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Updated 10/21/98 JMK

SUBJECT: Forwards Rev 21 to "WNP-2 Emergency Plan." Detailed synopsis of changes also provided.Rev 21 corrects violation identified in insp rept 50-397/98-14 concerning reduction of effectiveness in Rev 20 of WNP-2 emergency plan.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • Richland, Washington 99352-0968

GO2-98-169
September 25, 1998

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: **WNP-2 OPERATING LICENSE NPF-21**
TRANSMITTAL OF REVISION 21 TO THE WNP-2 EMERGENCY PLAN

In accordance with 10 CFR 50.4(b), 50.54(q), and 10 CFR 50 Appendix E, attached is the signed original of the WNP-2 Emergency Plan, Revision 21. A detailed synopsis of changes is also provided.

Revision 21 corrects the violation identified in Inspection Report 98-14 concerning the reduction of effectiveness in Revision 20 of the WNP-2 Emergency Plan. Revision 21 of the Emergency Plan was evaluated pursuant to the requirements of 10 CFR 50.54(q), and the changes do not reduce the effectiveness of the plan as previously approved.

Should you have any questions or desire additional information regarding this matter, please contact me or Tim Messersmith at (509) 377-8568.

Respectfully,

D. W. Coleman

D.W. Coleman (Mail Drop PE20)
Manager, Regulatory Affairs

1/1
A045

Attachment 300047

cc: EW Merschoff - NRC RIV
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50-397
Superseded pages per Rev to Emergency Plan dtd 3/12/01
010800413

ENERGY NORTHWEST

9809280275

EMERGENCY PLAN

WASHINGTON NUCLEAR PROJECT 2

Revision 26

APPROVALS: PRIOR NRC APPROVAL REQUIRED: ___ Yes _X_ No

RECEIVED:______ Date Correspondence No.:________________

[signature] 8/8/00
Corporate Emergency Preparedness, Safety and Health Officer — Date

D.W. Coleman 8/15/00
Manager, Regulatory Affairs — Date

[signature] 9/5/00
Plant Operations Committee Chairman — Date

GO Smith 9/6/00
Vice President, Generation/Plant General Manager, WNP-2 — Date

ENERGY NORTHWEST
EMERGENCY PLAN FOR WNP-2

REVISION 26 - SYNOPSIS OF CHANGES

Summary

Revision 26 of the WNP-2 Emergency Plan reflects editorial and grammatical changes. In addition, the representation of the Emergency Action Levels (EALs) in Table 4-1 was revised to reflect changes made to certain EPIP 13.1.1 EALs. These changes were made as a result of operator comments received during training to enhance human factor considerations, and replacement of the Reactor Building Exhaust High Range Monitor detector.

Affected Pages	Description of Changes
EP 2.15	The title of "OSC/TSC Communicator" is changed to "Repair Team Coordinator" to more accurately describe the function of this position. Roles and responsibilities of this position do not change as a result of the change of title. The change is consistent with the function of this position in the OSC, and does not affect the effectiveness of the Emergency Plan.
EP 4.24	Text in EAL 7.2.S.1 is revised to specifically call out the Remote Shutdown Panel and the Alternate Remote Shutdown Panel, instead of the Division 1 and 2 remote Shutdown Panels. These panels are better known to station personnel as the Remote (and Alternate Remote) Shutdown Panels. There is no change of equipment in this EAL. This correction is at the editorial level, and has no effect on Plan effectiveness. This correction is consistent with the current basis for EAL 7.2.S.1.
EP 4.33	The Note contained in Table 3 is revised to indicate that "if a dose projection cannot be performed, and...". Thus, the Note now states, "If a dose projection cannot be performed, and the monitor reading is sustained for longer than the specified time, then emergency declaration must be made using the valid reading." This change adds editorial clarification for the users. Plan effectiveness is not reduced by this change because performing dose projections to classify emergencies is more accurate than basing an emergency declaration solely on a valid monitor reading when dose projection capability is still available. This is consistent with the bases for EALs 5.1.A.1, 5.1.S.1, and 5.1.G.1. (The basis for EAL 5.1.U.1 is concerned with a loss of plant control that has allowed a radioactive release to occur for 60 minutes or more, rather

ENERGY NORTHWEST
EMERGENCY PLAN FOR WNP-2

REVISION 26 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 4.33	than the final integrated dose to the public which is very low at the Unusual Event level.) Three EAL Table 3 emergency classification thresholds are based on the Reactor Building Exhaust High Range monitor readings. EAL Table 3 is revised to reflect different monitor count rates for the Reactor Building Exhaust High Range radiation monitor used to declare Alert, Site Area Emergency and General Emergency classifications. This is due to the recent replacement of the existing high range detector. The new detector has a higher efficiency factor. Chemistry Calculation CY-00-001 was developed to ascertain the new count rates to be used for the new EAL criteria. The revised EAL thresholds remain appropriately conservative, and continue to assure the health and safety of the public. The quantity of radioactivity detected to trigger declaration of an emergency was based on using the Reactor Building Exhaust High Range monitor reading, and that quantity remains unchanged. Therefore, no decrease in effectiveness occurs as a result of this change.
EP 8.10	Section 8.7.3, Medical Emergency Drills, is expanded to provide additional detail with respect to specific activities and required drill frequency. This additional detail assures compliance with NUREG-0654, Evaluation Criteria N.2.c. Providing this type of detail does not decrease the effectiveness of the Plan.

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EMERGENCY PLAN FOR
WASHINGTON NUCLEAR PROJECT 2
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SECTION 1
INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

The Energy Northwest Emergency Plan (or Plan) was written to address emergencies at the Washington Nuclear Project 2 (WNP-2) located on the Hanford Reservation and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations as required by Title 10, Code of Federal Regulations, Part 50. It was developed in conjunction with the Washington State and the Benton and Franklin Counties Fixed Nuclear Facility Emergency Response Plans. All plans were developed to meet the intent of NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2 PURPOSE OF THE EMERGENCY PREPAREDNESS PROGRAM

The emergency preparedness program provides concepts and protective actions that are necessary to limit the consequences of radiation accidents and other emergencies. The primary objectives include the necessary arrangements, procedures and organizations necessary to effectively resolve any plant emergency to ensure the safety of the general public and to safeguard plant personnel and property.

1.3 ENERGY NORTHWEST COMMITMENT TO SAFETY

Energy Northwest is committed to the safe operation of its nuclear project. The commitment begins at the highest level of management and is reflected in the day-to-day activities of all employees. In addition to meeting, or in many cases exceeding, regulatory requirements, Energy Northwest is committed to providing a comprehensive program of personnel safety and corporate loss prevention. This Plan is a description of the comprehensive preparedness exhibited by Energy Northwest and its employees.

A trained staff of emergency response personnel is available, equipped and ready to respond to any emergency at Energy Northwest's nuclear project. Arrangements have been made with federal, state, and local response organizations and other nuclear facilities for assistance, if needed, during an emergency. Together these organizations can quickly implement a unified effort to assess the hazards, make the necessary decisions, and initiate actions to protect the health and safety of both emergency workers and the general population.

Energy Northwest works closely with all involved agencies. A coordinated training program between Energy Northwest and the Department of Energy in Richland provides emergency personnel from Benton and Franklin counties and the State of Washington with the training needed to assist during an emergency. Participation by Energy Northwest in joint programs with the Department of Energy to upgrade county and state emergency response capabilities is an example of the commitment to safety which Energy Northwest recognizes as its responsibility.

1.4 SITE CHARACTERISTICS

Energy Northwest leases 1089 acres of land on the Hanford Reservation, located north of Richland, Washington, and controlled by the Department of Energy. The land leased by Energy Northwest is approximately three miles west of the Columbia River and 12 miles north of the populated area of Richland. Figures 1-1 and 1-2, the Plume Exposure and Ingestion Exposure Emergency Planning Zone maps, show the location of the facilities on the Hanford Reservation.

1.4.1 Plant Design

WNP-2 is a boiling water reactor (BWR-5) with the reactor system supplied by the General Electric Company. This plant has an approximate electrical output of 1250 megawatts (MWe). Fuel for the reactor consists of slightly enriched uranium dioxide pellets sealed in Zircaloy-2 fuel rods. These fuel rods are assembled into individual fuel assemblies. Control of the core is achieved by movable, bottom-entry control rods.

The principal structures located on the plant site are shown in Figure 1-3 and include:

a. Reactor Building - envelopes the Mark II primary containment and provides a secondary containment structure. It also contains the new and spent fuel storage, refueling equipment, emergency core cooling systems and auxiliary equipment.

b. Radwaste and Control Building - houses the liquid and solid radwaste system, components of the off-gas system, and the main control room.

c. Turbine Building - houses the turbine-generator consisting of one high pressure and three low pressure turbines connected to a single generator.

d. Diesel Generator Building - location of the standby diesel generators and associated controls and instrumentation.

e. Service Building - houses the makeup water treatment system, machine shop, and office area.

f. Technical Support Center - this emergency response facility is utilized by the plant staff during an emergency. A more detailed description is provided in Section 6, "Emergency Facilities and Equipment."

g. Circulating Water Pumphouse - houses the circulating water pumps, plant service water pumps, and fire pumps.

h. Spray Ponds - the ultimate heat sink providing cooling water to the reactor for emergency shutdown.

i. Cooling Towers - six mechanical draft cooling towers used to dissipate the main condenser cooling water heat to the atmosphere.

1.4.2 Plant Support Facility

The Plant Support Facility is used for support of the plant site and the interface with off-site support agencies. It houses the Plant Simulator, the Site Training Center, and the Emergency Operations Facility. Its location is shown in Figure 1-4. See Section 6 for a detailed description of the emergency centers located in this facility.

1.5 ACTIVATION OF THE EMERGENCY PLAN AND PROCEDURES

This Emergency Plan provides the basis for classifying emergencies according to severity, assigning responsibilities, and outlining the most effective course of action to safeguard the public and plant personnel in the event of an incident. Detailed emergency procedures required to implement the Emergency Plan are listed in Appendix 2. The Emergency Plan Implementing Procedures prescribe the appropriate course of action necessary to activate the emergency response organizations and minimize the consequences of an incident.

The Emergency Plan Implementing Procedures (EPIPs) are used when an emergency is declared in accordance with Section 4 of this plan. In the absence of other controlling procedures, EPIPs are used as appropriate. The section of EPIPs designated as "Supporting Information Procedures" are implemented on a continuing basis and are used to ensure long term program maintenance.

1.6 ASSIGNED AUTHORITIES

1.6.1 Hanford Reservation

The 570 square mile Hanford Reservation is under the control of the Department of Energy - Richland Operations. The Department of Energy maintains a well-trained and qualified organization capable of responding to emergencies on the Hanford Reservation. The Department of Energy maintains responsibility for response actions on the Hanford Reservation outside the exclusion area boundaries.

Representatives from the Department of Energy will coordinate their response efforts to an Energy Northwest emergency with Energy Northwest, State, and County organizations from Energy Northwest's Emergency Operations Facility. Communications will be maintained with the Department of Energy's Occurrence Notification Center in Richland, Washington.

An Energy Northwest emergency may require response by local, state and federal organizations. Because of the unique siting of Energy Northwest facilities on a federal reservation, several areas of responsibility must be defined. A coordinated effort by the response organizations will be jointly conducted from Energy Northwest's Emergency Operations Facility. Responsibilities concerning jurisdictional areas are defined in the following sections. Statements made within this document are not intended to exclude one agency from providing assistance to another agency upon request.

1.6.2 Exclusion Area

The exclusion area for WNP-2 consists of a 1.2 mile radius around the plant. The exclusion area will be monitored by teams from Energy Northwest during an emergency and access will be controlled under the direction of Energy Northwest's Security Force. Coordination of activities within the exclusion area will be under the control of Energy Northwest and directed by the individual serving as the Emergency Director.

Energy Northwest has the authority to control and coordinate all activities within this exclusion area, as granted by Title 10 of the Code of Federal Regulations, Part 100.3. The agreement between Energy Northwest and the Department of Energy concerning the site lease on the Hanford Reservation includes provision for this authority.

1.6.3 Plume Exposure Pathway Emergency Planning Zone

The response to an emergency will usually require actions only within the site boundary; however, accidents are possible that may affect areas several miles from the facility. The planning basis for Energy Northwest's Emergency Preparedness Plan utilizes the emergency planning zone concept as first outlined in NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, dated December, 1978. The emergency planning zones are designated as areas for planning to assure that prompt and effective actions shall be taken to protect the public in the event of an accident. The emergency planning zone concept establishes two zones, a ten-mile Plume Exposure Pathway Emergency Planning Zone and an approximately 50-mile Ingestion Exposure Pathway Emergency Planning Zone.

In the Plume Exposure Pathway (Ten-Mile) Emergency Planning Zone (EPZ) the principal exposure sources are:

a. Whole body external exposure to beta/gamma radiation from the plume and from deposited radioactive material.

b. Inhalation exposure from the passing radioactive plume.

The Plume Exposure Pathway EPZ includes parts of the Hanford Reservation and Benton and Franklin Counties. Response actions will be coordinated between the two counties from their respective County Emergency Operations Centers.

The counties will coordinate all activities off the Hanford Reservation during the initial phases of the emergency. The Benton and Franklin County Emergency Operations Centers will coordinate activities with Energy Northwest and Department of Energy through county representatives at Energy Northwest's Emergency Operations Facility. Energy Northwest will provide dose assessment and protective action recommendations to state and local governments.

The Director for the Washington State Military Department, Emergency Management Division, is responsible for ensuring that the State maintains the capability to protect the public health and safety in the event of a fixed nuclear facility incident.

The Washington State Department of Health (DOH) is responsible for safeguarding the health of the public. Coordination of monitoring activities will be provided from Energy Northwest's Emergency Operations Facility.

1.6.4 Ingestion Exposure Pathway Emergency Planning Zone

The Ingestion Exposure Pathway Emergency Planning Zone (EPZ) as shown in Figure 1-2 extends into the Yakama Indian Nation, eight counties within the State of Washington, and two counties in the State of Oregon. These are Benton, Franklin, Yakima, Kittitas, Grant, Adams, Walla Walla, and Klickitat in the State of Washington[1], and Morrow and Umatilla Counties in the State of Oregon. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The State of Washington maintains communication with the Washington counties in the Ingestion Exposure Pathway EPZ. The State of Oregon does the same for Morrow and Umatilla Counties. Communications with the Yakama Indian Nation are handled by Yakima County. Dose projections and environmental sampling are also the responsibility of the States and will be coordinated from Energy Northwest's Emergency Operations Facility by State representatives. Support to the States of Washington and Oregon is provided by Energy Northwest through the sharing of field team data and other resources.

1.6.5 Emergency Plan Interrelationships

Interrelationships of this plan with procedures, other plans, and emergency arrangements are summarized as follows:

- Detailed actions to be taken by individuals in response to onsite emergency conditions are described in the Emergency Plan Implementing Procedures.
- The WNP-2 Physical Security Plan and Procedures and this plan are coordinated to ensure that appropriate emergency actions can be taken. For example, the Physical Security Plan and Procedures contain provisions for emergency response personnel and vehicle access when required by the Emergency Plan Procedures.
- Site construction groups at WNP-1 and the maintenance contractors at WNP-2 that develop emergency procedures for their personnel are tasked with coordinating their procedures with this plan.

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[1]Kittitas and Klickitat Counties do not actively participate in radiological emergency preparedness efforts. The State of Washington has established measures to ensure that appropriate actions will be taken for these two counties. Refer to the State of Washington Emergency Response Plan.

- The WNP-2 Plant Procedure Manual, Radiological Protection Procedures Section defines administrative controls and procedures such as radiological control limits and precautions, use of personnel monitoring devices, use of protective clothing and equipment, personnel decontamination, etc. Additionally, the Chemistry Procedure Section and Radiation Protection Procedure Section provide instructions for conducting surveys, analyzing samples, operating health physics/radiation protection equipment, etc. Information and details provided in these documents have either been incorporated into the Plan or Emergency Plan Implementing Procedures, or have been appropriately referenced.

- WNP-2 has formulated Abnormal Condition Procedures, as part of the Plant Procedure Manual, which discuss generic emergencies such as floods, volcanic ash, and other severe weather conditions. The methods and equipment developed for such emergencies are available for use in concert with emergency actions described in this plan.

- Formal agreements have been negotiated to define the coordination and interface between onsite and offsite organizations and agencies having related radiological emergency planning responsibilities. Continuing liaison with the offsite organizations ensures compatibility and proper interfacing with this plan. Section 3 of this plan further describes those agencies' activities with respect to an emergency at WNP-2.

- Other offsite organizations, not within the immediate area, may also be requested to offer technical assistance (e.g., Institute of Nuclear Power Operations, General Electric, NPS Energy Services, etc.).

1.7 DEFINITIONS

1.7.1	Activated	-	An Emergency Center may be activated when all appropriate personnel are present and capable of appropriately addressing the emergency condition.
1.7.2	ALARA	-	As Low as Reasonably Achievable.
1.7.3	Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.
1.7.4	Annually, or Annual	-	Performed or executed at anytime during a calendar year.
1.7.5	Augmenting Emergency Organization Personnel	-	Emergency Response Organization personnel not designated as essential, but are desired for efficient operation of emergency centers.
1.7.6	Drill	-	A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise and is supervised and evaluated by qualified drill controller(s) and/or evaluator(s).
1.7.7	Early Warning System	-	A system designed to alert all residents and transients within the Ten-Mile Emergency Planning Zone. This system will include sirens for areas along the Columbia River and the Horn Rapids area, and tone alert radios for residents within the ten mile Emergency Planning Zone.
1.7.8	Emergency Action Level	-	Plant-specific indications, conditions or instrument readings which are utilized to determine emergency classifications.
1.7.9	Emergency Decontamination Facility	-	A facility located adjacent to Kadlec Medical Center in Richland to be used for decontamination and emergency medical care of contaminated persons.

1.7.10	Emergency Director	-	This functional position is responsible for all emergency activities at the plant and coordination of outside assistance as needed. The position will be held by either the Shift Manager, the TSC Manager or the EOF Manager.
1.7.11	Emergency Operations Facility (EOF)	-	An area located within the Plant Support Facility which is equipped to facilitate command and control decision-making for the coordination of emergency activities and environmental assessments.
1.7.12	EOF Manager	-	This position is responsible for overall management of Energy Northwest resources and will oversee all activities related to the plant emergency response effort when the EOF is activated.
1.7.13	Emergency Response Organization (ERO)	-	Employees designated as emergency response personnel.
1.7.14	Essential ERO Personnel	-	Emergency response positions designated as essential to coordinate a response to a WNP-2 emergency.
1.7.15	Exercise	-	An exercise is an event that tests the integrated capability and a major portion of the WNP-2 emergency preparedness plans and response organizations. It will consist of a simulated emergency that results in offsite radiological releases and may include mobilization of state and local personnel and resources adequate to verify their capability to respond to a WNP-2 accident. Federal and State agencies will be invited to participate as observers/evaluators in exercises.
1.7.16	Exclusion Area	-	An area extending out to a radius of 1.2 miles from the WNP-2 reactor.
1.7.17	Fixed Nuclear Facility	-	A permanent facility (plant) with an operable nuclear reactor.

1.7.18	General Emergency	-	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
1.7.19	Hanford Reservation	-	A federally owned reservation under the control of the Department of Energy, Richland Operations, Richland, Washington. The reservation covers 570 square miles and is located north of the City of Richland in Benton County.
1.7.20	Ingestion Exposure Pathway Emergency Planning Zone	-	A zone around WNP-2 in which planning for protective actions for the public is based on potential ingestion of contaminated water and/or foods. This zone consists of the area within a 50-mile radius of WNP-2 including a portion of the State of Oregon. The boundaries of the zone are shown in Figure 1-2.
1.7.21	Monthly	-	Performed or executed at any time during a calendar month.
1.7.22	Nonessential Personnel	-	Personnel not designated as Emergency Response Personnel.
1.7.23	Owner Controlled Area	-	That area that Energy Northwest maintains industrial and process control of.
1.7.24	Onsite Emergency Centers	-	Includes the Control Room, Technical Support Center, and Operations Support Center. Plant personnel will implement emergency actions and make decisions to support plant operations and repair activities from these centers.
1.7.25	Plant	-	That area containing the WNP-2 reactor and certain support structures within the Protected Area.

1.7.26	Plant Support Facility	-	A facility located approximately 0.75 miles southwest of WNP-2. The structure includes a shielded area designated as the Emergency Operations Facility.
1.7.27	Plume Exposure Pathway Emergency Planning Zone	-	A zone around WNP-2 in which planning for protective actions by the public are based on potential exposure to or inhalation of materials carried by a passing radioactive plume released during an accident. This zone consists of the area within an approximate 10-mile radius of WNP-2, including portions of Benton and Franklin Counties.
1.7.28	Protected Area	-	An area located within the Owner-Controlled Area which contains the WNP-2 power block and is surrounded by chain link fence.
1.7.29	Protective Action Guides	-	Numerical doses and concentrations which act as trigger points to initiate protective actions such as sheltering, evacuation, or placement of dairy herds on stored feed. These guides are established by the States of Washington and Oregon, and take the Environmental Protection Agency Protective Action Guides into consideration.
1.7.30	Quarterly	-	Performed or executed at any time during a calendar quarter.
1.7.31	Recovery Manager	-	This position is responsible for overall management of Energy Northwest's resources and will be in charge of all activities related to the recovery operations following a plant emergency.
1.7.32	Release in Progress	-	Any radioactive release that exceeds the Emergency Action Levels for an Unusual Event.
1.7.33	SE Comm	-	South East Communications, the 911 answering division of Benton County Emergency Services.

1.7.34	Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guides exposure levels except near the site boundary.
1.7.35	Energy Northwest	-	Energy Northwest is a "Joint Operating Agency" incorporated under the laws of the State of Washington. Its members include public utility districts and municipalities. Energy Northwest holds the license to operate WNP-2.
1.7.36	Support Emergency Response Organization	-	Consists of personnel that perform limited support functions, or may only be needed under certain conditions.
1.7.37	Thermoluminescent Dosimeter (TLD)	-	A device for measuring gamma, neutron and some beta radiation exposure.
1.7.38	Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.
1.7.39	WNP-2	-	Washington Nuclear Project No. 2 (i.e., Plant 2) is an operational General Electric boiling water reactor rated at approximately 3486 MWth.

1.8 ACRONYMS

AMS	Aerial Measuring System
ARC	American Red Cross
ARM	Area Radiation Monitor
ATWS	Anticipated Transient Without Scram
BOP	Balance of Plant
BPA	Bonneville Power Administration
CAS	Central Alarm Station
Ci	Curie
CR	Control Room
CRS/SM	Control Room Supervisor/Shift Manager
DAC	Derived Air Concentration
DBA	Design Basis Accident
DEM	Department of Emergency Management
DG	Diesel Generator
DIL	Derived Intervention Level
DOE-RL	Department of Energy - Richland Operations
DOH	Department of Health
DW	Drywell
EAL	Emergency Action Level
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ED	Emergency Director
EDPS	Emergency Dose Projection System
EFPD	Effective Full Power Days
EFSEC	Energy Facility Site Evaluation Council, Washington State
EMD	Emergency Management Division
EMT	Emergency Medical Technician
EO	Equipment Operator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data Systems
ERO	Emergency Response Organization
ERP	Elevated Release Point
EWAC	Emergency Worker/Assistance Center
FAX	Facsimile
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRERP	Federal Radiological Emergency Response Plan
GPM	Gallons Per Minute
HP	Health Physics
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning
I&C	Instrumentation and Control
JIC	Joint Information Center

KI	Potassium Iodide (Thyroid Blocking Agent)
KV	Kilovolt
LERN	Law Enforcement Radio Network
LLEA	Local Law Enforcement Agency
LOCA	Loss of Cooling Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
mREM	Millirem
MPF	Multipurpose Facility
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Safety/Relief Valve
MUDAC	Meteorology and Unified Dose Assessment Center
NPRDS	Nuclear Plant Reliability Data System
NRC	Nuclear Regulatory Commission
OAC	Offsite Agency Coordinator
OSC	Operations Support Center
PAD	Protective Action Decision
PAG	Protective Action Guide
PAAP	Protected Area Access Point
PAR	Protective Action Recommendation
PASS	Post-Accident Sampling System
PIO	Public Information Officer
PSIG	Pounds Per Square Inch Gauge
RACES	Radio Amateur Civil Emergency Service
RB	Reactor Building
RCIC	Reactor Core Isolation Cooling
REM	Radiological Emergency Manager
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RW	Radioactive Waste
SAS	Secondary Alarm Station
SC	Suppression Chamber
SCC	Security Communications Center
SE COMM	South East Communications
SECON	Security Condition
SFP	Spent Fuel Pool
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SM	Shift Manager
SP	Suppression Pool
SSW	Standby Service Water
TGB	Turbine Generator Building
TSC	Technical Support Center
USCG	United States Coast Guard

WEIC	Washington Emergency Information Center
WNP-2	Washington Nuclear Project Number 2
WSDA	Washington State Department of Agriculture
WSP	Washington State Patrol
WW	Wetwell

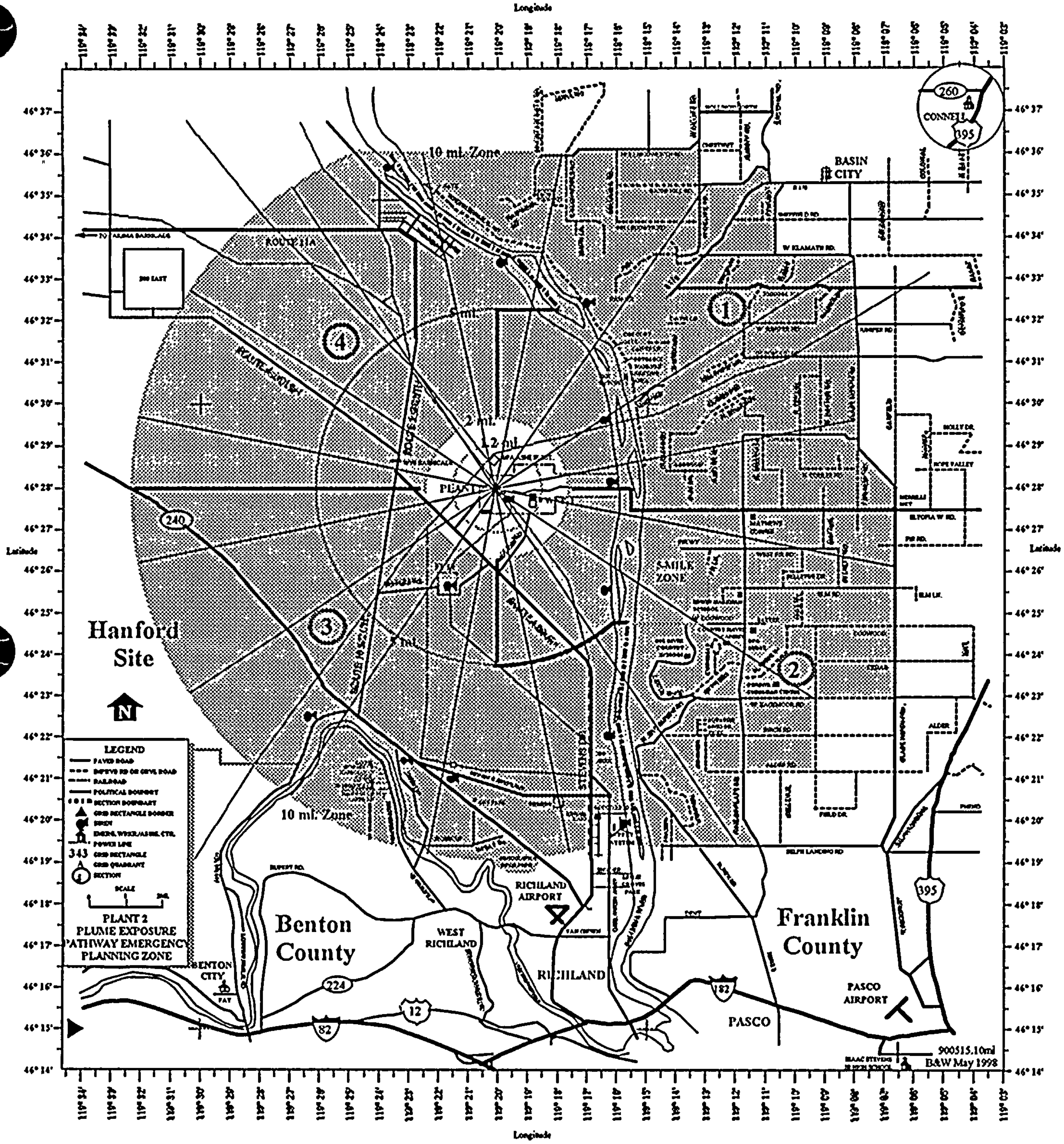
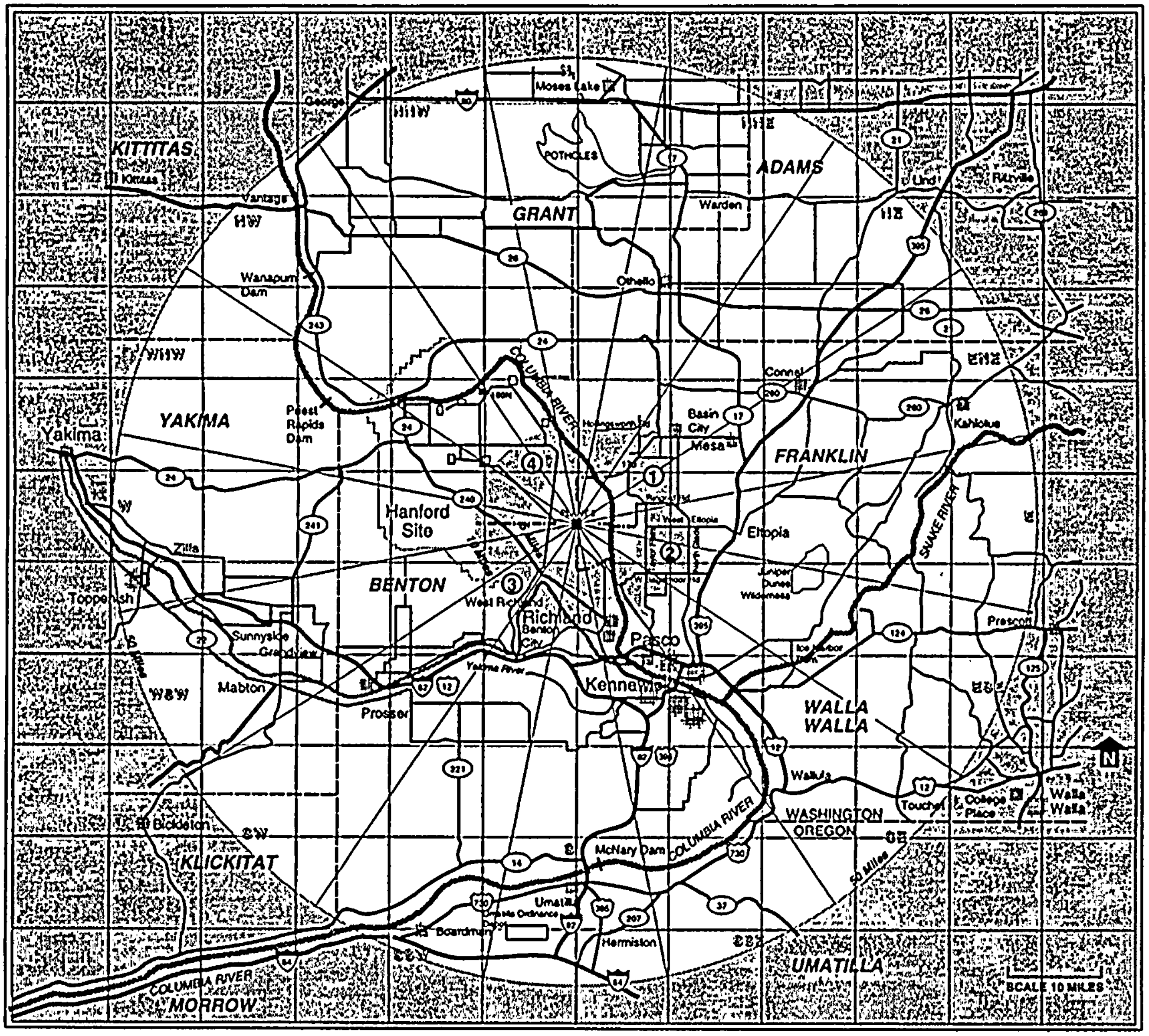


Figure 1-1, Ten-Mile Emergency Planning Zone (EPZ)



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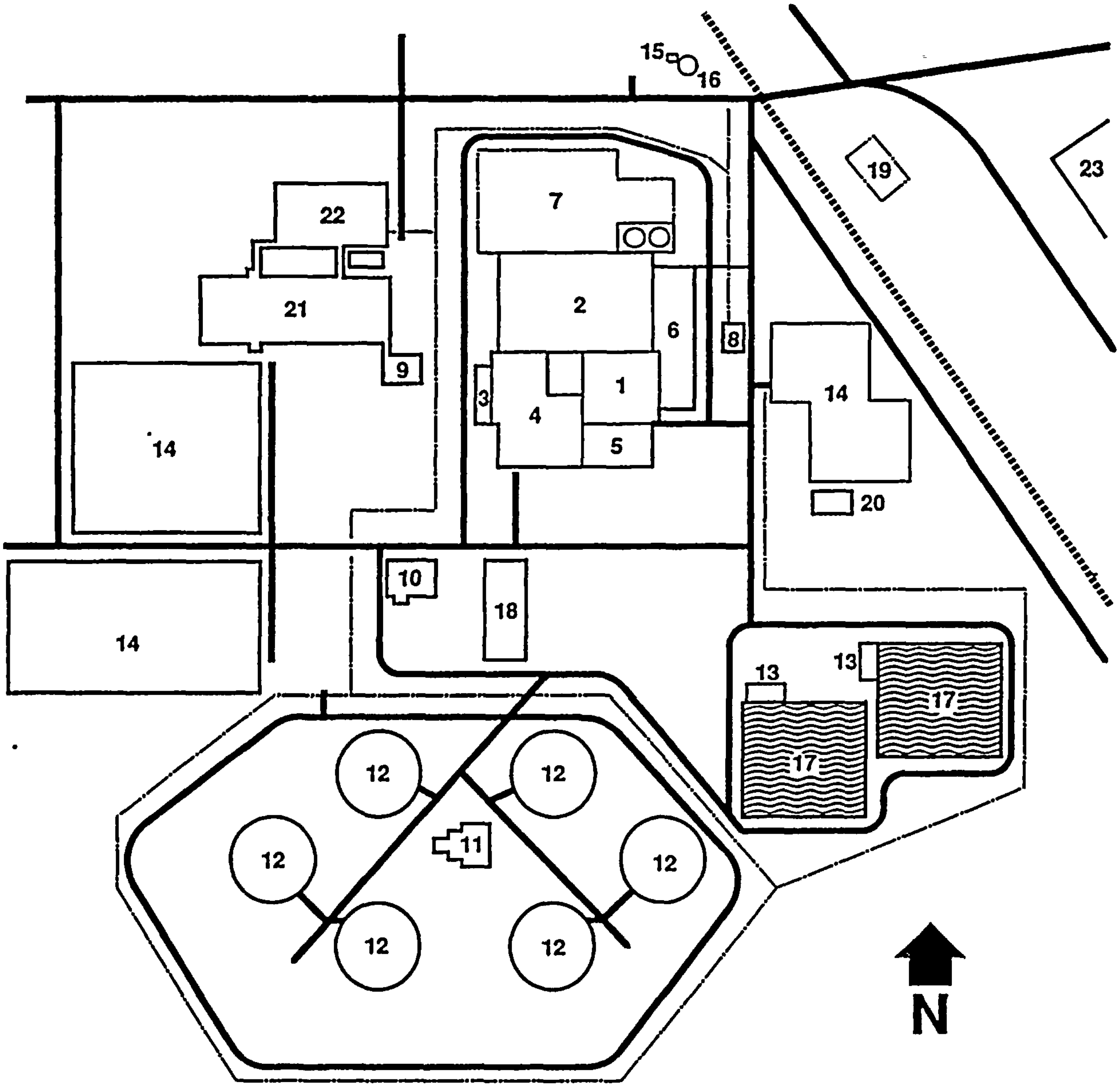
Rev. 13
Jan 1995

Figure 1-2, Fifty-Mile Emergency Planning Zone (EPZ)

Site Plan



1. Reactor Building
2. Turbine Generator Building
3. Technical Support Center
4. Radwaste Building
5. Diesel Generator Building
6. General Services Building
7. Transformer Yard
8. Primary access point
9. Alternate access point
10. Office Complex
11. Circulating Water Pumphouse
12. Cooling Towers
13. Standby Service Water Pumphouse
14. Parking Lots
15. Pumphouse
16. Water Storage Tank
17. Spray Pond
18. Records Management
19. Service Substation
20. Visitor Center
21. Plant Engineering Center
22. Document Storage
23. Warehouses

Figure 1-3, Plant 2 Site

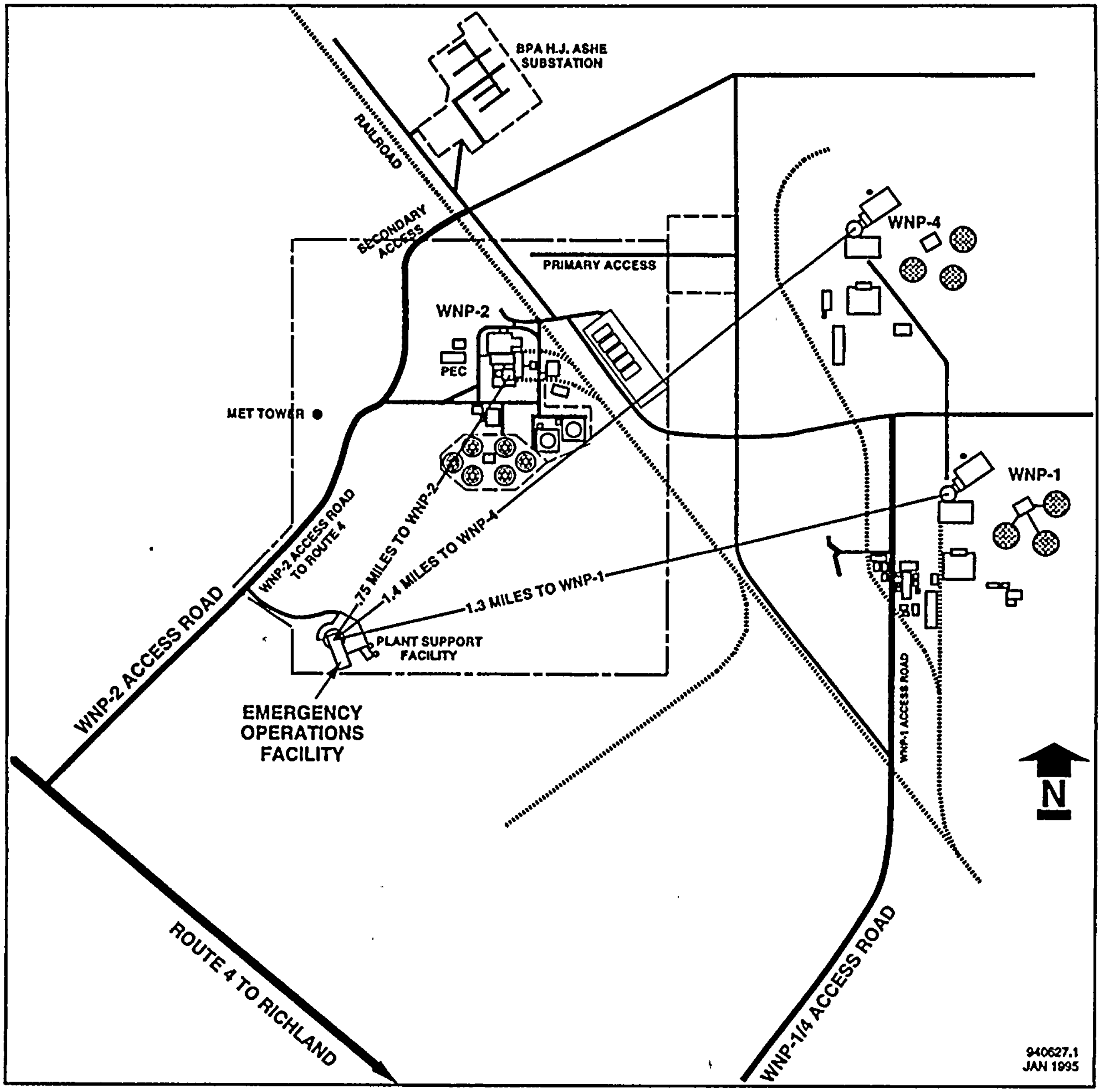


Figure 1-4, Emergency Operations Facility Location

SECTION 2
ENERGY NORTHWEST EMERGENCY ORGANIZATION

2.1 ORGANIZATIONAL CONCEPTS

This section of the Plan describes the emergency response organization at Energy Northwest. The normal plant operating organization serves as a foundation for the emergency organization and is augmented by the on-call Emergency Response Organization (ERO) at an Alert or higher emergency class. The normal organization is described in the corporate organization charts. An overview of the emergency organization is shown in Figure 2-1.

Energy Northwest's Emergency Response Organization consists of positions that satisfy requirements for initial and augmented staffing during declared emergency as well as positions that may be summoned as needed. The members of the emergency organization which are essential to implementation of the Plan and the augmenting organization which supports the essential personnel are shown in Figure 2-1. The Emergency Organization Assignment List contains a listing of the personnel assigned to the ERO. The title of Shift Technical Advisor (STA) is generic, and the responsibility may be performed by other personnel on shift for purposes of NUREG-0737 and NUREG-0654.

Responsibility for emergency direction and control (i.e., overall direction of the plant's emergency response which must include the non-delegable responsibilities for emergency classification, the decision to notify, and to recommend protective actions to authorities responsible for offsite emergency measures) is normally transferred from the Shift Manager to the TSC Manager to the EOF Manager. However, if the situation dictates, the responsibilities may be transferred from the Shift Manager directly to the EOF Manager. The transfer of responsibilities only takes place when the individual relieving the Shift Manager is at his assigned location, has minimum staffing level or greater in place, and has received a formal turnover.

2.2 SHIFT ORGANIZATION

The operating crew for each shift at the plant normally consists of a Shift Manager, to whom reports a Control Room Supervisor, Shift Support Supervisor, Shift Technical Advisor, licensed reactor operators, equipment operators, health physics technicians, chemistry technicians, and Security Force personnel. Operations personnel are trained to perform emergency maintenance functions in the absence of on shift maintenance personnel. The Shift Manager on duty has the immediate responsibility for the plant at all times, and has full authority and responsibility for recognizing and declaring emergencies. Each shift is provided with a complement of qualified individuals who have specialized training in notifications, the operation of the reactor and other plant systems, plant instrumentation, radiation safety, and maintenance.

Security force personnel and the control room have 24 hour communications capability with the ERO and offsite response agencies.

Plant Technical Specifications and 10 CFR 50.54 (m) provide for reduced staffing in reactor operational modes 4 and 5. Energy Northwest recognizes that these are minimum staffing levels and that additional personnel are necessary to perform emergency functions. On shift staffing, in all modes, includes adequate numbers of qualified personnel to perform classification, notification, and dose assessments within time requirements.

The Vice President, Generation/Plant General Manager has full authority and responsibility for the overall supervision and administration of the nuclear plant. Technical support is provided by a staff experienced in reactor physics, nuclear power plant systems technology and operation and health physics and chemistry. The normal plant operating organizations are complemented by a group of specialists available from other departments of Energy Northwest and are identified in the corporate organization charts.

2.3 EMERGENCY RESPONSE ORGANIZATION

Energy Northwest's Emergency Response Organization (ERO) consists of positions that satisfy requirements for initial and augmented staffing during a declared emergency as well as positions that may be summoned as needed. This organization has the capability of continuous (24 hour) operations for a protracted period. The ERO is arranged in the following response categories:

On Shift:

On shift positions consist of the Shift Manager, Control Room Supervisor, Reactor Operators, Shift Technical Advisor (not required in Mode 4 and 5, thus can't provide initial response in these modes), Equipment Operators, HP Technicians, Chemistry Technicians, I&C Technicians, Electrical and Mechanical Craft, and Security. These positions provide initial response to an emergency.

Essential:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means at any time to respond within a specified time. Essential ERO personnel will normally assist on shift personnel to provide assessment and mitigation of accident conditions, notifications to offsite agencies, or provide overall direction, control and logistical support for emergency operations.

Augmenting:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means to respond at any time within a specified time. Augmenting personnel provide additional emergency assessment, accident mitigation and logistics support to on shift and essential personnel.

Support:

Consists of positions which may or may not be designated on a rotating on-call list or ERO assignment list, but may be summoned by electronic or manual means when needed to support emergency operations.

The essential emergency organization has the capability to provide manpower and other resources to assist the normal plant organization within approximately one hour if an emergency situation arises. The essential organization has been established with responders designated on a rotating on call list. The emergency duties of the normal plant staff are transferred to the ERO as the corresponding members arrive on site and the emergency centers are activated.

If an emergency situation arises, the Shift Manager will activate the ERO to supplement the normal operating staff. Those members of the ERO who are not on site at the time of the emergency will be able to respond within about one hour of the emergency. In addition, designated members of the Emergency Preparedness department are available to assist with Emergency Operation Facility activation.

Following are general descriptions of the Essential Emergency Response Organization. Duties are discussed in more detail in the Emergency Plan Implementing Procedures. Table 2-1 demonstrates how these positions align with NUREG-0654/FEMA-REP-1, Rev. 1, Table B-1 requirements.

2.3.1 On Shift Emergency Organization

2.3.1.1 Shift Manager

Basic Emergency Function: The Shift Manager reports to the Operations Manager and is responsible for overall plant control. The Shift Manager assumes the Emergency Director duties and responsibilities upon initial emergency classification until relieved by the TSC Manager or EOF Manager. Once an emergency classification is declared, the Shift Manager, as the Emergency Director, is responsible for activation and direction of the emergency response organization to the extent required by the emergency.

NOTE: The Shift Manager is responsible for ensuring safe operation of the plant under all conditions. The Shift Manager, as the Emergency Director, ensures necessary protective actions are carried out. The priority of actions shall be in the following order:

- Public Safety
- On Site Personnel Safety
- Equipment Protection
- Plant Reliability

The Senior Reactor Operator (SRO) license holders on shift and the STAs are available to perform offsite dose assessment at all times when required.

2.3.1.2 Control Room Supervisor (On shift as required by Technical Specifications)

Basic Emergency Function: The Control Room Supervisor (CRS) is the senior individual responsible for plant control actions during both normal and emergency operations. The Control Room Supervisor will assume Shift Manager responsibilities, including emergency direction and control authority, in the absence of the Shift Manager.

2.3.1.3 Reactor (Control Room) Operators

Basic Emergency Function: The Reactor Operators (RO) are responsible for the day to day operations of the reactor and implement necessary actions under the direction of the Control Room Supervisor to terminate the condition causing the emergency and place the plant in a safe condition.

2.3.1.4 Security Communication Center Staff

Basic Emergency Function: The Security Communication Center (SCC) Staff will assist with notifications to Energy Northwest ERO personnel and to offsite agencies during both the emergency and recovery phases. The SCC staff reports to the Security Manager.

2.3.1.5 Equipment Operators

Basic Emergency Function: The Equipment Operators (EO) are responsible for responding to the emergency as directed by the Control Room Supervisor or Fire Brigade (FB) Leader. The location of the Equipment Operators is assigned by the Control Room Supervisor/FB Leader. Control and accountability of Equipment Operators may, after discussion between the Shift Manager and OSC Manager, be transferred to the OSC.

2.3.1.6 Shift Technical Advisor (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Shift Technical Advisor (STA)/Shift Engineer is responsible for assessing the plant operating status, recognizing that an Emergency Action Level (EAL) initiating condition exists and advising the Shift Manager on mitigating actions. They provide specific information to the Shift Manager concerning the Emergency Plan Implementing Procedures required response actions.

2.3.1.7 Fire Brigade

Basic Emergency Function: The Fire Brigade (FB) is responsible for fire fighting, first aid and search and rescue operations. The team will perform radiological surveys and contamination control as necessary. Members of the FB may also perform plant systems manipulation tasks to mitigate consequences of an accident. The FB is under the direction of the Shift Manager until directed to report to the OSC Manager.

2.3.1.8 Health Physics, Chemistry, and Maintenance Support Personnel

Basic Emergency Function: Health Physics, Chemistry, and Maintenance Support personnel are responsible for providing radiation surveillance, chemistry analyses, and maintenance operations as repair or reentry and recovery team members. These support staff will report to the OSC Manager for in plant team activities.

2.3.2 Essential Plant Emergency Organization

Figure 2-1 identifies the key shift personnel who are sufficiently trained to perform all necessary duties until relief personnel arrive. Figure 2-1 provides a diagram of the ERO showing the reporting chain within the ERO. The following sections detail duties of the essential emergency response organization.

2.3.2.1 TSC Manager

Basic Emergency Function: The Technical Support Center Manager (TSC Manager) is responsible for the coordination of onsite response efforts during an emergency. This position is also responsible for the overall development and implementation of accident mitigation and repair/damage control efforts. In some cases the TSC Manager may assume the responsibility for emergency direction and control until the EOF Manager assumes this responsibility at the Emergency Operations Facility. The TSC Manager initiates evacuation and onsite recovery actions as necessary. The TSC Manager is also responsible for ensuring plant security is maintained and provisions are made for immediate entry of necessary emergency assistance such as ambulance or fire equipment.

The Maintenance Manager, Operations Manager, Technical Manager, Radiation Protection Manager, Plant Admin Manager, Plant/NRC Liaison, and OSC Manager report to the TSC Manager.

2.3.2.2 TSC Radiation Protection Manager

Basic Emergency Function: The Radiation Protection Manager (RPM) is responsible for directing the health physics staff, assessing radiological conditions, reviewing radiological data received, ensuring personnel exposures are maintained As Low As is Reasonably Achievable (ALARA), and providing recommendations concerning radiation safety matters to the TSC Manager.

The Radiation Protection Manager will also assess offsite doses and make recommendations concerning protective actions to the TSC Manager until the Radiological Emergency Manager at the EOF takes over this function.

2.3.2.3 TSC Plant/NRC Liaison

Basic Emergency Function: The Plant/NRC Liaison is the primary plant interface with the NRC Headquarters concerning emergency matters and will coordinate commitments made to the NRC. He will keep the TSC Manager advised of NRC activities and, as necessary, will staff the NRC/ENS phone. The Plant/NRC Liaison is responsible for ensuring activation of the Emergency Response Data System (ERDS) for an Alert or higher classification.

2.3.2.4 TSC Technical Manager

Basic Emergency Function: The Technical Manager is responsible for analysis of plant data and the development of plans and procedures in direct support of plant operations personnel. The primary objective is to achieve a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This position supervises the analysis of plant safety parameters by the plant technical and operations staff.

2.3.2.5 TSC Core Thermal Engineer

Basic Emergency Function: Provides information on reactor water pressures and temperature distribution, heat transfer and fluid flow rates, and performs core damage assessments.

2.3.2.6 TSC Electrical Engineer

Basic Emergency Function: Provides information and recommendations about plant and offsite electrical power sources and distribution.

2.3.2.7 TSC Mechanical Engineer

Basic Emergency Function: Provides information and recommendations on mechanical systems and hardware modifications.

2.3.2.8 TSC Operations Manager

Basic Emergency Function: The Operations Manager will assist the TSC Manager by providing oversight and direction to Control Room operations. He provides the interface between the TSC and Control Room. The Operations Manager keeps the TSC Manager informed of plant status and provides input concerning plant operations necessary for the accident and recovery process.

2.3.2.9 OSC Manager

Basic Emergency Function: The Operations Support Center (OSC) Manager is responsible for assigning and dispatching Repair Teams. This individual provides updates to the TSC Manager via the Maintenance Manager on team activities. The OSC Manager is also responsible for ensuring plant personnel accountability is performed. The Fire Brigade reports to the OSC Manager once it is released by the Shift Manager.

2.3.2.10 HP Lead

Basic Emergency Function: The HP Lead identifies hazardous areas within the plant, provides repair team HP briefings and assigns HP resources to repair teams. The HP Lead communciates with the OSC Manager and TSC RPM.

2.3.2.11 Repair Team

Basic Emergency Function: The Repair Teams provide the necessary manpower to perform tasks throughout the plant involving investigation of the accident, repair of equipment or taking actions to minimize the extent of damage. The Repair Teams report to the OSC Manager.

2.3.3 Essential Emergency Operations Facility Emergency Organization

The Emergency Operations Facility (EOF) is activated at the Alert classification and will be utilized by the EOF Manager and his staff to implement necessary actions during an Alert, Site Area or General Emergency. The EOF Manager normally assumes responsibility for emergency direction and control within approximately one hour of the declaration of an Alert or higher emergency. He normally receives a turnover from the TSC Manager but in some cases may receive a turnover from the Shift Manager. The EOF Manager is responsible for the overall management of Energy Northwest emergency resources and has full authority to make commitments for the company. The basic functions which will be directed from the Emergency Operations Facility are:

a. Manage the overall Energy Northwest emergency effort.

b. Evaluate the magnitude and consequences of actual or potential radiological releases.

c. Coordinate field sampling and analysis of radioactive material released from the plant.

d. Coordinate emergency response activities with local, state, and federal agencies and provide recommendations concerning appropriate offsite protective measures.

e. Provide technical support to the plant.

f. Provide necessary security controls.

g. Provide decontamination and medical assistance for personnel evacuated from the plant.

h. Secure necessary supplies and equipment.

i. Develop public information reports for the Joint Information Center concerning plant status, emergency actions underway, and hazards to the public.

j. Advise upper management concerning plant conditions.

k. Coordinate the overall recovery effort including the development of procedures and schedules, procurement of equipment, and identification of necessary licensing actions.

l. Provide for adequate work area for the recovery effort.

2.3.3.1 EOF Manager

Basic Emergency Function: The Emergency Operations Facility (EOF) Manager is responsible for the overall management of Energy Northwest resources and will be in charge of activities related to plant emergency and recovery operations. The EOF Manager has the authority to request outside assistance, including resources available from the federal government, and will assume the responsibility for emergency direction and control. The decision to request outside assistance, change emergency classifications, approve offsite protective action recommendations and make decisions concerning the notification of offsite authorities cannot be delegated once the EOF Manager has assumed the Emergency Director duties.

The Engineering Manager, Site Support Manager, Offsite Agency Coordinator, EOF Public Information Officer, Radiological Emergency Manager, TSC Manager, Security Manager, Licensing Manager, and Joint Information Center Manager report to the EOF Manager.

At his discretion, the EOF Manager may request one or more assistants. The assistant(s) perform duties as assigned by the EOF Manager.

2.3.3.2 EOF Radiological Emergency Manager

Basic Emergency Function: The Radiological Emergency Manager (REM) reports to the EOF Manager. The REM is responsible for managing radiological dose assessment and field monitoring activities. The REM assists in development of Protective Action Recommendations and, during the late phases of the response, coordinates this activity with the States of Washington and Oregon and the US DOE and provides offsite radiological Protective Action Recommendations to the EOF Manager. The REM also coordinates Energy Northwest offsite radiological monitoring effort with the States of Washington and Oregon and the US DOE.

2.3.3.3 EOF Field Team Coordinator

Basic Emergency Function: The Field Team Coordinator provides overall management of field teams, identifies plume path and areas requiring survey; directs the Field Team Dispatcher, and makes field teams available for river evacuation; communicates field team summary information to the REM.

2.3.3.4 Environmental Field Teams

Basic Emergency Function: The Environmental Field Teams are responsible for determining offsite radiological hazards and for conducting the required offsite surveys, monitoring and sampling. Field team activities are coordinated by the Field Team Coordinator. At least three teams will be available to conduct environmental sampling in the field.

2.3.3.5 EOF Telecommunications Manager

Basic Emergency Function: Provide for the operability of Energy Northwest communications systems. Will direct and dispatch Telecommunications Technicians to areas requesting assistance with phones or other telecommunications equipment.

2.3.4 Essential Joint Information Center Emergency Organization

The essential Joint Information Center emergency organization consists of the Joint Information Center Manager. This function ensures timely, accurate releases of information and assists offsite organizations in developing coordinated information for release to the public.

2.3.4.1 Joint Information Center Manager

Basic Emergency Function: The Joint Information Center (JIC) Manager will ensure timely and accurate releases of information to the media and public and will monitor and respond to misinformation. The JIC Manager will also coordinate Energy Northwest's emergency public information activities with those of Benton and Franklin counties, Washington State, Oregon State, and the Federal Government. The JIC Manager reports to the EOF Manager.

2.4 AUGMENTING EMERGENCY ORGANIZATION

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential Energy Northwest emergency organization described in Section 2.3. In addition to the positions described in this section, other augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures are listed in the Emergency Response Organization List.

2.4.1 Augmenting Plant Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential plant emergency organization described in Section 2.3.1. These positions will be filled by activating previously selected personnel who can respond as required.

2.4.1.1 TSC Plant Administrative Manager

Basic Emergency Function: The Plant Administrative Manager is responsible for providing the TSC Manager with the necessary administrative services including accountability, requests for additional personnel and office services support. The TSC Administrative staff reports to the Plant Administrative Manager.

2.4.1.2 TSC Maintenance Manager

Basic Emergency Function: The Maintenance Manager is responsible for assigning tasks to be performed by the Operations Support Center (OSC) teams, determining the priority to be assigned for each task, and acting as the focal point between the TSC and OSC for the work control process.

2.4.1.3 Information Coordinators

Basic Emergency Function: Provide information and plant status updates to the center manager and staff. Communicate pertinent emergency related information from their assigned center to the other information coordinators. Information Coordinators are assigned to the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

2.4.1.4 TSC Chemistry/Effluent Manager

Basic Emergency Function: The Chemistry/Effluent Manager is responsible for monitoring the Plant effluent and ARM monitors. Changes in radiological conditions are reported to the Radiation Protection Manager. The Chemistry/Effluent Manager may also perform emergency dose projections. In addition, the Chemistry/ Effluent Manager advises the TSC Manager of chemistry concerns.

2.4.1.5 OSC Team Tracker

Basic Emergency Function: The OSC Team Tracker is responsible for maintaining communications with in-plant Repair Teams performing actions during the event following dispatch from the OSC. The Team Tracker is responsible for keeping the OSC Manager informed of team status and location. The Team Tracker also is responsible for coordination of site personnel accountability.

2.4.1.6 OSC Craft Leads

Basic Emergency Function: The Craft Leads will assist the OSC Manager in briefing and debriefing Repair Teams. They will also assist the Team Tracker in tracking of teams and personnel as required. Craft leads respond for Electrical, Mechanical, I&C and Health Physics disciplines.

2.4.2 Augmenting Emergency Operations Facility Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Emergency Operations Facility essential organization which is described in Section 2.3.2. These positions will be filled by activating previously selected personnel.

2.4.2.1 Assistant EOF Manager

Basic Emergency Function: The Assistant EOF Manager will assist the EOF Manager in the overall management of Energy Northwest resources and will assume the EOF Manager duties including Emergency Director responsibilities if the EOF Manager is not available at the EOF.

2.4.2.2 EOF Manager Secretary

Basic Emergency Function: The responsibilities of the EOF Manager Secretary include maintaining a log of EOF Manager actions, monitoring EOF Manager's phones, initiating Crash calls and performing other EOF administrative support duties as requested by the EOF Manager.

2.4.2.3 Dose Projection Health Physicist

Basic Emergency Function: The Dose Projection Health Physicist is responsible for completing dose projections, providing input to Protective Action Recommendations, and keeping the Radiological Emergency Manager informed of radiological release status. Refer to Section 6.4.2 for a description of the Meteorology and Unified Dose Assessment Center (MUDAC).

2.4.2.4 EOF Engineering Manager

Basic Emergency Function: The Engineering Manager and staff members are responsible for analyzing plant information and for developing plans and procedures in direct support of plant.

2.4.2.5 Emergency Operations Facility Public Information Officer

Basic Emergency Function: The Emergency Operations Facility Public Information Officer (EOFPIO) will prepare and transmit news releases to the Joint Information Center which can be used by Energy Northwest and offsite agencies. The EOFPIO keeps the EOF Manager up-to-date on public relations matters.

2.4.2.6 EOF Radiation Detection Systems Engineer

Basic Emergency Function: Analyzes radiation detection systems and assists in location of radiation source.

2.4.2.7 EOF Security Manager

Basic Emergency Function: The Security Manager is responsible for ensuring that security is maintained at all Energy Northwest facilities and security support groups are fully operational. This individual provides information and advice to the EOF Manager concerning the coordination of Energy Northwest Security and local law enforcement agency (LLEA) response actions. The Security Manager reports to the EOF Manager and supervises the Security staff.

2.4.2.8 EOF Site Support Manager

Basic Emergency Function: The Site Support Manager is responsible for coordinating requests for administrative and technical support to the plant and EOF. He also makes provisions to secure necessary supplies and equipment requested. The Site Support Manager reports to the EOF Manager and supervises the Offsite Agency Coordinator, EOF Information Coordinator, Telecommunications Manager, Manpower Scheduler and Admin Support staff.

2.4.2.9 Energy Northwest Representatives to County Emergency Operation Centers

Basic Emergency Function: Energy Northwest representatives will keep the staff members at the Benton and Franklin Counties Emergency Operations Center (EOCs) informed of the emergency conditions and Energy Northwest responses. The offsite representative will report to the Site Support Manager, normally through the EOF Offsite Agency Coordinator.

2.4.3 Augmenting Joint Information Center Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Joint Information Center Manager described in Section 2.3.3. In addition to the positions described below, other administrative augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures will be filled by personnel who can respond as required.

2.4.3.1 Assistant JIC Manager

Basic Emergency Function: The Assistant JIC Manager manages the preparation of Energy Northwest news releases, coordinates the process for news releases prepared by agencies and jurisdictions represented in the JIC, manages the team responsible for distribution of news releases to the media and other emergency centers and assumes the duties of JIC Manager, if requested. The Assistant JIC Manager supervises the Distribution Team Supervisor and News Release Editor and reports to the JIC Manager.

2.4.3.2 JIC Media Manager

Basic Emergency Function: The Media Manager will address the information needs of media representatives at the Energy Northwest JIC. The Media Manager supervises the JIC Receptionist and reports to the JIC Manager.

2.4.4 Support Emergency Organization

2.4.4.1 Administrative Support Staff

Basic Emergency Function: Performs duplication and facsimile services, record searches, verification of document revision.

2.4.4.2 TSC Manager Secretary

Basic Emergency Function: Maintains a log of activities for the TSC Manager, initiates and monitors crash calls, and screens phone calls.

2.4.4.3 TSC/OSC Communicator:

Basic Emergency Function: Communicates maintenance tasks to the OSC and relays OSC information about actions taken to the TSC staff.

2.4.4.4 Repair Team Coordinator

Basic Emergency Function: Communicates maintenance tasks from the TSC and relays information about actions taken to the TSC., Responsible for directing repair team activities.

2.4.4.5 TSC Computer Engineer

Basic Emergency Function: The Computer Engineer is responsible for ensuring that the computer systems available in the TSC are operating as required. The Computer Engineer will troubleshoot system problems and assist TSC Engineering staff in obtaining information from the various Plant computers.

2.4.4.6 TSC Trending Forecaster

Basic Emergency Function: Trend plant parameters and forecast plant status.

2.4.4.7 EOF Plant Systems Assessment Engineer

Basic Emergency Function: Analyzes plant systems and provides technical input to the INPO Network Coordinator

2.4.4.8 EOF Fuels Assessment Engineer

Basic Emergency Function: Evaluates core damage, interfaces with the TSC Core Thermal Engineer and EOF Engineering Manager to provide results and projections of core damage. Provides input for PAR determinations to the Radiological Emergency Manager.

2.4.4.9 EOF PDIS Analyst

Basic Emergency Function: Provides technical data for EOF engineering and monitors the information network for problems.

2.4.4.10 EOF Manpower Scheduler

Basic Emergency Function: Coordinates the preparation of overall shift staffing rosters.

2.4.4.11 EOF State/County Technical Liaison

Basic Emergency Function: Informs Energy Northwest representatives to the state and counties of plant conditions.

2.4.4.12 EOF Offsite Agency Coordinator

Basic Emergency Function: Coordinates requests from offsite agencies for information and keeps the EOF Manager informed of those requests. Coordinates airspace or airport closure requests with the Federal Aviation Agency.

2.4.4.13 EOF INPO Network Coordinator

Basic Emergency Function: Prepares and transmits technical descriptions of major events during an emergency to INPO.

2.4.4.14 Health Physics Center Staff

Basic Emergency Function: Prepares the Health Physics Center for use by setting up tables, lanes, and signs.

2.4.4.15 EOF Electrical/I&C Engineer

Basic Emergency Function: Analyzes plant electrical and I&C systems and provides information to the Emergency Manager.

2.4.4.16 EOF PIO Technical Support

Basic Emergency Function: Provides technical interpretations of information for the EOF PIO to formulate accurate news releases for the JIC.

2.4.4.17 EOF Field Team Dispatcher

Basic Emergency Function: Dispatch of field teams and log keeping.

2.4.4.18 Energy Northwest Representative to the State

Basic Emergency Function: Dispatched to Washington State EOC, provides technical expertise to EOC personnel.

2.4.4.19 EOF Licensing Manager

Basic Emergency Function: Interface with onsite NRC response team and communciate with the NRC on licensing issues.

2.4.4.20 JIC Information Manager

Basic Emergency Function: The Information Manager coordinates response to telephone requests for information from news media representatives or the general public. The Information Manager coordinates responses to rumors and public concerns and insures timely and accurate information is provided. This individual directs activities of the Media and Public Phone Team Supervisors and reports to the JIC Manager.

2.4.4.21 JIC Offsite Agency Representatives

Basic Emergency Function: The Offsite Agency Representatives reporting to the JIC will coordinate the emergency public information activities of the organizations thay represent. The representatives report to their parent agencies. Their activities are coordinated by the JIC Manager or the Assistant JIC Manager.

2.4.4.22 JIC Phone Team Supervisor

Basic Emergency Function: The Phone Team Supervisor, Public Phone Teams and Media Phone Teams will respond to incoming calls from the public and media, provide information updates as necessary, and make efforts to correct misinformation as necessary. The Public Phone Team Supervisor supervises the Public and Media Phone Teams and reports to the Information Manager.

2.4.4.23 JIC Support Manager

Basic Emergency Function: Provides administrative support and procurement of supplies for JIC personnel.

2.4.4.24 JIC Spokesperson

Basic Emergency Function: Conducts news conferences at the JIC and provides timely information during the conferences

2.4.4.25 JIC Technical Spokesperson

Basic Emergency Function: Provides technical information in an easy to understand format.

2.4.4.26 JIC Health Physics Spokesperson

Basic Emergency Function: Provides health physics information in an easy to understand format.

2.4.4.27 JIC News Release Editor

Basic Emergency Function: Assists in preparing news releases for dissemination to the media.

2.4.4.28 JIC Public and Media Phone Teams

Basic Emergency Function: Answer phone calls made by the public and media to disseminate correct information and dispel rumors.

2.4.4.29 JIC Audio/Visual

Basic Emergency Function: Coordinates operation of A/V equipment during news conferences at the JIC.

2.4.4.30 JIC Distribution Team Supervisor

Basic Emergency Function: Supervises the JIC Distribution Team.

2.4.4.31 JIC Distribution Team

Basic Emergency Function: Distributes faxes, news releases, and makes copies for the JIC staff.

2.4.4.32 JIC Receptionist

Basic Emergency Function: Provides receptionist duties for the JIC

2.4.4.33 JIC Secretary

Basic Emergency Function: Provides secretarial duties for the JIC staff.

ENERGY NORTHWEST EMERGENCY RESPONSE ORGANIZATION
MINIMUM STAFFING REQUIREMENTS

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Senior Management	Emergency Operations Facility Mgr[3]		1
	Technical Support Center Mgr[3]		1
	Joint Information Center Mgr		1
Operations	Shift Manager[3]	1	
	Control Room Supervisor	1[1]	
	Reactor Operator	2	
	Equipment Operator	2	
	Operations Manager[5]		1
Notification/Communication	Control Room ENS Communicator[4]	1	
	SCC Duty Officer	1	
	Security Responder	1[2]	
	Telecom Manager		1
	Plant/NRC Liaison		1
Health Physics	Radiation Protection Manager		1
	HP Technicians (In Plant Surveys)	1	2
	HP Technicians (Protective Actions)	2	4
	Environmental Field Teams (Offsite Surveys)		4
	Environmental Field Teams (Onsite Surveys Out of Plant)		2
	Radiological Emergency Manager (Offsite Dose Assessment)		1

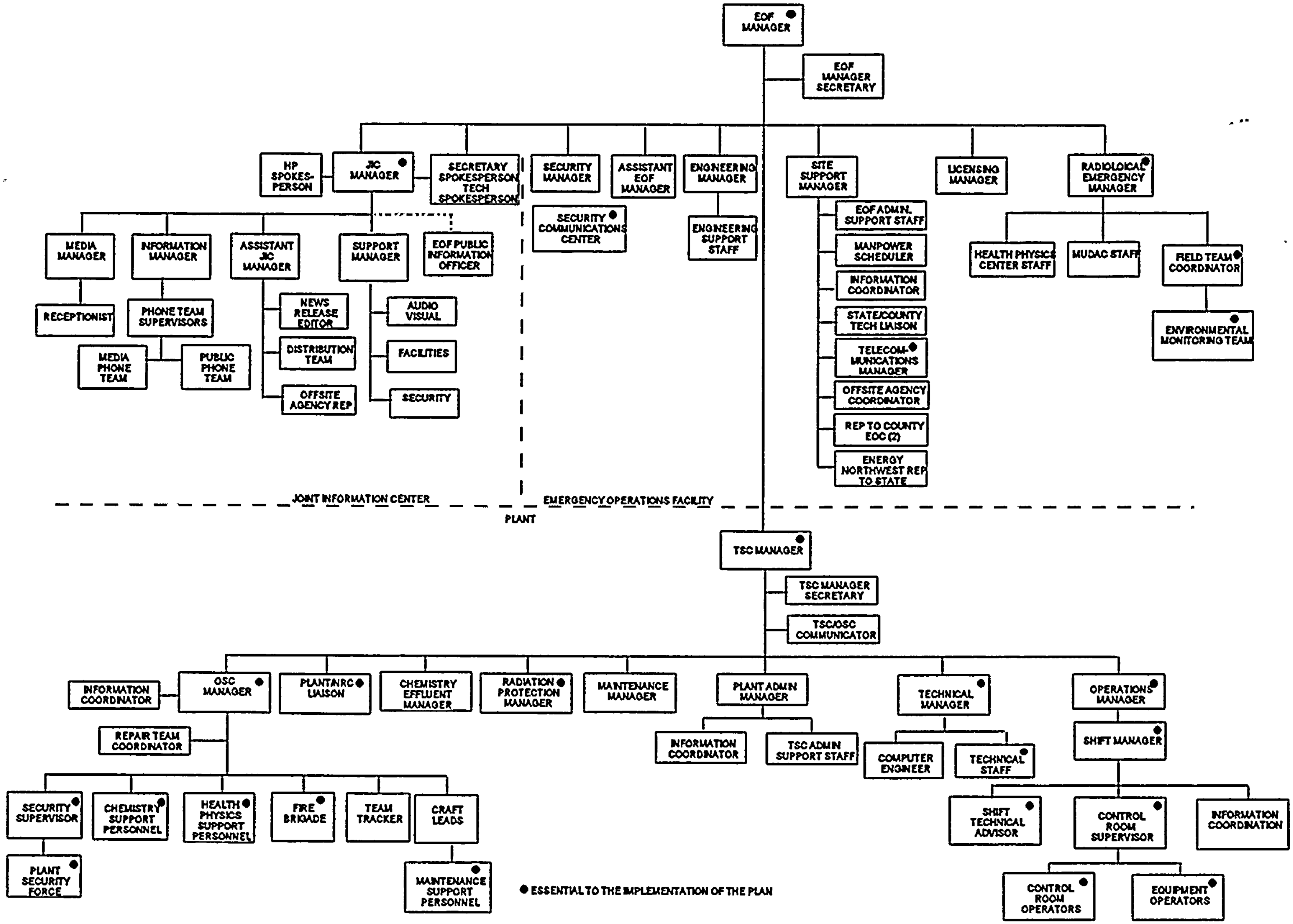
Table 2-1

MINIMUM STAFFING REQUIREMENTS(Continued)

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Nuclear Chemistry	Chemistry Technicians	1	1
Maintenance	Operations Support Center Mgr[5]		1
	Electrical Maintenance/	1[2]	2
	I/C Support		1
	Mechanical Maintenance/Radwaste	1[2]	1
	Operator		1
Engineering	Shift Technical Advisor	1[1]	
	Core/Thermal Hydraulics		1
	Electrical		1
	Mechanical		1
	Technical Manager[5]		1
Security	Per Security Plan		
Firefighting	Fire Brigade	Fire Brigade per FSAR Section 13	Local Support
First Aid and Rescue Operations	Fire Brigade	2[2]	Local Support

[1] On Shift as required by Technical Specifications in Modes 1, 2, and 3. Available within 60 minutes for call in for Modes 4 and 5.
[2] May be provided by shift personnel assigned other functions
[3] Shift Manager initially assumes the responsibility for emergency direction and control, then is relieved by the TSC Manager or EOF Manager
[4] Duties of ENS Communicator are assumed by an individual designated by Shift Manager
[5] Not identified as a Table B-1, NUREG 0654 requirement

Table 2-1


EOF MANAGER
EOF MANAGER SECRETARY
HP SPOKES-PERSON
JIC MANAGER
SECRETARY SPOKESPERSON TECH SPOKESPERSON
SECURITY MANAGER
ASSISTANT EOF MANAGER
ENGINEERING MANAGER
SITE SUPPORT MANAGER
LICENSING MANAGER
RADIOLOGICAL EMERGENCY MANAGER
MEDIA MANAGER
INFORMATION MANAGER
ASSISTANT JIC MANAGER
SUPPORT MANAGER
EOF PUBLIC INFORMATION OFFICER
SECURITY COMMUNICATIONS CENTER
ENGINEERING SUPPORT STAFF
EOF ADMIN. SUPPORT STAFF
MANPOWER SCHEDULER
INFORMATION COORDINATOR
STATE/COUNTY TECH LIAISON
TELECOM-MUNICATIONS MANAGER
OFFSITE AGENCY COORDINATOR
REP TO COUNTY EOC (2)
ENERGY NORTHWEST REP TO STATE
HEALTH PHYSICS CENTER STAFF
MUDAC STAFF
FIELD TEAM COORDINATOR
ENVIRONMENTAL MONITORING TEAM
RECEPTIONIST
PHONE TEAM SUPERVISORS
MEDIA PHONE TEAM
PUBLIC PHONE TEAM
NEWS RELEASE EDITOR
DISTRIBUTION TEAM
OFFSITE AGENCY REP
AUDIO VISUAL
FACILITIES
SECURITY
JOINT INFORMATION CENTER
EMERGENCY OPERATIONS FACILITY
PLANT
TSC MANAGER
TSC MANAGER SECRETARY
TSC/OSC COMMUNICATOR
INFORMATION COORDINATOR
OSC MANAGER
PLANT/NRC LIAISON
CHEMISTRY EFFLUENT MANAGER
RADIATION PROTECTION MANAGER
MAINTENANCE MANAGER
PLANT ADMIN MANAGER
TECHNICAL MANAGER
OPERATIONS MANAGER
REPAIR TEAM COORDINATOR
INFORMATION COORDINATOR
TSC ADMIN SUPPORT STAFF
COMPUTER ENGINEER
TECHNICAL STAFF
SHIFT MANAGER
SECURITY SUPERVISOR
CHEMISTRY SUPPORT PERSONNEL
HEALTH PHYSICS SUPPORT PERSONNEL
FIRE BRIGADE
TEAM TRACKER
CRAFT LEADS
SHIFT TECHNICAL ADVISOR
CONTROL ROOM SUPERVISOR
INFORMATION COORDINATION
PLANT SECURITY FORCE
MAINTENANCE SUPPORT PERSONNEL
CONTROL ROOM OPERATORS
EQUIPMENT OPERATORS
● ESSENTIAL TO THE IMPLEMENTATION OF THE PLAN

SECTION 3
EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.1 COORDINATION OF SUPPORT ORGANIZATIONS

The Energy Northwest individual assigned the Emergency Director function is responsible for coordinating the use of emergency response resources available from outside Energy Northwest. These external resources are available through formal agreements referenced in Appendix 4 or in the emergency plans referenced in Appendix 1. Figure 3-1 shows the relationship between Energy Northwest emergency centers and the various outside response agencies. The Shift Manager/Emergency Director can call on any or all of these resources for support during an emergency.

The Energy Northwest Emergency Operations Facility contains provisions for outside organizations to coordinate actions with Energy Northwest. Specific areas in the Emergency Operations Facility and Richland Office Complex are designated in the Emergency Plan Implementing Procedures to be utilized by various offsite response organizations.

Energy Northwest representatives will normally be dispatched to the Benton and Franklin County Emergency Operations Centers at the Alert or higher emergency classification. The Energy

Northwest representative to the state will normally report to the EOF at the Alert level, and be dispatched to the Washington State Emergency Operations Center at Site Area Emergency to assist. Energy Northwest representatives will assist in providing clarification of information and data.

The Offsite Agency Coordinator in the EOF will provide necessary support to responding agencies.

Figure 3-1 illustrates the various assistance organizations which may respond to the Emergency Operations Facility.

3.2 LOCAL SUPPORT SERVICES

A rapid response is available to Energy Northwest from local fire, medical, law enforcement, and radiological organizations. Agreements have been made with response agencies either through agreement letters or through their emergency plans. In cooperation with Energy Northwest and Benton and Franklin Counties Emergency Management, a training program has been established to familiarize responding agencies with their role at the plant site during an emergency. Energy Northwest will provide escorts, assistance, and dosimetry for all persons entering the plant protected areas, as requested.

3.2.1 Fire

Agreements established between the Department of Energy and Energy Northwest provide for Hanford Contract Fire Department response to all Energy Northwest facilities on the Hanford Reservation. Additional fire department response, if needed, is available through mutual aid agreements between county and municipal fire departments. The Hanford Contract Fire Department personnel are specifically trained to handle nuclear facility fire incidents and have specially equipped vehicles and personnel for rescue and other emergencies. Fire organizations performing functions onsite will interface directly with the Fire Brigade Leader.

3.2.2 Medical

The Emergency Director or designee is responsible for notifying the medical facility and providing qualified health physics personnel to assist. Communications with medical response agencies is coordinated through the radio network described in Section 6.5.1 of this Plan. The fixed medical facilities (i.e., hospitals) can also be reached by telephone using the numbers provided in the Emergency Phone Directory.

3.2.2.1 Local Hospitals

Kennewick General Hospital in Kennewick, Washington; Our Lady of Lourdes Hospital in Pasco, Washington; and Kadlec Medical Center in Richland, Washington, provide hospital and medical services. Any combinations of these three hospitals serves as the primary and backup medical facility. These hospitals have emergency room coverage twenty-four hours per day.

The State of Washington also maintains agreements for handling contaminated patients with other hospitals in the State of Washington.

Energy Northwest has placed and maintains kits containing radiological monitoring equipment and decontamination supplies for use in the care of radiation accident patients at these hospitals. Energy Northwest also assists each hospital in developing procedures for the care of radiation accident patients as requested. Training and assistance on radiological decontamination procedures is offered by Energy Northwest to these hospitals when requested. Drills are periodically conducted to evaluate hospital proficiency for handling contaminated victims

3.2.2.2 Special Medical Facilities

The Emergency Decontamination Facility (EDF), located next to Kadlec Medical Center, can be used for handling highly contaminated patients.

If high levels of radioactive contamination or exposure are involved, injuries will be pre-treated at the specially equipped EDF. The EDF is a sophisticated unit specifically designed for handling and treatment of radiation/contamination accident victims. Provisions include decontamination equipment, shielded surgery tables, remote TV viewing, contaminated water retention, air filtration, radiation monitoring instrumentation, whole body counting, and communications equipment.

The EDF is operated by the Hanford Environmental Health Foundation (HEHF) for the Department of Energy in support of nuclear activities on the Hanford Reservation. The physicians responding to the EDF are prepared and qualified to make radiation exposure and uptake evaluations.

3.2.2.3 Medical Transportation

Medical emergency transportation will be provided by the Department of Energy - Richland Operations (DOE-RL). If additional assistance is required, local ambulance services may be used. An Energy Northwest employee knowledgeable in health physics will accompany contaminated patients to the hospital or meet the ambulance at the hospital to assist in the emergency. Additional health physics assistance may be requested from DOE-RL, or Washington State Department of Health.

3.2.3 Law Enforcement

The Benton County Sheriff has jurisdiction on the Hanford Reservation highways. Arrangements have been made for this organization to provide traffic control in order to limit access to the Hanford Reservation during an Energy Northwest emergency.

The Sheriff has jurisdiction at the Energy Northwest site for all civil disturbances or threats. Request for assistance to the Benton County Sheriff can be made directly to the Sheriff's office or through the 24 hour Emergency Dispatch Center (SE COMM) located in Richland. The

Energy Northwest communications centers are capable of communicating with responding law enforcement agencies.

The Security Manager is the main interface with local law enforcement personnel and administers the agreement for law enforcement services. Activation of this support is under the direction of the Emergency Director.

In the event that evacuation is needed for areas off the Hanford Reservation, the Emergency Director, or designee, will notify the County Emergency Chairman or designee, at the Benton and Franklin County Emergency Operations Centers and provide available information concerning the nature of releases. Within the guidelines established by Washington State, a recommendation concerning necessary protective actions to be taken by the general public will be made by Energy Northwest. Following receipt of a protective action decision by an appropriate county authority, the Sheriffs of Benton and Franklin Counties will be responsible for implementing evacuation, traffic control, community security and search and rescue activities in their respective jurisdictions.

The Washington State Patrol provides assistance to the Sheriff concerning traffic control and area access. The local State Patrol headquarters has direct radio communications with the Benton and Franklin County sheriffs and the Emergency Dispatch Center (SE COMM).

3.2.4 Radiological

The Department of Energy (see Section 3.6.2) and Siemens Power Corporation (see Section 3.3.1) can provide a large number of trained personnel capable of assisting during a radiological emergency. Additionally, a training program for local support organizations (i.e., hospital, ambulance and fire companies) developed jointly by Energy Northwest and Benton and Franklin Counties, provides information on proper actions to take during a radiological emergency. Supporting emergency plans for this service are listed in Appendix 1.

3.3 PRIVATE RESPONSE ORGANIZATIONS

3.3.1 Siemens Power Corporation

Siemens Power Corporation facility located just outside the Southern boundary of the Hanford Reservation, approximately 8 miles south of Energy Northwest plants, maintains 24-hour health physics coverage of operations. As provided for in their Emergency Plan, listed in Appendix 1, assistance can be quickly provided during an Energy Northwest emergency to monitor radiological conditions along the southern Hanford Site boundary. Assistance will be provided upon request of the Emergency Operations Facility Manager and will be coordinated from the Emergency Operations Facility.

3.3.2 Environmental Sample Analysis

Service contracts are currently maintained with appropriate vendors by Energy Northwest's Radiological Environmental Monitoring Program group for environmental sample analytical

services.

3.3.3 General Electric Company

The General Electric Company, suppliers of the WNP-2 nuclear steam supply system, provides a support program utilizing the resources of their Nuclear Energy Group in San Jose, California. An emergency response team can be dispatched to the Emergency Operations Facility within twenty-four hours to provide technical assistance. A technical support team with experts in appropriate technical disciplines will be activated at General Electric Headquarters and will establish telephone communications with the onsite General Electric Emergency Response Team. The response team, dispatched to Energy Northwest, will be provided work space in the Emergency Operations Facility and will coordinate efforts with the EOF Engineering Manager. General Electric personnel may be used in the plant as needed. When in the plant, the TSC Technical Manager will be the primary interface.

3.3.4 Institute of Nuclear Power Operations

The Institute of Nuclear Power Operations (INPO) will provide assistance in identifying and mobilizing the resources of the nuclear industry in the event of an emergency. INPO will be notified of any emergency at the alert or greater classification.

INPO will provide the following assistance, if requested:

a. Designated INPO representatives who can be dispatched to the utility.

b. Dedicated 24-hour emergency notification system.

c. Ability to locate personnel with specific technical expertise.

d. Obtaining industry experience regarding plant equipment through NPRDS.

3.3.5 American Nuclear Insurers

American Nuclear Insurers (ANI) provides insurance coverage for Energy Northwest's nuclear facilities. If an accident occurs which involves the general public, ANI will provide financial assistance and reimbursement of reasonable expenses to persons required to relocate. Within 24 hours of the declaration of the emergency, ANI will dispatch a representative to the local area and will coordinate with the Emergency Response Team.

3.3.6 Hanford Environmental Health Foundation

The Hanford Environmental Health Foundation provides physicians trained in the treatment of radiation accident patients and for response and consultation services to the plant and to the hospitals which have agreements with Energy Northwest. Refer to Appendix 4.

3.3.7 Dosimetry

Energy Northwest has provisions for thermoluminescent dosimeters and related services.

3.4 COUNTY ORGANIZATIONS

3.4.1 Benton and Franklin Counties

The Benton and Franklin County plans for responding to a nuclear emergency, referenced in Appendix 1, provides for a coordination of effort, resources, and facilities. Mitigation and preparedness responsibilities include coordinating local radiological emergency response planning, exchanging emergency preparedness information and, along with Energy Northwest assisting local agencies and officials in developing appropriate emergency capabilities, establishing a radiological emergency response program, emergency response training, and promoting the development of effective communications and other emergency resources. Local law enforcement agencies provide access control services for the Hanford reservation.

Emergency response activities of the Benton and Franklin Counties emergency organizations include implementing local emergency public information and instruction activities, establishment of emergency worker and assistance centers and the Benton and Franklin County Emergency Operations Centers, making protective action decisions, activation of the early warning system, and coordination of local protective action implementation and support. County officials are notified of an emergency through the Emergency Dispatch Centers, and also receive any recommendations provided by Energy Northwest in this manner. When activated, the county staff in the Emergency Operations Centers will communicate with the staff at the Emergency Operations Facility over Energy Northwest dedicated communications systems. Activation of the county plans is automatic for an Alert, a Site Area Emergency, or General Emergency and county representatives will be dispatched to the Emergency Operations Facility and the Joint Information Center.

Benton and Franklin Counties will also play an active role during recovery operations and will work closely with the State of Washington and Energy Northwest to ensure appropriate measures are taken for affected members of the public within their jurisdiction.

3.4.2 Counties Within the Ingestion Exposure Pathway Emergency Planning Zone

Six Washington counties (in addition to Benton and Franklin Counties) as well as two Oregon counties are located within the Ingestion Exposure Pathway Emergency Planning Zone (EPZ). A portion of the Yakama Indian Nation also falls within the Ingestion Exposure EPZ. The State of Washington will provide notification to these counties and the Yakama Indian Nation will be notified by Yakima County. This will be coordinated through the Washington State Emergency Management, or the Oregon Department of Energy, by the EOF Radiological Emergency Manager. Local governments will be kept informed regarding the status of the plant and recommended protective actions by the state(s).

3.5 STATE ORGANIZATIONS

3.5.1 State of Washington

The Washington State Plan referenced in Appendix 1 describes the detailed response which will be given during an emergency. Responsibilities are outlined for all state agencies which have a response role. The following list outlines the response actions of several of the state agencies which would respond during an Energy Northwest emergency. A Washington State Representative will proceed to the Emergency Operations Facility during a Site Area or General Emergency, and if conditions warrant during an Alert, to coordinate State resources. The Offsite Agency Coordinator will provide support and function as a working liaison with the State Representative when in the Emergency Operations Facility. Response time is estimated to be less than 6 hours.

3.5.1.1 Washington Emergency Management

Washington Emergency Management is the State agency responsible for radiological response planning and coordination of operations. The responsibility of this agency includes the following items:

a. Develop and maintain the Washington State Fixed Nuclear Facility Emergency Response Plan and assist the counties in developing their individual emergency response plans.

b. Arrange training programs for state and local agencies designed to promote effective response to radiological incidents.

c. Provide affected communities with warning confirmation, upon request.

d. Coordinate communications and other available support to affected local governments.

e. Coordinate the support of other state agencies and political subdivisions near the affected area and obtain assistance of federal agencies as required.

Dedicated communications with the State Emergency Operation Center are available. Representatives from Washington Emergency Management will have access to the Emergency Operations Facility (EOF) and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.5.1.2 Department of Health

The Department of Health (DOH) is responsible for administering and directing radiation control program activities within the State. DOH provides local authorities with technical guidance, assistance in establishing monitoring and decontamination programs, and recommending appropriate emergency countermeasures and recovery actions offsite. Responding at an Alert or higher classification, DOH provides representatives to support the emergency response as follows:

a. To the Meteorology and Unified Dose Assessment Center (MUDAC) for joint

control of environmental field monitoring teams, assessment of dose projection information, preparation of protective action recommendations for the plume exposure pathway and ingestion zones, and estimation of total dose exposure. Also, DOH provides Radiation Control (Radcon) monitoring teams that perform radiological monitoring, collect samples and provide limited field analysis and monitoring and decontamination support to the counties at emergency worker and assistance centers.

b. Outside of the EOF, DOH normally furnishes a representative to the Joint Information Center (JIC) for the coordination of public information. At the State Emergency Operations Center (EOC), DOH representatives furnish guidance on implementation of protective actions and assist local health officials with the implementation of protective actions. Agency response times to the Richland area are expected to be less than six hours.

3.5.1.3 Washington State Patrol

The Washington State Patrol (WSP) will assist each affected county and provide, upon request from either state or county officials law enforcement functions, communications support, and transportation assistance to other agencies when the WSP's law enforcement commitment is not jeopardized. Energy Northwest has space available in the Emergency Operations Facility for a representative from the WSP to coordinate their activities with Energy Northwest Security Manager as needed.

3.5.1.4 Energy Facility Site Evaluation Council

The Energy Facility Site Evaluation Council (EFSEC) is the lead state organization for siting of power generating facilities in the State of Washington. EFSEC is responsible for assessing compliance with the Site Certification Agreement and administering contracts with state agencies and local governments for emergency preparedness services in support of the WNP-2 Emergency Plan.

The council is periodically apprised of Energy Northwest's emergency preparedness per section V.A.2 of the WNP-2 Site Certification Agreement.

3.5.1.5 Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for the control and protection of agricultural products within the boundaries of Washington State. This is accomplished by implementing agricultural protection measures in coordination with other participating agencies and local jurisdictions. These measures include preparing and issuing agricultural advisories to protect the public; preparing and implementing plans in coordination with affected agencies and jurisdictions to reduce the Food Control Area, release food, dispose of contaminated food and conduct embargoes. They will also provide input, as requested by other agencies, in the areas of soil, water and crop decontamination; claims procedures; reduction of Food Control Area and public information.

3.5.2 State of Oregon

The State of Oregon has the responsibility to protect the health and safety of Oregon residents during a radiological emergency at WNP-2. The Oregon Office of Energy has prepared a WNP-2 Emergency Response Program for that purpose.

A major emergency at WNP-2 is not expected to have immediate, life-threatening radiological impacts on Oregon. During the emergency phase, Oregon's involvement will be limited to maintaining communications and monitoring the emergency. If the emergency involves ingestion exposure considerations, however, Oregon will be involved in a cooperative effort with Energy Northwest, Washington State, and federal response agencies to assess conditions within the state boundaries, initiate necessary public protective measures, and provide public information (e.g., news releases) as may be required. Upon declaration of a Site Area Emergency, Oregon will begin a limited activation of the Oregon EOC in Salem. They will also send representatives to Energy Northwest EOF, JIC, and the Washington EOC. In addition, they will send one or more field teams to Morrow and Umatilla Counties and will provide field team assistance to Washington State as requested.

The Governor or designee will make protective action decisions for Oregon. During ingestion pathway events, Oregon will coordinate protective actions with other members of the protective action recommendation/decision group at the EOF and the Washington EOC.

Communications with the State Emergency Operations Center in Salem are available. Representatives from Oregon Office of Energy will have access to the EOF and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.6 FEDERAL ORGANIZATIONS

3.6.1 Nuclear Regulatory Commission

Personnel from the Nuclear Regulatory Commission (NRC), including Resident Inspectors, may elect to respond to any emergency. The NRC Resident Inspectors assigned to Energy Northwest facilities will be notified of any emergency condition on-site by pager and/or by phone contact and may proceed to the control room or any other areas. Facilities are available for NRC personnel in the Technical Support Center, Joint Information Center, and the Emergency Operations Facility. Dedicated communications are available between these facilities and the NRC. Additionally, the NRC duty officer in Rockville, Maryland is notified of the emergency by the Emergency Notification System (a dedicated phone circuit provided by NRC) of every emergency condition and will adapt their response to the situation as it evolves. If the dedicated phone circuit fails, the NRC duty officer can be reached by commercial phone lines using the numbers provided in the Emergency Phone Directory.

The role of NRC personnel during incidents at nuclear power plants is to monitor actions by the licensee to ensure that people in the vicinity of the plant are adequately protected and to provide any assistance requested by the licensee or offsite officials. NRC's principal role in the event of a power plant emergency is to ensure that appropriate protective actions are being taken. If it appears that warranted protective actions are not being recommended by the licensee or are not being taken by offsite officials, NRC representatives will contact the licensee or offsite officials and present their concerns.

NRC is the lead federal agency concerned with technical aspects of an accident at one of its licensed facilities (e.g., nuclear power plants). The specific NRC response roles are to:

a. monitor the licensee to ensure that appropriate protective action recommendations are being made off site:

b. support offsite authorities, including confirming the licensee's recommendation to offsite authorities, if requested;

c. support the licensee;

d. keep other federal agencies and entities (e.g., Congress and the White House) informed of the status of the incident;

e. keep the media informed of NRC's knowledge of the status of the incident, including coordination with other public affairs groups; and

f. intervene in a limited fashion to direct the licensee's on-site response in some unusual and very rare situations.

3.6.2 Department of Energy

Assistance from of the Department of Energy can be requested by the Emergency Director. The Department of Energy-Richland Operations office located in Richland, Washington, is capable of providing radiological response, such as field monitoring teams, within two hours. The Department of Energy will provide additional federal field monitoring and dose assessment capability when requested. Coordination with Energy Northwest will be through the Offsite Agency Coordinator or the Radiological Emergency Manager. A representative from the Department of Energy may proceed to the Emergency Operations Facility to coordinate the effort.

The Department of Energy-Richland Operations (RL) has large resources of equipment and manpower available. Technical personnel and laboratory facilities can quickly be made available. RL will provide support for the alerting of personnel, and establishment of a safety zone on the portion of the Columbia River within the WNP-2 Ten-Mile Emergency Planning Zone. Also, RL will coordinate and implement protective actions for portions of the 10-mile Emergency Planning Zone on Hanford outside of the WNP-2 Exclusion Area.

Assistance which can be requested via the Department of Energy includes:

a. Emergency Decontamination Facility staffed by qualified radiological emergency personnel able to treat contaminated patients.

b. Hanford contractor ambulances with qualified EMT support personnel.

c. Hanford contractor Fire Department resources to respond to fires on the Hanford Reservation.

d. Hanford contractors with additional respirators, protective clothing and equipment for personnel decontamination.

e. Hanford contractors that can assist with field monitoring, dose assessment, meteorological data and laboratory analysis.

Eight DOE Regional Coordinating Offices for Radiological Assistance provide radiological assistance on request in any region of the country. The radiological assistance teams are the front lines of Federal assistance under the Federal Radiological Emergency Response Plan (FRERP). RAP teams will generally be requested quite early in an event by the State and/or the NRC. RAP teams typically are composed of four to six people. They are capable of conducting gross gamma, alpha, and beta monitoring. They will require only one half to two hours to prepare for a response. Response time will depend on travel time to the location of the accident. The RAP team will also act as an advance team for coordination of further DOE assistance such as the Federal Radiological Monitoring and Assessment Center (FRMAC) or the Aerial Measuring System (AMS).

When assistance is requested, DOE coordinates the monitoring and assessment efforts of all Federal agencies. The FRMAC is usually established near the site of the accident as part of or in conjunction with the Federal Response Center established by the Federal Emergency Management Agency (refer to Section 3.6.3). The size and complexity of the assistance effort will depend on the incident. DOE can provide the most extensive monitoring and assessment capabilities available in the United States. It will require about 24 hours for a fully operational unit to be established. DOE has delegated the responsibility for establishing this service to the DOE Nevada Operations Office.

The AMS is an airborne radiological detection system that can respond to radiological incidents and perform plume tracking, radiation surveys, and radiation mapping over large areas around the site of an incident. Most of the aerial monitoring assets are located in Las Vegas, Nevada, but there are also some capabilities based at Andrews Air Force Base, near Washington, D.C. The AMS will be integrated into the assistance effort once it is established.

3.6.3 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) coordinates federal responses to nuclear facilities for both radiological and non-radiological emergencies. In the event of a radiological emergency a number of federal agencies can be activated through FEMA to support State and County activities. FEMA would coordinate these activities through provisions of the Federal Radiological Emergency Response Plan (FRERP). For a Site Area or General Emergency, FEMA would normally establish a Federal Response Center (FRC) in the Tri-Cities area. Space would also be made available at the Energy Northwest Emergency Operations Facility (EOF) for representatives of responding federal agencies. If resources are needed from FEMA to support offsite emergency activities, the State has the authority to request offsite assistance. Energy Northwest will coordinate with the FEMA representative concerning field response activities.

3.6.4 U.S. Coast Guard

The U.S. Coast Guard, through the Thirteenth District Commander in Seattle, Washington, and the Captain of the Port in Portland, Oregon, regulates activities on navigable waters. For Site Area or General Emergencies, the Coast Guard may establish a safety zone on the Columbia River and broadcast a river closure notice to mariners.

U.S. Coast Guard assistance is a special case which, by virtue of pre-coordination with Benton and Franklin Counties, is automatically provided or may be made directly. Coast Guard Officers of authority may establish the "Safety Zone" within the 10-Mile Emergency Planning Zone (EPZ) for the Columbia River when notified of a Site Area or General Emergency. This Safety Zone provides authority for DOE and Sheriff's Office patrol craft to control river access within the EPZ. This service is provided for by the plan and procedures maintained by Benton and Franklin Counties, via the Fixed Nuclear Facility Response Plans referenced in Appendix 1.

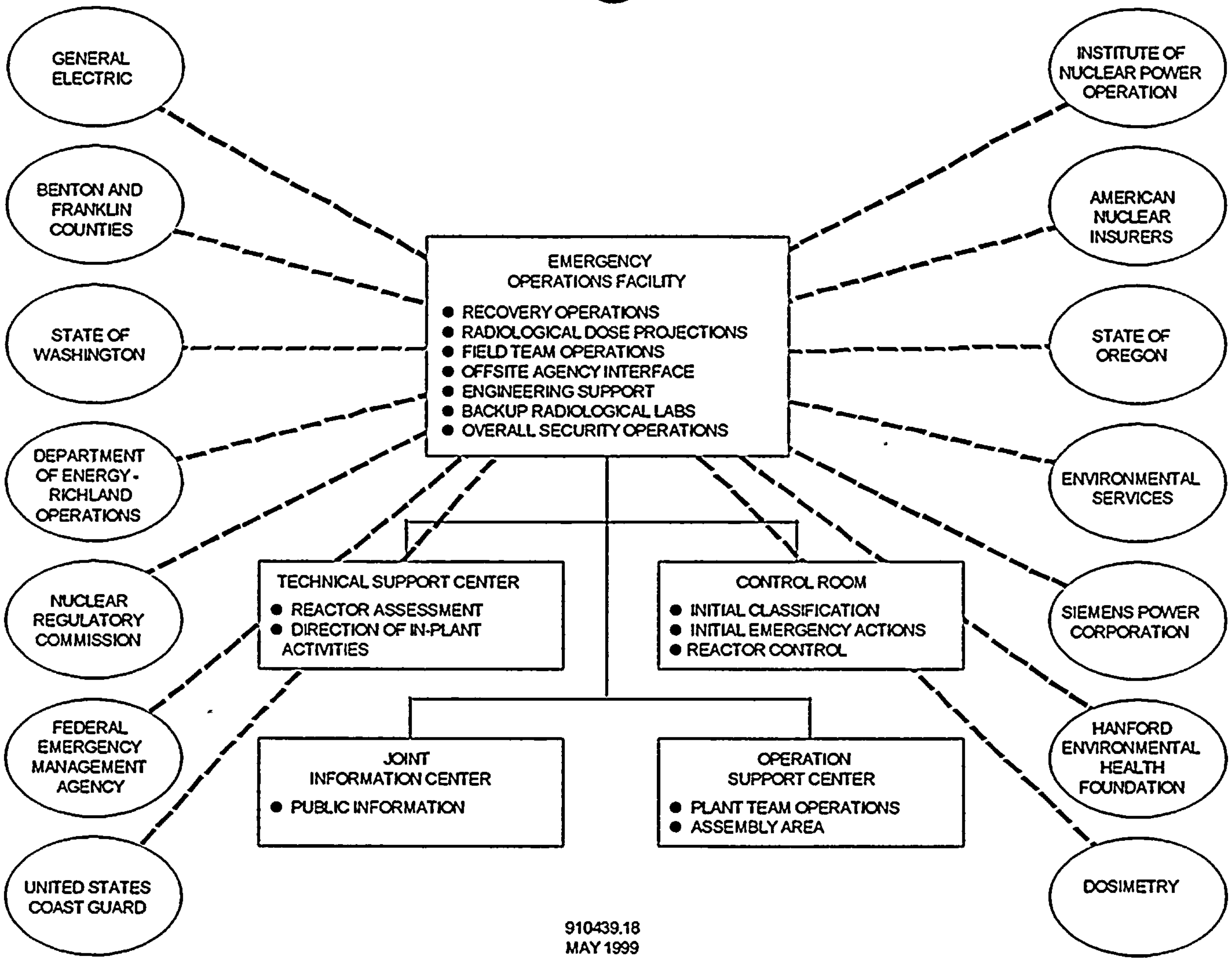


Figure 3-1, Outside Response Agency Resources

SECTION 4
EMERGENCY CLASSIFICATION AND NOTIFICATION

4.1 EMERGENCY CLASSIFICATION

The Emergency Plan provides for four classes of emergency to cover a spectrum of plant events that could lead to a loss of control over radioactive materials which could result in the need to initiate protective measures for the public. These four classes, in order of increasing severity of plant conditions, are Unusual Event, Alert, Site Area Emergency, and General Emergency. The basic regulatory premise for these classifications is found in 10 CFR 50 Part 47, with further guidance in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1, where example initiating conditions are provided for each emergency classification.

The initiating conditions (ICs) form the basis for establishing specific indications, i.e., plant instrument readings or personal observations, which would indicate that a given initiating condition had been met and thus an emergency classification must be declared. These instrument readings and personal observations are known as Emergency Action Levels (EALs).

Classifying an event based on plant abnormal conditions is the responsibility of the Emergency Director. Initiating events or conditions are included in this section, and implemented by Emergency Plan Implementing Procedure EPIP 13.1.1, Classifying the Emergency.

A conservative philosophy for emergency classification is used to declare the highest category for which an EAL has been met. For example, a Site Area Emergency would be declared directly if a Site Area Emergency EAL is met. This would be done without having first declared the Unusual Event or Alert emergency classifications. Also, if two or more EALs have been met, the EAL representing the highest emergency classification would be used to declare the emergency to ensure that appropriate notifications and actions are taken.

The initiating conditions presented in Table 4-1 are all inclusive of EALs and demonstrate how the EPIP 13.1.1 EALs are arranged. Due to the comprehensive nature of the initiating conditions, however, all postulated accidents in the Final Safety Analysis Report (FSAR) for WNP-2 are fully covered and could be classified, when necessary, by using this scheme. Since some FSAR accidents are not representative of a significant plant event and do not pose a challenge to the fission product barriers, not all FSAR accidents would require declaration of an emergency classification.

Events occurring offsite at nearby nuclear facilities or transportation accidents involving hazardous materials, such as chemicals or nuclear fuel, will only be classified under the WNP-2 EALs when conditions onsite are changed by the event to where they meet the criteria in EPIP 13.1.1. WNP-2 actions will be based on the significance of these events. A transportation accident that does not directly impact the Plant site will be categorized as a Transportation Emergency.

4.2 EMERGENCY ACTION LEVEL CRITERIA

The WNP-2 EAL criteria is based on a combination of methods. The combination ranges from primarily event-based EALs for Unusual Events, to primarily symptom-based or barrier-based EALs for General Emergencies. This type of an approach to EAL development ensures that timely recognition and notification occurs, that events occurring during refueling and cold shutdown are appropriately covered, and that multiple events can be effectively classified.

The symptom-based and barrier-based parameters used in the EALs are consistent with the parameters used in the Plant Emergency Operating Procedures, which are derived from accident analysis done by General Electric and the Boiling Water Reactor (BWR) Owner's Group after the Three Mile Island-2 accident. Symptom-based parameter examples are provided in EPIP 13.1.1, and represent conditions of plant system malfunctions or failures. Some of the parameters are linked to an electronic system which displays an alarm on the Computerized Graphic Display System (GDS) in the Control Room whenever certain abnormal conditions are met.

Situation-based parameters used in the EALs define other abnormal conditions which cannot be easily computerized or quantitatively defined and for which classification may require some judgement. In these cases, personnel are instructed to make decisions based on conservative principles and the definitions and purposes for event classification. Further guidance and justification for the WNP-2 EALs is provided in a technical bases document, EPIP 13.1.1.A, Classifying the Emergency Technical Bases.

4.3 OFFSITE AGENCY REVIEW OF EMERGENCY ACTION LEVELS

EPIP 13.1.1 is the document provided to the NRC, the states, the US Department of Energy, Richland Operations, and the local government agencies to use for review and comment on emergency classification criteria.

A major revision of EPIP 13.1.1 EALs were discussed and agreed upon with state and local governments, and approved by the NRC on December 9, 1994. On at least an annual basis, the most recent revision to EPIP 13.1.1 is reviewed with state and local government representatives.

4.4 CLASSIFICATION DEFINITIONS AND PURPOSES

The conditions for event classification presented here are not intended to cover all situations. Other events and combinations of situations can warrant conservative action and emergency classifications. Classifications shall be made utilizing conservative principles and in situations not covered by examples. The Emergency Director shall declare an appropriate emergency classification where, in his judgement, plant status warrants such a declaration.

4.4.1 Unusual Event

a. Definition

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Purpose

To bring the plant operating staff to a heightened state of readiness, provide for a more systematic handling of information and decision making, and to ensure that notification is made to the emergency response organization, including all offsite emergency authorities.

c. Rationale

The rationale for the Unusual Event classification is to provide early notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. Emergency response organizations are typically not activated for an Unusual Event declaration.

d. Actions:

(1) Promptly inform states and/or local offsite authorities of the nature of the unusual condition as soon as discovered.

(2) Augment on shift resources as needed.

(3) Assess and respond.

(4) Escalate to a higher classification, if appropriate, or

(5) Close out with verbal summary to offsite authorities, followed by written summary within 24 hours.

4.4.2 Alert

a. Definition

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

b. Purpose

To provide additional help in responding to the situation and provide systematic handling of information and decision making. Declaring an Alert will provide additional manpower in the Technical Support Center to help the normal operating crew in those duties not directly related to plant control, such as offsite dose assessment, technical problem evaluation, and communications with outside organizations. It will also activate the Operations Support Center, which will provide additional manpower to respond to plant conditions, and the Emergency Operations Facility and Joint Information Center to improve offsite communications and the ability to relay information to the news media and the public.

c. Rationale

The rationale for the Alert classification is to provide prompt notification of minor events of more significance than the Unusual Event category and to ensure fuller response preparations are performed. The WNP-2 emergency response organization is activated for an Alert declaration.

d. Actions:

(1) Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered.

(2) Augment resources and activate on-site Technical Support Center, on-site Operations Support Center near site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site monitoring teams and associated communications.

(5) Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

(6) Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases, from the appropriate emergency center.

(7) Escalate to a more severe class, if appropriate.

(8) Close out or recommend reduction in emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction.

4.4.3 Site Area Emergency

a. Definition

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

b. Purpose

To assure that all emergency response centers are activated, field monitoring teams dispatched, evacuation coordinators readied, predetermined protective actions issued for the public, and to keep the public informed.

c. Rationale

The rationale for the Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring but where a fuel failure situation is not indicated based on current information. In this situation full mobilization of emergency personnel, and the assembly, accountability and evacuation of non-essential personnel in the near site environs is indicated, as well as associated offsite communications, and the dispatch of radiation monitoring personnel.

d. Actions:

(1) Promptly inform State and/or local offsite authorities of site area emergency status and reason for emergency as soon as discovered.

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provided meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Escalate to general emergency class, if appropriate

or

(10) Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.4 General Emergency

a. Definition

Events are in process or have occurred which involve actual or imminent substantial fuel degradation or failure with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite at distances more than the immediate site area.

b. Purpose

To initiate predetermined actions for the public, provide for continuous offsite assessment, initiate additional measures, as indicated by radiological releases or plant conditions, and to provide for consultation and flow of information to and from the various offsite authorities.

c. Rationale

The rationale for the General Emergency classification reflects conditions where actual or imminent substantial fuel degradation or failure with the potential for loss of containment are occurring. In this situation, evacuation becomes the preferred immediate action.

d. Actions:

(1) Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local).

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF), and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Close out or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.5 One-Hour Reportability

Events are evaluated against the criteria of 10CFR50.72(b)(1). PPM 1.10.1, Notifications and Reportable Events, implements this criteria. NUREG 1022 contains clarifying NRC guidance.

4.5 STATE AND COUNTY CLASSIFICATION SYSTEM

The States of Washington and Oregon have adopted a fixed nuclear facility emergency classification scheme with classification levels. Each State maintains individual emergency response plans with these classification levels and specific guidelines for responding to emergencies at WNP-2.

The WNP-2 10-Mile Emergency Planning Zone lies within two counties. These counties, Benton and Franklin, have agreed to use the emergency classification scheme used by WNP-2 and the States.

As part of the annual EAL review process, Energy Northwest ensures that both the counties' emergency response plans and the State emergency response plan continue to use a classification scheme consistent with the WNP-2 scheme.

4.6 NOTIFICATION METHODS AND PROCEDURES

The Energy Northwest notification process for activating the emergency organizations includes notification of emergency response personnel and assistance organizations, who are notified when an emergency is declared. Initial communication links between Energy Northwest, Benton and Franklin Counties, and the State of Washington are available on a 24 hour per day basis. The extent of notification will depend upon the emergency classification. A means for verifying the authenticity of all initial offsite notifications is established.

Communication links are established among the various on-site and offsite emergency centers. Descriptions of the emergency response positions at each center include responsibilities for communications with specific positions or other emergency response facilities. Those communication responsibilities are further specified in the EPIPs.

4.6.1 Energy Northwest Emergency Organization Notification

Activation of response teams during normal working hours will be via the telephone system, the inplant public address system, or the paging system. Activation during hours other than normal working hours will be accomplished by the paging system, automatic notification system. This system will be initiated by the Security Communication Center Duty Officer. The Duty Officer will be directed to make the notifications by the Emergency Director. A manual call list will serve as a backup notification method. Instructions will be provided if protective measures are required.

The in-plant paging system, high noise area paging devices, a radio paging system, and an Automated Notification System will be used to notify Energy Northwest ERO personnel. Instructions will be provided if protective measures are required.

On-duty Energy Northwest personnel will notify Washington Emergency Management, Benton County Emergency Management, Franklin County Emergency Management, and the Department of Energy.

The extent of the notification will depend upon the emergency classification. However, the Emergency Director may call anyone deemed necessary to support the emergency effort. Table 4-2 outlines the response organizations that will be notified by Energy Northwest for each emergency class. The above scheme is established in procedures.

4.6.2 Nearby Facilities Notification

Initial emergency notification to nearby facilities will be made. Instructions will be provided if protective measures are required.

The Department of Energy is responsible for notifying facilities on the Hanford Reservation during an Energy Northwest emergency; however, Energy Northwest will notify the Fast Flux Test Facility (FFTF) control room when an Exclusion Area evacuation is implemented. DOE notifies Energy Northwest in the event of a sodium oxide release from FFTF.

4.6.3 Support Organizations Notification

Initial notification to Benton County Emergency Management, Franklin County Emergency Management, Department of Energy, and Washington Emergency Management will be made from the Control Room, the Technical Support Center or the Emergency Operations Facility. The Nuclear Regulatory Commission Emergency Response Center will be notified. The Nuclear Regulatory Commission offices will patch the call through to the Nuclear Regulatory Commission offices in Region IV, Arlington, Texas. A means for verifying the authenticity of the notification is established.

4.6.4 General Public Notification

Emergency notification to both transients and residents is the responsibility of the County Emergency Chairman. Notification will be based on information received from Energy Northwest and, if time permits, consultation with the staffs of the Benton County Emergency Operations Center, Franklin County Emergency Operations Center, and Washington State Emergency Operations Center.

Transient and resident populations are advised in public information material to monitor the Emergency Alerting System (EAS) for emergency announcements and protective action instructions. The initial instructions will consist of prescribed emergency messages consistent with the Emergency Classification and will contain information such as:

a. Identification of agency/organization issuing information.

b. A statement that a facility has had an accident.

c. Identification of the communities or geographical areas affected by the emergency.

d. A brief description of the type of emergency and the nature of the hazard.

e. Specific protective measures such as sheltering or evacuation to be taken by residents of the affected areas.

f. A statement that further information will be given over the Emergency Broadcast System.

Copies of the text of prerecorded EAS messages and the messages to be read over the siren system are provided in the Benton and Franklin Counties Emergency Response Plans.

Initial and follow-up notifications of an emergency at the plant are made to the County Emergency Dispatch Center, to the Department of Energy-Richland Operations, and to the State of Washington from the control room, the TSC or the EOF. Washington State is responsible for notifying Oregon DOE. The Benton County Emergency Operations Center is responsible for notifying the public in Benton County. The Franklin County Emergency Operations Center is responsible for notifying the public in Franklin County. Benton County is responsible for making Protective Action Decisions (PADs) in Benton County during the Plume phase of an emergency. Franklin County is responsible for making PADs in Franklin County during the Plume phase of an emergency. They will notify the public within fifteen minutes after a Protective Action Decision is made. The State of Washington is responsible for making PADs during the ingestion phase of an emergency. The Department of Energy has the responsibility to alert and provide information to its employees and contractors on the Hanford Reservation. The Joint Information Center will coordinate public news releases with responding agencies.

The Early Warning System is designed to alert and provide information to the population in the Ten-Mile Emergency Planning Zone.

Tone activated radios provide the primary means of notification. These radios are activated by the Emergency Alerting System signal and provide instructions for protective actions. Transient population along the Columbia River is notified by sirens within the 10-mile EPZ, a Coast Guard marine band broadcast and, if necessary, by Sheriffs Department. Transient population along the Yakima River and in the Horn Rapids area within the 10-mile EPZ are notified by sirens. In addition, Washington State Department of Fish and Wildlife may inform members of the public of protective response actions required.

4.6.5 Initial Messages to Offsite Response Organizations

Initial messages to response organizations will contain such information as:

a. Type of notification
b. Facility experiencing emergency
c. Time of incident
d. Emergency classification
e. Protective action recommendation

4.6.6 Follow-up Messages

Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as:

a. Name and telephone number of caller
b. Location of incident
c. Date/Time of incident
d. Classification of Emergency
e. Type of actual or projected release and estimated duration/impact times
f. Estimate of quantity of radioactive material released or being released, and the points of release
g. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
h. Meteorological conditions
i. Actual or projected dose rates at site boundary; projected integrated dose at site boundary
j. Projected dose rates and integrated dose at the projected peak and at 2 and 10 miles, including sector(s) affected
k. Estimate of any surface radioactive contamination; in-plant, onsite or offsite
l. Emergency response actions underway
m. Recommended emergency actions, including protective action recommendations
n. Request for offsite organization support needed onsite
o. Prognosis for worsening or termination of event based on plant information

TAB

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.1 Coolant Activity	Fuel Clad Degradation 1.1.U.1 1 2 3 4 RCS sample activity GT Technical Specification 3.4.8 for GT LCO Action Statement time.	Loss OR potential loss of fuel clad 1.1.A.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine.	Loss or potential loss of any two fission product barriers 1.1.S.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND ANY of the following: • Any RCS Loss Indicators, Table 1 • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Any PC Loss Indicators, Table 2 • Cannot maintain plant parameters within SRVTPLL, or PSP	A loss of any two fission product barriers and loss or potential loss of the third 1.1.G.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Drywell pressure response not consistent with LOCA conditions 1.1.G.2 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2, upscale high AND Any PC Loss Indicators, Table 2 1.1.G.3 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Any RCS Loss Indicators, Table 1 AND either of the following: Any PC Loss Indicators, Table 2 OR Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP

TAB
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.2 Radiation Monitors	Fuel Clad Degradation 1.2.U.1 1 2 3 SJAE CONDSR OUTLET RAD HI-HI alarm (P602)	Loss OR potential loss of RCS 1.2.A.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Loss or potential loss of any two fission product barriers 1.2.S.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr	A loss of any two fission product barriers and loss or potential loss of the third 1.2.G.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr 1.2.G.2 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr AND ANY of following: • Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP. • Drywell pressure response not consistent with LOCA conditions. • Any PC Loss Indicators, Table 2

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.3 Refueling Incidents	Unexpected decrease in water covering irradiated fuel assemblies 1.3.U.1 1 2 3 4 5 def Uncontrolled water level decrease in the reactor cavity or SFP below the level of the weirs with all irradiated fuel assemblies remaining covered by water	Major damage to irradiated fuel OR loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the RPV 1.3.A.1 1 2 3 4 5 def HIGH alarm on ARM-RIS-1 (Fuel Pool ARM) resulting from an uncontrolled irradiated fuel handling process		
		Loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel 1.3.A.2 1 2 3 4 5 def Water level, when not intentionally lowered, observed to be below the top of the gate sill separating the reactor cavity and the SFP 1.3.A.3 1 2 3 4 5 def Report of visual observation of irradiated fuel uncovered or uncovering imminent.		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.1 RPV Water Level	RCS Leakage 2.1.U.1 1 2 3 Valid unidentified leakage GE 10 gpm or upscale high indicated on recorder EDR-FRS-623, Pen 1 (P632) (Non RCC) OR Valid identified leakage GE 25 gpm indicated on recorder EDR-FRS-623, Pen 2 (P632)	Loss OR potential loss of RCS 2.1.A.1 1 2 3 Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Loss or potential loss of any two fission product barriers 2.1.S.1 1 2 3 4 5 RPV level LT -161 inches or cannot be determined	A loss of any two fission product barriers and loss of potential loss of the third 2.1.G.1 1 2 3 Entry into Severe Accident Guidelines 2.1.G.2 1 2 3 RPV level LT -161 inches, or cannot be determined AND ANY of following: • Rapid unexplained decrease of PC pressure following an initial increase. • Drywell pressure response not consistent with LOCA conditions • Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.2 Reactivity Control	Inadvertent Criticality 2.2.U.1 [ ] [2] [3] [4] [5] [ ] An extended and unplanned sustained positive period observed on NIs, while NOT performing a reactor startup.	Failure of Reactor Protection System (RPS) instrumentation to complete or initiate a reactor scram AND manual scram was successful. 2.2.A.1 [1] [2] [ ] [ ] [ ] [ ] <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Manual Actions (mode switch in shutdown, manual push buttons and ARI) result in reactor power LE 5%.	Failure of RPS instrumentation to complete or initiate an automatic reactor scram once a RPS setpoint has been exceeded AND manual scram was NOT successful 2.2.S.1 [1] [2] [ ] [ ] [ ] [ ] <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND either: Reactor power GT 5% or unknown OR Wetwell temperature GT 110°F	Failure of the RPS to complete an automatic scram AND manual scram was NOT successful AND there is indication of an extreme challenge to the ability to cool the core. 2.2.G.1 [1] [2] [ ] [ ] [ ] [ ] <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Wetwell temperature cannot be maintained LT the HCTL

TAB
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.1 Primary Containment Pressure	Loss or potential loss of primary containment 3.1.U.1 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase	Loss or potential loss of either fuel clad or RCS 3.1.A.1 1 2 3 Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	Loss or potential loss of any two fission product barriers 3.1.S.1 1 2 3 Drywell pressure response not consistent with LOCA conditions 3.1.S.2 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	A loss of any two fission product barriers and loss or potential loss of the third 3.1.G.1 1 2 3 PC pressure exceeds PCPL
3.2 Wetwell Temperature/ Level	Loss or potential loss of primary containment 3.2.U.1 1 2 3 Cannot maintain plant parameters within SRVTPLL		Loss or potential loss of any two fission product barriers 3.2.S.1 1 2 3 RPV pressure and wetwell temperature cannot be maintained below HCTL	

TAB
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.2 Wetwell Temperature/Pressure			Loss or potential loss of any two fission product barriers 3.2.S.2 1 2 3 Cannot maintain plant parameters within SRVTPLL or PSP AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell	

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EMERGENCY CLASSIFICATI[illegible] INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.3 Combustible Gas Concentration				A loss of any two fission product barriers and loss or potential loss of the third 3.3.G.1 1 2 3 PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
3.4 Containment Isolation Status	Loss or potential loss of primary containment 3.4.U.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists	Main steam line break outside containment with isolation 3.4.A.1 1 2 3 Indications of a MSL break AND MSIV closure <u>has isolated</u> the break	Loss or potential loss of any two fission product barriers 3.4.S.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists. AND ANY of following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell 3.4.S.2 1 2 3 Indications of a MSL break AND MSIV closure <u>has not isolated</u> the break	A loss of any two fission product barriers and loss or potential loss of the third 3.4.G.1 1 2 3 Intentional venting of Primary Containment to prevent failure.

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4 Secondary Containment 4.1 Reactor Building Temperature/ Radiation Levels			Loss or potential loss of any two fission product barriers 4.1.S.1 1 | 2 | 3 | | | Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures).	A loss of any two fission product barriers and loss of potential loss of the third 4.1.G.1 1 | 2 | 3 | | | Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures). AND ANY of the following: • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr • RPV level LT -161 inches or cannot be determined • Coolant activity GT 300 μCi/gm dose equivalent iodine

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.1 Offsite Release	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times ODCM limits for 60 minutes or longer 5.1.U.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "UE" for GT 60 minutes 5.1.U.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" OR Sample analysis indicates release GT 2 times ODCM 6.2.1.1 limits for GT 60 minutes	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological specifications for 15 minutes or longer 5.1.A.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Alert" for GT 15 minutes 5.1.A.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate dose rates GT Table 4 column "Alert" OR Sample analysis indicates release GT 200 times ODCM 6.2.1.1 limits for GT 15 minutes	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release 5.1.S.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Site Area" for GT 15 minutes 5.1.S.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area"	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the release using actual meteorology 5.1.G.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "General" for GT 15 minutes 5.1.G.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate doses or dose rates GT Table 4 column "General" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "General".

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.2 Area Radiation	Unexpected increase in plant radiation levels 5.2.U.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 5E3 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-20 thru ARM-RIS-30 • ARM-RIS-32 thru ARM-RIS-34 (High Range)	Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown 5.2.A.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 15 mR/hr on ARM-RIS-19 (CR) OR Valid reading GT 1E4 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-23 • ARM-RIS-24 • ARM-RIS-32 thru ARM-RIS-34 (High Range)		

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
6 Electrical Failures 6.1 AC Power Loss	Loss of all offsite power to critical AC busses for greater than 15 minutes 6.1.U.1 1 | 2 | 3 | 4 | 5 | def Power is unavailable to SM-7 and SM-8 from offsite AC sources GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.A.1 | | | 4 | 5 | def Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes Power capability to critical AC busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout. 6.1.A.2 1 | 2 | 3 | | | Available emergency bus AC power has been reduced to only one of the following sources for GT 15 min • TR-N1 (SM-7 and/or SM-8) • TR-S (SM-7 and/or SM-8) • TR-B (SM-7 and/or SM-8) • DG-1 (SM-7) • DG-2 (SM-8)	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.S.1 1 | 2 | 3 | | | Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Prolonged loss of all offsite power and prolonged loss of all onsite power to critical AC busses 6.1.G.1 1 | 2 | 3 | | | Complete loss of <u>all</u> AC power to SM-7 and SM-8 AND either of the following: In the judgement of the Emergency Director, AC power to either SM-7 or SM-8 is not likely to be restored within 4 hours OR RPV level LT -161 inches
6.2 DC Power Loss	Degradation of all critical DC power for greater than 15 minutes. 6.2.U.1 | | | 4 | 5 | def Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicated by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes		Degradation of all critical DC power for greater than 15 minutes 6.2.S.1 1 | 2 | 3 | | | Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicted by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes	

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.1 System Failures	Inability to reach required shutdown within technical specification limits 7.1.U.1 1 2 3 Plant is not brought to required operating mode within T.S. LCO action statement time 7.1.U.2 1 2 3 4 5 def Uncontrolled flooding in a safe shutdown building, Table 5, that has the potential to affect safety related equipment needed for the current operating mode	Inability to maintain plant in cold shutdown 7.1.A.1 4 5 Inability to restore and maintain reactor coolant temp LT 200°F 7.1.A.2 1 2 3 4 5 def Report by plant personnel confirming the occurrence of plant uncontrolled internal flooding in a safe shutdown building, Table 5 AND Affected safe shutdown system parameters indicate degraded performance		
7.2 Control Room Evacuation		Control room evacuation has been initiated 7.2.A.1 1 2 3 4 5 The decision to evacuate the Control Room has been made.	Control room evacuation has been initiated, but plant control CANNOT be established 7.2.S.1 1 2 3 4 5 CR evacuation initiated AND Control of plant equipment needed to maintain adequate core cooling cannot be established at either the Remote Shutdown Panel or Alternate Remote Shutdown panel within 15 minutes of the SRO in charge of the CR physically leaving the CR	

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Unplanned loss of most or all safety system annunciators or indication in the control room for greater than 15 minutes 7.3.U.1 1 2 3 Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd. C associated with safety related equipment GT 15 minutes	Unplanned loss of most or all safety system annunciators or indications in the control room with EITHER: 1) a significant transient in progress; OR 2) Compensatory non-alarming indicators are unavailable 7.3.A.1 1 2 3 Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd C associated with safety related equipment GT 15 minutes AND either of the following: A significant plant transient is in progress OR Compensatory non-alarming indications are <u>not</u> available (plant computer system and GDS)	Inability to monitor a significant transient in progress. 7.3.S.1 1 2 3 Loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603 and Bd. C associated with safety related equipment AND Compensatory nonalarming indications are unavailable (process computer system and GDS) AND Significant transient in progress AND Loss of indications needed to monitor ANY of the following plant critical safety parameters: • Reactor power • RPV level • RPV pressure • Drywell pressure • Drywell temperature • Wetwell pressure • Wetwell/Drywell H2/O2 Concentrations • Wetwell level • Wetwell temperature • Radioactive Gaseous Effluents	
	Significant loss of onsite OR offsite communications capabilities 7.3.U.2 1 2 3 4 5 def Unplanned loss of ALL of the following onsite communications capability: • Plant Public Address (PA) System • Plant Telephone System • Plant Radio System Operations and Security Channels			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Significant loss of onsite or offsite communications capabilities 7.3.U.3 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following offsite communications capability: • State/County Notification (CRASH) System • Offsite calling capability from the Control Room via direct telephone and fax lines • Long distance calling capability on the Plant ("2000") Switch and Plant Support Facility/Plant Engineering Center ("8000") Switch			

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.1 Security Threats	Confirmed security event which indicates a potential degradation in the level of safety of the plant 8.1.U.1 [1 | 2 | 3 | 4 | 5 | def] Bomb device discovered within plant protected area <u>but</u> outside a Safe Shutdown Building, Table 5 OR Confirmed report of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes	Security event in a Plant Protected Area 8.1.A.1 [1 | 2 | 3 | 4 | 5 | def] Confirmed report of an intrusion by a hostile force into the Plant Protected Area	Security event in a Plant Vital Area 8.1.S.1 [1 | 2 | 3 | 4 | 5 | def] Bomb device discovered or detonated within a Safe Shutdown Building, Table 5 OR Confirmed report of intrusion by a hostile force into a Safe Shutdown Building, Table 5	Security event resulting in loss of ability to reach and maintain cold shutdown 8.1.G.1 [1 | 2 | 3 | 4 | 5 | def] Loss of physical control of the CR due to security event OR Loss of physical control of the remote shutdown capability due to security event
8.2 Fire/Explosion Caused by Equipment Failure	Fire within the Protected Area Boundary not extinguished within 15 minutes of detection OR an explosion within Protected Area Boundary 8.2.U.1 [1 | 2 | 3 | 4 | 5 | def] Fire within or adjacent to any Safe Shutdown Building, Table 5, which is <u>not</u> extinguished within 15 minutes of either CR notification by plant personnel or validation of alarm OR Report by plant personnel of an unplanned explosion within the Protected Area boundary resulting in visible damage to permanent structures or equipment	Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown 8.2.A.1 [1 | 2 | 3 | 4 | 5 | def] Confirmed fire or explosion in a safe shutdown building, Table 5 AND either of the following: Affected safe shutdown system parameters indicate degraded performance OR Report by plant personnel of visible damage to the affected safe shutdown building or equipment contained within the affected safe shutdown building		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.3 Man-Made Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.3.U.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash into or projectile which impacts a Safe Shutdown Building, Table 5 8.3.U.2 1 | 2 | 3 Turbine failure resulting in casing penetration or damage to turbine or generator seals	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.3.A.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash or projectile impact which impedes access to or damages equipment in a Safe Shutdown Building, Table 5 8.3.A.2 1 | 2 | 3 Missiles generated from a turbine failure have resulted in visible structural damage to or penetration of a safe shutdown building, Table 5		
	Release of toxic or flammable gases affecting the Protected Area Boundary deemed detrimental to safe operation of the plant. 8.3.U.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for evacuation or shelter of site personnel based on offsite event	Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. 8.3.A.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases within a safe shutdown building, Table 5, in concentrations that will be life threatening to plant personnel or impede access to equipment needed for safe plant operation.		

TAB[illegible]
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.1 1 | 2 | 3 | 4 | 5 | def MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake 8.4.U.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 80 mph OR CR measured winds GT 66 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary 8.4.U.3 1 | 2 | 3 | 4 | 5 | def Range fires near the plant which threaten to reduce the level of safety	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.1 1 | 2 | 3 | 4 | 5 | def OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake 8.4.A.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 100 mph OR CR measured winds GT 76 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5 8.4.A.3 1 | 2 | 3 | 4 | 5 | def Ash fallout from volcanic activity is severe enough to warrant plant shutdown		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.4 1 | 2 | 3 | 4 | 5 | def Visible ash fallout from volcanic activity 8.4.U.5 1 | 2 | 3 | 4 | 5 | def River level increase which threatens to flood the river pumphouse	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.4 1 | 2 | 3 | 4 | 5 | def Report by plant personnel of an event causing visible structural damage to a safe shutdown building, Table 5		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Other 9.1 Other	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Unusual Event. 9.1.U.1 [1 | 2 | 3 | 4 | 5 | def] In the judgement of the Emergency Director, events are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Alert. 9.1.A.1 [1 | 2 | 3 | 4 | 5 | def] In the judgement of the Emergency Director, events are in progress or have occurred which indicate actual or potential substantial degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a Site Area Emergency 9.1.S.1 [1 | 2 | 3 | 4 | 5 | def] In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a General Emergency 9.1.G.1 [1 | 2 | 3 | 4 | 5 | def] In the judgement of the Emergency Director, other conditions exist which indicate either of the following: Actual or imminent substantial core degradation or melting with the potential for loss of containment integrity OR Potential for uncontrolled radionuclide releases which can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary
	Loss OR potential loss of Primary Containment 9.1.U.2 [1 | 2 | 3 | | |] Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment as indicted by Fission Product Barrier Degradation Table, Table 6	Loss OR potential loss of fuel clad or RCS 9.1.A.2 [1 | 2 | 3 | | |] Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier as indicted by Fission Product Barrier Degradation Table, Table 6	Loss or potential loss of any two fission product barriers 9.1.S.2 [1 | 2 | 3 | | |] Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of any two fission product barriers as indicted by Fission Product Barrier Degradation Table, Table 6	A loss of any two fission product barriers and loss or potential loss of the third 9.1.G.2 [1 | 2 | 3 | | |] Any event, in the judgement of the Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third as indicated by Fission Product Barrier Degradation Table, Table 6

Table 1 RCS Barrier Loss Indicators
• Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr
• RPV level LT -161 inches
• Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell

Table 2 PC Barrier Loss Indicators
• Rapid unexplained decrease of PC pressure following an initial increase
• Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment

TABLE 3

Table 3 Effluent Monitor Classification Thresholds				
Monitor	UE	Alert	Site Area	General
NOTE: If a dose projection cannot be performed and the monitor reading is sustained for longer than the specified time then the declaration must be made based on the valid reading.				
	60 minutes	15 minutes	15 minutes	15 minutes
PRM-RE-1B Reactor Bldg. Exhaust Inter.	1.35E4 cps	N/A	N/A	N/A
PRM-RE-1C Reactor Bldg. Exhaust Hi	N/A	1.14E3 cps	9.65E3 cps	9.35E4 cps
TEA-RIS-13/13A Turbine Bldg. Exhaust	1.7E4 cpm	4.4E4 cpm	4.4E5 cpm	8 PMU
WEA-RIS-14/14A RadWaste Bldg. Exhaust	1.2E5 cpm	1.7E5 cpm	1.7E6 cpm	26 PMU
TSW-RIS-5 TSW Effluent	3.9E3 cpm	3.9E5 cpm	N/A	N/A
FDR-RIS-606 Rad. Waste Effluent	2 x Hi-Hi alarm	200 x Hi-Hi alarm	N/A	N/A
SW-RIS-604 SW 'A' Process	2.0E2 cps	2.0E4 cps	N/A	N/A
SW-RIS-605 SW 'B' Process	2.0E2 cps	2.0E4 cps	N/A	N/A

WNP-2 EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

TABLES 4 & 5

cps = counts per second   cpm = counts per minute   PMU = panel meter units   N/A = not applicable (outside of meter range)

Table 4 Offsite Dose Calculation/Field Survey Sample Analysis Classification Thresholds at 1.2 miles

	UE	Alert	Site Area	General
TEDE	N/A	N/A	100 mrem	1000 mrem
CDE Thyroid	N/A	N/A	500 mrem	5000 mrem
TEDE rate	0.1 mrem/hr	10 mrem/hr	100 mrem/hr (projected GT 60 min)	1000 mrem/hr (projected GT 60 min)
CDE Thyroid rate	0.3 mrem/hr	50 mrem/hr	500 mrem (for GT 1 hr inhalation)	5000 mrem (for GT 1 hr inhalation)

Table 5 Safe Shutdown Buildings
• Vital portions of the RadWaste/Control Building • Reactor Building • Turbine Building • Standby Service Water Pump Houses • Diesel Generator Building • Diesel Generator Fuel Oil Storage Area

WNP-2 EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control") Intentional venting per PPM 5.2.1, "Primary Containment Control"	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL Wetwell pressure exceeds PSP PC pressure exceeds PCPL
<u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		<u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		<u>Any</u> event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

TABLE 4-2
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Energy Northwest:				
Technical Support Center	N,R	A	A	A
Operations Support Center	N,R	A	A	A
Security Communications Center	A	A	A	A
Emergency Operations Facility	N,R	A	A	A
Joint Information Center (Energy Northwest Richland Office Complex)	N,R	A	A	A
County:				
Benton Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
Benton and Franklin County Sheriffs[1]	N,R	A	A	A
County:				
Franklin Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
State:				
Washington State Emergency Management	N	A	A	A
Oregon State[2] Department of Energy	N	N	A	A

A = Activate N = Notify for information only R = Respond if requested

[1] Notified by Benton County or Franklin County, as appropriate, Emergency Dispatch

[2] Notified by Washington State

TABLE 4-2 (Cont'd.)
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Federal:				
Nuclear Regulatory Commission	N	N	A	A
U.S. Coast Guard		R	N,A	A
Federal Emergency Management Agency	N	N,R	A	A
Department of Energy Richland (will notify and activate DOE contractors)	N	N,R	A	A
Support Services:				
Siemens Corporation	R	R	N,R	N,R
General Electric	R	R	N,R	N,R
Institute of Nuclear Power Operations		N	N,R	N,R
American Nuclear Insurers		N	N,R	A
Northwest Health Services	R	R	N,R	N,R
Hospitals	R	R	R	R
BPA Substation	N	N	N	N

A = Activate N = Notify for information only R = Respond if requested

SECTION 5
ACCIDENT ASSESSMENT AND PROTECTIVE RESPONSE

5.1 ASSESSMENT ACTIONS, PLANT INSTRUMENTATION, AND RADIOLOGICAL MONITORING

Effective coordination and direction of all elements of the emergency response organization requires that accident assessment be continued throughout the emergency. Using plant instrumentation and radiological monitoring, each emergency class invokes similar assessment methods. The magnitude of the assessment actions posed by each classification varies. An important focus of assessment actions is to track the ability of plant systems to contain the core inventory of radioactive material (i.e., radionuclides) and to monitor whether the potential exists for accidental release of this material into the environment. Assessment actions also include determining the consequences of a radioactive material release on both a projected and actual basis.

For the Unusual Event classification level, assessment actions will generally involve situations that do not pose a threat to containment of the reactor core's radioactive material. Usually, declaration of an emergency classification will result from alarms, instrument readings, severe weather warnings, operating experience, or any combination thereof. Continuing assessment for an Unusual Event category of emergency will consist of the normal monitoring of Control Room and plant instrumentation and status. Tornado and severe weather assessment actions consist of keeping in contact with the load dispatcher and appropriate public authorities. If a fire prompted the declaration of an Unusual Event, the Fire Brigade Leader will go to the fire location, make continuing assessments, and report to the Shift Manager on whether offsite fire fighting support is required.

Once an incident has been classified as an Alert, assessment actions will include:

a. Increased surveillance of in-plant instrumentation.

b. If possible, the dispatching of shift personnel to the identified problem area to confirm and visually assess the problem.

c. The dispatching of personnel to monitor for possible releases, and to confirm the correct classification.

d. If a radiological incident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected offsite doses will occur. Dose assessment activity will continue until termination of the emergency so that assessment updates may be provided to all concerned offsite agencies and to the Emergency Director. Emergency Plan Implementing Procedures are provided to allow a rapid, consistent projection of offsite doses.

Assessment actions for the Site Area Emergency and General Emergency category are similar to the actions for an Alert. However, due to the increased magnitude of the possible release, assessment activity of greater scope will occur. The personnel necessary for this assessment effort will be provided by full mobilization of the onsite and offsite emergency response organizations. The assessment actions at these levels will include:

a. An increased amount of plant instrumentation will be monitored. (In particular, indications of core status, e.g., saturation temperature, core covery/uncovery indications etc.)

b. Radiation monitoring efforts will be greatly increased. Field Monitoring Teams will be available for dispatch. Beta-gamma field measurements will be performed; air sampling, environmental thermoluminescent dosimeter (TLD) change out, and collection of environmental media for assessment of material transport and deposition will be performed as necessary.

c. Dose assessment activities will be performed more frequently, with an increased emphasis on dose projection for use as a factor in determining necessary protective actions. Radiological and meteorological instrumentation readings will be used to project the dose rate at predetermined distances from the plant, and to project the potential integrated dose.

   In reporting the dose projections to the Emergency Director, the dose rate, dose, and basis for the time used for the dose estimate should be provided. Confirmation of dose rates by Field Monitoring Teams will be reflected in reports or revised dose estimate information provided to offsite agencies.

   All dose projections will be performed in accordance with the Emergency Plan Implementing Procedures which incorporate recommendations found in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." Reports to offsite authorities will include the relationship of dose to these guidelines. Emergency Plan Implementing Procedures provide for the recording of pertinent information.

Detailed plant operating procedures are available for use during emergencies, as well as during normal operations. Specific Emergency Operating Procedures and Abnormal Condition Procedures are provided to assist the Control Room operators in placing the plant in a safe condition and taking corrective actions.

5.1.1 Plant Instrumentation

Plant instrumentation measures appropriate parameters that are indicative of the status of various plant systems and the reactor. Instrumentation used to ensure safe reactor operation is deemed safety related. An important group of safety related parameters is commonly referred to as the Safety Parameter Display System (SPDS). The purpose of this system as outlined in NUREG-0696, is to help Control Room personnel make quick assessments of plant safety status. At WNP-2, the SPDS is made up of hard wired Control Room instrumentation. This instrumentation is sufficiently concentrated in the Main Control Room to allow rapid assessment of plant conditions. Additional information that is useful for emergency response is supplied by the Graphic Display System (GDS) which is part of SPDS. The SPDS provides information related to assessment of the following plant functions:

- Reactivity control,
- Reactor core cooling and heat removal,
- Reactor coolant system integrity,
- Radioactivity control, and
- Containment integrity.

The SPDS and other post-accident monitoring instrumentation provide the means to assess plant status during and following an accident. For more detailed information on plant instrumentation, refer to the Final Safety Analysis Report, Chapter 7.

The structures, systems, components and instrumentation important to safety at WNP-2 are designed and located to minimize the probability and effect of fires and explosions, as well as to withstand the effects of natural phenomena such as earthquakes, tornadoes, and floods without the loss of capability to perform their safety functions.

Facilities and equipment for detecting, annunciating, and extinguishing fires are provided to protect both plant and personnel. These include fire detection and alarm systems, deluge water spray systems, dry and wet pipe sprinkler systems, carbon dioxide systems, hose stations, portable fire extinguishers, and halon flooding systems. In addition, noncombustible and heat resistant materials are used wherever practical throughout the Plant, particularly in locations such as the containment and Control Room. For more detailed information on the fire protection systems, refer to the WNP-2 Fire Protection Evaluation.

The Plant site is near the Columbia River, which is the predominant hydrologic feature of the area. The elevations of safety related systems and components, however, are sufficient to protect the Plant against design basis flood conditions. All safety related structures, systems and components are also designed to withstand the effects of an earthquake, estimated as the maximum earthquake potential for this area. Instrumentation used to monitor earthquake seismic motion at WNP-2 complies with Regulatory Guide 1.12 requirements and provides both a printout and an alarm annunciation if certain levels of seismic motion are detected. For more detailed information on tornado, flood and earthquake protection, refer to the Final Safety Analysis Report, Chapter 3. If needed as backup, flood information can be obtained from the U.S. Coast Guard and seismic information can be obtained from the Department of Energy, Richland Operations. Both agencies are listed in the Emergency Phone Directory.

5.1.2 Radiological Monitoring Instrumentation

The plant radiation monitoring instrumentation is used to provide information in regard to general area radiation levels as well as the radiation levels in process and effluent streams, i.e., fluids in piping systems or air in ventilation systems. The area radiation and airborne radioactivity monitoring systems are comprised of area monitoring components located throughout the plant. Under normal operating conditions, the area monitors warn personnel both locally and remotely of increasing radiation levels. These monitors provide information to assessment personnel so that decisions can be made with respect to deployment of personnel or initiation of protective actions in the event of a radiation accident. For more detailed information on the area radiation and airborne radioactivity monitoring systems, refer to the Final Safety Analysis Report, Chapter 12.

The process and effluent radiological monitoring and sampling systems provide the means for sampling and continuously monitoring paths by which significant amounts of radioactivity could be released to the environment during normal operation and anticipated operational occurrences. As part of the plant radiological monitoring program, the process and effluent radiological monitoring and sampling systems assist in limiting effluent radioactivity to within the limits of 10CFR 20 and 10CFR 50, Appendix I and provide measurement for reporting radioactivity released to the environs in compliance with Regulatory Guide 1.21. These systems also provide the accident radiation monitoring required for compliance with NUREG-0737. Portions of these systems are also employed during postulated accident conditions for monitoring effluent discharge paths, and initiating automatic control features. A detailed description of the process and effluent monitoring and sampling systems is included in the Final Safety Analysis Report, Chapter 11.

5.2 METEOROLOGICAL AND ENVIRONMENTAL MONITORING

5.2.1 Meteorological Monitoring System

The primary onsite meteorological equipment includes a 240-foot tower with a 5 ft. wind mast located approximately 1700 feet west of WNP-2 and provides data to WNP-2. System measurements include wind speed, wind direction, sigma theta, temperature, dew point, barometric pressure, precipitation, and temperature differential. The Operational Meteorological Program is described in Chapter 2 of the Final Safety Analysis Report.

Wind speed, wind direction, and temperatures, except the temperature at 245 feet, are available in the control room as near real-time digital displays, (five-minute averages). The averaged data is sent via the supervisory system to the Control Room. The data is then sent to chart recorders and the PPCRS computer. The data is also accessible at the Emergency Operations Facility, the Technical Support Center, and the control room via the plant computer system.

Backup meteorological information is available. Wind speed and direction, temperature, dew points, and sigma theta parameters are available. This and other information is available from Pacific Northwest National Laboratory (PNNL) or the National Weather Service, for 15-minute averaging (manual) and input to the computer systems.

The outputs of the primary tower sensors are fed to the plant process computer for 15 minute averaging for input to the Emergency Dose Projection System (EDPS). Error diagnostics, simulated data entry, and archiving are performed concurrently. Near real time access for both emergency and routine operations is thus provided.

A procedure shall be available for the use of normal and backup meteorological data.

5.2.2 Radiological Environmental Monitoring Program

A routine radiological environmental monitoring program is established in accordance with the Offsite Dose Calculation Manual (ODCM) requirement. Energy Northwest activities include air, milk, water, garden produce, fish, soil and sediment sampling, and thermoluminescent dosimeter (TLD) placement. Energy Northwest environmental monitoring locations are similar to Figure 5-1 and are fully listed in Section 5.0 of Energy Northwest ODCM.

In case of an emergency at WNP-2 nuclear facility, TLDs will provide a time integrated exposure record. Permanent TLD stations are located within the Ten-Mile Emergency Planning Zone, around the Exclusion Area Boundary, and at various points of interest around the Hanford Reservation and across the Columbia River in Franklin County. A control station is located near Grandview, approximately 30 miles southwest of the site. Exchange frequency during normal operations is quarterly; however, during an emergency the TLDs may be exchanged more frequently based on release conditions. In addition, continuous air samplers are located within the Ten-Mile Emergency Planning Zone. The air samplers collect airborne radioiodines and particulates on filters which are analyzed either in the field or at the radiological laboratory in the Emergency Operations Facility.

5.3 OFFSITE DOSE PROJECTIONS

5.3.1 Source Term Determinations

Release data, such as volumetric flow rates and gross radiation levels, in conjunction with calibration factors and time dependent nuclide ratios, will be utilized during an accident to assess the radiological source term. Capability exists on shift to perform dose assessment projections using real time meteorological and effluent monitor data at all times. Data from instrumentation in the airborne effluent release pathways are available to be entered into the Emergency Dose Projection System (EDPS) to calculate the source term. A more detailed assessment of the isotopic composition of the release will be determined by laboratory analysis of effluent and field sampling media. Methods for determining release rate in the event the instrumentation is offscale or inoperative are contained in the Emergency Plan Implementing Procedures.

5.3.2 Emergency Dose Projection System

The Emergency Dose Projection System (EDPS) consists of 2 programs, QEPDS and EDPS Main. Both programs are accessed via personal computer. Both programs rely on a precalculated, real time, site-specific relationship between effluent monitor readings and on-site and offsite dose rates.

QEDPS is designed for rapid evaluation of a release with restricted data input and a straight-line dispersion model. QEDPS provides incremental dose projections from the site boundary out to 10 miles. QEDPS is available in the Control Room, TSC, EOF, and Alternate EOF, and provides text and map output. Field Team data may be used to calculate dose projections or validate previous projections.

Having the QEDPS software loaded on multiple, stand-alone computers located in the Control Room and EOF ensures backup dose projection capability.

EDPS Main is designed to accept much more detailed inputs for a more thorough release evaluation with more extensive text and graphical output. EDPS Main has the choice of puff or straight-line dispersion models and incremental dose projections from the site boundary out to 10 or 50 miles. EDPS Main has a graphical map output as well as a text output of the dose projection. EDPS Main is available in the TSC and EOF.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

5.3.3 Total Population Exposure

The WNP-2 plant data systems collect and maintain files of effluent flow, radiation monitor readings, and five minute average meteorology data. These data are manually input into a joint frequency program, into the XOQDOQ program, and then to the GASPAR II computer code to calculate total population dose for occupied areas. The GASPAR II code can be adapted to emergency operations by input of short term atmospheric dispersion factors and appropriate exposure pathway parameters out to 50 miles.

5.4 FIELD MONITORING

5.4.1 Environmental Field Teams

Field monitoring capabilities will be activated whenever an Alert classification occurs. Field monitoring will be performed by environmental field teams that have been selected and trained to perform these duties.

Sufficient personnel are identified within Energy Northwest and outside assistance agencies to maintain 24-hour shift coverage if needed for an extended period. Energy Northwest maintains sufficient dedicated equipment to adequately equip four Energy Northwest environmental field teams.

Field team members responding during offshift hours will report to their emergency duty station within 60 minutes. Field team deployment time from their emergency duty station will be as needed, and can be achieved in less than 30 minutes. This is based on the time necessary to brief the team, load equipment, and depart the staging area. This deployment time could be shorter during normal work hours when field team personnel are more available and could respond sooner than the 60 minute required response time.

Field monitoring will concentrate in the downwind area from the plant. Locations used during the normal environmental monitoring program will be used as preselected monitoring points when applicable (Figure 5-1).

5.4.2 Aerial Monitoring

Aerial monitoring may be used to locate a plume in a delayed or extended release, or to identify areas of radioactive deposition following a release. Aerial monitoring capability is available through federal emergency resources. The decision to employ aerial monitoring will be made by representatives of the Washington Department of Health, Oregon Department of Health, US Department of Energy, and Energy Northwest. Any request for federal resources to conduct aerial monitoring will be directed through the Washington State Emergency Operations Center (EOC).

5.4.3 Environmental Field Team Kits

Environmental field team monitoring kits are maintained in a state of readiness. Additional supplies and equipment are available to replace equipment out of service for repair and recalibration. Equipment in the calibration laboratory provides an additional resource. Appendix 3 provides lists of equipment and their location.

5.4.4 Radioiodine Determinations

Environmental air samples are analyzed for particulate and radioiodine concentrations. Analysis of particulate filters and iodine sampling cartridges are performed using a portable count rate meter. Procedures concerning sampling time and field analysis techniques are established to measure airborne radioiodine concentrations as low as 10^{-7} microcuries per cubic centimeter under field conditions.

5.4.5 Laboratory Capability

Laboratory analysis of environmental field samples can be conducted at Energy Northwest facilities as described in Section 6.2.8 of this Plan. In addition, the States of Oregon and Washington both maintain laboratories under the direction of their respective Departments of Health. These laboratories have the capability to identify, both qualitatively and quantitatively, the constituent elements that might be contained in radiological releases from WNP-2 during a nuclear incident. Following such an event, samples of air, drinking water, milk, pasture and other agricultural products would be obtained by field teams and brought to the labs for analysis. The results of this analysis would then be used to determine the

existence of radiological hazards in food products. The specific capabilities of the state laboratories are evaluated by FEMA.

5.5 PROTECTIVE ACTION AND RESPONSIBILITIES

The appropriate protective actions for an airborne release of radioactive material are evacuation and sheltering. The decision to evacuate or shelter is based on the dose to be avoided by the protective action relative to the risk associated with implementing a protective action. Dose to be avoided by a protective action can be affected by duration and quantity of radioactive release as well as time of release relative to time of implementation of the protective action. Protective Action Guides, discussed in Section 5.5.1, provide pre-planned guidance for making response decisions. When applied with professional judgement, they help to ensure rapid action to protect members of the public. Specifically:

a. Evacuation - Evacuation and control of access to an affected area can be the most effective protective action for reducing the dose to the public. However, constraints such as severe weather conditions, obstruction of roads, and limited time may impact the benefits of evacuation.

b. Sheltering - Sheltering in buildings with windows and doors closed and ventilation turned off can provide partial protection from a passing radioactive plume. The extent of the protection depends on the duration and isotopic mixture of the release and the type of building.

The provisions for relating measured parameters to dose rates for key isotopes and for estimating integrated dose from projected and actual dose rates shall be described in procedures.

5.5.1 Recommendations to Counties, States and Department of Energy-Richland Operations (RL)

Energy Northwest will make prompt recommendations for protective actions to state, county and DOE-RL officials. These officials will make decisions on the specific actions to be implemented in their jurisdiction.

Protective Action Recommendations (PARs) will be made based on plant or radiological conditions. Recommendations for evacuation and sheltering of certain areas are required upon classification of a General Emergency without regard to whether a radiological release is occurring. If plant conditions and a radiological release both warrant PARs, the most conservative recommendation will be made.

Shelter, evacuation or access control guidelines are based on the EPA Protective Action Guidelines and NUREG-0654 Supplement 3 recommendations.

The preferred initial action to protect the public from a severe reactor accident is to evacuate immediately about two miles around the plant and 10 miles downwind unless other conditions

make evacuation dangerous. Persons in the remainder of the plume zone should be directed to stay indoors and listen to EBS/EAS broadcasts while the situation is evaluated further.

Travel conditions that may present extreme hazard may prompt offsite officials to recommend shelter until conditions improve. Shelter may also be appropriate for special, transit-dependent populations, or during controlled, short duration releases of radioactivity.

Plant and offsite officials will continue to assess plant conditions to determine additional protective actions. These protective actions should be based on field monitoring data and dose projections that indicate EPA PAGs may be exceeded in areas beyond those that have been evacuated.

5.5.2 Energy Northwest Responsibilities

Primary responsibilities of Energy Northwest associated with offsite area protective actions are to:

a. Provide the best possible effort to resolve the emergency onsite, thus alleviating the offsite condition.

b. Notify the affected county, DOE, and state officials responsible for Protective Action Decisions of the emergency condition and provide the best possible information, recommendations, and support services.

c. Coordinate Energy Northwest actions with those of federal, state, and local agencies involved in implementing protective actions.

d. Ensure that all required agencies are advised of the protective actions recommended and provided periodic updates.

5.6 POPULATION DISTRIBUTION

Figures 5-3 and 5-4 present the compass sector population estimates for the WNP-2 Site. Estimates for the Ten-Mile Emergency Planning Zone were acquired from population surveys conducted by the Benton and Franklin County Offices of Emergency Management. The transient industrial worker populations on the Hanford Site have been updated by the appropriate facilities. Transient recreationist figures for the Columbia River and Horn Rapids areas were updated through contacts with local representatives of the Washington Department of Fisheries and the Washington Department of Wildlife.

5.6.1 Permanent Residents

Permanent residents include all persons residing in the area. In 1996 an estimated 3,044 people were living within the Ten-Mile Emergency Planning Zone. The nearest inhabitants occupy farms which are located east of the Columbia River and are thinly spread over five compass sectors. There are no permanent residents located within three miles of the site. About 274 persons reside between the three-mile and the five-mile radii; these are all located east of the Columbia River. Of the 3,044 people residing in the Ten-Mile Emergency Planning Zone, about 2,186 live in Franklin County and about 858 in Benton County.

There are no significant changes in land use expected in Franklin County over the next several years. As it is currently irrigated to about the maximum amount practicable, little population increase is foreseen. No significant change in land use on the Hanford Reservation is expected, and no foreseeable population will reside there. The unincorporated area near the Horn Rapids Dam on the Yakima River in the SSW sector is expected to be the primary growth area within the Ten-Mile Emergency Planning Zone. Population growth within the Ten-Mile Emergency Planning Zone is projected to be about 6% per annum.

5.6.2 Transient Population

The transient population is divided into three main subgroups: 1) industrial employees, 2) migratory agricultural workers, and 3) recreationists. Figure 5-4 illustrates this population location graphically.

Industrial employees in the Ten-Mile EPZ total 7,926. Most will be located in Benton County and form the main population to be evacuated. About 1200 industrial employees work at WNP-2 and at the Plant Support Facility.

Industrial employment in the Ten-Mile Emergency Planning Zone includes:

WNP-1 (Energy Northwest & Non-Energy Northwest personnel) (5/96)	27
Ashe Substation (5/96)	10
WNP-2 (5/96 Operational dayshift value)	728
Plant Engineering Center (5/96)	246
Plant Support Facility (5/96)	122
DOE 400 Area (FFTF, Fast Flux Test Facility) (5/96)	454
Siemens Nuclear Power Corporation (5/96)	800
DOE 300 Area (5/96)	1,671
DOE 3000 Area, (Battelle and other contractors in POB area) (5/96)	2,896
Battelle (Private) (5/96)	972
TOTAL	7,926

The majority of these employees work days, but there may be some shift workers in the DOE figures. Credit is not deducted from the population values due to emergency personnel remaining in place. Therefore, the planning figure of 7,926 to be evacuated is conservatively high.

There are up to approximately 4,244 migrant farm workers in the Ten-Mile Emergency Planning Zone. This figure may be high due to the possibility of double counting during the different harvest periods. The peak season for these workers is May and June; the next highest employment season is during the fall harvest. These workers consist of both permanent and temporary residents of the Tri-Cities area, some living within the Ten-Mile Emergency Planning Zone. The numbers shown on Figure 5-4 and Table 5-1 reflect their work locations in Franklin County within the Ten-Mile Emergency Planning Zone, not their residences.

Recreationists, consisting of hunters, fishermen and boaters, enjoy activities mainly along the east bank of the Columbia river. The primary fishing season is from June through November; the main hunting season being October through January. The heaviest use of the area by recreationists is on weekends and holidays in the early morning hours. On the average, 52 fishermen and 80 hunters are present in Franklin County during the weekdays. This increases to about 155 fishermen and 200 hunters on weekends and holidays. Recreationists also use the Yakima River with an estimated maximum of 42 at any time in this area. During peak fishing or hunting times, up to 1,275 fishing and hunting recreationists may be located

within the Ten-Mile Emergency Planning Zone. Of these, 1,233 are assigned to Franklin County and 42 to Benton County.

The main concentration of recreationists consists of fishermen located just south of the Ringold Fish Hatchery spillway on the Franklin County side of the Columbia River. Hunting consists of both water fowl, hunted at the Wahluke Hunting Area on the Franklin County side of the Columbia River, and upland game birds, hunted inland on the farm land of Franklin County. Up to 600 recreationists may be located around the Ringold Fish Hatchery and the Wahluke Hunting Area and the rest distributed inland.

An additional recreation attraction is in the south section of the Ten-Mile Emergency Planning Zone in Benton County as an Off-Road Vehicle Park (ORV). As many as 1,500 participants and spectators may be present during an event. Thus, a maximum total of 2,775 recreationists may be located within the Ten-Mile Emergency Planning Zone. Additional provisions have been made for the Horn Rapids housing development and golf course.

5.6.3 Special Facility Population

There are no individuals within the Ten-Mile Emergency Planning Zone confined to facilities such as hospitals, nursing homes, or penal institutions. There are four schools, the Edwin Markham Elementary School, the Country Haven Academy, the Country Christian Center, and the Big River Country School, with a total enrollment of approximately 580 (students and faculty). Most of the students live within the Ten-Mile Emergency Planning Zone.

5.7 EVACUATION ROUTES AND ASSISTANCE CENTERS

5.7.1 Public Evacuation Routes

The Benton County Fixed Nuclear Facility Response Plan and the Franklin County Radiological WNP-2 Response plan (referred to in Appendix 1) contain information concerning evacuation routes and assistance centers for personnel who would be evacuated from the Ten-Mile Emergency Planning Zone. See Figure 5-5 for Assistance Center locations.

5.7.2 Site Evacuation Routes

Several evacuation routes are available to site personnel. These are shown in Figure 5-5 and include:

a. Route 4 South - This four-lane road leads southeast from the site to Richland and is the main route from the plants.

b. Route 10 South - A two-lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads on into Richland.

c. Route 4 South - A two-lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.

d. Route 2 South - A two-lane road leading north from the plants, intersecting with Highway 240 and Highway 24 to Yakima.

All of these roads have an expected vehicle capacity of between 1200 and 1800 vehicles per lane per hour.

5.7.3 Plant and Nearby Facilities Evacuation

Radiological conditions may dictate evacuation of the plant and nearby facilities. If an evacuation of the plant is ordered by the Emergency Director, plant personnel, visitors, and contract personnel other than those with emergency functions will evacuate plant areas. Procedures and equipment are provided to immediately determine the habitability of the area. Preliminary surveys will also be made to determine the contamination or exposure status of personnel and identify those individuals needing decontamination.

For a Site Area Emergency or General Emergency, personnel within the Protected Area may be evacuated to the Plant Support Facility (PSF) or Energy Northwest's Richland Office Complex, for monitoring or decontamination as necessary. Procedures provide for personnel accountability and assessment of contamination/exposure status. Personnel that do have assigned emergency functions will proceed to their emergency center.

Non-essential personnel in the Exclusion Area will be evacuated as needed at a Site Area Emergency or General Emergency. They will be directed to go home if radiological contamination concerns do not exist, otherwise they will be directed to the Richland Office Complex (or other area as appropriate and designated by procedure). Personnel assigned emergency functions will proceed to their emergency center.

5.7.4 Radiological Monitoring and Decontamination of Personnel

Personnel will be monitored for contamination prior to leaving the plant if conditions permit. Whole body friskers and portable detectors are available at the plant exit. Personnel decontamination facilities in the plant include showers, sinks, and cleaning agents. Decontamination capabilities for emergency purposes are also available at the Plant Support Facility, at remote decontamination locations, and for injured personnel at the Hanford Environmental Health Foundation Emergency Decontamination Facility in Richland.

For the general population, monitoring will be conducted under provisions of the Benton and Franklin County Fixed Nuclear Facility Response Emergency Plans. Emergency Worker/ Assistance Centers (EWAC) are identified for the monitoring of personnel leaving the affected sectors of the 10 mile EPZ. Personnel evacuated from affected segments of the Columbia River will be monitored when necessary at a location along the river. The Washington State Department of Health will be in charge of the monitoring and decontamination effort.

5.7.5 Personnel Accountability

Personnel accountability will be conducted at predetermined locations. The Operations Support Center Manager is responsible for ensuring performance of accountability within the Protected Area and reporting the results to the TSC Manager or Shift Manager if the TSC is not activated. Non-essential personnel will be logged offsite utilizing the electronic access control system or personnel logs. The goal is to complete personnel accountability inside the Protected Area within 30 minutes. The last known location of unaccounted individuals will be obtained and search and rescue procedures initiated to locate the missing individuals.

For the Exclusion Area, personnel are alerted by the evacuation siren, public address announcement or telephones and will follow evacuation procedures. Energy Northwest personnel will be available to initiate the search and rescue procedures as needed.

5.8 EVACUATION TIME ESTIMATES

Evacuation time estimates for the WNP-2 site have been developed in the WNP-2 Ten Mile EPZ Evacuation Time Estimate Study, Revision 3, June 1996. Table 5-1 of this section summarizes the results.

5.8.1 Emergency Planning Zone Sub-Areas

The Ten-Mile Emergency Planning Zone was divided into several sub-areas as follows:

0-2 miles	entire circumference
0-5 miles	four approximate 90° sections
2-10 miles	four approximate 90° sections
0-10 miles	entire EPZ

The two-mile radius was not subdivided because it contains no residential population and the only institution populations are transients all working on contiguous Energy Northwest properties. Only three of the four 5 and 10 mile sectors (about 90°) were examined because the fourth, entirely on the Hanford Reservation, contains no residential, transient or special population. These sectors are graphically shown on Figure 5-5. The Columbia River forms a natural border between Benton and Franklin Counties and was used to form the division between Sector 2 and Sector 3. Franklin County was divided, approximately in half, since it was assumed that those persons north of the plant location would evacuate north toward Mesa and Connell and those persons south of the plant would evacuate south towards Pasco. When making estimates for outer portions of the sectors it was assumed that the inner adjacent portions were being simultaneously evacuated.

5.8.2 Notification, Preparation, Response and Confirmation Times

The evacuation time estimates shown in Table 5-1 include preparation time and response time. Notification times and confirmation times are shown as separate items.

Energy Northwest has established procedures to notify officials of Washington State, Benton and Franklin Counties and the Department of Energy-Richland Operations within 15 minutes of a declaration of any emergency classification. The Energy Northwest early warning system was designed to enable the county to notify the permanent 10-mile population within 15 minutes from the time the decision to take a protective action is made by county officials. Therefore, a maximum of 30 minutes notification time is assumed.

In the event of an evacuation, residents needing transportation are instructed to call the respective county emergency management office to request transportation. The respective emergency management office will dispatch emergency workers to collect these residents. Energy Northwest will be responsible for personnel accountability at Energy Northwest facilities (estimated to take a maximum of 30 minutes). The calculated evacuation time estimates start at the time of the announcement over the Emergency Broadcast System (EBS) or Emergency Alerting System (EAS) station to begin evacuation and end when the evacuation is complete.

The Figure 5-6 series illustrates "S-curves" for various populations and conditions. In the congested traffic environment which is characteristic of an evacuation process, travel time on a roadway section is, to a large extent, determined by the capacity of that section. Roadway capacities were based upon the type of roadway considered and the presence of traffic control. The following table presents the per-lane capacities utilized:

Roadway Type	Per-lane Capacity (Veh/hr)
Freeway	1800
Arterial/Rural Road	1500
Local Street	1200

A vehicle occupancy of three persons per vehicle was generally used for residents and transients. Exceptions are the industrial plants for which 1.5 persons per vehicle was used, the schools for which 35 persons per school bus was used, and the Off-Road Vehicle Park for which 2 persons per vehicle was used.

5.8.3 Adverse Weather

Severe weather conditions such as blizzards, heavy rain storms, flooding, fog, or high winds could seriously hamper evacuation. However, historical records indicate that severe conditions of this nature have occurred rarely in the past. Because of the effect of weather on the capacity of roadway and the fact that capacity is a controlling factor in deriving evacuation times, it is necessary to adjust capacity figures to represent estimated road conditions during adverse weather. Based on limited empirical data, weather conditions such as heavy rain reduce the values of capacity for the highways utilized as evacuation routes by approximately 20 percent. For adverse conditions during the winter months, estimated capacity reductions and free-flow speed reductions of 30 percent each, relative to normal weather conditions are assumed.

5.8.4 Special Facilities

The only special facilities within the Ten-Mile Emergency Planning Zone are Edwin Markham Elementary School, Country Haven Academy, the Big River Country School, and the Country Christian Center, with a total enrollment of approximately 580 students and faculty. Because of the small size of this population, it was considered counted as part of the permanent population in making evacuation time estimates. Buses which could be used in the evacuation are located at the district bus lot in north Pasco during the day. The buses can be dispatched to the schools within the one hour preparation time assumed for this section.

Public transportation, although not specifically identified as being needed, is available to the public in a portion of the Ten-Mile Emergency Planning Zone and is not relied upon for evacuation. The sheriffs' departments will be patrolling the area during an emergency and could make transportation arrangements for anyone not already evacuated.

5.9 RADIOLOGICAL EXPOSURE CONTROL

Radiation exposure limits and guidelines have been established for the control of radiation exposure to workers during an emergency. Facilities are available and arrangements can be made for internal and external personnel dose assessment. The individual functioning as Emergency Director has the responsibility to authorize exposures in excess of 10CFR20 limits or EPA-400 guidance, but can delegate this responsibility if necessary to improve command and control operations.

5.9.1 ALARA Policy

ALARA is an acronym meaning As Low As Reasonably Achievable. Energy Northwest's ALARA policy states:

> "Energy Northwest shall conduct all operations involving radiation and radioactive material such that radiation exposures to employees, contractors and the general public are maintained as low as is reasonably achievable. "Reasonably achievable" takes into account the state of technology and the economics of exposure reduction in relationship to the benefits to health and safety."

The principles of ALARA will be considered during all phases of the emergency and applied where practical. Refer to Section 5.9.3.

5.9.2 Administrative Exposure Hold Points

Administrative exposure hold points are used during normal operations to bring exposures which are or could be significant to the attention of Plant Management. Energy Northwest administrative exposure hold points will be automatically waived upon declaration of an Alert or higher emergency classification. The Radiation Protection Manager (RPM), for onsite, and the Radiological Emergency Manager (REM), for offsite, are still responsible for limiting personnel exposures in keeping with the ALARA philosophy.

Whenever the administrative exposure hold points are waived, efforts shall be made to keep all exposures below 10CFR20 limits.

5.9.3 Protective Action Guides (PAGs)

The Environmental Protection Agency (EPA) has established Emergency Worker and Lifesaving Activity Protective Action Guides as follows:

PROTECTIVE ACTION GUIDES FOR EMERGENCY WORKERS		
DOSE LIMIT	ACTIVITY	PROTECTIVE ACTIONS
5 rem TEDE[1]	ALL	Emergency Workers continuously monitor and limit exposure.
10 rem TEDE	PROTECTING VALUABLE PROPERTY	Evaluate alternatives prior to granting authorization to exceed limits. Exposures above 5 rem require approval of the Emergency Director or designee.
25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Lower doses not practicable.
>25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Provide specific review and decision for each VOLUNTARY life-saving mission. Only volunteers fully aware of the risks should request exceeding this limit.

Energy Northwest will at all times attempt to keep exposures below EPA 400 Guidelines. However, situations such as the following may arise which could necessitate application of the above Protective Action Guides:

a. lifesaving activities
b. removal of injured persons
c. undertaking corrective actions
d. performing assessment actions
e. providing first aid
f. performing personnel decontamination
g. providing ambulance services
h. providing medical treatment services

Permission for emergency workers to receive additional radiation exposure is contained in procedures which includes expeditious decisions and comparison of relative risk.

[1]The total effective dose equivalent (TEDE) is the sum of the deep dose equivalent (DDE) resulting from exposure to external sources and the committed effective dose equivalent (CEDE) projected over 50 years for internal exposures. CEDE is the risk weighted sum of committed dose equivalents (CDE) to organs. CDE is the total dose from an internally deposited radionuclide over the subsequent 50 year period.

5.9.4 Contamination Control

5.9.4.1 Area Access

Controls have been established at WNP-2 to ensure there is no detectable fixed or loose contamination (beta-gamma or alpha) outside of the Radiologically Controlled Area (RCA) under normal or emergency conditions. Energy Northwest policy is to minimize the potential for personnel contamination and to prevent the spread of contamination to uncontrolled areas at all times. Normally all personnel and equipment leaving the RCA are monitored to ensure the limits for contamination levels are met. However, normal in-plant contamination control procedures may be suspended during an emergency by the plant Radiation Protection Manager to allow for prompt emergency response and to minimize personnel exposure to other hazards. Contamination control measures intended to prevent transport of radioactive materials out of the plant or into continuously occupied areas such as the control room shall retain high priority.

5.9.4.2 Personnel

Personnel work practices within the RCA are controlled by Health Physics procedures. Upon leaving a radiologically contaminated area, each worker will normally proceed to the nearest personnel monitoring station which has a background count rate of less than 300 cpm and perform a personal survey. Individuals leaving the RCA are normally monitored for contamination before entering an uncontrolled area.

If survey of an individual indicates contamination levels in excess of established contamination limits, decontamination will be performed. Records will be maintained in accordance with established Health Physics procedures. Potassium Iodide, respirators and protective clothing can be distributed to plant personnel if needed.

5.9.4.3 Decontamination

Decontamination limits apply to personnel and equipment during routine and emergency operations. Only the Radiation Protection Manager or his delegate can waive these limits and then only on a case by case basis.

Normal personnel decontamination is accomplished in the 487′ elevation Radwaste Building decontamination facility. All drains lead to the Radwaste system where the liquid is processed and monitored prior to discharge. During site emergency evacuation conditions, personnel decontaminations can be accomplished at the PSF where a decontamination shower and supplies are maintained.

Energy Northwest policy requires decontamination of personnel, equipment, and material prior to release from a radiologically controlled area according to the criteria found in Chapter 12.5 of the FSAR.

If the contamination cannot be reduced to these limits by reasonable methods, such as with radioiodine skin contamination, the Radiation Protection Manager (for inside the Protected Area) and the Radiological Emergency Manager (for outside of that area) shall determine a further course of action. This may include referral to a local medical facility or placing the individual in an on-going exposure tracking program.

5.9.4.4 Drinking Water and Food Supplies

Radiological surveys will periodically be made in areas where food is stored onsite and isotopic analyses will periodically be made of the WNP-2 drinking water supply. The primary source of potable water for WNP-2 is the Columbia River. It is unlikely that an airborne release of radioactive material could affect this supply.

Offsite vegetation and milk samples are also analyzed routinely as part of the Radiological Environmental Monitoring Program (REMP). In the event of an airborne release of radioactive materials, environmental samples are collected and analyzed.

5.9.5 Personnel Dose Assessment

Routine and emergency personnel exposure monitoring and dose assessments are accomplished by issuing thermoluminescent dosimeters (TLDs), electronic or direct reading dosimeters and monitoring for airborne radioactivity. A twenty-four hour per day capability to analyze Energy Northwest issued dosimetry is available. Energy Northwest maintains a personnel monitoring program through the use of appropriate dosimetry and whole body counters.

5.9.5.1 Thermoluminescent Dosimeters

Issuance of personnel TLDs will be in accordance with established Health Physics procedures. Special provisions are included to increase the frequency of TLD processing, as necessary, during emergencies.

The measured dose as determined by TLDs shall serve as the permanent and official record of the individual's deep dose equivalent (DDE) and skin dose. Radiation dose to the hands, forearms, feet and ankles shall be obtained by placing additional TLDs in those locations when extremity exposure may be the controlling factor.

5.9.5.2 Direct Reading Dosimeters

Electronic or direct reading pocket dosimeters are issued to personnel entering radiologically controlled areas. Personnel shall be instructed to read these dosimeters frequently. Dosimeter readings provide an estimated record of external exposure received on a daily basis.

5.9.5.3 Issuance of Dosimetry to Offsite Emergency Personnel Responding Onsite

Offsite emergency personnel who respond onsite and do not have preassigned dosimetry will be issued the appropriate personnel dosimetry upon arrival at the site access point.

Emergencies requiring immediate response are characterized by the necessity for access by emergency response personnel with minimal or no delay. Examples include fire fighting teams, emergency medical personnel or bomb squads. In this situation, dosimetry will be dispensed by Security personnel at the access point. Procedures are established to ensure dosimeters are read at appropriate frequencies. Dosimetry and necessary personal and exposure information will be collected upon leaving the site. Energy Northwest Security will be provided with sufficient dosimetry devices, procedures, and data forms for this type of occurrence.

Offsite (State and County) personnel responding to the EOF will respond with their own dosimetry or will be provided dosimetry by Energy Northwest if necessary.

5.9.5.4 Airborne Radioactivity Monitoring

The primary method utilized to determine potential internal exposure of plant personnel is the measurement of airborne radioactivity. Standard Health Physics procedures describe the collection and analysis of air samples.

5.9.5.5 Whole Body Counting and In-Vitro Bioassays

Whole body counting and in-vitro bioassay will be available during and after an emergency to aid in determining the extent of an individual's internal exposure to radioactive materials. Measurements of radioactivity in the body (in-vitro), and/or radioactivity excreted from the body (in-vitro), will be performed as necessary. This will enable timely evaluation of uptakes of radioactive material whenever it is suspected that the individual has been exposed to airborne radioactivity above predetermined levels specified in established procedures.

5.9.5.6 Radiation Exposure Records

Exposure records are maintained by the Total Exposure System for external and internal radiation exposure for each person entering a radiologically controlled area at an Energy Northwest nuclear facility. These records include external dose [Deep Dose Equivalent (DDE)], skin and extremities dose [Skin Dose Equivalent (SDE)] and internal dose [Committed Dose Equivalents (CDE)] determined by dosimetry, whole body counting and/or in-vitro bioassay.

5.9.6 Respiratory Protection

Selected personnel assigned in-plant emergency response duties are trained in the use of respiratory protective equipment and qualified through quantitative respiratory fit testing. Respiratory protective equipment is maintained at strategic locations in the plant with backup supplies available. Respiratory protection under emergency conditions is administered in

accordance with normal operating procedures with special provisions for prompt emergency action requirements.

Facilities and equipment are available to qualify outside response personnel on the use of respiratory protective equipment.

5.9.7 Thyroid Blocking Agent

Potassium Iodide (KI) is maintained for use by emergency workers at strategic locations.

In the event of a release involving radioiodine, the TSC Manager, in consultation with the Radiation Protection Manager, will issue instructions concerning the use of potassium iodide by in-plant emergency workers. The EOF Manager, in consultation with the Radiological Emergency Manager, will issue instructions to Energy Northwest environmental field teams and emergency workers in the Exclusion Area concerning the use of potassium iodide and will recommend that other offsite (State, County, etc.) emergency workers be issued instructions concerning use of potassium iodide. The EOF Manager will forward his recommendations to the appropriate offsite authorities. The thyroid blocking capability of KI is most effective when taken prior to or immediately after exposure to radioiodine. Therefore, a timely decision is necessary concerning this action.

Whenever offsite resources are expended, Energy Northwest will provide KI, along with personnel monitoring, dosimetry and decontamination services, when needed by offsite emergency workers.

Description	Total Within 2 Miles	Areas Within 5 Miles				Areas Within 10 Miles			
		I	II	III	Total	I	II	III	Total
Permanent Population	-	124	40	-	164	1050	1136	858	3044
Permanent Population Vehicles	-	41	13	-	54	347	380	286	1013
Transient Population	1133	1744	141	1560	3445	1571	7154	3931	12,656
Transient Population Vehicles	971	581	64	964	2580	5763	2636	2944	6102
General Population	1133	1868	181	1560	3609	2621	8290	4789	15,700
Total Vehicles	971	622	77	964	2634	670	3016	3230	7115
Notification Time Minutes	15	30	30	30	30	30	30	30	30
Permanent Population Evac. Time Normal Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Normal Conditions Hours Minutes	1:00	1:00	1:00	1:30	1:30	1:30	1:20	2:15	2:15
Permanent Population Evac. Time Adverse Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Adverse Conditions Hours Minutes	1:30	1:00	1:00	2:00	2:00	1:30	1:30	2:30	2:30
Confirmation Time Minutes	30	60	60	60	60	60	60	60	60

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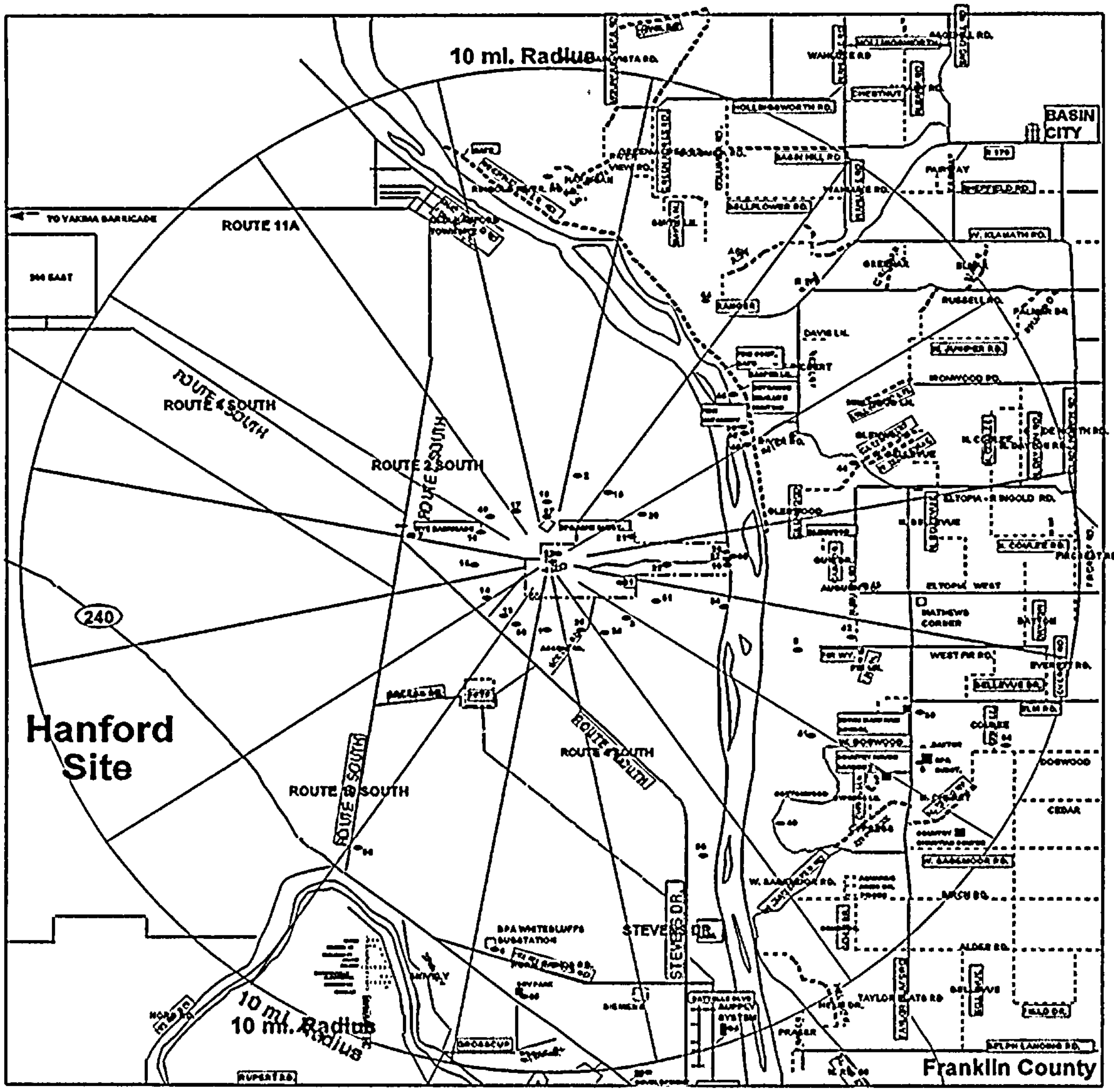
Table 5-1, Summary of Results of Evacuation Times Analysis



Station	Reactor	Radial Miles*	TLD	AP/AI
1	S	1.3	O	X
2	NNE	1.8	O	
3	SE	2.0	X	
4	ESE	9.3	O	O
5	ESE	7.7	O	X
6	S	7.7	O	X
7	WNW	2.7	O	X
8	ESE	4.7	O	O
9A*	WSW	30.0	O	O
9B*	WSW	35.0		
9C*	WSW	33.0	O	
10	E	3.1	X	
11	ENE	3.1	X	
12	NNW	6.1	O	
13	SW	1.4	O	
14	WSW	1.4	O	
15	W	1.4	O	
16	WNW	1.4	O	
17	NNW	1.2	O	
18	N	1.1	O	

Station	Reactor	Radial Miles*	TLD	AP/AI
19	NE	1.8	O	
20	ENE	1.3	O	
21	ENE	1.5	X	X
22	S	2.1	O	
23	ESE	3.0	X	X
24	SE	1.9	O	
25	SSE	1.6	O	
26*	E	3.2		
27	E	3.2		
29	SSE	11.0		
30	E	3.5		
31	E	1.1		
32	E	1.2		
33	ENE	3.3		
34	ESE	3.3		
35	ENE	10.5		
36	ESE	7.2		
37A	SSE	17.0		
37B	SSE	16.0		
38*	E	26.5 (95.0)		

Station	Reactor	Radial Miles*	TLD	AP/AI
40	SE	6.4	O	O
41	SE	6.8	O	
42	ESE	6.6	O	
43	E	5.7	O	
44	ENE	6.7	O	
45	ENE	4.2	O	
46	NE	4.7	X	
47	N	0.5		O
48	NE	4.3	O	
49	NW	1.2	O	
50	SSW	1.2	O	
51	ESE	2.1	O	
52	N	0.1		
53	N	7.6	O	
54	NNE	6.6	O	
55	SSE	7.0	O	
56	SSW	7.0	O	
57	N	0.7		O
65	S	8.7		X

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LEGEND
PAVED ROAD
IMPRVD RD OR GRVL ROAD
BOUNDRY LINES
SCALE

- Control location.
X Sample collected at station (non-ODCM)
O Offsite Dose Calculation Manual (ODCM) sample collected at station.
* Estimated from center at WNP-2 Containment from map position.
AP/AI Air Particulate and Iodine

Figure 5-1, Environmental Sampling Points

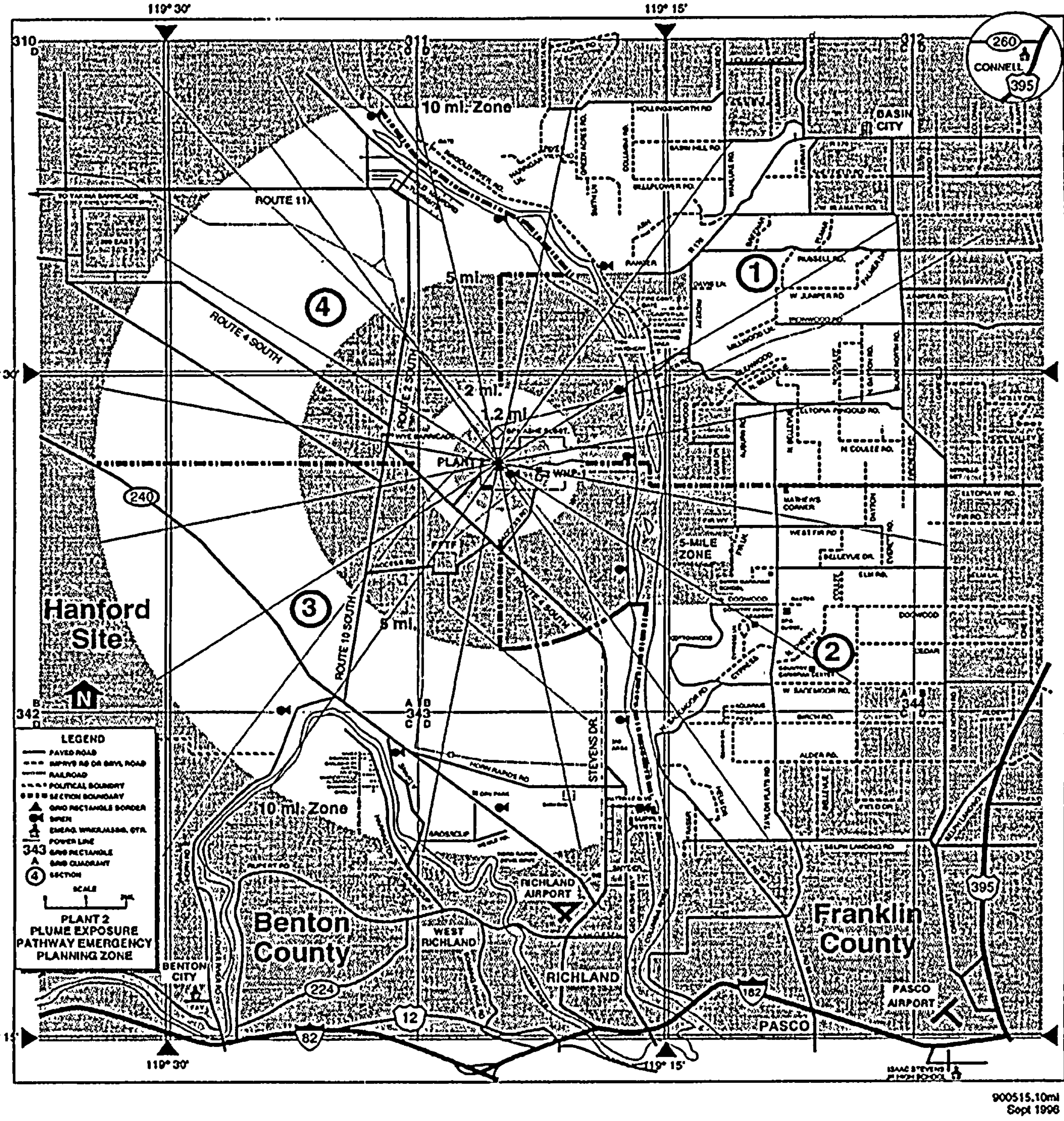
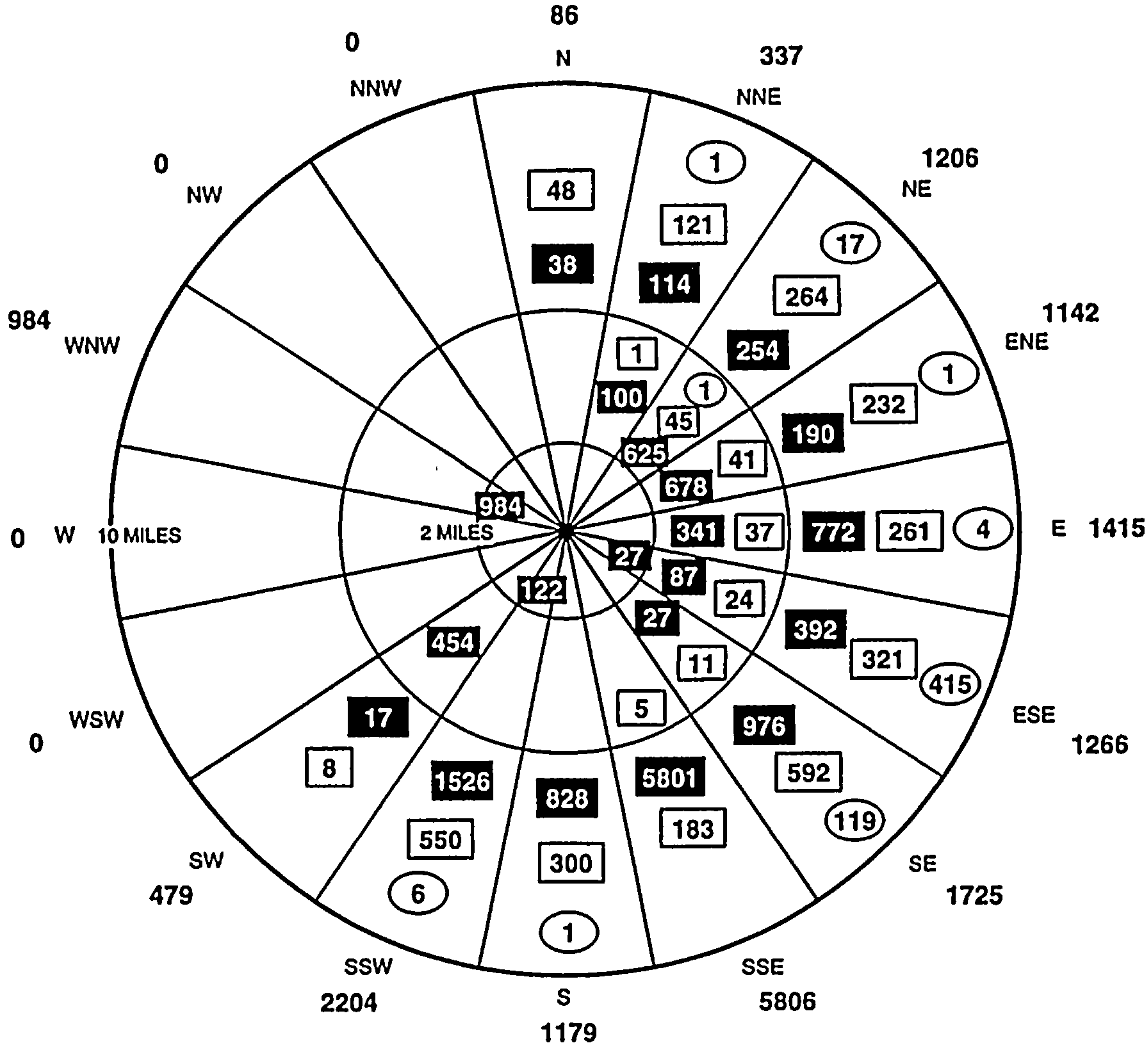


Figure 5-2, Ten Mile Grid Map



POPULATION TOTALS - PERMANENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	164	0-5	164
5-10	2880	0-10	3044

POPULATION TOTALS - TRANSIENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2312	0-5	3445
5-10	10,775	0-10	14,220

POPULATION TOTALS - SPECIAL			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	1	0-5	1
5-10	564	0-10	565

POPULATION TOTALS			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2477	0-5	3610
5-10	14,219	0-10	17,829

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Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down Into Classifications

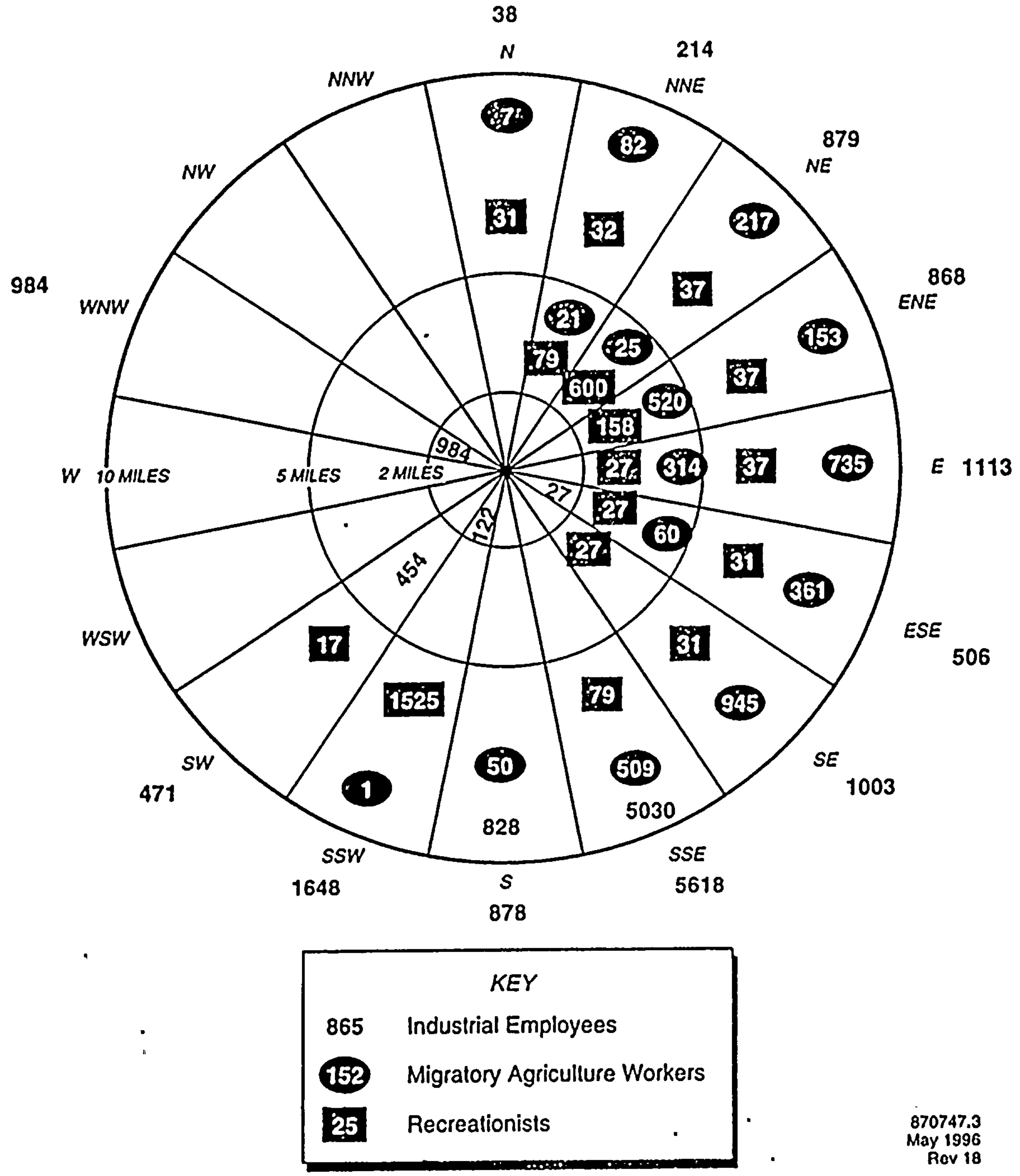


Figure 5-4, Distribution of Transient Population Within 10-Mile EPZ

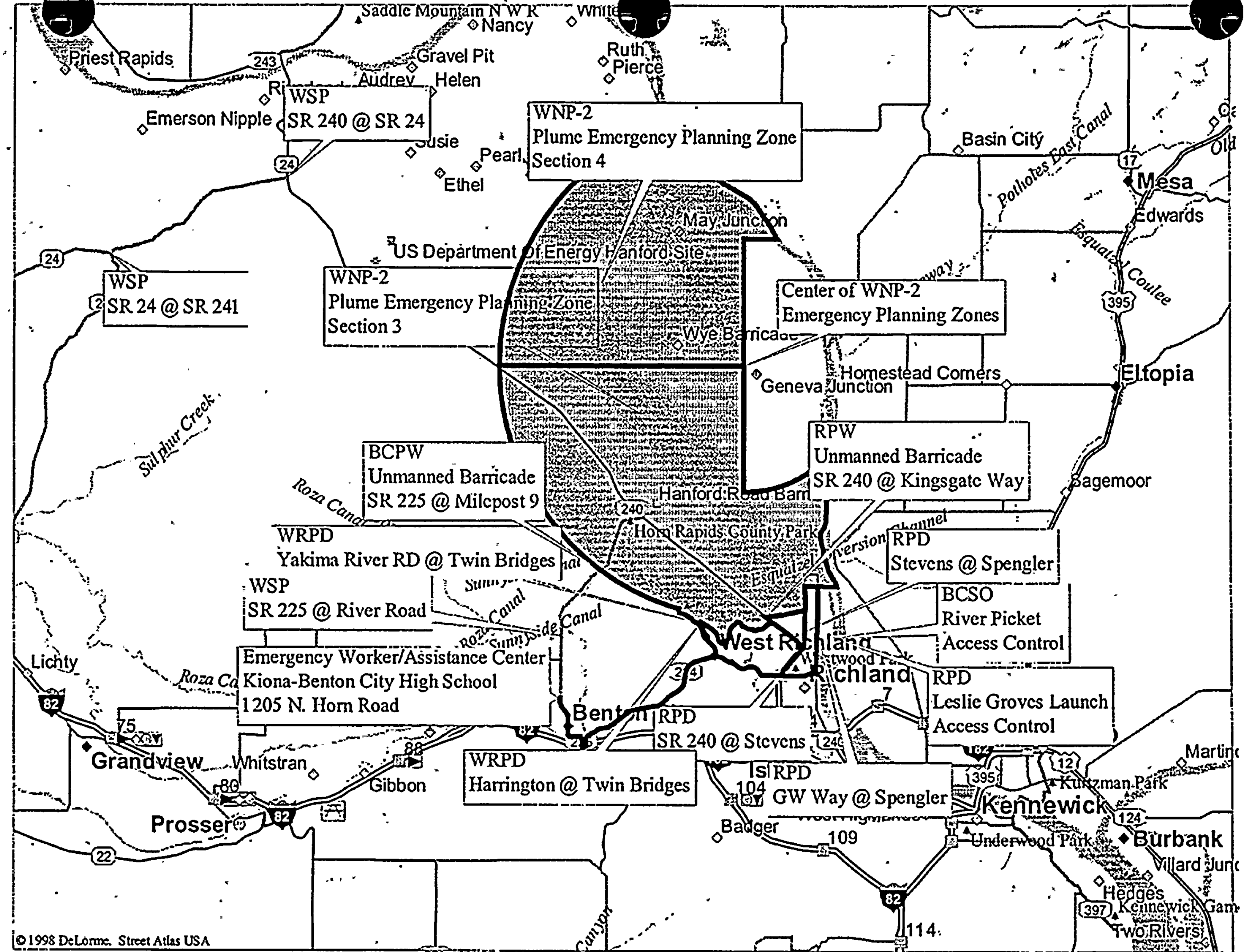


Figure 5-5, Benton County Evacuation Routes

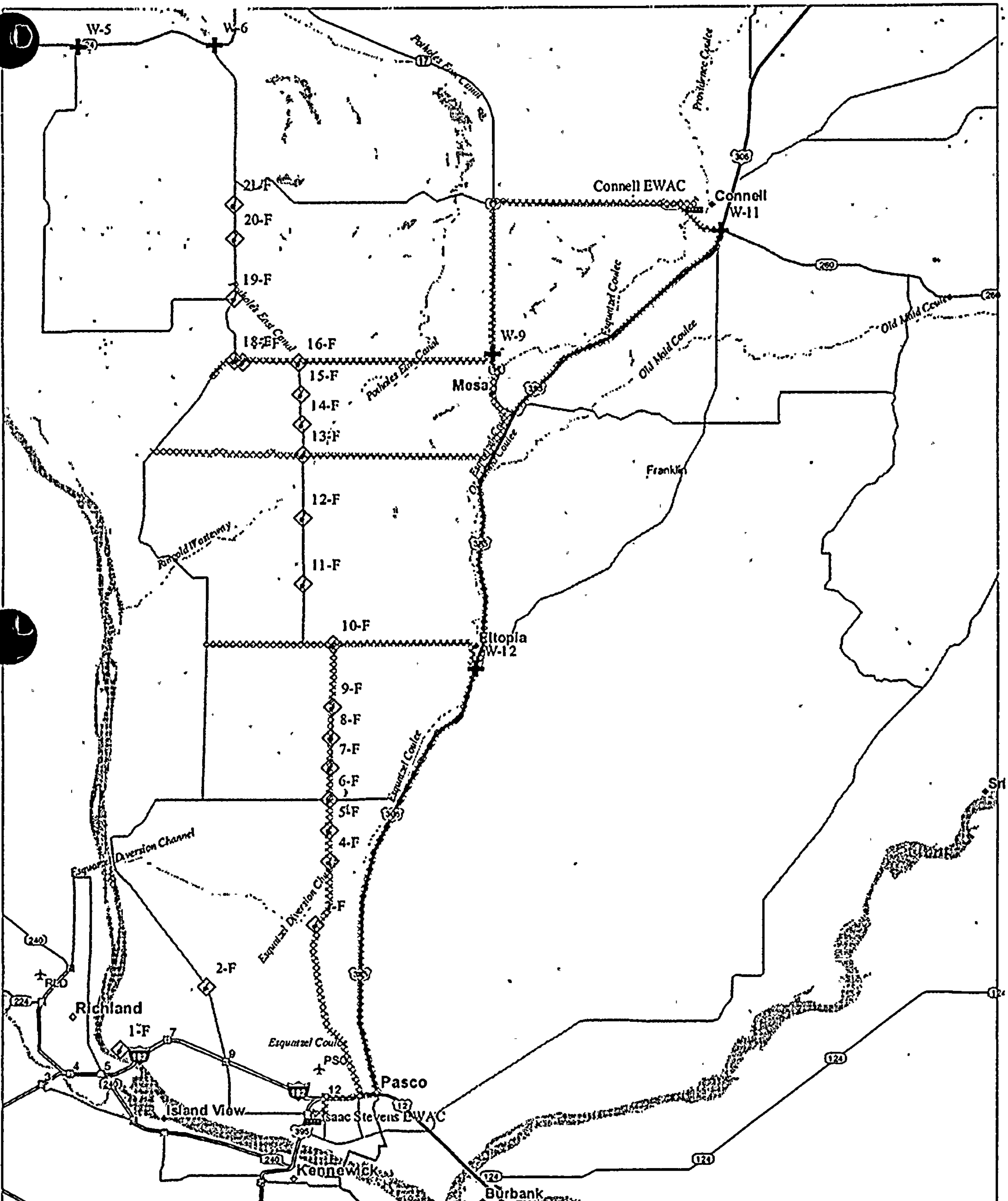


Figure 5-6, Franklin County Evacuation Routes

FRANKLIN COUNTY ACCESS CONTROL POINTS

ID #	LOCATION	RESPONSIBLE AGENCY
1-F	Road 68 @ Dent	Pasco PD
2-F	Dent Rd @ Court St	Pasco PD
3-F	Selph Landing @ Glade North	FC Sheriffs Office
4-F	Alder @ Glade North	FC Public Works *
5-F	Birch @ Glade North	FC Public Works *
6-F	West Sagemoor @ Glade North	FC Sheriffs Office
7-F	Cedar @ Glade North	FC Public Works *
8-F	Dogwood @ Glade North	FC Public Works *
9-F	Fir @ Glade North	FC Public Works *
10-F	Eltopia West @ Glade North	FC Sheriffs Office
11-F	Ringold @ Glade North	FC Public Works *
12-F	Ironwood @ Glade North	FC Public Works *
13-F	Russell @ Glade North	FC Public Works *
14-F	Klamath @ Glade North	FC Public Works *
15-F	Sheffield @ Glade North	FC Public Works *
16-F	SR 170 @ Glade North	FC Sheriffs Office
17-F	Fairway @ SR 170	FC Public Works *
18-F	SR 170 @ Sagehill	FC Sheriffs Office
19-F	Hollingsworth @ Sagehill	FC Public Works *
20-F	Fern @ Sagehill	FC Public Works *
21-F	North Wahluke @ Sagehill	FC Public Works *
W-5	Hwy 24 @ Mountain Vista	Washington State Patrol
W-6	Hwy 24 @ Sagehill	WSP
W-9	Hwy 17 @ Road 170	WSP
W-11	Hwy 395 @ Connell	WSP
W-12	Hwy 395 @ Eltopia West	WSP

NOTE: Asterisk (*) indicates Access Control Point is an unmanned barricade.

LEGEND:

= EWAC

= Evacuation Route

= Franklin Co. ACP

= WA State Patrol ACP

Figure 5-7

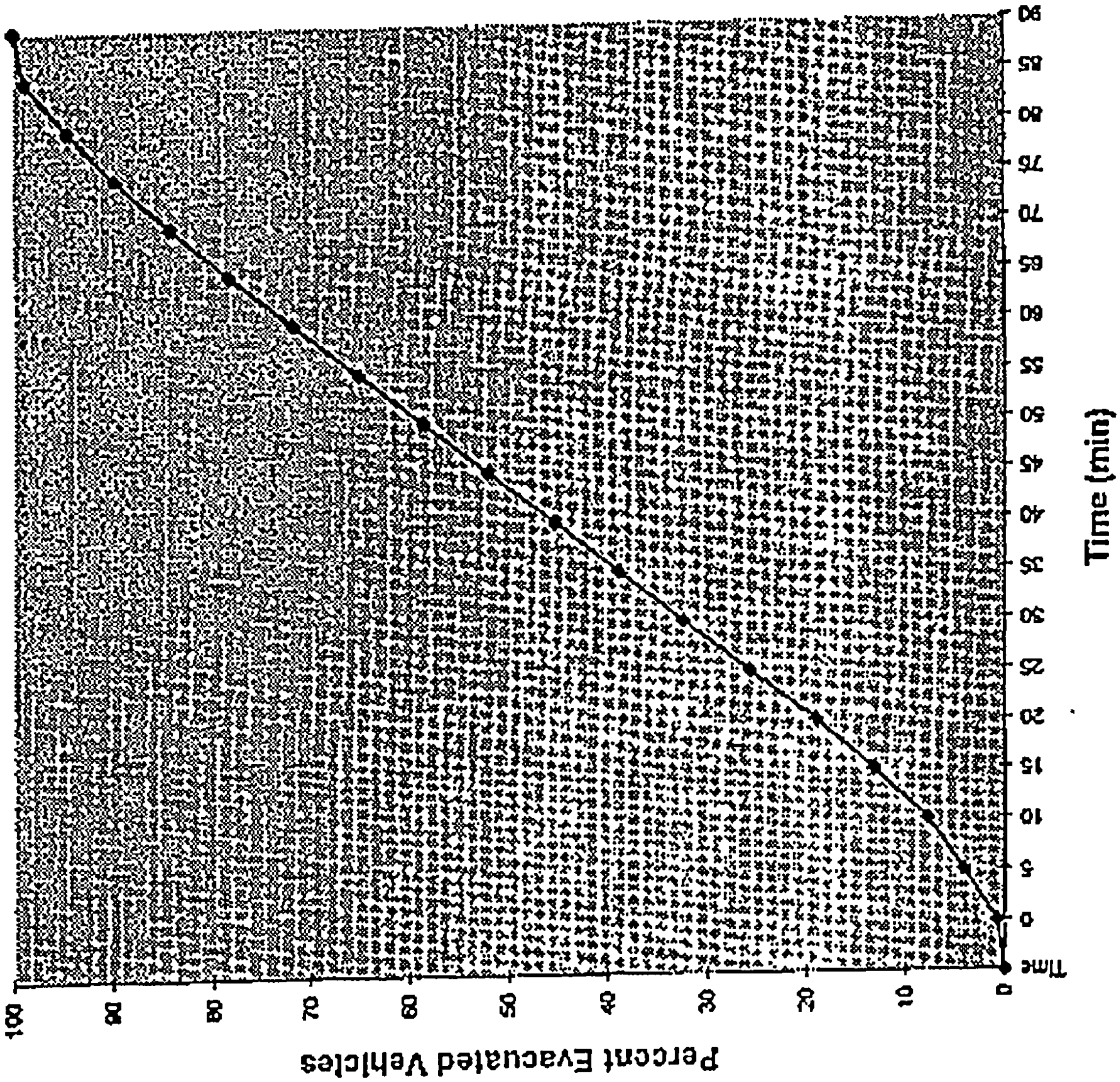


Figure 5-8.A Permanent Population-Normal Conditions

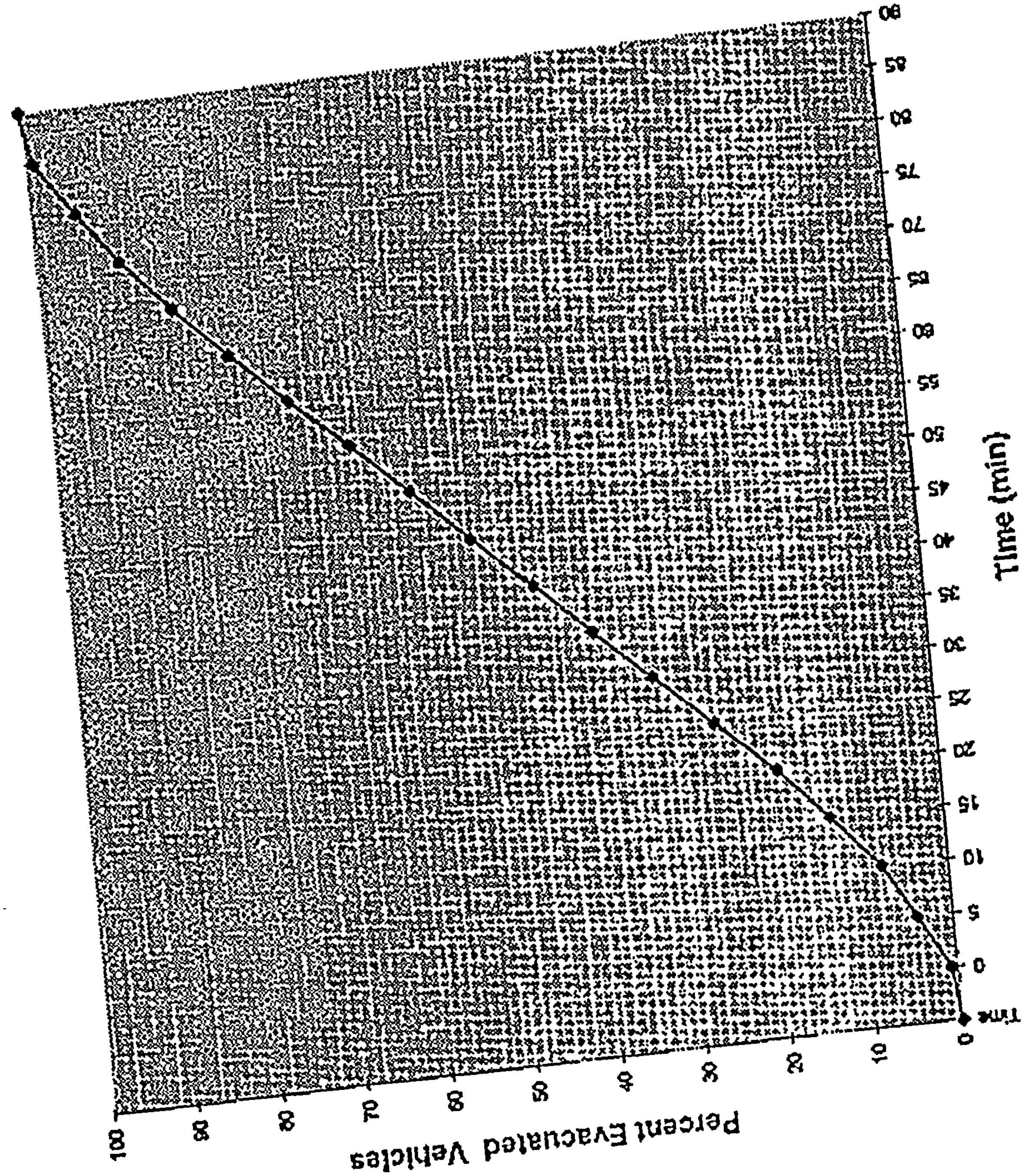


Figure 5-8.B Permanent Population-Adverse Conditions

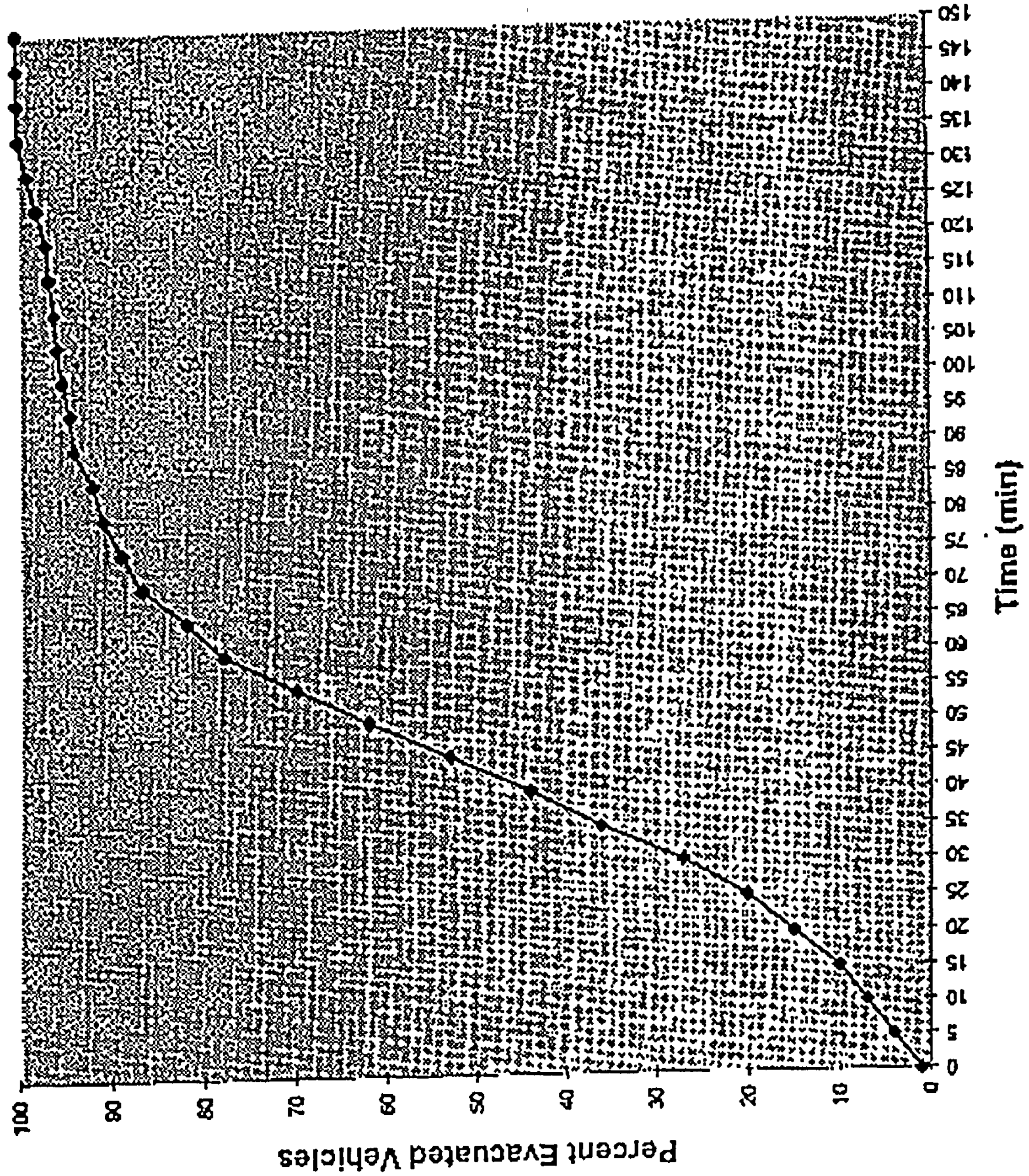


Figure 5-8.C General Population-Normal Conditions

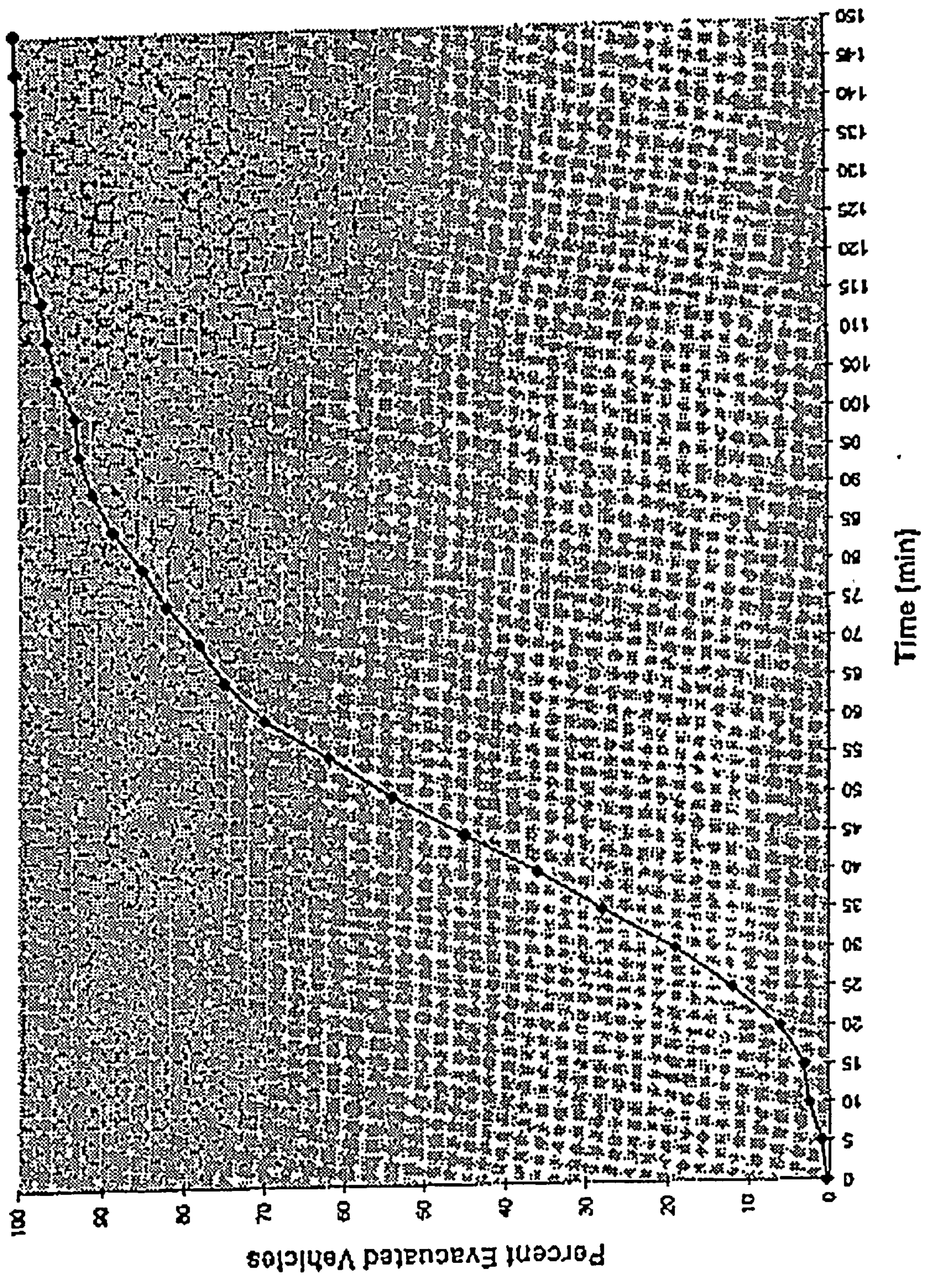


Figure 5-8.D General Population-Adverse Conditions

SECTION 6
EMERGENCY FACILITIES AND EQUIPMENT

6.1 PLANT FACILITIES

Located within the WNP-2 facilities are several areas which will be used for evaluation and initiation of emergency actions. These facilities have the capability to manage the short term response and maintain plant control through sustained emergency and recovery operations.

6.1.1 Control Room

The WNP-2 Control Room is located in the Radwaste Building, adjacent to the Reactor Building, as shown in Figure 6-1. Several entrance/exit points, each with airlocks, are provided. The Control Room contains instrumentation, controls and displays for the nuclear, reactor coolant, electrical, safety and accident monitoring systems and is where an emergency would be initially classified and declared.

The Control Room is staffed by licensed reactor operators and senior reactor operators and is under the direction of the plant Shift Manager twenty-four hours per day. Control Room personnel are responsible for coordinating all emergency response activities until other emergency facilities are activated. Control Room personnel are responsible to diagnose any abnormal plant conditions, perform corrective actions to mitigate the abnormal conditions, manage plant operations and perform initial emergency response activities.

Access to the Control Room during an emergency will be limited to essential personnel such as operators on duty or persons given specific permission for entry by the Technical Support Center Manager or the Shift Manager.

The Control Room has been designed for accessibility and habitability during the occurrences of postulated accidents that could result in the release of fission products and/or hazardous chemicals. To limit inward migration of hazardous materials the Control Room is maintained at a positive pressure with respect to adjacent areas using the pressurization mode of the control room ventilation system. The Control Room will be informed of a sodium oxide release from FFTF. Refer to FSAR section 6.4.4.2.2.

The system has been designed with both normal and remote sources of air to ensure the availability of uncontaminated air at all times. Both HEPA and charcoal filters are included. Shielding is provided to ensure that the combined radiation exposure of Control Room personnel during a postulated design-basis accident would remain within regulatory guidelines.

The Control Room communication system permits contact with the onsite Technical Support Center (TSC), the onsite Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the federal, state and local emergency response organizations on a twenty-four hour per day basis.

6.1.2 Technical Support Center

The WNP-2 Technical Support Center (TSC) is a structure attached to the Radwaste Building on the west side of the plant (refer to Figure 6-1). A typical floor diagram is shown in Figure 6-2. The TSC is as habitable as the Control Room during accidents. The TSC ventilation HEPA filters and charcoal absorbers are the same type as those used for the Control Room System. The ventilation system normal air intake will automatically switch to the Control Room remote air intake upon receipt of an isolation signal. Should the TSC become uninhabitable, the TSC Manager in consultation with radiation protection personnel, will decide on an alternate TSC location and setup where the TSC functions can continue to be performed.

The TSC is activated during an Alert or higher emergency classification and is under the direction of the TSC Manager. The TSC Manager may assume the duties of Emergency Director from the Shift Manager if not transferred directly to the EOF Manager. Staffing includes designated technical, engineering and senior management personnel. Space is available for a small staff of Nuclear Regulatory Commission personnel during emergency conditions.

Functions of the TSC are to provide management and technical support to plant operations personnel during emergencies. This relieves the reactor operators of peripheral duties not directly related to reactor systems manipulation and prevents congestion in the Control Room. The TSC will perform Emergency Operations Facility functions during Alert, Site Area Emergency and General Emergency classifications until the Emergency Operations Facility becomes functional. TSC personnel have ready access to up-to-date plant documents needed to perform emergency functions.

The TSC is the primary onsite communications center for the plant during an emergency. It has reliable voice communications with the onsite Operations Support Center, Emergency Operation Facility, Richland Office Complex, Control Room, NRC, and state and local Emergency Operations Centers.

Plant status, meteorological instrumentation, Plant Display and Information System (PDIS), display equipment and power supplies are provided in the TSC to support a comprehensive analysis of emergency conditions. A power circuit supplies the TSC from a Class 1E source located in the plant. This power source is backed by a diesel generator. Radiological monitoring equipment is available to continuously monitor dose rates and airborne radioactivity concentrations in the TSC. The TSC also assesses plant radiological conditions. In addition, protective equipment such as anti-contamination clothing, respirators and potassium iodide are provided in the TSC should conditions warrant their use.

6.1.3 Operations Support Center

A designated portion of the Service Building will serve as the Operations Support Center (OSC) for WNP-2 and will be activated for an Alert or higher emergency classification. The location of this center is shown in Figure 6-1. If the primary OSC location becomes uninhabitable, the OSC Manager, in consultation with radiation protection personnel, will decide on an alternative OSC setup, and OSC personnel will be evacuated to an alternate location where OSC functions can continue to be performed.

The OSC will be under the control of the OSC Manager who is responsible for dispatching and coordinating in-plant team activities during emergencies. The OSC is activated during an Alert or higher emergency classification and provides a location for coordinated logistic support outside the Control Room.

The OSC Manager has communications necessary to dispatch and coordinate emergency team activities with the Shift Manager and TSC Manager, for other necessary onsite and offsite communication, and for emergency team communications (see Section 6.5). Equipment and supplies are available in the OSC for emergency team use. A list of emergency equipment kits is provided in Appendix 3.

6.1.4 Security Alarm Stations

Two security alarm stations are maintained at WNP-2. The Central Alarm Station (CAS) is the primary security center and is located in a separate building near the Service Building. The Secondary Alarm Station (SAS) is the backup security center located in the Control Room.

6.1.5 Protected Area Access Point

Persons requesting entrance to the plant will report to the Protected Area Access Point. Security will issue dosimeters as needed, maintain personnel accountability, and notify the onsite Operations Support Center of the arrival of persons and receive permission to allow entry. In situations which require immediate access by personnel and equipment, such as fire or medical emergencies, Security will be notified to permit immediate entry. The Security Shift Lieutenant will coordinate with the Technical Support Center Manager for implementation of the Safeguards Contingency Plan.

6.1.6 Personnel Decontamination and First Aid Facilities

First aid equipment kits required by the Washington Industrial Safety and Health Act are located as close as feasible to areas which have the heaviest concentration of workers. Designated locations are similar to those shown in Appendix 3.

Initial first aid for employees is provided by the Fire Brigade Team (FB) which is composed of first aid trained personnel who are designated FB members during each work shift.

Medical emergencies are reported via a special phone number that is posted throughout the plant. The special number rings into the Control Room where personnel can then dispatch FB members to an emergency by radio, telephone, or by the plant public address system.

Fire Brigade members receive initial and annual continuing education training in first aid from an in-house program that is certified as meeting "First Responder" requirements by the State of Washington.

A decontamination facility is provided on the 487′ elevation of the Radwaste Building (refer to Figure 6-3). The facility consists of a large shower area with drains connected to the radwaste effluent treatment system. First aid equipment and decontamination supplies are located nearby and will be used whenever a contamination incident is involved. Decontamination will also be implemented as necessary at the Richland Office Complex and Emergency Worker Assistance Centers (EWACs)

6.2 EMERGENCY OPERATIONS FACILITY (PLANT SUPPORT FACILITY)

A Plant Support Facility is located 0.75 miles southwest of WNP-2. This facility is used to support normal plant operations and includes a 20,000 square foot shielded area in the lower level which includes the 4,500 square foot Emergency Operations Facility (EOF).

A typical floor plan of the Plant Support Facility is shown in Figure 6-4. The EOF contains several functional areas which are provided for various groups and will be activated as necessary for an Unusual Event and fully for an Alert, Site Area Emergency or General Emergency.

The EOF is under the direction of the Emergency Operations Facility (EOF) Manager and assists the plant by handling those functions associated with evaluating and minimizing the offsite effects of the accident, as well as supporting the TSC and Control Room with technical data analysis. This assistance includes such functions as field monitoring, dose projections, area security, interfacing with outside organizations, recommendation of protective actions for the public, assisting the plant technical staff, public information, administrative services, scheduling of personnel, and establishing a recovery program. If response to the primary EOF is hampered by radiological or other conditions, personnel unable to respond to the primary EOF will be directed to respond to the alternate EOF located at the Energy Northwest Richland Office Complex. Sufficient telephone links are available at the alternate EOF to communicate with the primary EOF and TSC. If the primary EOF location becomes uninhabitable, the EOF Manager in consultation with radiation protection personnel, will determine whether to evacuate the primary EOF, what equipment to take, and where to relocate. Select EOF staff will then evacuate and continue to perform the EOF functions.

The EOF will be used by representatives of the various offsite agencies to coordinate activities, resolve problems, maintain duty rosters, and make periodic status reports to their respective agencies. A close working relationship between these agencies and Energy Northwest is essential to the success of operations involving the general public. The personnel in the EOF receive information from all functional areas and provide clarifications to their respective agencies. Periodic briefings will be provided by Energy Northwest personnel to keep Energy Northwest and offsite agency personnel up-to-date on plant conditions and emergency measures underway.

The EOF is not used as a normal work location outside of drill and emergency use. It is subjected to periodic walkdowns by emergency preparedness personnel, as well as regularly scheduled inspections to ensure its readiness.

6.2.1 Emergency/Recovery Operations Area

The EOF Manager and his immediate staff will coordinate activities from the Emergency/ Recovery Operations Area of the EOF. The EOF Manager is responsible for the overall emergency effort and provides the necessary support to the TSC Manager. The Emergency/ Recovery Operations Area will maintain up-to-date information on plant and offsite status, recovery planning and scheduling, and will function as the designated area for periodic update briefings with selected personnel assigned to the EOF, including outside agency personnel.

6.2.2 Engineering Support Area

A segment of the EOF is designated as an Engineering Support Area which is established for use by Energy Northwest's engineering personnel, and architect/engineers, vendors, and contractors requested to assist Energy Northwest. A technical data information system including meteorological, radiological, and plant system status is available. Essential plant technical information is available in this area.

Using this area in the EOF, personnel from organizations outside the plant staff can provide needed technical assistance without responding directly to the plant. This provides technical personnel readily available to the plant if needed. The Engineering Support Area also provides a secondary location to track plant conditions and provides current and projected plant status reports to MUDAC and to the EOF Manager for inclusion in the formulation of Protective Action Recommendations.

6.2.3 Logistics Support Area

A designated portion of the EOF is established for logistics support functions which are provided by the Site Support Manager and staff. The Site Support Manager and his staff will provide general administrative support and logistical support to the EOF staff and as directed for other emergency centers.

6.2.4 Meteorology and Unified Dose Assessment Center

The Meteorology and Unified Dose Assessment Center (MUDAC) is utilized as a joint center by Energy Northwest, DOE-RL, and States of Washington and Oregon Departments of Health to coordinate field team operations, project dose rates, record actual measured dose rates during an emergency, and determine protective action recommendations. The computerized Emergency Dose Projection System as described in Section 5 is located in this center. Actual and projected doses obtained will be available for use in determining protective action recommendations for the general populations. From the MUDAC information can be sent by facsimile to the Benton and Franklin County Emergency Operations Centers, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and other Energy Northwest emergency centers. Communications with the field monitoring teams is provided in MUDAC. This capability allows for relaying instructions and receiving survey results.

6.2.5 Security Communications Center

The Security Communications Center is utilized in the notification process and has voice and hard copy transmission capabilities as detailed in Section 4.6. Any information received here will be delivered to the appropriate personnel.

6.2.6 News Release Preparation and Media Briefing

A news release preparation area is provided in the EOF for Energy Northwest's public relations personnel to develop public information status reports. These status reports will be updated and distributed to the Joint Information Center (JIC) located at the ROC. Groups of media personnel may be escorted to the EOF, as conditions permit, for briefings and tours. This action will be taken under the direction of the EOF Public Information Officer (PIO), and with approval of the EOF Manager.

6.2.7 Work Areas

Several work areas are identified for Energy Northwest personnel as well as for Government agencies (DOE, FEMA, NRC, Washington and Oregon States, etc.), outside consultants, architect/engineers, contractors, and vendors in the EOF. Other general office or classrooms are available as needed.

6.2.8 Health Physics Center

The Health Physics Center consists of several areas in the protected Emergency Operations Facility and the non-protected Plant Support Facility, a radiological laboratory, and counting lab. Energy Northwest contracts with a vendor to process thermoluminescent dosimeters and provide results to Energy Northwest in a timely manner. This vendor is certified to the standards of the National Voluntary Laboratory Accreditation Program (NVLAP). Results are recorded into a computerized Total Exposure System (TES) which can be accessed for information from the plant health physics areas as well as the Operations Support Center and Emergency Operations Facility.

A whole body counting, respiratory testing, and computerized internal dose assessment system is in use at Energy Northwest. The respiratory testing area consists of fitting and testing equipment. A large supply of respirators is available if required for emergency response or recovery operations.

The radiological laboratory and adjoining counting lab provide for radiological analysis of environmental samples as well as partial backup capability for plant laboratories. If plant analytical capabilities become unusable, plant samples can be transported to the Emergency Operations Facility or a support agency laboratory for chemical and/or radiological analysis. Energy Northwest contracts with outside laboratories for backup environmental sample analysis.

6.2.9 First Aid and Decontamination Area

A first aid facility is located near the Protected Area of the plant, and a decontamination facility is located in the unprotected portion of the Plant Support Facility. The relative locations of these facilities provide for treatment and decontamination of injured personnel as well as independent operation of both facilities. Drains from the decontamination area are connected to an isolable tank. Energy Northwest contracts with HEHF for treatment of severely contaminated injured personnel. This first aid facility is staffed by qualified personnel and first aid equipment is available for normal first aid treatment.

6.2.10 Environmental Programs Area

The environmental programs area includes an environmental equipment area and biology lab. The environmental equipment area will be used to store any backlog of environmental samples. Additional storage is available in the biology lab. Provisions have been made for cataloging stored samples.

6.2.11 Habitability

The Emergency Operations Facility is a protected area in the Plant Support Facility which has special shielding and ventilation to maintain habitability requirements. The ventilation system is designed to provide maximum habitability during an accidental radiological release. HEPA filters condition entering air during emergency conditions. Ion chambers are strategically located in the ventilation system to detect potential infiltration of contaminated air thus automatically allowing reconfiguration of airflows from replenishment to recirculation modes.

The EOF is designed to ensure that the total dose to occupying personnel is less than the Environmental Protection Agency Protective Action Guide limit of 5 rem TEDE for the duration of the postulated accident. Shielding requirements were determined using source terms from BWR/PWR accident scenarios described in the WASH 1400 Reactor Safety Study. Calculations considered worst case meteorology and assumed a 0.75 miles distance from the plant to the Emergency Operations Facility.

6.2.12 Emergency Power

A 365 kilowatt emergency power generator provides power to the Emergency Operations Facility during power loss. Vital equipment such as communication systems, counting equipment, dose assessment equipment, and lights are connected to the emergency power generator.

6.3 ALTERNATE EMERGENCY OPERATIONS FACILITY

The Alternate Emergency Operations Facility (EOF) is located approximately 10 miles south of the plant. This facility may be activated in the event of the primary EOF becoming uninhabitable, or inaccessible to offsite responders. The EOF Manager, in consultation with radiation protection personnel, will determine when to activate this facility, and appropriate staffing levels.

A Crash phone, dedicated facsimile machines, and a NRC Emergency Notification System phone are available to provide notifications to offsite agencies. The emergency functions for direction and control, emergency classification, notifications, protective action recommendations, dose projection operations, and field team dispatch and control may be provided from this facility. The Alternate EOF has sufficient communications capability to continue to communicate with the control room, TSC, primary EOF, field teams, and offsite agencies.

6.4 JOINT INFORMATION CENTER

The Energy Northwest Joint Information Center, (JIC), located approximately 10 miles south of the plant, integrates emergency response/recovery public information functions with the resources normally available to upper management personnel. Figure 6-5 shows the typical floor plan for the JIC.

Designated staff may support the EOF Manager and the emergency effort from the JIC.

Dedicated phones provide continuous contact with the plant and Emergency Operations Facility. Facsimile is available for the exchange of the latest data with other emergency centers. Access to certain areas are controlled when emergency centers are activated. The JIC will function as a joint news release center for Energy Northwest, county, state, DOE-RL and other federal agencies to facilitate consistent media releases. Areas will be set up to provide work space for the various media personnel.

Emergency power is provided for the JIC and telephone system.

6.5 EMERGENCY EQUIPMENT AND SUPPLIES

Appendix 3 identifies the emergency equipment staged for Fire Brigade Response at WNP-2. In addition to the Fire Brigade turnout stations, other equipment is staged throughout the plant for use by the Fire Brigade. This includes fire fighting hose stations, foam kits for Class B fires, and smoke removal.

Equipment is stored for field team use at the Emergency Operation Facility and at an offsite location. Vehicles and survey equipment kits are available for use by the field teams.

An inspection, inventory, and operational check of emergency equipment/instruments in each emergency cabinet or kit is conducted at least quarterly and after each drill which utilized that

particular cabinet and kit. The equipment designated for emergency use will be calibrated at the intervals recommended by the manufacturer. Sufficient reserves of instruments and equipment are maintained to replace instruments removed from kits for repair or calibration.

Emergency respiratory equipment will be inspected monthly. Required quantities in each cabinet or kit are established by procedure.

6.6 COMMUNICATION SYSTEMS

6.6.1 Radio Network

The radio system consists of radio channels covering several different radio bands. The Emergency Operations Facility is the primary facility for communication with emergency responders and offsite response organizations.

Limited radio capability is available in the Central Alarm Station, the Secondary Alarm Station (in the Control Room), the Technical Support Center, and the Operations Support Center. Mobile and portable radios are provided for selected vehicles and plant personnel.

Field monitoring teams will utilize the state sanctioned common emergency radio channel of 46.00 MHz. This system has a mountaintop base station that provides communications with field monitoring teams.

The mountaintop radio repeaters and 46.00 MHz base station are powered by a battery and charger system to provide communications capability during a loss of power.

Radio communication with the Department of Energy and the Benton and Franklin County Emergency Operations Centers is also available. The Department of Energy Communications Center and the Benton County Emergency Dispatch Center provide 24-hour monitoring of these radio links. See Table 6-1 for a listing of available radio channels.

6.6.2 Company Telephone System

Energy Northwest's Richland phone system is a computer based, software controlled telephone exchange (Computerized Branch Exchange). It is equipped with redundant computerized processor units and is served by an uninterruptible power supply.

The direct-dial private telephone system provides communication between the Hanford Energy Northwest facilities. The phone system is arranged such that plant telephones can reach other Energy Northwest facilities by direct-dialing and without the need of an operator. Telephones are at various strategic locations throughout the plants, including the Control Room, the remote shutdown panel, the Technical Support Center and Operations Support Center.

There are multiple direct inward dialing trunks to the Computerized Branch Exchange. WNP 2 is connected to this exchange via company owned tie trunk lines. The Emergency Operations Facility has tie trunk lines connected to the Richland Office Complex (ROC) Computerized Branch Exchange. The Computerized Branch Exchange in the plant is connected to the outside public telephone system via a minimum of 15 central office trunks. Each plant also has access to a number of long distance State Controlled Automatic Network Circuit (SCAN) trunks. Energy Northwest headquarters also has access to long distance

SCAN lines. These SCAN lines are wired direct to Spokane and bypass the local toll centers. This allows bypassing of the local central office in the event of congestion.

6.6.3 Dedicated Telephone Circuits

The following dedicated phone networks are available for emergency communications in addition to the normal Energy Northwest phone network:

a. Energy Northwest Emergency Center Network,
b. Response Agency Network, and
c. NRC Emergency Notification System.

The Energy Northwest Emergency Center Network interconnects the plant and emergency centers. The network uses a push button system in which the caller selects the area to be called, pushes the appropriate button which in turn automatically rings into the selected area.

The Response Agency Network connects the Energy Northwest emergency centers with State and local emergency centers. Lines to the Washington State Emergency Operations Center are routed through the local State Patrol Office switchgear and transmitted via the state microwave system to Camp Murray. By dialing a unique series of numbers the user is able to reach a specific agency. Facilities serviced by these dedicated lines are WNP-2, the Benton and Franklin County Emergency Operations Centers in Richland and Pasco, the Department of Energy Patrol Occurrence Notification Center on the Hanford site, and the Washington State Emergency Operations Center in Camp Murray. In addition, the network has a crash function, which is why it is referred to as the Crash Line or Crash Notification System. This feature of the system operates by dialing a unique activator number that automatically rings all the phones on the system.

A federal telephone system (FTS 2000) connects Energy Northwest emergency centers to the Nuclear Regulatory Commission. The Emergency Notification Network (ENS) and the Health Physics Network (HPN) are included in this system. ENS is available in the Control Room, the Technical Support Center and the Emergency Operations Facility. The HPN is available in

the Technical Support Center and the Emergency Operations Facility. The crash phone, ENS and HPN phones are also available in the Alternate EOF.

Call list telephone numbers associated with activation of the Emergency Plan are updated at least quarterly by the Emergency Preparedness section.

6.6.4 Sound Powered Phone System

The plant Sound Powered System, designed to provide communications without the use of batteries or other outside power sources, is powered by voice sound energy. This system is completely separate and distinct from the computerized Branch Exchange telephone system.

The Sound Powered System has separate communications loops which are arranged by building and elevation. All sound powered jacks in each loop are wired in parallel and terminated on a switching device. This device provides the capability to merge and isolate various combinations of loops for maintenance and testing activities. Extension cords, handsets, and sound powered head or head-chest sets are provided for use with the jack stations.

6.6.5 In-Plant Public Address System

The Public Address System (PA) is composed of separate public address zones, each accessible through the Plant Computerized Branch Exchange telephone system. An additional phone number accesses all zones for group paging. Paging microphones located in the Control Room, Central Alarm Station, Secondary Alarm Station, Technical Support Center (TSC) and other areas override telephonic paging and transmit to all zones simultaneously. Tone generators operated from the Control Room or the TSC allow an alerting tone to be broadcast over the PA system. The paging microphones have priority over all other functions of the Public Address System.

Portable high noise evacuation devices, each composed of a radio-controlled siren and strobe light, are located in selected areas throughout the plant. These devices are activated by the PA alerting tone.

6.6.6 Area Wide Radio Paging

A Radio Paging System is used to alert on-call members of Energy Northwest's emergency response organization of an emergency.

6.6.7 Facsimile System

Various locations such as the Control Room, Technical Support Center, Emergency Operations Facility, Joint Information Center, Department of Energy-RL, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and the Benton and Franklin County Emergency Operations Centers have facsimile transceivers. The facsimile transceivers enable the transmission and receipt of printed material. The facsimile system which connects the Energy Northwest emergency centers with the county and state emergency centers uses dedicated phone lines.

6.6.8 Early Warning System

Tone activated radios are made available to all households within the Ten-Mile Emergency Planning Zone. These radios monitor the local Emergency Alerting System. If an Emergency Alerting System signal is received, a light is activated and an audible tone is heard. The radio then broadcasts the message. The radios contain a battery backup.

In addition to the tone activated radios, sirens located on the Columbia and Yakima Rivers, and in the Horn Rapids area are provided to assist in notifying sportsmen, boaters, and other recreationists that may be present. The Department of Energy also maintains a system for alerting its employees and its contractor's employees.

6.6.9 Automatic Dialer

An automatic dialing system is used similarly to and at times in conjunction with the area wide radio paging system as a means to notify Energy Northwest emergency personnel.

6.6.10 Emergency Response Data System

The Emergency Response Data System (ERDS) has been established to transmit raw reactor parametric data to the NRC when an Alert or higher emergency is declared. The data is conveyed over an FTS 2000 phone circuit.

6.7 COMMUNICATION SYSTEMS TESTS

The following test schedule of the communication system is established to ensure operability. This test schedule includes:

a. Communications with Emergency Dispatch Center and Department of Energy-RL

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

b. Communications with Washington State Emergency Operation Center

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.

c. Communications with Nuclear Regulatory Commission Headquarters

1. Dedicated telephone lines -- tested monthly.
2. ERDS - tested quarterly.

d. Communications among Energy Northwest Emergency Facilities

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.
3. Data circuits -- tested monthly.
4. Installed Radio links -- tested monthly.
5. Environmental Field Team radios -- tested quarterly.

e. Notification System

1. Siren system

a) status test -- monthly documentation of status tests conducted at least bi-weekly.
b) complete system test -- annually.

2. EAS Radio receivers test

   a) operability -- weekly (performed by the Emergency Alerting System).
   b) coverage -- annually (performed by Energy Northwest and Benton and Franklin counties).

3. Automatic Dialer

   Perform activation tests -- quarterly.

f. Emergency communications equipment (not covered above)

   1. Area Wide Radio Paging -- operational test quarterly.

g. Fire Brigade Equipment

   1. Replace batteries -- monthly.
   2. Perform operational checks on portable radios-- monthly.

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

I. Emergency Facility Radio Channel Availability

A. Control Room

- In-Plant Operations Channel
- Area Wide Security Channel (Secondary Alarm Station)

B. Technical Support Center (TSC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Field Team - 46.00 MHz

C. Operations Support Center (OSC)

- In-Plant Operations Channel

D. Central Alarm Station (CAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

E. Secondary Alarm Station (SAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

F. Security Communications Center (SCC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel
- LERN (Law Enforcement Radio Network)

G. Emergency Operations Facility

- Area Wide Security Channel Link
    1. Franklin County Sheriff

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

2. Emergency Dispatch Center

3. Department of Energy Patrol Emergency Office

- Field Team - 46.00 MHz Channel
- Department of Energy Emergency Response Channel
- LERN Channel (Law Enforcement Radio Network)

H. Department of Energy

- Area Wide plant Security Channel

I. Benton County Emergency Dispatch Center

- Area Wide Security Channel

K. Franklin County Emergency Dispatch Center

- Area Wide Security Channel

J. Benton and Franklin Counties Emergency Operations Centers

- Area Wide Security Channel

II. Energy Northwest Emergency Center Telephone Capability

A. Technical Support Center (TSC) dedicated phone system interconnects with:

- Control Room
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Emergency Operations Facility
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System

B. Operations Support Center (OSC) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Emergency Operations Facility
- Central Alarm Station/Secondary Alarm Station
- Facsimile System

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

C. Control Room dedicated phone system interconnects with:

- Technical Support Center
- Operations Support Center
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System
- Emergency Operations Facility

D. Emergency Operations Facility (EOF) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

E. Alternate Emergency Operations Facility (EOF) phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

F. Joint Information Center (JIC) dedicated phone system interconnects with:

- Crash Notification System
- EOF
- Facsimile System

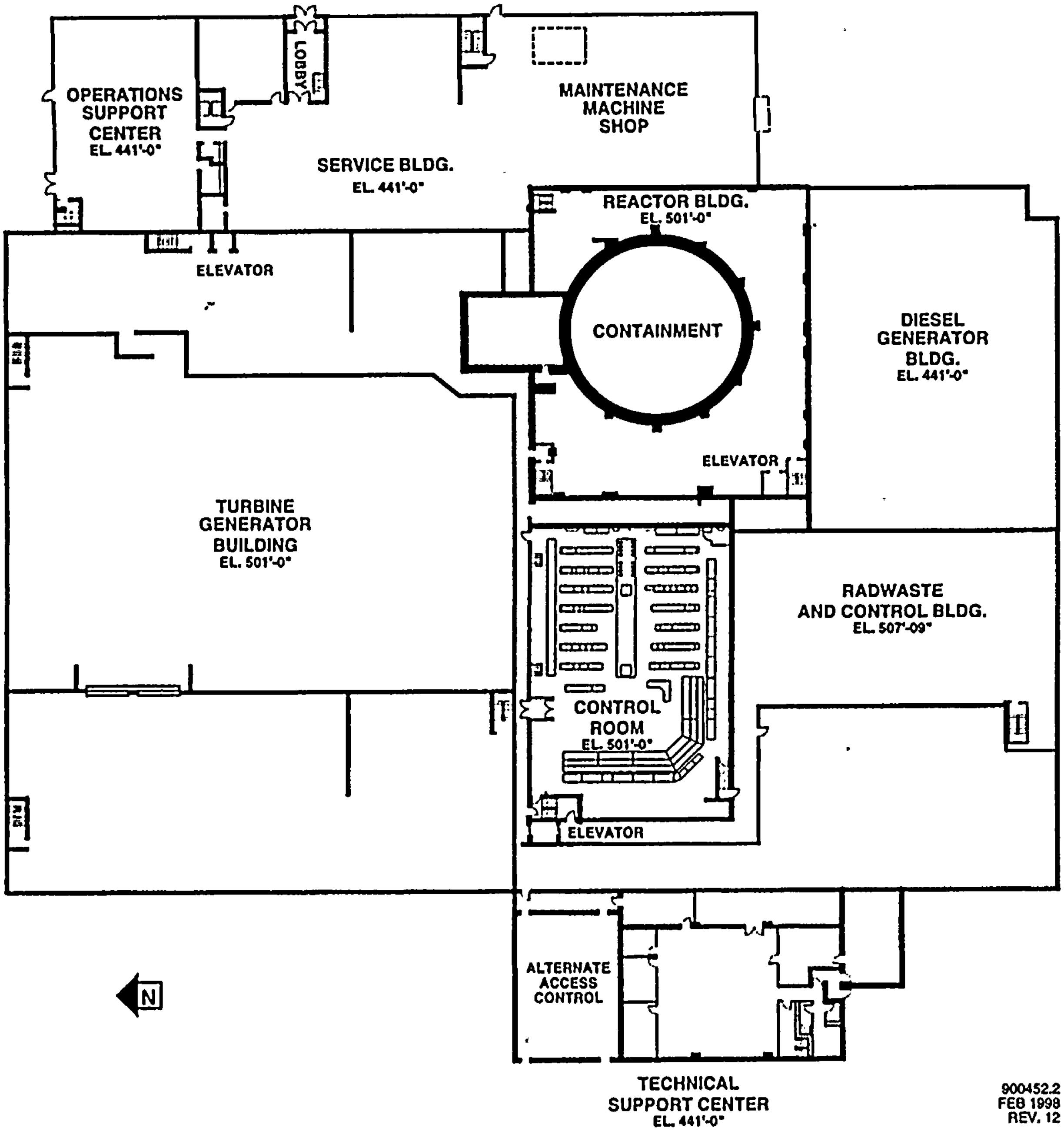


Figure 6-1, Plant 2 Control Room, Technical Support Center and Operations Support Center Locations (Typical Arrangement)

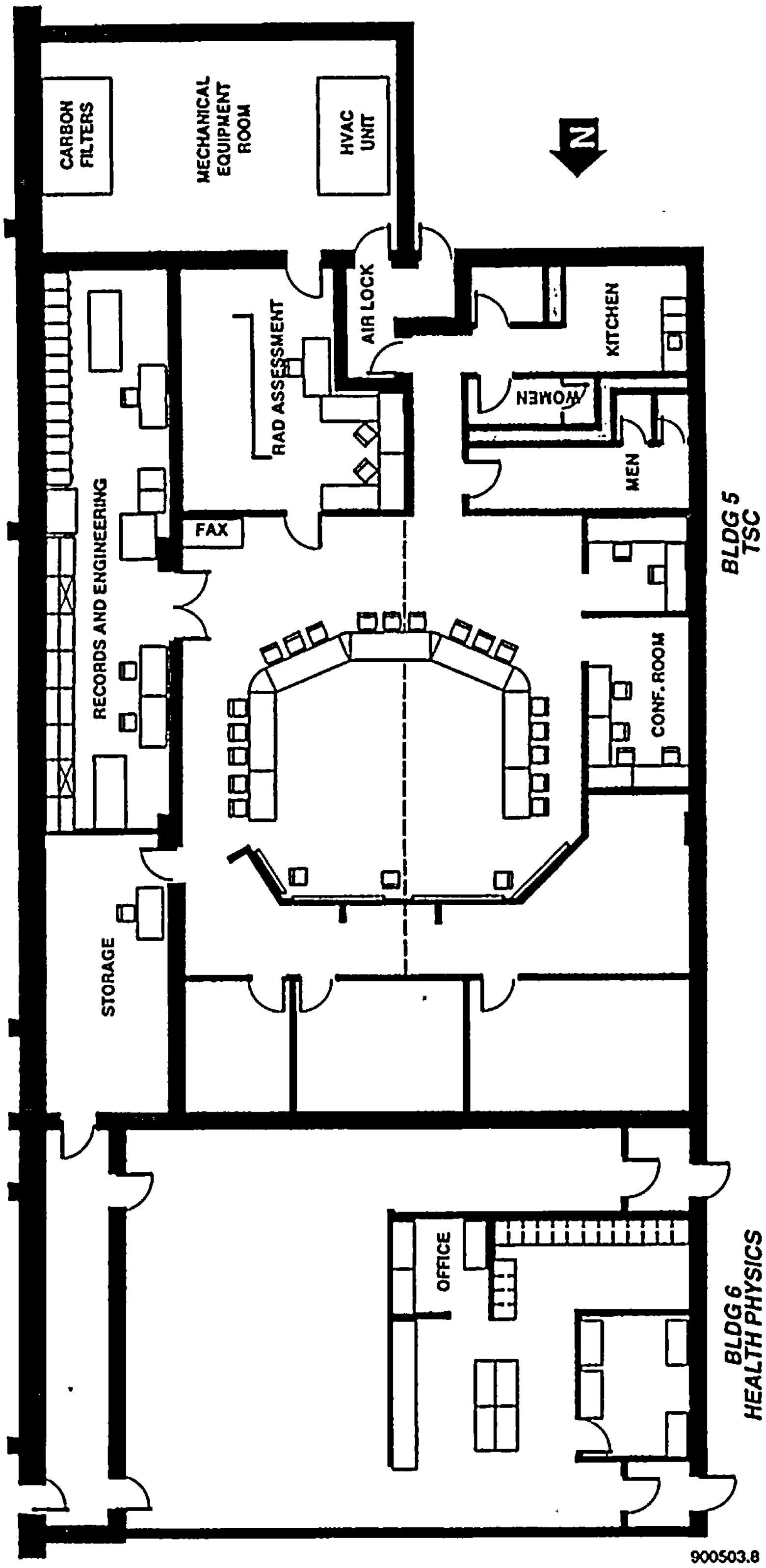


Figure 6-2, WNP-2 Technical Support Center
(Typical Arrangement)

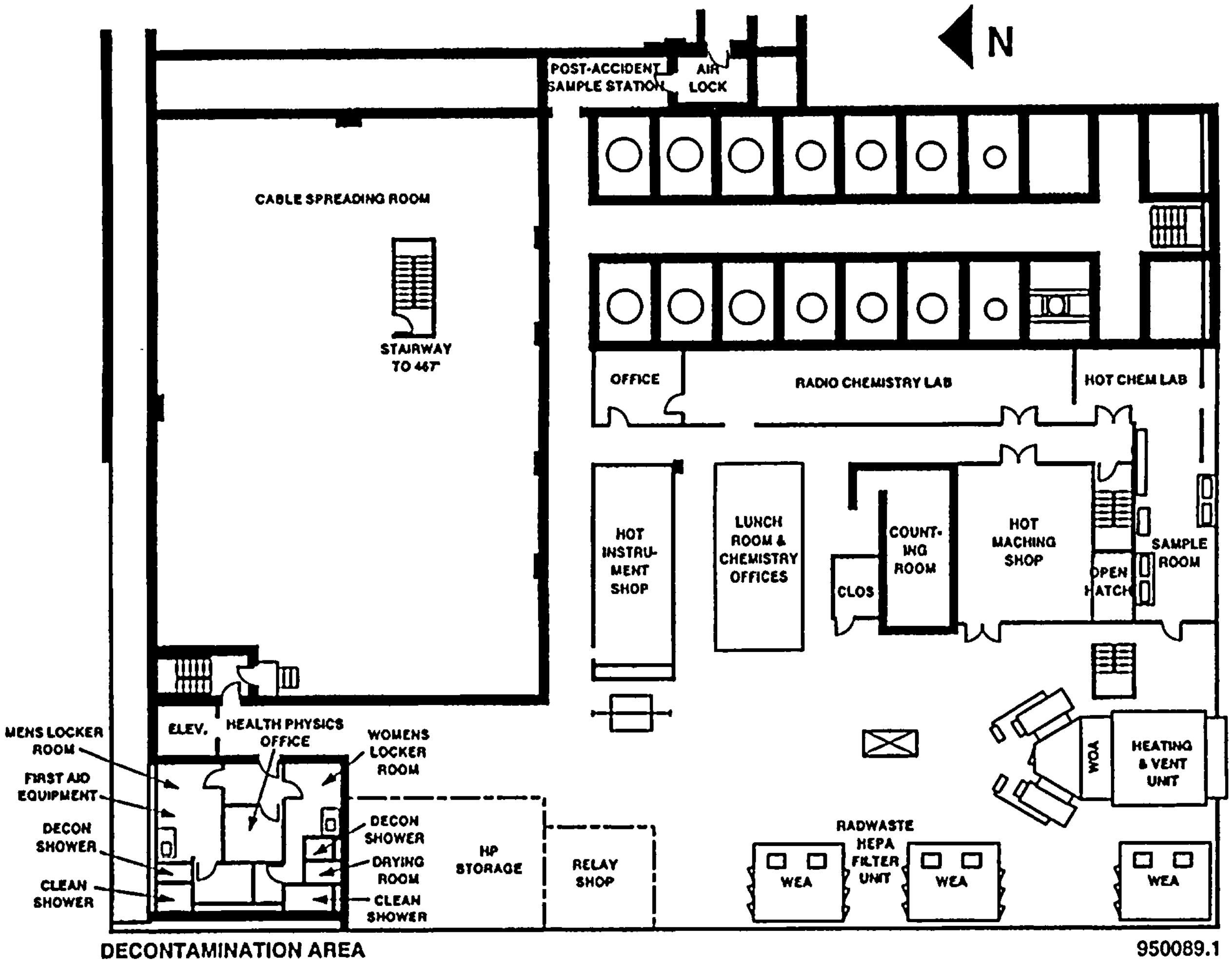


Figure 6-3, WNP-2 Decontamination Area
(Typical Arrangement)

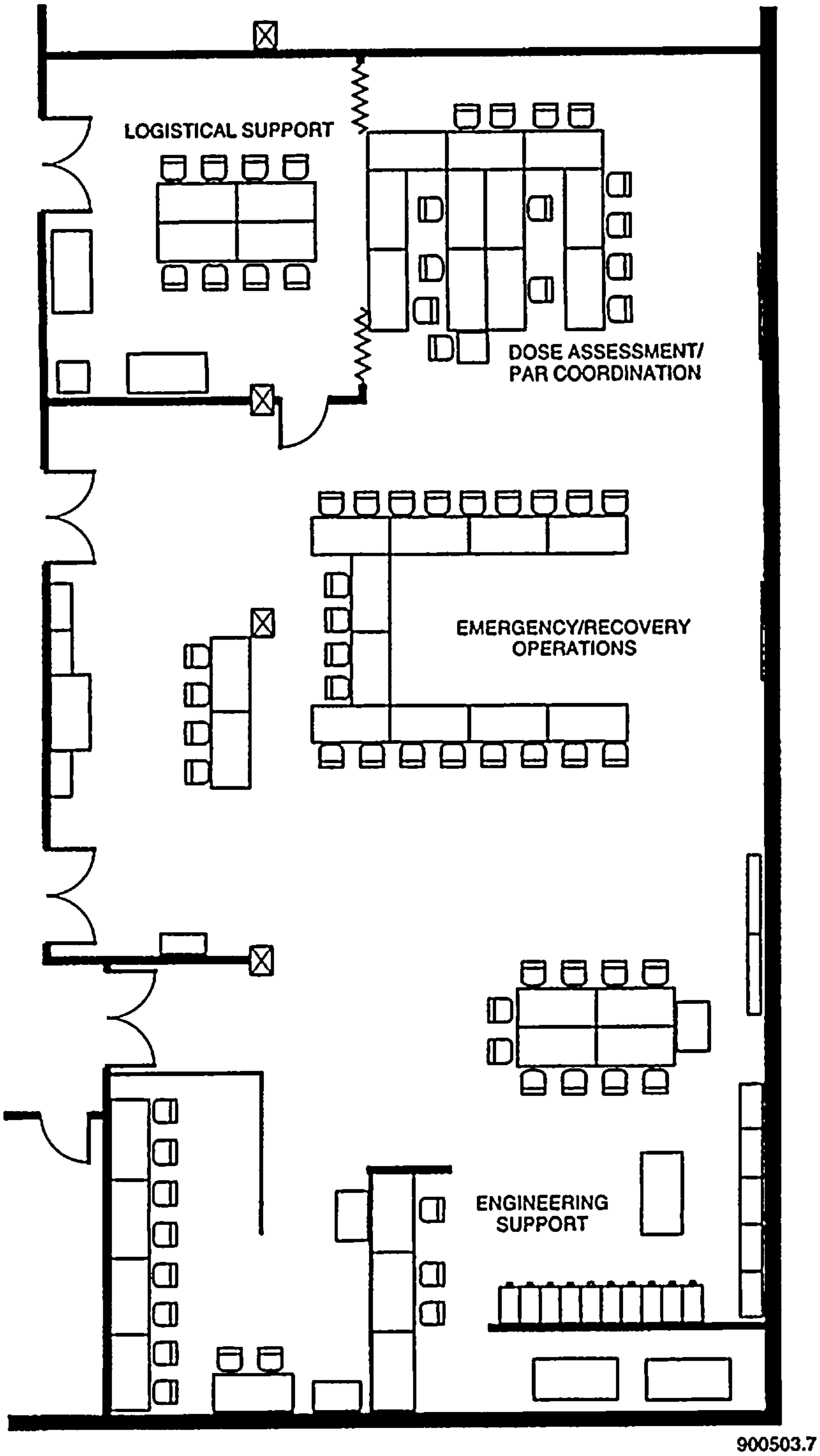


Figure 6-4, Plant Support Facility (PSF)
Emergency Operations Facility (EOF)
(Typical Arrangement)

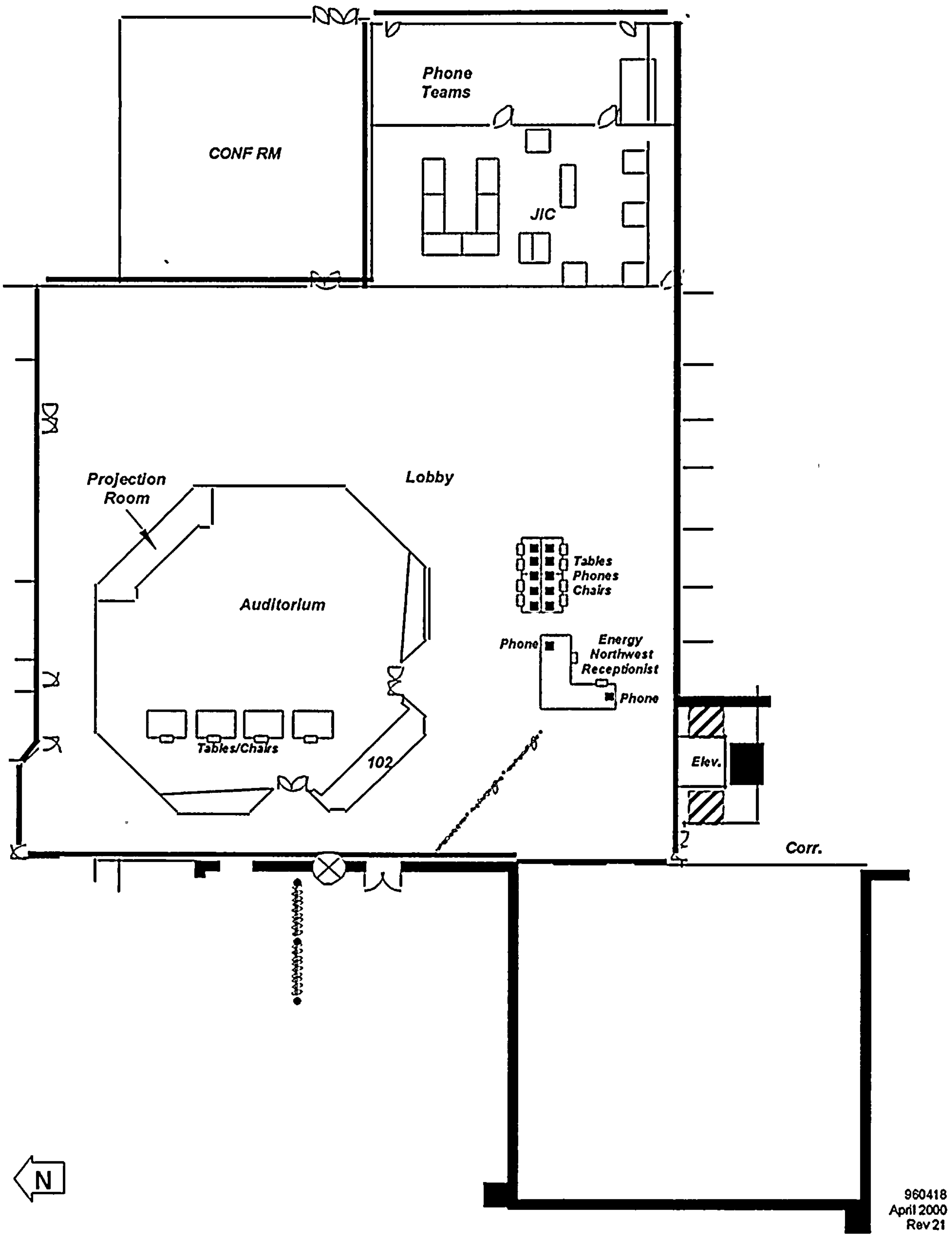


Figure 6-5, Joint Information Center - Typical Arrangement

SECTION 7
REENTRY AND RECOVERY OPERATIONS

7.1 REENTRY AND RECOVERY OPERATIONS

Emergency actions will shift to the recovery phase once the immediate corrective and protective actions have established effective control over the incident. Onsite reentry and recovery operations are addressed in 7.2 and 7.3. Offsite reentry and recovery operations are discussed in 7.4.

7.2 REENTRY INTO ONSITE AREAS

Reentry into evacuated onsite areas may be required during and after an emergency. This could include search and rescue, actions to minimize further accident consequence, or assessment of plant conditions to determine the scope of recovery operations. Exposure guidelines, as outlined in Section 5 of this plan, should not be relaxed without sufficient justification.

Prior to reentry, the Radiation Protection Manager or his representative shall:

a. Review all available radiation survey data and determine plant areas with high radiation exposure and/or contamination potential,

b. Review the radiation exposure records of personnel participating in the reentry operation and determine the need for additional personnel,

c. Review the adequacy of the radiological sampling and survey instrumentation to be used by the team (type, ranges, number, calibration etc.),

d. Review protective clothing, dosimetry, and respiratory protection requirements,

e. Ensure that appropriate communications are available, and

f. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry.

The initial recovery efforts should encompass the following actions:

a. Conduct comprehensive radiation surveys of the plant facilities and define all radiological problem areas;

b. Isolate and post all radiation and contamination areas with appropriate warning signs as conditions and available time allow, and

c. Identify potential hazards that may impact recovery operations.

During the reentry activities immediately following an accident, initial radiation monitoring functions involve only gross hazard evaluations, isolation of the hazard, and the definition of radiological problem areas. This immediate radiation surveillance activity is used to provide the basic information for the development of recovery operations.

7.3 ONSITE RECOVERY OPERATIONS

The EOF Manager and TSC Manager have the joint responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. A Recovery Manager will be appointed and a Recovery Organization will be established to develop and coordinate plans and schedules for the recovery operations. Following a Site Area Emergency or General Emergency, the Corporate Nuclear Safety Review Board (CNSRB) will review and comment on the recovery planning effort to assure that all nuclear safety aspects of the recovery are satisfied. (The CNSRB will report their findings to the Recovery Manager, who shall take the actions deemed appropriate for safe recovery operations.) Refer to Figure 7-1 for key positions and responsibilities of the recovery organization.

7.3.1 Initiating the Recovery Phase

Prior to terminating an emergency and entering the recovery phase, the EOF Manager will coordinate with the TSC Manager to ensure that the following criteria have been considered:

a. The conditions which caused the emergency have stabilized, are under control, and are unlikely to deteriorate further.

b. Plume tracking is no longer required. The only environmental assessment activities in progress may be those necessary to assess the extent of deposition resulting from passage of the plume.

c. In-plant radiation levels are stable or decreasing.

d. Radioactive releases are under control.

e. The potential for an uncontrolled radioactive release is acceptably low.

f. Containment pressure is within technical specifications.

g. The reactor is in a stable safe shutdown condition and long-term core cooling is available as required.

h. Any fire, flood, earthquake or similar emergency conditions no longer exist.

i. Offsite conditions will not limit access of personnel and support resources to the site.

j. Discussions have been held with DOE-RL, Washington, Oregon, affected counties and select regulatory agencies, and agreement has been reached to begin the recovery phase.

The extent of recovery activities will dictate the precise framework of the Recovery Organization:

a. For events of a minor nature, the normal onshift organization should be adequate to perform necessary close-out actions (e.g., for UNUSUAL EVENT classifications).

b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization, or portions thereof, should be adequate to coordinate the necessary recovery actions (e.g., for ALERT classifications).

c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, a formal Recovery Organization will be established to manage the recovery actions. Specific members of the Recovery Organization will be selected based upon the sequence of events that preceded the recovery activities.

7.3.2 Conducting Recovery Operations

Recovery operations will be performed in accordance with written procedures developed by the Recovery Manager and staff prior to implementation of any recovery action. These procedures shall be based upon information collected by the initial reentry team(s) and any subsequent updates. Special precautions will be identified for any potentially hazardous conditions. If radiological hazards exceed the boundaries of the radiation access controlled areas, the security access lists should be reviewed and revised to prevent unauthorized or unintentional entry into hazardous areas.

The Recovery Manager is responsible for directing the activities of the Recovery Organization and should:

a. Ensure that sufficient personnel from WNP-2 and other organizations are available to support recovery.

b. Direct the development of a recovery plan and implementing procedures, as required.

c. Coordinate with the CNSRB to ensure adequate review of engineering activities and proper review and approval of the recovery plan and implementing procedures.

d. Coordinate the deactivations of emergency response facilities and personnel as appropriate.

e. Coordinate the integration of available state and federal assistance into recovery activities.

f. Coordinate with offsite authorities, and provide support as required for offsite recovery activities.

g. Approve all technically oriented recovery information released by the Public Information Organization.

h. Periodically estimate total population exposure.

When criteria to enter the recovery phase are met, the Recovery Manager will inform emergency centers and offsite agencies by crash call of the transition to recovery. The Recovery Manager then initiates a discussion of recovery items with the Recovery Task Force members to develop a shutdown safety plan focusing on procedurally defined priorities.

The Recovery Task Force will produce initial plans to cope with near and long term activities, provide direct input to the maintenance organization for an integrated outage plan, and provide assistance to the Recovery Manager to transition from a recovery phase to an outage, as appropriate.

During the recovery operations, particular attention should be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine the extent of any equipment damage and to determine the sequence of events that led up to the accident for event reporting and lessons learned findings.

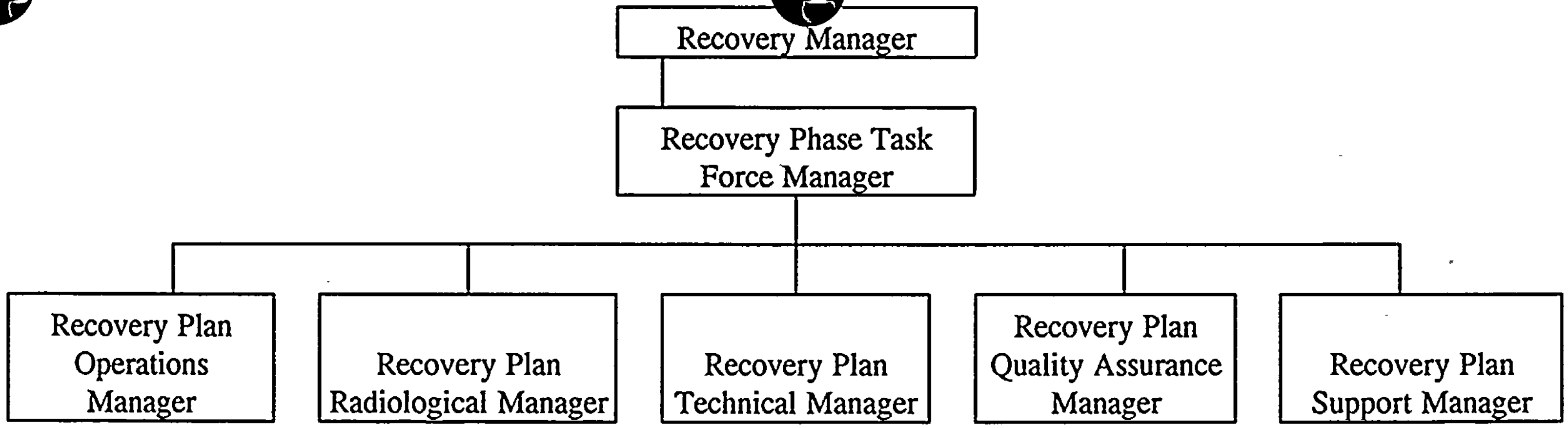
The Recovery Manager will ensure that onsite ERO and appropriate offsite agencies are notified prior to initiating any recovery operation with a potential for a radiological release. The ERO and offsite agencies will also be notified of any changes in the key positions of the recovery organizational structure.

All recovery operations are considered to be terminated when the plant has returned to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.4 OFFSITE REENTRY AND RECOVERY OPERATIONS

A Reentry and Recovery Task Force is established by the State and County emergency response plans and is responsible for coordinating offsite recovery following radiological incidents including the requirements for reentry conditions for any offsite evacuated areas. Energy Northwest will provide a representative and additional assistance to this Task Force, as requested. Specific details of offsite reentry and recovery operations can be found in the State and County emergency response plans and implementing procedures.

RECOVERY TASK FORCE ORGANIZATION CHART



Areas of Oversight Responsibilities:

Production Scheduling	Environmental	Fuels	Commitments	Procedures
Safety	Decon	Licensing	Reviews	Scheduling
Maintenance	Restoration HP	Vendors	Oversight	Finance
Security (Plant)	Radwaste	Analysis	Qualifications	Public Relations
OPS	Surveys	Plant Support		Legal
Shutdown Safety				Site Support
				Procurement
				Add'l Staffing

NOTE: The NRC will be invited to participate in this task force as deemed appropriate.

Figure 7-1

SECTION 8
MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES FOR THE PLANNING EFFORT

Overall responsibility and authority for emergency planning lies with the Vice President, Operations Support/Public Information Officer. The Manager, Regulatory Affairs, reports directly to this Vice President, and has emergency preparedness as one of his general areas of responsibility. Reporting to the Manager, Regulatory Affairs, is the Corporate Emergency Preparedness, Safety and Health Officer, who has specific responsibility for the Emergency Preparedness organization, and implementation of the program itself. Formal position descriptions specify minimum qualifications for the emergency planning personnel. Professional qualifications are maintained by periodic attendance at industry seminars and short courses, through observation of and participation in radiological emergency exercises conducted at other nuclear facilities, and through job-related in-house topical training sessions.

Specific responsibilities for the Corporate Emergency Preparedness, Safety and Health Officer include, but are not necessarily limited to, the following:

a. Ensure that the information, data, and procedures detailed in the Emergency Plan Implementing Procedures are consistent with the WNP-2 Emergency Plan.

b. Ensure that the Emergency Plan Implementing Procedures and other procedures are coordinated and interface properly (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

c. Ensure the coordination of the WNP-2 Emergency Plan and Emergency Plan Implementing Procedures with the State, County and DOE-RL Plans.

d. Ensure an adequate staffing of the ERO.

e. Ensure emergency preparedness related training documentation is sent to Records Management.

f. Ensure emergency preparedness related drills and exercises are coordinated as described in this Plan.

g. Ensure periodic review and update of the WNP-2 Emergency Plan and Emergency Plan Implementing Procedures occurs as described in this Plan.

h. Ensure the maintenance and inventory of emergency facilities, equipment and supplies as described in this Plan.

i. Maintain knowledge current with respect to changes in the federal regulations and guidance that impact emergency preparedness activities.

j. Public information and education on emergency preparedness issues.

8.2 EMERGENCY PREPAREDNESS PLAN REVIEW

The Emergency Plan and the Agreements which support the plan are reviewed annually and updated as necessary. Critiques of past exercises, changes in company organizational structure, and issuance of new regulations provide the primary input to plan review. The Corporate Emergency Preparedness, Safety and Health Officer is responsible for developing and updating the Emergency Plan and coordinating the plan with other response organizations. The Plant Operations Committee is responsible for reviewing any proposed changes and submittal of the proposed revision to the Corporate Nuclear Safety Review Board.

The Corporate Emergency Preparedness, Safety and Health Officer provides a distribution list of all organizations and individuals with responsibility for implementation of the Emergency Plan. The Emergency Plan and all subsequent revisions are then distributed through a manuals control system which verifies receipt of the revisions by the implementing organization or individual. Revised pages are dated and marked to indicate where changes have occurred. If no revisions have occurred, the Corporate Emergency Preparedness, Safety and Health Officer will certify by letter to all Emergency Plan manual holders that the plan and supporting agreements have been reviewed and are current.

8.3 INDEPENDENT AUDIT OF THE EMERGENCY PREPAREDNESS PROGRAM

Either of two types of audit groups may be employed to ensure an adequate Emergency Preparedness Program. Audits may be performed by an outside organization with technical expertise in emergency planning or by an organization within Energy Northwest which is independent of the emergency preparedness program.

An audit will be conducted in accordance with 10 CFR 50.54(t) and the OQAPD. The review shall include the Emergency Plan, the Emergency Plan Implementing Procedures, training, readiness testing, equipment, and interfaces with state and local governments. The results of the audit, along with recommendations for improvement, shall be documented and reported to the Chief Executive Officer, the Vice President Generation/Plant General Manager, Vice President, Operations Support/PIO, and appropriate corporate and plant management. In addition, involved federal, state, and local organizations will receive results of the audit. The report and recommendations will be retained for a minimum period of five years.

The Corporate Nuclear Safety Review Board has the responsibility to review the Emergency Preparedness Program audit findings to determine if the conduct is adequate, and if the audit responses are appropriate and timely. The Board may expand these audit activities if necessary.

8.4 FACILITIES AND EQUIPMENT MAINTENANCE

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for ensuring that the facilities and equipment specified in Section 6 of this Plan are maintained in operational readiness. In addition to the routine tests and scheduled maintenance evolutions, the Emergency Preparedness staff members conduct periodic facility walk-downs of the on-site emergency response facilities. Various departments within Energy Northwest share the responsibility for performing maintenance and calibration on the equipment necessary to implement the provisions of the Emergency Plan, including survey meter calibration and testing, backup power source maintenance and testing (e.g., uninterruptible power supply batteries, diesel generators, etc.), emergency ventilation system maintenance and operational checks, field team vehicle maintenance, communications systems maintenance and testing, and tone alert radio and siren maintenance and periodic testing.

8.5 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The radiological emergency response training program is one of the most important aspects of the emergency preparedness effort. This training is intended to keep an adequate number of emergency personnel sufficiently familiar with the Emergency Plan and procedures to perform effectively in an emergency. Fire Brigade personnel are trained per FSAR 13.2. Security personnel are trained per the Physical Security Plan.

8.5.1 Emergency Training Program Description

Initial training for emergency responders is provided to all new Energy Northwest emergency response organization candidates. Refresher training is provided to the emergency response organization on an annual basis.

Personnel from local, state, and federal organizations who may be requested to assist during an emergency will be invited to participate in the site specific training program which may include tours to gain familiarization with the facilities. Support organization personnel will be provided qualified escorts if they enter the Plant Site during an emergency.

a. The Emergency Preparedness Training Program will include, but is not limited to the following:

- Applicable Emergency Plan Implementing Procedures
- Location of emergency equipment and supplies
- Names, locations, and functions of the emergency response facilities
- Use of plant communication systems
- Personnel accountability, assembly, and evacuation

b. As a minimum, all Emergency Response Organization personnel shall receive Emergency Preparedness Initial training. Emergency Plan training program lesson plans are developed using applicable guidance from the systematic approach to training process.

c. Initial training for Emergency Response Organization personnel shall include formalized classroom training, and examinations. Additionally, "hands on" training with completion of performance evaluation sign off forms may be used, as appropriate. It is the intent of this training program to qualify Emergency Response Organization personnel in the requirements of the Emergency Plan Implementing Procedures applicable to their emergency positions.

The training courses will provide the necessary information to enable each member of the emergency organization to perform assigned emergency tasks. Selected emergency personnel will attend specialized classes related to particular emergency assignments. Specific training course assignments for members of the emergency organization, and overall training responsibilities, may be found in the Qualification Directory. Detailed training responsibilities may be found in the Site Wide Procedures. The training course descriptions are found in the specific qualification directories.

8.5.1.1 Emergency Training for Essential Personnel

The emergency organization positions which are essential to implementation of this Emergency Plan are identified in Table 2-1. The individuals identified to function in these emergency organization positions will receive appropriate specialized initial training in the duties and responsibilities of the position and the applicable procedures. This training will consist of formal classroom instruction, written examination to verify a satisfactory level of comprehension, and where appropriate will include "hands-on" training with completion of performance evaluation sign off forms.

a. In addition to Emergency Center Overview training, essential personnel receive the following training:

- Emergency Director (Shift Manager, TSC Manager, EOF Manager)
    - Protective Action Recommendations
    - Emergency Classification
- Control Room Staff (Shift Manager, Control Room Supervisor, Control Room Operators, STA)
    - Protective Action Recommendations (SM/CRS only)
    - Emergency Classification

    - Dose Projection (SM/CRS only)
    - Emergency Notification

- Accident Assessment and Rad Monitoring Teams (RPM, Chemistry/Effluent Manager, REM, Dose Projection HP, Field Team Members, Field Team Coordinator)
    - Protective Action Recommendations (RPM and REM only)
    - Dose Projection (Chemistry/Effluent Manager, REM and Dose Projection HP only)
    - Field Team Overview and Operations (FT members and FT Dispatcher only)
- Fire Brigade
    - Trained per the requirements of FSAR Chapter 13.2
- Repair Teams (HP, Mechanic, Electrician, I&C, Chemistry)
    - OSC Maintenance Craft Overview
- First Aid/Rescue teams
    - Equivalent to Red Cross standard First Aid

8.5.1.2 Emergency Training for Augmenting and Support Personnel

Individuals assigned to emergency organization augmenting and support positions (not identified in Table 2-1) will receive training as described in the Qualification Directory.

8.5.2 Training for Offsite Agencies

Orientation and training of state and county agencies and personnel involved in the WNP-2 emergency preparedness efforts will be made available by WNP-2, as follows:

a. The offsite organizations listed below will be invited, on at least an annual basis, to participate in a training program. The invitation will provide a schedule of drills and exercises to enable offsite agencies to request participation.

- Washington Emergency Management
- Washington Department of Health
- Benton County Emergency Management
- Franklin County Emergency Management
- Oregon Office of Energy
- Oregon State Health Division
- Local media personnel (newspapers, radio, tv, etc.)

b. The program will cover the basics of emergency preparedness as it relates to regulations and public safety. The program will include a review of select Emergency Plan Implementing Procedures with particular emphasis given to:

- Classification of emergencies,
- Reporting requirements,
- Assessments,
- Corrective and protective actions, and
- Communications networks.

Training for local services personnel includes, but is not necessarily limited to, procedures for notification and, where applicable, site access procedures, onsite contact identity, basic radiation protection and emergency response functions. This training is provided to the following organizations:

- Richland, Kennewick, and Pasco Fire Departments

  Initial and annual retraining is provided to the local fire department personnel concerning response requirements for accidents involving a threat of radiological contamination.

- Richland, Kennewick, and Pasco Hospitals

  Hospital personnel who may be involved in response to an emergency involving a potential of radiological contamination receive initial and annual retraining. Training covers how to deal with radiation accident cases.

8.5.3 Frequency of Training

Training for all individuals assigned to emergency organization positions will be successfully completed prior to their initial assignment to the emergency organization. Continuing training will also be administered to insure retention and familiarity with the subjects covered in the initial training. The continuing training will be administered annually.

The annual retraining program for ERO personnel is accomplished using classroom instruction and drill performance with immediate on the spot correction. Completion of self study information or examinations may be used to maintain qualifications of personnel unable to attend classroom sessions or drills.

Classroom instruction is used to refresh ERO personnel on information such as industry events, lesson learned from the past year's experience, significant procedure changes, and a review of response requirements.

Self guided performance evaluations may be used to refresh specific skills necessary for adequate emergency response skills. Written examinations may be used to evaluate comprehension and retention for refresher training.

Drills are used to provide practical experience to enhance information gained in the classroom. During the year, as many emergency response personnel as possible participate in scheduled drills, exercises and team training drills to broaden their experience base and that of the entire emergency organization.

When used, self-study by reading and acknowledgement is used to make responsible emergency response personnel aware of important changes to procedures. This method is primarily used when such information should not be delayed until classroom training can be provided.

8.5.4 Training Records

Responsibility for maintaining documentation of the training program is described in the Site Wide Procedures. Formal lesson plans for each course, including instructor qualifications and performance objectives will be maintained. Attendance records for all courses will also be maintained.

8.6 DRILLS AND EXERCISES

Periodic drills and exercises will be conducted in order to test the overall state of emergency preparedness. The prime objective of this form of training is to determine the level of emergency preparedness of all participating personnel, organizations, and agencies. More specifically, each drill or exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their duties and responsibilities.

b. Verify the adequacy of the WNP-2 Emergency Plan and Emergency Plan Implementing Procedures.

c. Test communications networks and systems.

d. Check the availability of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

8.6.1 Drill and Exercise Responsibilities

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for the planning, scheduling, and coordination of all emergency preparedness related drills and exercises. All exercises are subject to the approval of the Manager, Regulatory Affairs, and the Vice President, Generation/Plant General Manager.

When a drill or exercise is to be conducted, the Corporate Emergency Preparedness, Safety and Health Officer will:

a. Schedule a date for and assign a drill or exercise coordinator.

b. Assign personnel to prepare a scenario and to act as controllers.

c. Coordinate efforts with other participating emergency personnel, organizations, and agencies.

d. Oversee conduct of the drill or exercise.

e. Critique the results of the drill or exercise.

f. Assign personnel to correct any deficiencies.

Combined functional drills and exercises will involve onsite as well as offsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted simulating, as closely as possible, actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Whenever practical this will incorporate provisions for "free play" on the part of the participants. Drill scenarios will be prepared that involve the participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations. This may include varying degrees of participation of state, county, and federal organizations and agencies, and local service support personnel and organizations. The Corporate Emergency Preparedness, Safety and Health Officer will make every effort to notify the offsite emergency response organizations and agencies at least 180 days in advance of the scheduled date of the drill or exercise.

Drills will involve on-the-spot correction of erroneous performance and a demonstration of the proper performance for the evaluator. During the conduct of exercises, the controllers are

restricted in their ability to correct erroneous performance, and may only intercede to prevent damage to equipment or assure safety of personnel.

Recommendations for revisions to the Emergency Plan, Emergency Plan Implementing Procedures, and/or the upgrading of emergency equipment and supplies as a result of a drill or exercise are forwarded to the Corporate Emergency Preparedness, Safety and Health Officer by observers or participants for appropriate disposition.

8.6.2 Drill/Exercise Package

A drill/exercise package is the controlling document for each drill or exercise. It includes, as a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s) and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
- A description of the arrangements for and advance materials to be provided to official observers.

8.7 TYPES OF DRILLS

This section gives details of some of the types of drills which will be conducted periodically. Other types of drills may be developed as needed to test various portions of the emergency support organization.

8.7.1 Communication Drills

Communication drills are conducted in the following manner:

- Operability of the various communications systems is tested by two-way communication. See Section 6 for a detailed list of the systems tested. These tests may be included as part of a scheduled drill or exercise.
- Communication drills involving the field assessment teams are conducted as a part of the radiological monitoring drills.

- Communication drills with Washington State and local governments, (Benton and Franklin Counties), and DOE-RL are conducted to evaluate the message distribution process, including the ability of participants to understand the content of example messages.

8.7.2 Fire Drills

The Fire Brigade will be activated for response to a simulated fire or may respond to a training area to actually fight a fire under the supervision of the Fire Brigade Leader.

8.7.3 Medical Emergency Drills

This drill involves a simulated injury with contamination and will include provisions for participation by ambulance personnel and offsite medical treatment facilities. This drill shall occur annually. The offsite and onsite portions may be performed out of sequence and at different times. The onsite portion of the medical emergency drill should involve evaluation, packaging, and transport of the simulated victim to the ambulance pickup point.

8.7.4 Radiological Monitoring Drills

These drills involve the Environmental Field Teams. Plant and field activities may involve conducting surveys, tracking radiological plume(s) and deposition, and collecting and analyzing various samples such as water, soil, air, and vegetation. Provisions for communications and record keeping will also be tested.

8.7.5 Health Physics Drills

- The first type of health physics drill involves response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- The second type of health physics drill requires analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system.

8.8 FREQUENCY OF DRILLS AND EXERCISES

Scenarios will be varied from year to year so that all major elements of the plan and preparedness organizations are tested within a six-year period. Drills and exercises will be conducted under various weather conditions and may be unannounced. Provisions will be made to demonstrate an off hours drill between 6:00 P.M. and 4:00 A.M., at least once each six years. Additional drills may be conducted to provide practical training to emergency organization members. These drills may include components that satisfy the required drill elements in Table 8-1.

8.9 DRILL/EXERCISE PREPARATIONS AND CONDUCT

The Emergency Preparedness organization is responsible for initiating and coordinating the development of the drills and exercises necessary to meet the requirements of the Emergency Plan. The drill/exercise coordinator is responsible for overall development of the drill/exercise package and to ensure all preparatory activities between departments and agencies are coordinated (see Section 8.10.1). The minimum necessary actions to be taken in preparation for a drill or exercise are as follows:

a. Develop the drill/exercise scenario including:

   1. The objectives and evaluation criteria;

   2. The desired participants (i.e., response agencies);

   3. The primary actions/plans expected to be implemented, activated; and

   4. The tentative date.

b. Distribute the scenario to the desired participants for review and concurrence.

c. For all exercises, Federal, State, and local government agencies will be invited to observe, evaluate, and critique the exercise.

The use of the WNP-2 Probabilistic Safety Assessment (PSA) should be considered when constructing drill and exercise scenarios. The use of PSA allows efforts to be directed at the most likely accident scenarios. Planning efficiency may therefore be increased by allowing the available resources to be directed at the most likely events. The WNP-2 PSA considers both the likelihood and consequences of severe accidents possible at WNP-2 and thus can be utilized to ensure the drill and exercise scenarios are more realistic to the players.

One of the major objectives of drills and exercises is to test the ability of emergency response organization personnel to utilize the emergency response procedures and to make effective and timely decisions based on available data. To effectively accomplish this objective, the drill/exercise controllers will provide the players with any data which the player would have available to them under the conditions being simulated by the drill or exercise.

Facilitative critique session(s) will be held as soon as practicable after each drill/exercise. The comments of the evaluators, controllers, players and observers including federal and state observers or evaluators, will be discussed and the significant comments will be identified. As a part of the critique report, deficiencies (involving needed plan/procedure changes) will be identified. The Emergency Preparedness Section will be responsible for tracking Energy Northwest corrective actions to completion and maintaining sufficient records to document correction of the deficiencies.

TABLE 8-1

REQUIRED DRILL ELEMENTS

	Drill/Exercise	Frequency
a.	Communications Tests	(As described in Section 6. Can be performed as part of drills or exercises.)
b.	Communications Drills	Monthly (with WA State, DOE RL, and Benton and Franklin County Response Agencies) Quarterly (with state and federal response agencies) Annually (with WNP-2, state and local field monitoring teams)
c.	Fire Brigade Drills	As described in FSAR Section 13.2 (See Note 1)
d.	Medical Emergency Drills	Annually (See Note 2)
e.	Radiological Monitoring Drills	Annually
f.	Health Physics Drills	
	1. Analysis of simulated samples and measurements in the environment	Semi-Annually
	2. Analysis of in plant liquid samples with actual elevated radiation levels	Annually
g.	Major Exercises, including tests of Public Notification System	Biennially (See Note 3)
h.	Combined Functional Drills	Biennially (See Note 4)

NOTE 1: One of the fire drills may be conducted as a portion of the major exercise or combined functional drill.

NOTE 2: The portion of the medical emergency drill involving offsite support agencies may be performed as a portion of the radiological monitoring, major exercise or combined functional drill.

NOTE 3: Department of Energy - Richland Operations, Benton and Franklin County and Washington State Emergency Management will be afforded the opportunity to participate biennially or more frequently if they so request.

NOTE 4: Performed during the alternating years from the major exercises, and testing a major portion of the basic elements of the plans and organizations.

SECTION 9
PUBLIC EDUCATION AND INFORMATION

9.1 PUBLIC EDUCATION AND INFORMATION PROGRAM

Energy Northwest has developed a public education and information program with the purpose of educating the public concerning power plant safety, expected effects of a reactor accident, and actions which should be taken by the public in the unlikely event of a release of radioactive material. This program is targeted for the transients and residents within the Ten-Mile Emergency Planning Zone (EPZ), as well as other interested members of the general public. Special programs have also been designed to address the special needs of the news media.

9.1.1 Annual Public Information Program

In coordination with the Department of Energy - Richland Operations, State of Washington and Benton and Franklin Counties, Energy Northwest provides information to permanent and transient populations within the Ten-Mile EPZ on such topics as radiation, recommended protective measures, selected evacuation routes and assistance centers, sheltering, respiratory protection, thyroid blocking agents, special needs for the handicapped, tone activated radio operation and contacts for additional information. This program includes written material updated and distributed annually to residences within the Ten-Mile EPZ for reference during an emergency.

Brochures at designated recreational facilities are available to transient populations within the 10-Mile EPZ.

9.1.2 Media Information Program

In addition to Energy Northwest's ongoing media program, special presentations coordinated with county and state emergency management offices are made annually to acquaint the news media with emergency preparedness, radiation hazards, and points of contact for release of public information during an emergency.

9.1.3 Warning Signs

Warning signs are posted and maintained at selected areas frequented by sportsmen within the Ten-Mile EPZ.

The signs inform the transients that upon hearing a steady siren tone to leave the area immediately and tune to the local Emergency Broadcast System frequency.

9.2 PUBLIC INFORMATION DURING EMERGENCIES

9.2.1 Emergency Public Information

During an emergency the Joint Information Center (JIC) Manager is responsible for ensuring an accurate and reliable flow of information. Emergency public information procedures are activated during an emergency and will include provisions for exchange of information between Energy Northwest, the public, and outside agencies.

It is likely that the perceived threat, hence media interest and public concern, will be greater than that actually associated with the emergency. The degree to which the emergency public information program is activated by the JIC Manager will depend upon the classification of the emergency and upon the public perception of the event. Therefore, accelerated operations beyond the requirements expected for the declared class of emergency may be implemented.

9.2.2 Emergency Operations Facility Public Information Operations

The Emergency Operations Facility (EOF) Public Information Officer and news writing staff are responsible for developing media release information, and will work closely with technical personnel in the EOF to assure accurate information.

9.2.3 Public Information Operations

The Joint Information Center, located outside the 10-mile EPZ, can accommodate a large number of media personnel and is activated automatically at an alert or higher classification or at the direction of the JIC Manager.

A News Coordination Team, chaired by the JIC Manager, will be established to issue accurate, coordinated and timely information to the media by conducting media briefings and preparing news releases. This team is composed of representatives from Energy Northwest, the Nuclear Regulatory Commission, the Department of Energy-RL, the Federal Emergency Management Agency (coordinating the rest of the federal agencies), and state and local officials. The team will assure that the spokepersons designated from each group have access to all necessary information, opportunity to exchange information, and have the opportunity to participate in media briefings.

Media briefings will be held at regular intervals. The Joint Information Center has space for briefing over 150 members of the media. Areas in the center will be provided for media work space. Copies of news releases and other support materials will be made available for media use.

A media briefing area is available in the PSF outside of the EOF. The main media center is located at the Energy Northwest ROC in Richland.

9.2.4 Media Telephone Team Operations

A Media Phone Team can be activated and remain operational twenty-four hours per day until the emergency is terminated. This team will respond to incoming media calls with the latest available information. This team may be manned jointly by Energy Northwest, federal, local, and state representatives.

9.2.5 Public Information Telephone Team Operations

Public Information Phone Team operations will begin as directed by JIC Manager. This Team will respond to calls and correct misinformation distributed by the media or other groups. This team may be manned jointly by Energy Northwest, Federal, Local and State Representatives. The Public Information Phone Team, combined with the Media Phone Team, will ensure a comprehensive rumor control effort.

APPENDIX 1

SUPPORTING PLANS AND CONTRACTS

Annually Energy Northwest will review the supporting plans and/or contracts listed below to ensure they remain accurate and applicable relative to WNP-2 activities. The results of this review may be communicated informally, but some form of record will be maintained.

Plan	Source
Washington State Fixed Nuclear Facility Emergency Response Plan	Washington Emergency Management
Benton County Fixed Nuclear Facility Response Plan	Benton County Emergency Management
Franklin County Radiological Emergency Response: Energy Northwest	Franklin County Emergency Management
Oregon WNP-2 Emergency Response Plan	Oregon Office of Energy
Hanford Emergency Management Plan	Department of Energy, Richland Operations
Siemens Pre Emergency Plan Manual	Siemens Power Corporation
INPO 86-032, Emergency Resources Manual	Institute of Nuclear Power Operations
Federal Radiological Emergency Response Plan (FRERP)	Federal Emergency Management Agency
NUREG-0845, Agency Procedures for NRC Incident Response Plan (and supplements)	United States Nuclear Regulatory Commission

APPENDIX 2

EMERGENCY PLAN IMPLEMENTING PROCEDURES
Index for Implementation of Emergency Plan Sections

Procedure	Title	Section of Plan Implemented
	13.1 Emergency Classification	
13.1.1	Classifying the Emergency	4.1 thru 4.4
13.1.1A	Classifying the Emergency - Technical Bases	4.2
	13.2 Protective Measures	
13.2.1	Emergency Exposure Level/Protective Action Guides	5.9
13.2.2	Determining Protective Action Recommendations	5.5
	13.3 Natural Emergency Actions	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.1.1 and the Abnormal Condition Procedures, Section 4.12, of the Plant Procedures Manual.	
	13.4 Notifications	
13.4.1	Emergency Notifications	4.6
	13.5 Evacuation and Accountability	
13.5.1	Localized and Protected Area Evacuations	5.7.2, 5.7.3
13.5.3	Evacuation of Exclusion Area and/or Nearby Facilities	1.6.2 5.7.2, 5.7.3
13.5.5	Personnel Accountability/ Search and Rescue	5.7.5
	13.6 Emergency Security Procedures	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.10.8 and other Security Plan Implementing Procedures.	

Procedure	Title	Section of Plan Implemented
	13.7 Personnel Monitoring, Decontamination, First Aid	
13.7.5	Offsite Assembly Area Operations	5.7.3
	13.8 Offsite Dose Calculations	
13.8.1	Computerized Emergency Dose Projection System Operations	5.3

Procedure	Title	Section of Plan Implemented
	13.9 Environmental Field Monitoring	
13.9.1	Environmental Field Monitoring Operations	2.3.3.3, 2.4.4.16, 5.4, 6.2.4
13.9.5	Environmental Sample Collection	5.2.2, 5.4
13.9.8	River Evacuation Monitoring	5.7.4
	13.10 Plant Emergency Facilities	
13.10.1	Control Room Operations and Shift Manager Duties	2.3.1.1 thru 2.3.1.3, 2.3.1.6
13.10.2	TSC Manager Duties	2.3.2.1
13.10.3	Technical Manager and Staff Duties	2.3.2.4, 2.3.2.7
13.10.4	Radiation Protection Manager Duties	2.3.2.2
13.10.5	Operations Manager Duties	2.3.2.8
13.10.6	Plant/NRC Liaison Duties	2.3.2.3
13.10.7	Plant Administrative Manager Duties	2.4.1.1
13.10.8	Security Lieutenant Duties	2.3.1.4
13.10.9	OSC Manager and Staff Duties	2.3.1.9, 2.4.1.6, 2.4.1.7
13.10.10	Health Physics and Chemistry OSC Duties	2.3.1.8, 2.10
13.10.12	Repair Team Duties	2.5.2-11
13.10.14	Maintenance Manager Duties	2.4.1.2

Procedure	Title	Section of Plan Implemented
13.10.16	Chemistry/Effluent Manger Duties	2.14.1.4
	13.11 Emergency Operations Facility	
13.11.1	EOF Manager Duties	2.3.3.1
13.11.2	Assistant EOF Manager Duties	2.4.2.1
13.11.3	Site Support Manager and Staff Duties	2.4.2.8
13.11.7	Radiological Emergency Manager Duties	2.3.3.2
13.11.8	Licensing Manager Duties	2.4.4.18
13.11.10	Security Manager Duties	2.4.2.7
13.11.12	EOF Engineering Manager and Staff Duties	2.4.2.4, 2.4.2.6
13.11.18	Information Coordinator Duties	2.4.1.3
	13.12 Headquarters Emergency Centers	
13.12.19	JIC Management	2.3.4.1
13.12.20	Media and Information Management	6.3
13.12.21	JIC Support Services	6.3
	13.13 Reentry/Recovery	
13.13.1	Reentry	7.2
13.13.2	Recovery Operations	7.3
13.13.3	Intermediate Phase MUDAC Operations	7.3.2
13.13.4	After Action Reporting	4.4

13.14 Supporting Information Procedures

13.14.1	Nearby Nuclear Facility Emergencies/ Requests for Assistance	4.1
13.14.4	Emergency Equipment	6.4, 8.4
SWP-EPP-01	Emergency Response Organization and Training	8.5
13.14.8	Drills and Exercises Program	8.6
13.14.9	Emergency Program Maintenance	8.1 thru 8.4

APPENDIX 3

EMERGENCY KITS

WNP-2 Fire Brigade Stations

Fire Brigade turnout stations are strategically located inside and outside the Radiologically Controlled Area (RCA). Contents include fire fighter protective equipment, self-contained breathing apparatus (SCBA) units, radios, fire fighter tools and equipment, First Responder medical kits, hazardous materials response kits, and radiological monitoring equipment.

WNP-2 Decontamination Kits

Two decontamination kits are located in the Radwaste Building decontamination area, and one is located in the General Services Building Emergency Equipment Area.

WNP-2 Protective Equipment Kit

A kit containing protective equipment and radiological monitoring equipment is located in the Technical Support Center.

Energy Northwest Field Monitoring Kits

Kits containing protective equipment, radiological monitoring equipment, communications equipment, and emergency supplies for Environmental Monitoring Field Teams are located at the Plant Support Facility and Richland Office Complex (ROC). Kits located at ROC also include a River Evacuation Monitoring Kit.

Hospital Radiological Emergency Kits

Kits containing protective equipment, radiological monitoring equipment, and emergency supplies are located at Kadlec Medical Center in Richland, Our Lady of Lourdes Hospital in Pasco, and Kennewick General Hospital in Kennewick.

APPENDIX 4

AGREEMENT LETTERS

This appendix refers to signed letters of agreement which formalize commitments between Energy Northwest and outside organizations to provide or receive mutual aid and support during emergency conditions.

Listed below are the outside agencies Energy Northwest has agreements with. Agreements are maintained in files by Energy Northwest's Emergency Preparedness Group.

Agreements already in place or provided for in existing response plans provide detailed, formalized commitments to provide or receive mutual aid or support during emergency conditions. These plans are referenced in Appendix 1 of this plan.

In addition, Federal commitment to support WNP-2 is provided in Federal response plans maintained by Nuclear Regulatory Commission and Federal Emergency Management Agency. These plans are listed in section 3.6.1 and 3.6.3, as well as Appendix 1.

Annually, Energy Northwest will review the agreements listed below to ensure they remain accurate and applicable. The results of this review will be communicated to the affected organizations. Acknowledgements for this annual review are requested and maintained in the agreement file. Records of verbal acknowledgements are acceptable and will be maintained.

1. Agreement Letter With Our Lady of Lourdes Hospital

2. Agreement Letter With Kennewick General Hospital

3. Agreement Letter With Kadlec Medical Center

4. (Memorandum of Understanding Between) Department of Energy Richland Operations Office, Hanford Environmental Health Foundation, Emergency Response At the Hanford

Site - Use of the Emergency Decontamination Facility

5. Law Enforcement Agency Agreement - Benton County

6.

Hanford Site Support Services, Fire and Ambulance

NUREG-0654 CROSS-REFERENCE

II. Planning Standards and Evaluation Criteria

A. Assignment of Responsibility (Organizational Control)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.a.	Each plan shall identify organizations that are intended to be part of the overall response. (See Appendix 5)	X Sect. 2 Sect. 3	X	X
b.	Specify its concept of operations, and its relationship to the total effort.	X Sect. 3	X	X
c.	Illustrate these interrelationships in a block diagram.	X 1.6.5 Table 1-1	X	X
d.	Identify a specific individual by title who shall be in charge of the emergency response.	X 2.1	X	X
e.	Provide for 24-hour per day emergency response, including manning of communications links	X 2.2, 2.3	X	X
2.a.	Specify the functions and responsibilities for major elements and key individuals by title. (See Section B for licensee.)		X	X
b.	The legal basis for such authorities.		X	X
3.	Include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations.	X App. 4	X	X
4.	Shall be capable of continuous (24-hour) operations for a protracted period.	X 2.1	X	X

B. Onsite Emergency Organization

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.	Specify the onsite emergency organization of plant staff personnel.	2.2 X 2.3		
2.	Designate an individual as emergency coordinator who shall be on shift at all times.	X 2.2		
3.	Identify a line of succession for the emergency coordinator.	X 2.1		
4.	Establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated.	X 2.11		
5.	Specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1.	Sect. 2, Table 2-1		
6.	Specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram.	X Sect. 3, Figure 21		
7.	Specify the corporate management, administrative, and technical support personnel who will augment the plant staff.	X 2.4		
a.	logistics support for emergency personnel;	2.4.1.1, X 2.4.2.8		

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
B.	Onsite Emergency Organization (Cont'd.)			
b.	technical support for planning and reentry/recovery operations;	X 2.3.3.1		
c.	management level interface with governmental authorities; and	X 2.3.3.1		
d.	release of information to news media during an emergency.	X 2.3.3.1		
8.	Specify the contractor and private organizations who may be requested to provide technical assistance	X 3.3		
9.	Identify the services to be provided by local agencies for handling emergencies. Provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan.	3.2 X App. 4		

C. Emergency Response Support and Resources

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Make provisions for incorporating the Federal response capability into its operation plan, including the following:			
a.	specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.	2.3.3.2, X 3.6.2	X	

C. Emergency Response Support and Resources (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and	X 3.6.2	X	
c.	specific licensee, State and local resources available to support the Federal response.	X 3.6.2	X	X
2.a.	Each principal offsite organization may dispatch representatives to the licensee's near-site Emergency Operations Facility.		X	X
b.	Prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.	X 3.1		
3.	Identify radiological laboratories and their general capabilities and expected availability.	3.3.1 3.3.2 3.3.3 X 3.6.2	X	
4.	Shall identify nuclear and other facilities, organizations or individuals which can be relied upon.	3.3 X App. 4	X	X

D. Emergency Classification System

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee.	X 4.1, 4.2, 4.4		
2.	The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the FSAR.	X 4.1		

D. Emergency Classification System (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
3. Establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.		X	X
4. Have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility.		X	X

E. Notification Methods and Procedures

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish procedures which describe mutually agreeable bases for notification of response organizations.	4.6 X Table 4-2	X	X
2. Establish procedures for alerting, notifying, and mobilizing emergency response personnel.	X 4.6.1	X	X
3. Establish the contents of the initial emergency messages to be sent from the plant.	X 4.6.5		
4. Make provisions for followup messages from the facility.	X 4.6.6		
5. Establish a system for disseminating to the public appropriate information.		X	X
6. Establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public.	X 4.6.4	X	X

E. Notification Methods and Procedures (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide written messages intended for the public, consistent with the licensee's classification scheme.	X 4.6.5	X	X

F. Emergency Communications

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish reliable primary and backup means of communication.			
a. provision for 24-hour per day notification to and activation of the State/local emergency response network;	X 4.6	X	X
b. provision for communications with contiguous State/local governments within the Emergency Planning Zones;	X 4.6.3	X	X
c. provision for communications as needed with Federal emergency response organizations;	X 4.6	X	X
d. provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations centers, and radiological monitoring teams;	X Table 6-1	X	X
e. provision for alerting or activating emergency personnel in each response organization; and	X 4.6.1	X	X

F. Emergency Communications (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	provision for communication with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.	4.6.3 X 6.5.3		
2.	Ensure that a coordinated communication link for fixed and mobile medical support facilities exists.	X 3.2.2	X	X
3.	Conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).	X 6.6	X	X

G. Public Education and Information

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Provide a coordinated periodic (at least annually) dissemination of information to the public.	X 9.1.1	X	X
2.	Provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material. Shall also be used to disseminate to any transient population appropriate information that would be helpful if an emergency or accident occurs.	X 9.1.1, 9.1.3	X	X
3.a.	Designate the points of contact and physical locations for use by news media during an emergency.	X 9.2.3	X	X

G. Public Education and Information (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	Provide space which may be used for a limited number of the news media at the nearsite Emergency Operations Facility.	X 9.2.3		
4.a.	Designate a spokesperson who should have access to access to all necessary information.	X 9.2.3	X	X
b.	Establish arrangements for timely exchange of information among designated spokespersons.	X 9.2.3	X	X
c.	Establish coordinated arrangements for dealing with rumors.	X 9.2.5	X	X
5.	Conduct coordinated programs at least annually to acquaint news media with the emergency plans	X 9.1.2	X	X

H. Emergency/Facilities and Equipment

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish a Technical Support Center and an onsite operations support center	6.1.2 X 6.1.3		
2.	Establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out.	X 6.2		
3.	Establish an emergency operations center for use in directing and controlling response functions.		X	X

H. Emergency/Facilities and Equipment (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans: Licensee	State	Local
4.	Provide for timely activation and staffing of the facilities and centers described in the plan.	6.5.6 X 6.5.9	X	X
5.	Identify and establish onsite monitoring systems that are to be used to initiate emergency measures, as well as those to be used for conducting assessment.	5.1, X 5.2		
	The equipment shall include:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	5.1 X 5.2		
b.	radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	5.1.2 X App. 3		
c.	process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and	6.3 X 5.1.1		
d.	fire and combustion products detectors.	X 5.1.1		
6.	Make provisions to acquire data from or for emergency access to offsite monitoring and analysis equipment including:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1.1		
b.	radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided; and	X 5.2.2		
c.	laboratory facilities, fixed or mobile.	X 5.4.5		

H. Emergency/Facilities and Equipment (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.	X 5.4.3	X	X
8. Provide meteorological instrumentation and procedures, and provisions to obtain representative current meteorological information from other sources.	X 5.2.1		
9. Provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies.	X 6.1.3		
10. Make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use.	6.4 X 8.4	X	X
11. Each plan shall, in an appendix, include identification of emergency kits by general category.	X App. 3	X	X
12. Establish a central point for the receipt and analysis of all field monitoring data and coordination of sample media.	6.2.4 6.2.8 X 6.2.10	X	X

I. Accident Assessment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents	Table 4-1 X 5.1		

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
2.	Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident.	5.1 thru X 5.3		
3.	Establish methods and techniques to be used for determining:			
a.	the source term of releases of radioactive material within plant systems.	X 5.3.1		
b.	the magnitude of the release of radioactive materials.	X 5.3.2		
4.	Establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.	X 5.3.2		
5.	Have the capability of acquiring and evaluating meteorological information.	5.2.1 X 6.2.4		
6.	Establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.	X 5.3.1		
7.	Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone.	X 5.4	X	X
8.	Provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.	5.1 5.3 X 5.4	X	X

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
9. Have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uCi/cc.	X 5.4.4	X	
10. Establish means for relating the various measured parameters and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.	5.9.3 X 5.5	X	
11. Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.		X	

J. Protective Response

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish the means and time required to warn or advise:			
a. Employees not having emergency assignments;	X 5.7.3		
b. Visitors;	X 5.7.3		
c. Contractor and construction personnel; and	X 5.7.3		
d. Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.	3.2.3 X 5.7.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
2. Make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.	5.7.2 X 5.7.3		
3. Provide for radiological monitoring of people evacuated from the site.	X 5.7.4		
4. Provide for the evacuation of onsite non-essential personnel and shall provide a decontamination capability at or near the monitoring point specified in J.3.	X 5.7.3		
5. Provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.	X 5.7.5		
6. Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:			
a. Individual respiratory protection;	X 5.9.6		
b. Use of protective clothing; and	X 5.9.4.2		
c. Use of radioprotective drugs, (e.g., individual thyroid protection).	X 5.9.7		
7. Establish a mechanism for recommending protective actions to the appropriate State and local authorities.	X 5.9.3		

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
8.	Contain time estimates for evacuation within the plume exposure EPZ.	Table 5-1 X 5.8		
9.	Establish a capability for implementing protective measures based upon protective action guides and other criteria.		X	X
10.	The organization's plans to implement protective measures for the plume exposure pathway shall include:			
a.	Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	Fig. 5-1 Fig. 5-2 X Fig. 5-5	X	X
b.	Maps showing population distribution around the nuclear facility;	Fig. 5-3 X Fig. 5-4	X	X
c.	Means for notifying all segments of the transient and resident population;	X 5.8.2	X	X
d.	Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;		X	X
e.	Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.		X	X

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans Licensee	State	Local
f.	Include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;		X	X
g.	Means of relocation;		X	X
h.	Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone;		X	X
i.	Projected traffic capacities of evacuation routes under emergency conditions;		X	X
j.	Control of access to evacuated area and organization responsibilities for such control;		X	X
k.	Identification of and means for dealing with potential impediments to use of evacuation routes, and contingency measures;		X	X
l.	Time estimates for evacuation of various sectors and distances; and		X	X
m.	The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions.	X 5.5.1	X	

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
11.	Specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food-stuffs. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained.		X	
12.	Describe the means for registering and monitoring of evacuees at relocation centers in host areas.		X	

K. Radiological Exposure Control

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish onsite exposure guidelines for:			
a.	removal of injured persons;	X 5.9.3		
b.	undertaking corrective actions;	X 5.9.3		
c.	performing assessment actions;	X 5.9.3		
d.	providing first aid;	X 5.9.3		
e.	performing personnel decontamination;	X 5.9.3		

K. Radiological Exposure Control (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	providing ambulance service; and	X 5.9.3		
g.	providing medical treatment services.	X 5.9.3		
2.	Provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.	X 5.9		
3.a.	Make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X 5.9.5	X	X
b.	Ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records.	X 5.9.5.2	X	X
4.	Establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides.		X	X
5.a.	Specify action levels for determining the need for decontamination.	X 5.9.4.2	X	X
b.	Establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.	X 5.9.4.3	X	X
6.	Provide onsite contamination control measures including:			
a.	area access control;	X 5.9.4.1		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. drinking water and food supplies;	X 5.9.4.4		
c. criteria for permitting return of areas and items to normal use.	X 7.1		
7. Provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.	X 5.9.4.3		

L. Medical and Public Health Support

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X 3.2.2	X	X
2. Provide for onsite first aid capability.	6.1.5 X 6.2.9		
3. Develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities		X	
4. Arrange for transporting victims of radiological accidents to medical support facilities.	X 3.2.2.3	X	X

M. Recovery and Reentry Planning and Postaccident Operations

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Develop general plans and procedures for reentry and recovery.	X Sect. 7	X	X
2. Plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization.	X 7.3		
3. Specify means for informing members of the response organizations that a recovery operation is to be initiated.	X 7.3.2	X	
4. Establish a method for periodically estimating total population exposure.	X 5.3.3	X	

N. Exercises and Drills

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1.a. Exercises shall be conducted as set forth in NRC and FEMA rules.	X 8.9	X	X
b. Provide for a critique of the evaluated exercise by Federal and State observers/evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once each six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.	8.6.1 X 8.8	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
2. Conduct drills, in addition to the annual exercise at the frequencies indicated below.	X Table 8-1		
a. Communication Drills			
Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually.	X Table 8-1	X	X
b. Fire Drills			
Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.	8.7.2 X Table 8-1		
c. Medical Emergency Drills			
A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies shall be conducted annually.	8.7.3 X Table 8-1		X
d. Radiological Monitoring Drills			
Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually.	8.7.4 X Table 8-1	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
e.	Health Physics Drills			
	(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	8.7.5 X Table 8-1	X	
	(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.	8.7.5 X Table 8-1		
3.	Describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.			
a.	The basic objective(s) of each drill and and exercise and appropriate evaluation criteria;	X 8.6.2	X	X
b.	The date(s), time period, place(s) and participating organizations;	X 8.6.2	X	X
c.	The simulated events;	X 8.6.2	X	X
d.	A time schedule of real and simulated initiating events;	X 8.6.2	X	X
e.	A narrative summary describing the conduct of the exercises or drills;	X 8.6.2	X	X
f.	A description of the arrangements for and advance materials to be provided to official observers.	X 8.6.2	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
4. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.	X 8.6.1	X	X
5. Each organization shall establish means for evaluating observer and participant comments on areas needing improvement.	X 8.6.1	X	X

O. Radiological Emergency Response Training

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Each organization shall assure the training of appropriate individuals.	X 8.5	X	X
a. Provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.	X 8.5.1		
b. Each offsite response organization shall participate in and receive training.		X	X
2. The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills.	X 8.5.1		
3. Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.	6.1.6 X 8.5.1.1		

O. Radiological Emergency Response Training (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
4.	Establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs shall be provided in the following categories:			
a.	Directors or coordinators of the response organizations;	X 8.5.1.1	X	X
b.	Personnel responsible for accident assessment;	X 8.5.1.1	X	*
c.	Radiological monitoring teams and radiological analysis personnel;	X 8.5.1.1	X	*
d.	Police, security and fire fighting personnel;	X 8.5.2	*	X
e.	Repair and damage control/correctional action teams (onsite);	X 8.5.1.1		
f.	First aid and rescue personnel;	X 8.5.1.1	*	X
g.	Local support services personnel including Civil Defense/Emergency Service personnel;	X 8.5.2		X
h.	Medical support personnel;	X 8.5.2	X	X
i.	Licensee's headquarters support personnel;	X 8.5.1.2		
j.	Personnel responsible for transmission of emergency information and instructions.	X 8.5.1.1	X	X

*NRC and FEMA encourage State and Local Governments which have these capabilities to continue to include them in their training programs.

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
5. Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.	X 8.5.2	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide for the training of individuals responsible for the planning effort.	X 8.1	X	X
2. Identify by title the individual with the overall authority and responsibility for radiological emergency response training.	X 8.1	X	X
3. Designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X 8.1	X	X
4. Update its plan and agreements as needed, review and certify it to be current on an annual basis.	X 8.2	X	X
5. Changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans.	X 8.2	X	X
6. Each plan shall contain a detailed listing of supporting plans and their source.	X App. 1	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Each plan shall contain as an appendix listing, by title, procedures required to implement the plan.	X App. 2	X	X
8.	Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.	Table of Contents X App. 5	X	X
9.	Arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.	X 8.3		
10.	Provide for updating telephone numbers in emergency procedures at least quarterly.	X 6.5.3	X	X

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Affected Pages	Description of Changes
EP 4.23	Added reference to –192" for Anticipated Transient Without Scram (ATWS) conditions to EAL 6.1.G.1. This is not a decrease of effectiveness of the Emergency Plan as reactor water level may be directed by station Emergency Operating Procedures to be intentionally lowered to –192" for power control and steam cooling of the reactor fuel during ATWS conditions.
EP 4.26	Added the building names for the Plant Support Facility (Kootenai Building) and Plant Engineering Center (Deschutes Building) in EAL 7.3.U.3. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 4.27	Clarified Emergency Action Level (EAL) 8.2.U.1 by changing "validation of alarm" to "receipt of an alarm". This change aligns the intent of this EAL with the technical basis description, and the generic Guidance contained in NEI 99-01, revision 4. This change makes the Notification of Unusual Event declaration more conservative because it clarifies when the 15 minute clock starts for the declaration. Therefore, this change increases the effectiveness of the Emergency Plan.
EP 4.32	Added reference to –192" for Anticipated Transient Without Scram (ATWS) conditions Table 6, Columns Fuel Clad Loss and RCS Loss. This is not a decrease of effectiveness of the Emergency Plan as reactor water level may be directed by station Emergency Operating Procedures to be intentionally lowered to –192" for power control and steam cooling of the reactor fuel during ATWS conditions.
EP 4.33	Added reference to –192" for Anticipated Transient Without Scram (ATWS) conditions to Table 1. This is not a decrease of effectiveness of the Emergency Plan as reactor water level may be directed by station Emergency Operating Procedures to be intentionally lowered to –192" for power control and steam cooling of the reactor fuel during ATWS conditions.

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REVISION 27 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 3.11	Corrected the station name to Columbia Generating Station in where it appears in Section 3.6.2. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 4.1	Corrected the station name to Columbia Generating Station where it appears in Section 4.1. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 4.2	Corrected the station name to Columbia Generating Station where it appears in Section 4.2. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 4.4	Corrected the station name to Columbia Generating Station in Section 4.4.2.c. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 4.8	Corrected the station name to Columbia Generating Station where it appears in Section 4.5. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 4.9	Added the acronym "EAS" to Section 4.6.4. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 4.15	Added reference to –192" for Anticipated Transient Without Scram (ATWS) conditions in EALs 2.1.S.1 and 2.1.G.2. This is not a decrease of effectiveness of the Emergency Plan as reactor water level may be directed by station Emergency Operating Procedures to be intentionally lowered to –192" for power control and steam cooling of the reactor fuel during ATWS conditions.
EP 4.20	Added reference to –192" for Anticipated Transient Without Scram (ATWS) conditions to EAL 4.1.G.1. This is not a decrease of effectiveness of the Emergency Plan as reactor water level may be directed by station Emergency Operating Procedures to be intentionally lowered to –192" for power control and steam cooling of the reactor fuel during ATWS conditions.

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Affected Pages	Description of Changes
EP 2.15	The position of Repair Team Coordinator was relocated to Section 2.4.1, Augmenting Plant Emergency Response Organization from this Section, 2.4.4, Support Plant Emergency Response Organization, representing an increase in plan effectiveness, and additional conservatism for the reasons cited for the description of the change on page 2.12, above.
EP 2.19	Added the position of Field Team Coordinator, with footnote 5, to Table 2-1. This position is a non NUREG-0654, Table B-1 position, but provides an important coordination function to field team operations. As such, specifying this position adds effectiveness to the Emergency Plan by adding clarity to Table 2-1.
EP 3.1	Corrected the name of the Richland Office Complex to Energy Northwest Office Complex (ENOC) in Section 3.1. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 3.4	Corrected the station name to Columbia Generating Station in Sections 3.3.1 and 3.3.3. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 3.8	Corrected the station name to Columbia Generating Station in Section 3.5.1.4. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan. The Site Certification Agreement has also been revised to reflect this change.
EP 3.9	Corrected the station name to Columbia Generating Station where it appears in Section 3.5.2. Corrected the location of the NRC Duty Officer referenced in Section 3.6.1 to White Flint, MD, instead of Rockville, MD. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 1.7	Relocated the Definition that describes Columbia Generating Station from page EP 1.11. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 1.8	Corrected the reference location of the Emergency Operations Facility to the new building name of the Kootenai Building in definition 1.7.11. Corrected the station name to Columbia Generating Station in definition 1.7.14, 1.7.15, and 1.7.16. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan.
EP 1.9	Corrected the station name to Columbia Generating Station in definitions 1.7.20 and 1.7.25. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 1.10	Corrected the name of the Plant Support Facility to the new name of Kootenai Building and corrected the station name to Columbia Generating Station in definition 1.7.27. Corrected the station name to Columbia Generating Station in definitions 1.7.27 and 1.7.28. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan.
EP 1.11	Corrected the station name to Columbia Generating Station in definition 1.7.35, and relocated old definition 1.7.39 (formerly WNP-2 definition) to page EP 1.7 to maintain a correct alphabetical sequence. This change is at the editorial level, and does not affect the effectiveness of the Emergency Plan.
EP 1.15	Corrected the station name to Columbia Generating Station in Figure 1-1. The change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 1.16	Corrected the station name to Columbia Generating Station in Figure 1-2. The change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 1.17	Updated the Plant 2 Site Map, Figure 1-3. This update reflects new building names and removal of certain non-emergency response related buildings from the site as these buildings are no longer used and have been physically removed. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 1.18	Updated Figure 1.4, Emergency Operations Facility Location, to reflect the new name of the Plant Support Facility (PSF) as the Kootenai Building. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 2.2	The title of Vice President, Generation/Plant General Manager was corrected to read Plant General Manager in the second paragraph from the top of the page. The Plant General Manager has the full authority and responsibility for the overall supervision and administration of the plant. This change is editorial and driven by a corporate organization change that split the formerly combined position into two separate positions. As such, this change has no affect on effectiveness of the Emergency Plan.
EP 2.12	The position of Repair Team Coordinator is relocated to new Section 2.4.1, Augmenting Plant Emergency Organization, as 2.4.1.6, from Section 2.4.4, Support Plant Emergency Organization, old 2.4.4.4. Drills and evaluated exercises have demonstrated that this position is important to the operation of the Operations Support Center (OSC), by coordinating and communicating maintenance tasks from the Technical Support Center, and directing repair team activities. Because this position will now become a pager carrying position, this position is assured of being filled during an emergency thus making OSC operations, and repair team direction, more effective. Previously, this position was not a designated pager carrying position as a Support Category position. This change is considered an increase of effectiveness in the Emergency Plan, and represents additional conservatism.

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Superseded pages per Rev. 28 to Emergency Plan ltd. 4/24/01
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ENERGY NORTHWEST

EMERGENCY PLAN

COLUMBIA GENERATING STATION

Revision 27

APPROVALS: PRIOR NRC APPROVAL REQUIRED: __ Yes _X_ No

RECEIVED: __________ Date Correspondence No.:______________

[illegible] 1/25/01
Corporate Emergency Preparedness, Safety and Health Officer — Date

D.W. Coleman 1/31/01
Manager, Regulatory Affairs — Date

[illegible] 2-16-01
Plant Operations Committee Chairman — Date

[illegible] 2-16-01
Plant General Manager — Date

ENERGY NORTHWEST
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REVISION 27 - SYNOPSIS OF CHANGES

Summary

Revision 27 of the WNP-2 Emergency Plan changes the title of the Plan to Columbia Generating Station Emergency Plan and reflects editorial changes resulting from an organizational change where the individual position of Vice President, Generation/Plant General Manager was split into two separate positions. In addition, the Support Category position of Repair Team Coordinator was upgraded to Augmenting Category. Minor corrections to OSC Fire Brigade radio testing and preventive maintenance were made due to equipment improvements. Site building names were added where appropriate. The names of the station and the title of the Emergency Plan were corrected from WNP-2 to Columbia Generating Station. EAL 8.2.U.1 was clarified with respect to receipt of an alarm in the Control Room. General Emergency declaration threshold values for the Turbine and Rad Waste Building ventilation monitors were increased to account for artificial background signals.

Affected Pages	Description of Changes
Cover page	The name of the plant was changed from WNP-2 to Columbia Generating Station. The title of Vice President, Generation/Plant General Manager was corrected to read Plant General Manager. The Plant General Manager is the approving authority for Emergency Plan changes. This change is editorial and driven by a corporate organization change that split the formerly combined position into two separate positions. As such, this change has no affect on the effectiveness of the Emergency Plan.
EP ii	Added the building name to the Table of Contents description of the Plant Support Facility, Section 1.4.2, also known as the Kootenai Building. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP v	Added the building name to the Table of Contents description of the Emergency Operations Facility, also located in the Kootenai Building (PSF), Section 6.2. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP xi	Added the building name (Kootenai Building) to the description of the Emergency Operations Facility, item 6-4, in the Table of Contents List of Figures. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 1.1	Corrected the station name to Columbia Generating Station and specified the correct title of the Franklin County Radiological Emergency Response Plan in section 1.1. These changes are editorial and have no affect on the effectiveness of the Emergency Plan.
EP 1.2	Corrected the station name to Columbia Generating Station. Added the building name (Yakima Building) to the description of the General Services Building (GSB), Section 1.4.1.e. Added the new building name to Section 1.4.1.g, identifying the Circulating Water Pumphouse as the Wind River Building. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan.
EP 1.3	Retitled Section 1.4.2 to "Kootenai Building (PSF)", from "Plant Support Facility", and corrected reference in this section to the new building name. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 1.4	Corrected the station name to Columbia Generating Station in Section 1.6.2. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 1.5	Corrected the station name to Columbia Generating Station in reference to the Physical Security Plan title in Section 1.6.5, second bullet. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 1.6	Corrected the station name to Columbia Generating Station where it appears on this page. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 4.34	Increase the General Emergency classification threshold for TEA-RIS-13A from 8 to 11 Panel Meter Units (PMUs). This change does not reduce the effectiveness of the Emergency Plan because the increase in the artifical background of this radiation monitor has no affect on the quantity of radiation dectected. Radiation quantities discharged to the atmosphere from the Turbine Building are still detected, and the basis for declaration of a General Emergency in this instance has not changed. The 3 PMU increase in the artifical background for this monitor adds an artificial background value to the linear meter reading. The change increases the meter value observed but not the quantity of radioactivity detected. The dose projection system used at the station also accounts for this value by subtracting the artifical background from the meter input value such that actual increase in radiation readings above background are used for dose projection calculations. Increase the General Emergency classification threshold for WEA-RIS-14A from 26 to 29 PMUs. This change does not reduce the effectiveness of the Emergency Plan because the increase in the artifical background of this radiation monitor has no affect on the quantity of radiation dectected. Radiation quantities discharged to the atmosphere from the Radwaste Building are still detected, and the basis for declaration of a General Emergency in this instance has not changed. The 3 PMU increase in the artifical background for this monitor adds an artificial background value to the linear meter reading. The change increases the meter value observed but not the quantity of radioactivity detected. The dose projection system used at the station also accounts for this value by subtracting the artifical background from the meter input value such that increases in actual radiation readings above background are used for dose projection calculations.
EP 4.35	Added "Vital portions of the" [Turbine Building] to Table 5 to provide added clarity and alignment with the intent of the Technical Bases for EALs that refer to Table 5, such as certain Section 8, Hazards category EALs. This change enhances the effectiveness of the EAL scheme and the Emergency Plan.

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Affected Pages	Description of Changes
EP 5.3	Corrected the station name to Columbia Generating Station where it appears in Section 5.1.1. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 5.4	Corrected the station name to Columbia Generating Station in Section 5.2.1. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 5.5	Corrected the station name to Columbia Generating Station in Section 5.2.2. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.6	Corrected the station name to Columbia Generating Station in Section 5.3.3. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.7	Corrected the station name to Columbia Generating Station in Section 5.4.5. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.9	Corrected the station name to Columbia Generating Station in Section 5.5. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.10	Corrected the station name to Columbia Generating Station and the name of the Plant Support Facility (PSF) to the Kootenai Building is Section 5.6.2, Transient Population. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan.
EP 5.11	Corrected the station name to Columbia Generating Station and the building names of "Plant Engineering Center" to "Deschutes Building" and "Plant Support Facility" to "Kootenai Building" in the table describing the industrial employment in the 10 mile EPZ, Section 5.6.2. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 5.12	Corrected the station name to Columbia Generating Station in Section 5.7.1. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.13	Corrected the name of the Plant Support Facility to "Kootenai Building", and the Energy Northwest Office Complex from Richland Office Complex in Section 5.7.3. Since the acronym "PSF" is retained in this description, no confusion is introduced for personnel to evacuate to a particular assembly area. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan. Corrected the title of the Franklin County response plan to "Franklin County Radiological Response: Energy Northwest" in Section 5.7.4. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 5.14	Corrected the station name to Columbia Generating Station in Section 5.8. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.19	Corrected the station name to Columbia Generating Station in Section 5.9.4.1. Corrected the building name of Plant Support Facility to Kootenai Building in Section 5.9.4.3. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 5.20	Corrected the station name to Columbia Generating Station in Section 5.9.4.4. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.21	Corrected a typographical error in Section 5.9.5.5, where the term "in-vitro" was used incorrectly. The term, "in-vivo", is the correct term in this application. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 5.25	Corrected the station name to Columbia Generating Station in Figure 5-2. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 5.28	Corrected the station name to Columbia Generating Station where it appears in Figure 5-5. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 6.1	Corrected the station name to Columbia Generating Station in Section 6.1 and 6.1.1. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 6.2	Corrected the station name to Columbia Generating Station in Section 6.1.2. Corrected the reference to the Energy Northwest Office Complex instead of the Richland Office Complex in section 6.1.2. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 6.3	Corrected the description of the location of the Operations Support Center to reference the new building name of "Yakima Building" instead of "Service Building", and corrected the station name to Columbia Generating Station in Section 6.1.3. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
	Corrected the station name to Columbia Generating Station in Section 6.1.4. Corrected the name of the location of the Central Alarm Station to "Yakima Building" instead of the "Service Building" in Section 6.1.4. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan.
EP 6.4	Corrected the name of the Energy Northwest Office Complex from the old name of Richland Office Complex, and corrected the name of the "Plant Support Facility" to "Kootenai Building in the title of Section 6.2, and the body of this description where it occurs. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 6.6	Corrected the acronym used to represent the Energy Northwest Office Complex (ENOC) in Section 6.2.6. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 6.7	Corrected the name of the "Plant Support Facility" to "Kootenai Building" for the description of the location of the Health Physics Center (HPC) in Section 6.2.8, and of the First Aid and Decontamination Area, Section 6.2.9. These changes are at the editorial level, and has no affect on the effectiveness of the Emergency Plan..
EP 6.8	Corrected the name of the "Plant Support Facility" to "Kootenai Building" in the description of the Emergency Operations Facility in Section 6.2.11, Habitability. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 6.9	Corrected the station name to Columbia Generating Station in Section 6.5. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 6.10	Corrected the station name to Columbia Generating Station and the Richland Office Complex to Energy Northwest Office Complex (ENOC) in Section 6.6.2. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 6.11	Corrected the station name to Columbia Generating Station in Section 6.6.3. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
	Added text indicating that the Crash line is available in the Alternate EOF, and restructured the description of the locations of the Crash line and HPN system in Section 6.6.3. This change adds additional clarifying detail, and so enhances the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 6.14	Expanded Section 6.7.g, Fire Brigade Equipment, to indicate that annual FCC checks are performed on portable radios. Previously, this section indicated only that the batteries were replaced monthly, and operational checks were performed monthly. This change is considered to be an increase in effectiveness of the Emergency Plan because of improved maintenance practices, availability, and equipment reliability.
EP 6.21	Corrected the title of Figure 6-4 to reflect the new name of "Kootenai Building" for the location of the Emergency Operations Facility. This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP 7.3	Corrected the station name to Columbia Generating Station in Section 7.3.2.a. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 8.1	Corrected the station name to Columbia Generating Station in Sections 8.1.a, 8.1.c, and 8.1.g. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP 8.2	The title of Vice President, Generation/Plant General Manager was corrected to read Plant General Manager in Section 8.3, Independent Audit of the Emergency Preparedness Program, second paragraph. Because the Plant General Manager has the full authority and responsibility for the overall supervision and administration of the plant, the Plant General Manager should have the results of EP program audits reported to him. This change is editorial and driven by a corporate organization change that split the formerly combined position into two separate positions. As such, this change has no affect on effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 8.4	The description of training applicability for Protective Action Recommendations is corrected in Section 8.5.1.1.a is corrected to exclude Control Room Operators, instead of specifying Shift Manager/Control Room Supervisor only. This provides a simpler approach to specifying pertinent training applicability and aids in readability and understanding. As such, the effectiveness of the Emergency Plan is enhanced.
EP 8.5	The description of training applicability for Dose Projection is corrected in Section 8.5.1.1.a is corrected to exclude Control Room Operators, instead of specifying Shift Manager/Control Room Supervisor only. This provides a simpler approach to specifying pertinent training applicability and aids in readability and understanding. As such, the effectiveness of the Emergency Plan is enhanced.
EP 8.8	Corrected the station name to Columbia Generating Station in Sections 8.6.b. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan. The title of Vice President, Generation/Plant General Manager is corrected to read Plant General Manager in Section 8.6.1, Drill and Exercise Responsibilities. Because the Plant General Manager has the full authority and responsibility for the overall supervision and administration of the plant, the Plant General Manager should have approval authority for exercises. This change is editorial and driven by a corporate organization change that split the formerly combined position into two separate positions. As such, this change has no affect on effectiveness of the Emergency Plan.
EP 8.11	Corrected the station name to Columbia Generating Station where it appears in Section 8.9. These changes are at the editorial level and have no affect on the effectiveness of the Emergency Plan.

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Affected Pages	Description of Changes
EP 8.12	Corrected the station name to Columbia Generating Station in Table 8-1, item b., column Frequency. This change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.
EP 9.2	Corrected the description of the location of the Media Briefing Area in Section 9.2.3 to reference the new building name of "Kootenai Building" instead of "Plant Support Facility." This change is at the editorial level, and has no affect on the effectiveness of the Emergency Plan.
EP A1-1	Corrected the station name to Columbia Generating Station in the title of Oregon Columbia Generating Station Emergency Response Plan and elsewhere in Appendix 1. These changes area at the editorial level and have no affect on the effectiveness of the Emergency Plan.
EP A2-2	Deleted reference to Procedures 13.10.10 and 13.10.14 as these procedures have been incorporated into 13.10.9, OSC Manager and Staff Duties. Emergency Plan sections implemented by the cancelled procedures are relocated into the 13.10.9 reference. These changes are editorial in nature, and have no affect on the effectiveness of the Emergency Plan.
EP A3-1	Corrected the station name to Columbia Generating Station in Appendix 3 where it appears. Corrected the description of the locations of Emergency Kit in Appendix 3 to reference new building names of "Yakima Building" instead of the "General Services Building" for WNP-2 Decontamination Kits, and the "Kootenai Building" instead of the "Plant Support Facility" for Energy Northwest Field Monitoring Kits. Corrected the reference to the Energy Northwest Office Complex and the associated acronym. These changes are at the editorial level, and have no affect on the effectiveness of the Emergency Plan.
EP A4-1	Corrected the station name to Columbia Generating Station in Appendix 4. The change is at the editorial level and has no affect on the effectiveness of the Emergency Plan.

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SECTION 1
INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

The Energy Northwest Emergency Plan (or Plan) was written to address emergencies at the Columbia Generating Station located on the Hanford Reservation and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations as required by Title 10, Code of Federal Regulations, Part 50. It was developed in conjunction with the Washington State and the Benton County Fixed Nuclear Facility Emergency Response Plan and the Franklin County Radiological Response: Energy Northwest plan. All plans were developed to meet the intent of NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2 PURPOSE OF THE EMERGENCY PREPAREDNESS PROGRAM

The emergency preparedness program provides concepts and protective actions that are necessary to limit the consequences of radiation accidents and other emergencies. The primary objectives include the necessary arrangements, procedures and organizations necessary to effectively resolve any plant emergency to ensure the safety of the general public and to safeguard plant personnel and property.

1.3 ENERGY NORTHWEST COMMITMENT TO SAFETY

Energy Northwest is committed to the safe operation of its nuclear project. The commitment begins at the highest level of management and is reflected in the day-to-day activities of all employees. In addition to meeting, or in many cases exceeding, regulatory requirements, Energy Northwest is committed to providing a comprehensive program of personnel safety and corporate loss prevention. This Plan is a description of the comprehensive preparedness exhibited by Energy Northwest and its employees.

A trained staff of emergency response personnel is available, equipped and ready to respond to any emergency at Energy Northwest's nuclear project. Arrangements have been made with federal, state, and local response organizations and other nuclear facilities for assistance, if needed, during an emergency. Together these organizations can quickly implement a unified effort to assess the hazards, make the necessary decisions, and initiate actions to protect the health and safety of both emergency workers and the general population.

Energy Northwest works closely with all involved agencies. A coordinated training program between Energy Northwest and the Department of Energy in Richland provides emergency personnel from Benton and Franklin counties and the State of Washington with the training needed to assist during an emergency. Participation by Energy Northwest in joint programs with the Department of Energy to upgrade county and state emergency response capabilities is an example of the commitment to safety which Energy Northwest recognizes as its responsibility.

1.4 SITE CHARACTERISTICS

Energy Northwest leases 1089 acres of land on the Hanford Reservation, located north of Richland, Washington, and controlled by the Department of Energy. The land leased by Energy Northwest is approximately three miles west of the Columbia River and 12 miles north of the populated area of Richland. Figures 1-1 and 1-2, the Plume Exposure and Ingestion Exposure Emergency Planning Zone maps, show the location of the facilities on the Hanford Reservation.

1.4.1 Plant Design

Columbia Generating Station is a boiling water reactor (BWR-5) with the reactor system supplied by the General Electric Company. This plant has an approximate electrical output of 1250 megawatts (MWe). Fuel for the reactor consists of slightly enriched uranium dioxide pellets sealed in Zircaloy-2 fuel rods. These fuel rods are assembled into individual fuel assemblies. Control of the core is achieved by movable, bottom-entry control rods.

The principal structures located on the plant site are shown in Figure 1-3 and include:

a. Reactor Building - envelopes the Mark II primary containment and provides a secondary containment structure. It also contains the new and spent fuel storage, refueling equipment, emergency core cooling systems and auxiliary equipment.

b. Radwaste and Control Building - houses the liquid and solid radwaste system, components of the off-gas system, and the main control room.

c. Turbine Building - houses the turbine-generator consisting of one high pressure and three low pressure turbines connected to a single generator.

d. Diesel Generator Building - location of the standby diesel generators and associated controls and instrumentation.

e. Yakima Building (GSB) - houses the makeup water treatment system, machine shop, and office area.

f. Technical Support Center - this emergency response facility is utilized by the plant staff during an emergency. A more detailed description is provided in Section 6, "Emergency Facilities and Equipment."

g. Wind River Building (Circulating Water Pumphouse) - houses the circulating water pumps, plant service water pumps, and fire pumps.

h. Spray Ponds - the ultimate heat sink providing cooling water to the reactor for emergency shutdown.

i. Cooling Towers - six mechanical draft cooling towers used to dissipate the main condenser cooling water heat to the atmosphere.

1.4.2 Kootenai Buidling (PSF)

The Kootenai Building is used for support of the plant site and the interface with off-site support agencies. It houses the Plant Simulator, the Site Training Center, and the Emergency Operations Facility. Its location is shown in Figure 1-4. See Section 6 for a detailed description of the emergency centers located in this facility.

1.5 ACTIVATION OF THE EMERGENCY PLAN AND PROCEDURES

This Emergency Plan provides the basis for classifying emergencies according to severity, assigning responsibilities, and outlining the most effective course of action to safeguard the public and plant personnel in the event of an incident. Detailed emergency procedures required to implement the Emergency Plan are listed in Appendix 2. The Emergency Plan Implementing Procedures prescribe the appropriate course of action necessary to activate the emergency response organizations and minimize the consequences of an incident.

The Emergency Plan Implementing Procedures (EPIPs) are used when an emergency is declared in accordance with Section 4 of this plan. In the absence of other controlling procedures, EPIPs are used as appropriate. The section of EPIPs designated as "Supporting Information Procedures" are implemented on a continuing basis and are used to ensure long term program maintenance.

1.6 ASSIGNED AUTHORITIES

1.6.1 Hanford Reservation

The 570 square mile Hanford Reservation is under the control of the Department of Energy - Richland Operations. The Department of Energy maintains a well-trained and qualified organization capable of responding to emergencies on the Hanford Reservation. The Department of Energy maintains responsibility for response actions on the Hanford Reservation outside the exclusion area boundaries.

Representatives from the Department of Energy will coordinate their response efforts to an Energy Northwest emergency with Energy Northwest, State, and County organizations from Energy Northwest's Emergency Operations Facility. Communications will be maintained with the Department of Energy's Occurrence Notification Center in Richland, Washington.

An Energy Northwest emergency may require response by local, state and federal organizations. Because of the unique siting of Energy Northwest facilities on a federal reservation, several areas of responsibility must be defined. A coordinated effort by the response organizations will be jointly conducted from Energy Northwest's Emergency Operations Facility. Responsibilities concerning jurisdictional areas are defined in the following sections. Statements made within this document are not intended to exclude one agency from providing assistance to another agency upon request.

1.6.2 Exclusion Area

The exclusion area for Columbia Generating Station consists of a 1.2 mile radius around the plant. The exclusion area will be monitored by teams from Energy Northwest during an emergency and access will be controlled under the direction of Energy Northwest's Security Force. Coordination of activities within the exclusion area will be under the control of Energy Northwest and directed by the individual serving as the Emergency Director.

Energy Northwest has the authority to control and coordinate all activities within this exclusion area, as granted by Title 10 of the Code of Federal Regulations, Part 100.3. The agreement between Energy Northwest and the Department of Energy concerning the site lease on the Hanford Reservation includes provision for this authority.

1.6.3 Plume Exposure Pathway Emergency Planning Zone

The response to an emergency will usually require actions only within the site boundary; however, accidents are possible that may affect areas several miles from the facility. The planning basis for Energy Northwest's Emergency Preparedness Plan utilizes the emergency planning zone concept as first outlined in NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, dated December, 1978. The emergency planning zones are designated as areas for planning to assure that prompt and effective actions shall be taken to protect the public in the event of an accident. The emergency planning zone concept establishes two zones, a ten-mile Plume Exposure Pathway Emergency Planning Zone and an approximately 50-mile Ingestion Exposure Pathway Emergency Planning Zone.

In the Plume Exposure Pathway (Ten-Mile) Emergency Planning Zone (EPZ) the principal exposure sources are:

a. Whole body external exposure to beta/gamma radiation from the plume and from deposited radioactive material.

b. Inhalation exposure from the passing radioactive plume.

The Plume Exposure Pathway EPZ includes parts of the Hanford Reservation and Benton and Franklin Counties. Response actions will be coordinated between the two counties from their respective County Emergency Operations Centers.

The counties will coordinate all activities off the Hanford Reservation during the initial phases of the emergency. The Benton and Franklin County Emergency Operations Centers will coordinate activities with Energy Northwest and Department of Energy through county representatives at Energy Northwest's Emergency Operations Facility. Energy Northwest will provide dose assessment and protective action recommendations to state and local governments.

The Director for the Washington State Military Department, Emergency Management Division, is responsible for ensuring that the State maintains the capability to protect the public health and safety in the event of a fixed nuclear facility incident.

The Washington State Department of Health (DOH) is responsible for safeguarding the health of the public. Coordination of monitoring activities will be provided from Energy Northwest's Emergency Operations Facility.

1.6.4 Ingestion Exposure Pathway Emergency Planning Zone

The Ingestion Exposure Pathway Emergency Planning Zone (EPZ) as shown in Figure 1-2 extends into the Yakama Indian Nation, eight counties within the State of Washington, and two counties in the State of Oregon. These are Benton, Franklin, Yakima, Kittitas, Grant, Adams, Walla Walla, and Klickitat in the State of Washington[1], and Morrow and Umatilla Counties in the State of Oregon. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The State of Washington maintains communication with the Washington counties in the Ingestion Exposure Pathway EPZ. The State of Oregon does the same for Morrow and Umatilla Counties. Communications with the Yakama Indian Nation are handled by Yakima County. Dose projections and environmental sampling are also the responsibility of the States and will be coordinated from Energy Northwest's Emergency Operations Facility by State representatives. Support to the States of Washington and Oregon is provided by Energy Northwest through the sharing of field team data and other resources.

1.6.5 Emergency Plan Interrelationships

Interrelationships of this plan with procedures, other plans, and emergency arrangements are summarized as follows:

- Detailed actions to be taken by individuals in response to onsite emergency conditions are described in the Emergency Plan Implementing Procedures.

- The Columbia Generating Station Physical Security Plan and Procedures and this plan are coordinated to ensure that appropriate emergency actions can be taken. For example, the Physical Security Plan and Procedures contain provisions for emergency response personnel and vehicle access when required by the Emergency Plan Procedures.

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[1]Kittitas and Klickitat Counties do not actively participate in radiological emergency preparedness efforts. The State of Washington has established measures to ensure that appropriate actions will be taken for these two counties. Refer to the State of Washington Emergency Response Plan.

- Site construction groups at WNP-1 and the maintenance contractors at Columbia Generating Station that develop emergency procedures for their personnel are tasked with coordinating their procedures with this plan.

- The Columbia Generating Station Plant Procedure Manual, Radiological Protection Procedures Section defines administrative controls and procedures such as radiological control limits and precautions, use of personnel monitoring devices, use of protective clothing and equipment, personnel decontamination, etc. Additionally, the Chemistry Procedure Section and Radiation Protection Procedure Section provide instructions for conducting surveys, analyzing samples, operating health physics/radiation protection equipment, etc. Information and details provided in these documents have either been incorporated into the Plan or Emergency Plan Implementing Procedures, or have been appropriately referenced.

- Columbia Generating Station has formulated Abnormal Condition Procedures, as part of the Plant Procedure Manual, which discuss generic emergencies such as floods, volcanic ash, and other severe weather conditions. The methods and equipment developed for such emergencies are available for use in concert with emergency actions described in this plan.

- Formal agreements have been negotiated to define the coordination and interface between onsite and offsite organizations and agencies having related radiological emergency planning responsibilities. Continuing liaison with the offsite organizations ensures compatibility and proper interfacing with this plan. Section 3 of this plan further describes those agencies' activities with respect to an emergency at Columbia Generating Station.

- Other offsite organizations, not within the immediate area, may also be requested to offer technical assistance (e.g., Institute of Nuclear Power Operations, General Electric, NPS Energy Services, etc.).

1.7 DEFINITIONS

1.7.1	Activated	-	An Emergency Center may be activated when all appropriate personnel are present and capable of appropriately addressing the emergency condition.
1.7.2	ALARA	-	As Low as Reasonably Achievable.
1.7.3	Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.
1.7.4	Annually, or Annual	-	Performed or executed at anytime during a calendar year.
1.7.5	Augmenting Emergency Organization Personnel	-	Emergency Response Organization personnel not designated as essential, but are desired for efficient operation of emergency centers.
1.7.6	Columbia Generating Station	-	Columbia Generating Station is an operational General Electric boiling water reactor rated at approximately 3486 MWth.
1.7.7	Drill	-	A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise and is supervised and evaluated by qualified drill controller(s) and/or evaluator(s).
1.7.8	Early Warning System	-	A system designed to alert all residents and transients within the Ten-Mile Emergency Planning Zone. This system will include sirens for areas along the Columbia River and the Horn Rapids area, and tone alert radios for residents within the ten mile Emergency Planning Zone.
1.7.9	Emergency Action Level	-	Plant-specific indications, conditions or instrument readings which are utilized to determine emergency classifications.

1.7.10	Emergency Decontamination Facility	-	A facility located adjacent to Kadlec Medical Center in Richland to be used for decontamination and emergency medical care of contaminated persons.
1.7.11	Emergency Director	-	This functional position is responsible for all emergency activities at the plant and coordination of outside assistance as needed. The position will be held by either the Shift Manager, the TSC Manager or the EOF Manager.
1.7.12	Emergency Operations Facility (EOF)	-	An area located within the Kootenai Building which is equipped to facilitate command and control decision-making for the coordination of emergency activities and environmental assessments.
1.7.13	EOF Manager	-	This position is responsible for overall management of Energy Northwest resources and will oversee all activities related to the plant emergency response effort when the EOF is activated.
1.7.14	Emergency Response Organization (ERO)	-	Employees designated as emergency response personnel.
1.7.15	Essential ERO Personnel	-	Emergency response positions designated as essential to coordinate a response to a Columbia Generating Station emergency.
1.7.16	Exercise	-	An exercise is an event that tests the integrated capability and a major portion of the Columbia Generating Station emergency preparedness plans and response organizations. It will consist of a simulated emergency that results in offsite radiological releases and may include mobilization of state and local personnel and resources adequate to verify their capability to respond to a Columbia Generating Station accident. Federal and State agencies will be invited to participate as observers/evaluators in exercises.
1.7.17	Exclusion Area	-	An area extending out to a radius of 1.2 miles from the Columbia Generating Station reactor.

1.7.18	Fixed Nuclear Facility	-	A permanent facility (plant) with an operable nuclear reactor.
1.7.19	General Emergency	-	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
1.7.20	Hanford Reservation	-	A federally owned reservation under the control of the Department of Energy, Richland Operations, Richland, Washington. The reservation covers 570 square miles and is located north of the City of Richland in Benton County.
1.7.21	Ingestion Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions for the public is based on potential ingestion of contaminated water and/or foods. This zone consists of the area within a 50-mile radius of Columbia Generating Station including a portion of the State of Oregon. The boundaries of the zone are shown in Figure 1-2.
1.7.22	Monthly	-	Performed or executed at any time during a calendar month.
1.7.23	Nonessential Personnel	-	Personnel not designated as Emergency Response Personnel.
1.7.24	Owner Controlled Area	-	That area that Energy Northwest maintains industrial and process control of.
1.7.25	Onsite Emergency Centers	-	Includes the Control Room, Technical Support Center, and Operations Support Center. Plant personnel will implement emergency actions and make decisions to support plant operations and repair activities from these centers.

1.7.26	Plant	-	That area containing the Columbia Generating Station reactor and certain support structures within the Protected Area.
1.7.27	Kootenai Building	-	A facility located approximately 0.75 miles southwest of Columbia Generating Station. The structure includes a shielded area designated as the Emergency Operations Facility.
1.7.28	Plume Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions by the public are based on potential exposure to or inhalation of materials carried by a passing radioactive plume released during an accident. This zone consists of the area within an approximate 10-mile radius of Columbia Generating Station, including portions of Benton and Franklin Counties.
1.7.29	Protected Area	-	An area located within the Owner-Controlled Area which contains the Columbia Generating Station power block and is surrounded by chain link fence.
1.7.30	Protective Action Guides	-	Numerical doses and concentrations which act as trigger points to initiate protective actions such as sheltering, evacuation, or placement of dairy herds on stored feed. These guides are established by the States of Washington and Oregon, and take the Environmental Protection Agency Protective Action Guides into consideration.
1.7.31	Quarterly	-	Performed or executed at any time during a calendar quarter.
1.7.32	Recovery Manager	-	This position is responsible for overall management of Energy Northwest's resources and will be in charge of all activities related to the recovery operations following a plant emergency.
1.7.33	Release in Progress	-	Any radioactive release that exceeds the Emergency Action Levels for an Unusual Event.

1.7.34	SE Comm	-	South East Communications, the 911 answering division of Benton County Emergency Services.
1.7.35	Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guides exposure levels except near the site boundary.
1.7.36	Energy Northwest	-	Energy Northwest is a "Joint Operating Agency" incorporated under the laws of the State of Washington. Its members include public utility districts and municipalities. Energy Northwest holds the license to operate Columbia Generating Station.
1.7.37	Support Emergency Response Organization	-	Consists of personnel that perform limited support functions, or may only be needed under certain conditions.
1.7.38	Thermoluminescent Dosimeter (TLD)	-	A device for measuring gamma, neutron and some beta radiation exposure.
1.7.39	Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

1.8 ACRONYMS

AMS	Aerial Measuring System
ARC	American Red Cross
ARM	Area Radiation Monitor
ATWS	Anticipated Transient Without Scram
BOP	Balance of Plant
BPA	Bonneville Power Administration
CAS	Central Alarm Station
Ci	Curie
CR	Control Room
CRS/SM	Control Room Supervisor/Shift Manager
DAC	Derived Air Concentration
DBA	Design Basis Accident
DEM	Department of Emergency Management
DG	Diesel Generator
DIL	Derived Intervention Level
DOE-RL	Department of Energy - Richland Operations
DOH	Department of Health
DW	Drywell
EAL	Emergency Action Level
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ED	Emergency Director
EDPS	Emergency Dose Projection System
EFPD	Effective Full Power Days
EFSEC	Energy Facility Site Evaluation Council, Washington State
EMD	Emergency Management Division
EMT	Emergency Medical Technician
EO	Equipment Operator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data Systems
ERO	Emergency Response Organization
ERP	Elevated Release Point
EWAC	Emergency Worker/Assistance Center
FAX	Facsimile
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRERP	Federal Radiological Emergency Response Plan
GPM	Gallons Per Minute
HP	Health Physics
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning
I&C	Instrumentation and Control
JIC	Joint Information Center

KI	Potassium Iodide (Thyroid Blocking Agent)
KV	Kilovolt
LERN	Law Enforcement Radio Network
LLEA	Local Law Enforcement Agency
LOCA	Loss of Cooling Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
mREM	Millirem
MPF	Multipurpose Facility
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Safety/Relief Valve
MUDAC	Meteorology and Unified Dose Assessment Center
NPRDS	Nuclear Plant Reliability Data System
NRC	Nuclear Regulatory Commission
OAC	Offsite Agency Coordinator
OSC	Operations Support Center
PAD	Protective Action Decision
PAG	Protective Action Guide
PAAP	Protected Area Access Point
PAR	Protective Action Recommendation
PASS	Post-Accident Sampling System
PIO	Public Information Officer
PSIG	Pounds Per Square Inch Gauge
RACES	Radio Amateur Civil Emergency Service
RB	Reactor Building
RCIC	Reactor Core Isolation Cooling
REM	Radiological Emergency Manager
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RW	Radioactive Waste
SAS	Secondary Alarm Station
SC	Suppression Chamber
SCC	Security Communications Center
SE COMM	South East Communications
SECON	Security Condition
SFP	Spent Fuel Pool
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SM	Shift Manager
SP	Suppression Pool
SSW	Standby Service Water
TGB	Turbine Generator Building
TSC	Technical Support Center
USCG	United States Coast Guard

WEIC	Washington Emergency Information Center
WSDA	Washington State Department of Agriculture
WSP	Washington State Patrol
WW	Wetwell

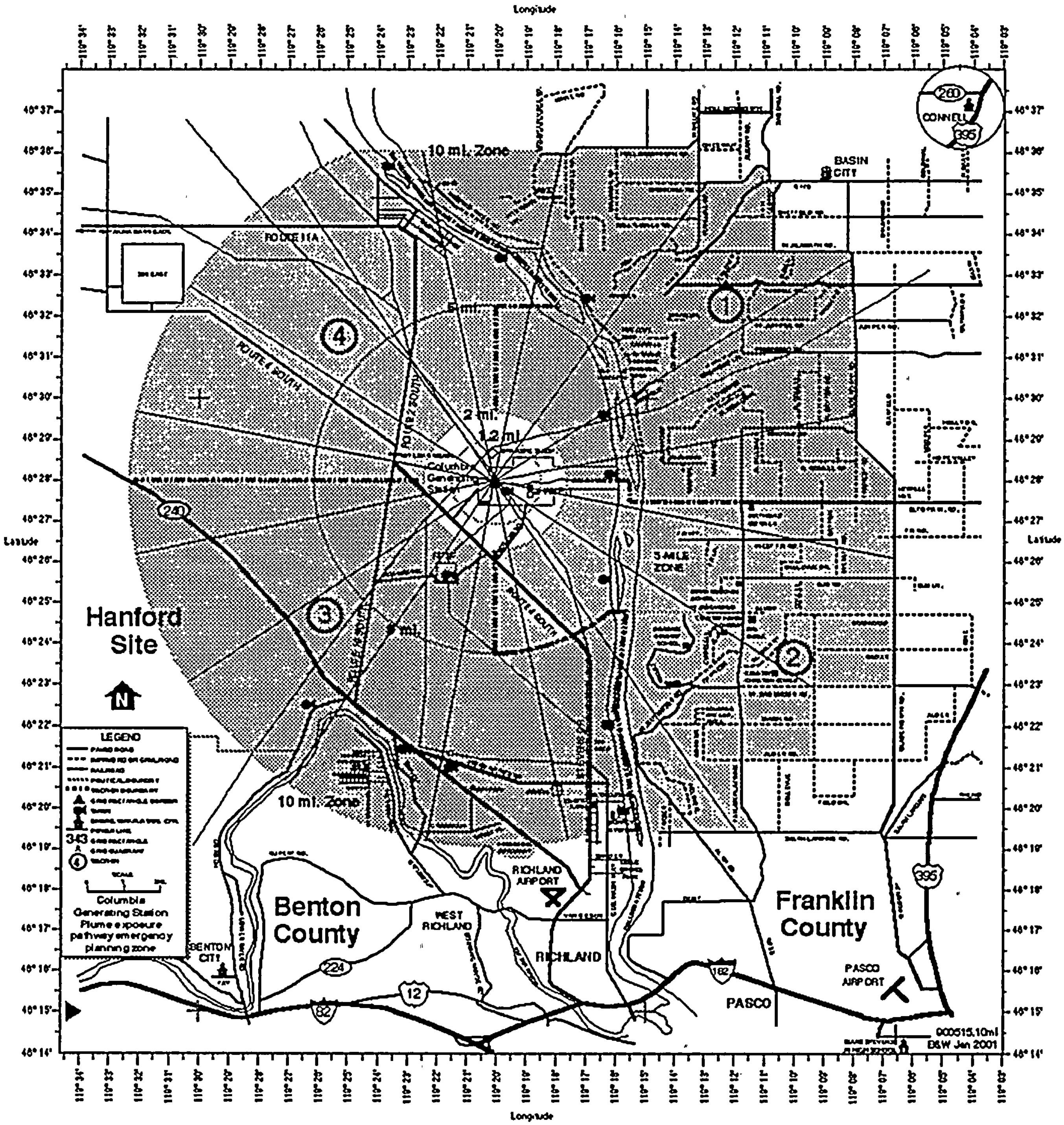
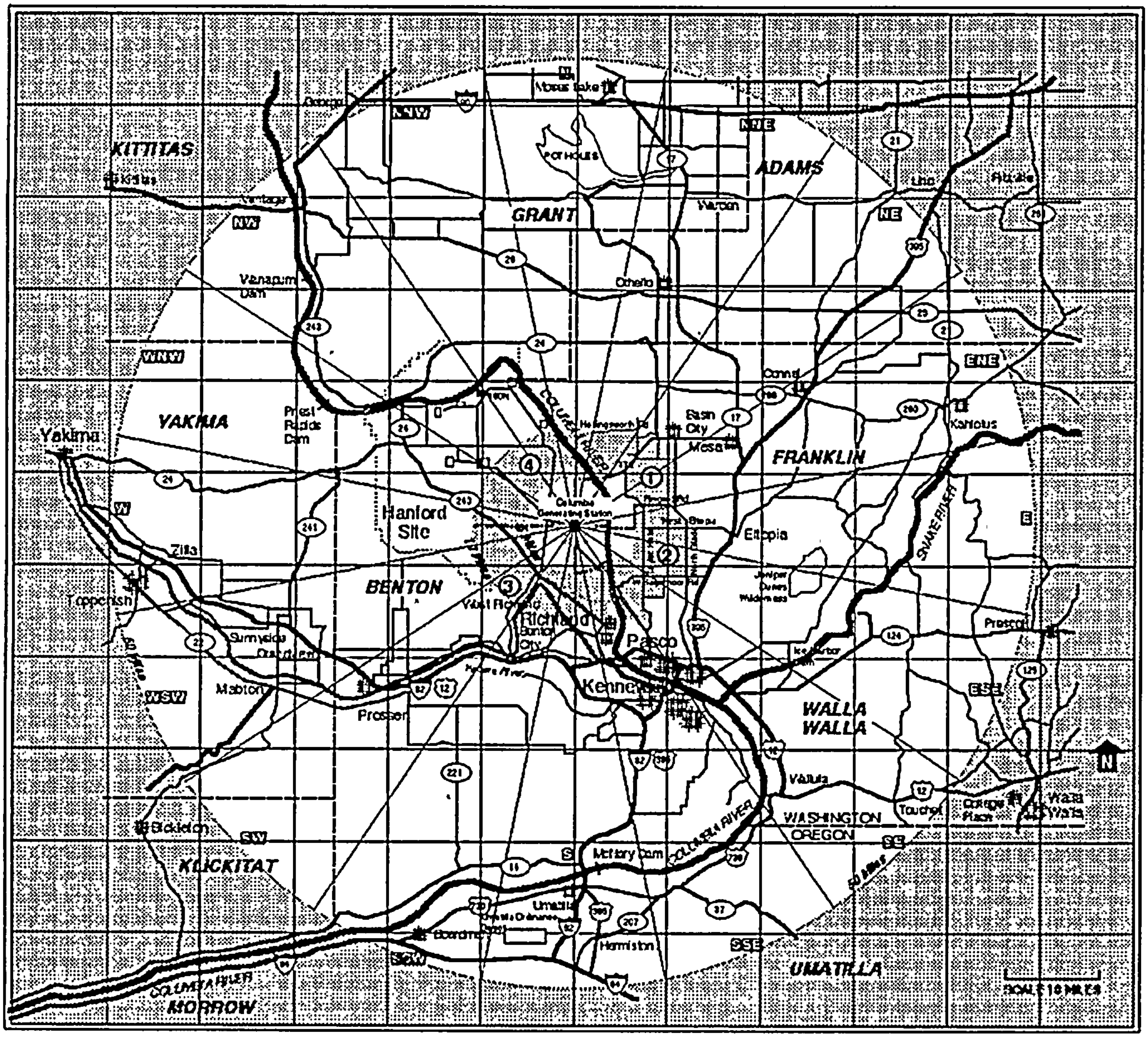


Figure 1-1, Ten-Mile Emergency Planning Zone (EPZ)



50 Mile Map

Figure 1-2, Fifty-Mile Emergency Planning Zone (EPZ)

Site Plan

Bldg No.	Building Description
2	Reactor Building
3	Radwaste Building
4	Turbine Generator Building
5	Technical Support Building
6	Health Physics Access Point
7	Diesel Generator Building
8	ASD Building
9	Palouse - Engineering
11	Chelan - Facilities
12	Heavy Equip. Maintenance
13	Cowlitz - Facilities
15	Laborers Storage
17	Wenatchee - Site Maintenance
19	Battery Storage
21	Backflow Preventer Building
22	Service Substation
23	Diesel Fuel Polishing Building
24	Visitor Center
25	Protected Area Access Point (P.A.A.P.)
26	Deschutes - Plant Engineering Center
30	Wind River Bldg. - Circ Water Pumphouse
32	Colville - Site Contractor Fab Shop
47	Document Storage
62	Primary Access Point (P.A.P.) (Security)
64	Willamette - Site Support Contractor/Records Mgmt.
75	Warehouse /Painters
88	Okanogan - Site Cafeteria/NDE/I&C Security
94	Laborers/Procedures
100	Fitness for Duty Facility/First Aid

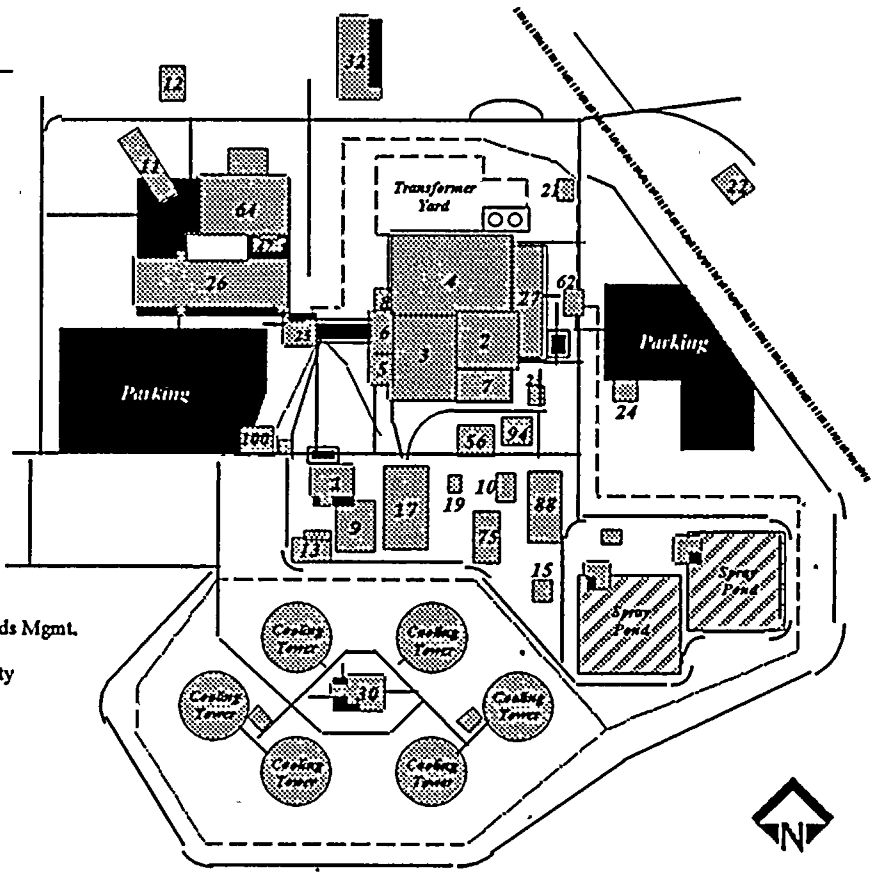


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Figure 1-3, Columbia Generating Station Site

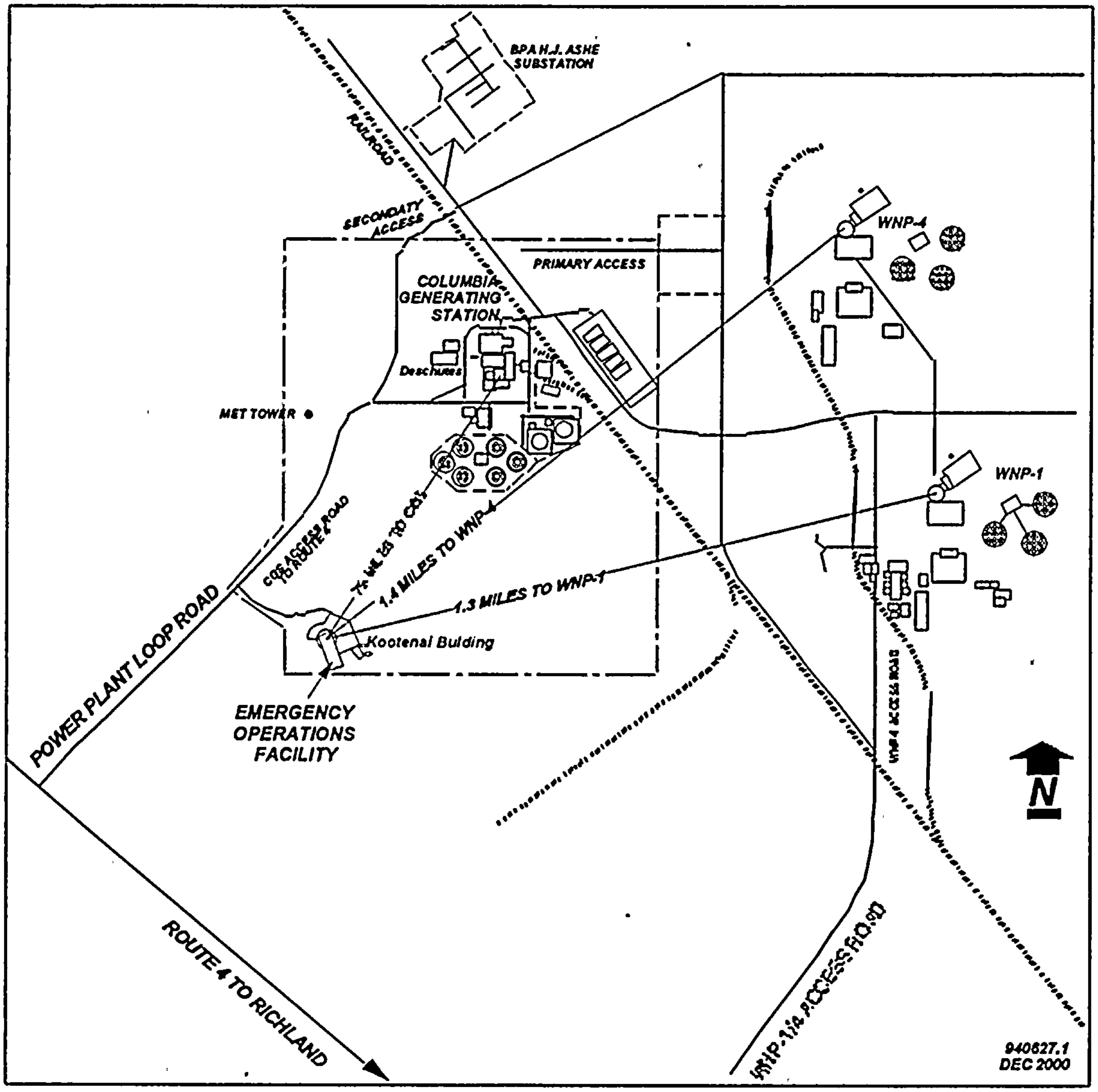

Figure 1-4, Emergency Operations Facility Location

SECTION 2
ENERGY NORTHWEST EMERGENCY ORGANIZATION

2.1 ORGANIZATIONAL CONCEPTS

This section of the Plan describes the emergency response organization at Energy Northwest. The normal plant operating organization serves as a foundation for the emergency organization and is augmented by the on-call Emergency Response Organization (ERO) at an Alert or higher emergency class. The normal organization is described in the corporate organization charts. An overview of the emergency organization is shown in Figure 2-1.

Energy Northwest's Emergency Response Organization consists of positions that satisfy requirements for initial and augmented staffing during declared emergency as well as positions that may be summoned as needed. The members of the emergency organization which are essential to implementation of the Plan and the augmenting organization which supports the essential personnel are shown in Figure 2-1. The Emergency Organization Assignment List contains a listing of the personnel assigned to the ERO. The title of Shift Technical Advisor (STA) is generic, and the responsibility may be performed by other personnel on shift for purposes of NUREG-0737 and NUREG-0654.

Responsibility for emergency direction and control (i.e., overall direction of the plant's emergency response which must include the non-delegable responsibilities for emergency classification, the decision to notify, and to recommend protective actions to authorities responsible for offsite emergency measures) is normally transferred from the Shift Manager to the TSC Manager to the EOF Manager. However, if the situation dictates, the responsibilities may be transferred from the Shift Manager directly to the EOF Manager. The transfer of responsibilities only takes place when the individual relieving the Shift Manager is at his assigned location, has minimum staffing level or greater in place, and has received a formal turnover.

2.2 SHIFT ORGANIZATION

The operating crew for each shift at the plant normally consists of a Shift Manager, to whom reports a Control Room Supervisor, Shift Support Supervisor, Shift Technical Advisor, licensed reactor operators, equipment operators, health physics technicians, chemistry technicians, and Security Force personnel. Operations personnel are trained to perform emergency maintenance functions in the absence of on shift maintenance personnel. The Shift Manager on duty has the immediate responsibility for the plant at all times, and has full authority and responsibility for recognizing and declaring emergencies. Each shift is provided with a complement of qualified individuals who have specialized training in notifications, the operation of the reactor and other plant systems, plant instrumentation, radiation safety, and maintenance.

Security force personnel and the control room have 24 hour communications capability with the ERO and offsite response agencies.

Plant Technical Specifications and 10 CFR 50.54 (m) provide for reduced staffing in reactor operational modes 4 and 5. Energy Northwest recognizes that these are minimum staffing levels and that additional personnel are necessary to perform emergency functions. On shift staffing, in all modes, includes adequate numbers of qualified personnel to perform classification, notification, and dose assessments within time requirements.

The Plant General Manager has full authority and responsibility for the overall supervision and administration of the nuclear plant. Technical support is provided by a staff experienced in reactor physics, nuclear power plant systems technology and operation and health physics and chemistry. The normal plant operating organizations are complemented by a group of specialists available from other departments of Energy Northwest and are identified in the corporate organization charts.

2.3 EMERGENCY RESPONSE ORGANIZATION

Energy Northwest's Emergency Response Organization (ERO) consists of positions that satisfy requirements for initial and augmented staffing during a declared emergency as well as positions that may be summoned as needed. This organization has the capability of continuous (24 hour) operations for a protracted period. The ERO is arranged in the following response categories:

On Shift:

On shift positions consist of the Shift Manager, Control Room Supervisor, Reactor Operators, Shift Technical Advisor (not required in Mode 4 and 5, thus can't provide initial response in these modes), Equipment Operators, HP Technicians, Chemistry Technicians, I&C Technicians, Electrical and Mechanical Craft, and Security. These positions provide initial response to an emergency.

Essential:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means at any time to respond within a specified time. Essential ERO personnel will normally assist on shift personnel to provide assessment and mitigation of accident conditions, notifications to offsite agencies, or provide overall direction, control and logistical support for emergency operations.

Augmenting:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means to respond at any time within a specified time. Augmenting personnel provide additional emergency assessment, accident mitigation and logistics support to on shift and essential personnel.

Support:

Consists of positions which may or may not be designated on a rotating on-call list or ERO assignment list, but may be summoned by electronic or manual means when needed to support emergency operations.

The essential emergency organization has the capability to provide manpower and other resources to assist the normal plant organization within approximately one hour if an emergency situation arises. The essential organization has been established with responders designated on a rotating on call list. The emergency duties of the normal plant staff are transferred to the ERO as the corresponding members arrive on site and the emergency centers are activated.

If an emergency situation arises, the Shift Manager will activate the ERO to supplement the normal operating staff. Those members of the ERO who are not on site at the time of the emergency will be able to respond within about one hour of the emergency. In addition, designated members of the Emergency Preparedness department are available to assist with Emergency Operation Facility activation.

Following are general descriptions of the Essential Emergency Response Organization. Duties are discussed in more detail in the Emergency Plan Implementing Procedures. Table 2-1 demonstrates how these positions align with NUREG-0654/FEMA-REP-1, Rev. 1, Table B-1 requirements.

2.3.1 On Shift Emergency Organization

2.3.1.1 Shift Manager

Basic Emergency Function: The Shift Manager reports to the Operations Manager and is responsible for overall plant control. The Shift Manager assumes the Emergency Director duties and responsibilities upon initial emergency classification until relieved by the TSC Manager or EOF Manager. Once an emergency classification is declared, the Shift Manager, as the Emergency Director, is responsible for activation and direction of the emergency response organization to the extent required by the emergency.

NOTE: The Shift Manager is responsible for ensuring safe operation of the plant under all conditions. The Shift Manager, as the Emergency Director, ensures necessary protective actions are carried out. The priority of actions shall be in the following order:

- Public Safety
- On Site Personnel Safety
- Equipment Protection
- Plant Reliability

The Senior Reactor Operator (SRO) license holders on shift and the STAs are available to perform offsite dose assessment at all times when required.

2.3.1.2 Control Room Supervisor (On shift as required by Technical Specifications)

Basic Emergency Function: The Control Room Supervisor (CRS) is the senior individual responsible for plant control actions during both normal and emergency operations. The Control Room Supervisor will assume Shift Manager responsibilities, including emergency direction and control authority, in the absence of the Shift Manager.

2.3.1.3 Reactor (Control Room) Operators

Basic Emergency Function: The Reactor Operators (RO) are responsible for the day to day operations of the reactor and implement necessary actions under the direction of the Control Room Supervisor to terminate the condition causing the emergency and place the plant in a safe condition.

2.3.1.4 Security Communication Center Staff

Basic Emergency Function: The Security Communication Center (SCC) Staff will assist with notifications to Energy Northwest ERO personnel and to offsite agencies during both the emergency and recovery phases. The SCC staff reports to the Security Manager.

2.3.1.5 Equipment Operators

Basic Emergency Function: The Equipment Operators (EO) are responsible for responding to the emergency as directed by the Control Room Supervisor or Fire Brigade (FB) Leader. The location of the Equipment Operators is assigned by the Control Room Supervisor/FB Leader. Control and accountability of Equipment Operators may, after discussion between the Shift Manager and OSC Manager, be transferred to the OSC.

2.3.1.6 Shift Technical Advisor (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Shift Technical Advisor (STA)/Shift Engineer is responsible for assessing the plant operating status, recognizing that an Emergency Action Level (EAL) initiating condition exists and advising the Shift Manager on mitigating actions. They provide specific information to the Shift Manager concerning the Emergency Plan Implementing Procedures required response actions.

2.3.1.7 Fire Brigade

Basic Emergency Function: The Fire Brigade (FB) is responsible for fire fighting, first aid and search and rescue operations. The team will perform radiological surveys and contamination control as necessary. Members of the FB may also perform plant systems manipulation tasks to mitigate consequences of an accident. The FB is under the direction of the Shift Manager until directed to report to the OSC Manager.

2.3.1.8 Health Physics, Chemistry, and Maintenance Support Personnel

Basic Emergency Function: Health Physics, Chemistry, and Maintenance Support personnel are responsible for providing radiation surveillance, chemistry analyses, and maintenance operations as repair or reentry and recovery team members. These support staff will report to the OSC Manager for in plant team activities.

2.3.2 Essential Plant Emergency Organization

Figure 2-1 identifies the key shift personnel who are sufficiently trained to perform all necessary duties until relief personnel arrive. Figure 2-1 provides a diagram of the ERO showing the reporting chain within the ERO. The following sections detail duties of the essential emergency response organization.

2.3.2.1 TSC Manager

Basic Emergency Function: The Technical Support Center Manager (TSC Manager) is responsible for the coordination of onsite response efforts during an emergency. This position is also responsible for the overall development and implementation of accident mitigation and repair/damage control efforts. In some cases the TSC Manager may assume the responsibility for emergency direction and control until the EOF Manager assumes this responsibility at the Emergency Operations Facility. The TSC Manager initiates evacuation and onsite recovery actions as necessary. The TSC Manager is also responsible for ensuring plant security is maintained and provisions are made for immediate entry of necessary emergency assistance such as ambulance or fire equipment.

The Maintenance Manager, Operations Manager, Technical Manager, Radiation Protection Manager, Plant Admin Manager, Plant/NRC Liaison, and OSC Manager report to the TSC Manager.

2.3.2.2 TSC Radiation Protection Manager

Basic Emergency Function: The Radiation Protection Manager (RPM) is responsible for directing the health physics staff, assessing radiological conditions, reviewing radiological data received, ensuring personnel exposures are maintained As Low As is Reasonably Achievable (ALARA), and providing recommendations concerning radiation safety matters to the TSC Manager.

The Radiation Protection Manager will also assess offsite doses and make recommendations concerning protective actions to the TSC Manager until the Radiological Emergency Manager at the EOF takes over this function.

2.3.2.3 TSC Plant/NRC Liaison

Basic Emergency Function: The Plant/NRC Liaison is the primary plant interface with the NRC Headquarters concerning emergency matters and will coordinate commitments made to the NRC. He will keep the TSC Manager advised of NRC activities and, as necessary, will staff the NRC/ENS phone. The Plant/NRC Liaison is responsible for ensuring activation of the Emergency Response Data System (ERDS) for an Alert or higher classification.

2.3.2.4 TSC Technical Manager

Basic Emergency Function: The Technical Manager is responsible for analysis of plant data and the development of plans and procedures in direct support of plant operations personnel. The primary objective is to achieve a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This position supervises the analysis of plant safety parameters by the plant technical and operations staff.

2.3.2.5 TSC Core Thermal Engineer

Basic Emergency Function: Provides information on reactor water pressures and temperature distribution, heat transfer and fluid flow rates, and performs core damage assessments.

2.3.2.6 TSC Electrical Engineer

Basic Emergency Function: Provides information and recommendations about plant and offsite electrical power sources and distribution.

2.3.2.7 TSC Mechanical Engineer

Basic Emergency Function: Provides information and recommendations on mechanical systems and hardware modifications.

2.3.2.8 TSC Operations Manager

Basic Emergency Function: The Operations Manager will assist the TSC Manager by providing oversight and direction to Control Room operations. He provides the interface between the TSC and Control Room. The Operations Manager keeps the TSC Manager informed of plant status and provides input concerning plant operations necessary for the accident and recovery process.

2.3.2.9 OSC Manager

Basic Emergency Function: The Operations Support Center (OSC) Manager is responsible for assigning and dispatching Repair Teams. This individual provides updates to the TSC Manager via the Maintenance Manager on team activities. The OSC Manager is also responsible for ensuring plant personnel accountability is performed. The Fire Brigade reports to the OSC Manager once it is released by the Shift Manager.

2.3.2.10 HP Lead

Basic Emergency Function: The HP Lead identifies hazardous areas within the plant, provides repair team HP briefings and assigns HP resources to repair teams. The HP Lead communciates with the OSC Manager and TSC RPM.

2.3.2.11 Repair Team

Basic Emergency Function: The Repair Teams provide the necessary manpower to perform tasks throughout the plant involving investigation of the accident, repair of equipment or taking actions to minimize the extent of damage. The Repair Teams report to the OSC Manager.

2.3.3 Essential Emergency Operations Facility Emergency Organization

The Emergency Operations Facility (EOF) is activated at the Alert classification and will be utilized by the EOF Manager and his staff to implement necessary actions during an Alert, Site Area or General Emergency. The EOF Manager normally assumes responsibility for emergency direction and control within approximately one hour of the declaration of an Alert or higher emergency. He normally receives a turnover from the TSC Manager but in some cases may receive a turnover from the Shift Manager. The EOF Manager is responsible for the overall management of Energy Northwest emergency resources and has full authority to make commitments for the company. The basic functions which will be directed from the Emergency Operations Facility are:

a. Manage the overall Energy Northwest emergency effort.

b. Evaluate the magnitude and consequences of actual or potential radiological releases.

c. Coordinate field sampling and analysis of radioactive material released from the plant.

d. Coordinate emergency response activities with local, state, and federal agencies and provide recommendations concerning appropriate offsite protective measures.

e. Provide technical support to the plant.

f. Provide necessary security controls.

g. Provide decontamination and medical assistance for personnel evacuated from the plant.

h. Secure necessary supplies and equipment.

i. Develop public information reports for the Joint Information Center concerning plant status, emergency actions underway, and hazards to the public.

j. Advise upper management concerning plant conditions.

k. Coordinate the overall recovery effort including the development of procedures and schedules, procurement of equipment, and identification of necessary licensing actions.

l. Provide for adequate work area for the recovery effort.

2.3.3.1 EOF Manager

Basic Emergency Function: The Emergency Operations Facility (EOF) Manager is responsible for the overall management of Energy Northwest resources and will be in charge of activities related to plant emergency and recovery operations. The EOF Manager has the authority to request outside assistance, including resources available from the federal government, and will assume the responsibility for emergency direction and control. The decision to request outside assistance, change emergency classifications, approve offsite protective action recommendations and make decisions concerning the notification of offsite authorities cannot be delegated once the EOF Manager has assumed the Emergency Director duties.

The Engineering Manager, Site Support Manager, Offsite Agency Coordinator, EOF Public Information Officer, Radiological Emergency Manager, TSC Manager, Security Manager, Licensing Manager, and Joint Information Center Manager report to the EOF Manager.

At his discretion, the EOF Manager may request one or more assistants. The assistant(s) perform duties as assigned by the EOF Manager.

2.3.3.2 EOF Radiological Emergency Manager

Basic Emergency Function: The Radiological Emergency Manager (REM) reports to the EOF Manager. The REM is responsible for managing radiological dose assessment and field monitoring activities. The REM assists in development of Protective Action Recommendations and, during the late phases of the response, coordinates this activity with the States of Washington and Oregon and the US DOE and provides offsite radiological Protective Action Recommendations to the EOF Manager. The REM also coordinates Energy Northwest offsite radiological monitoring effort with the States of Washington and Oregon and the US DOE.

2.3.3.3 EOF Field Team Coordinator

Basic Emergency Function: The Field Team Coordinator provides overall management of field teams, identifies plume path and areas requiring survey; directs the Field Team Dispatcher, and makes field teams available for river evacuation; communicates field team summary information to the REM.

2.3.3.4 Environmental Field Teams

Basic Emergency Function: The Environmental Field Teams are responsible for determining offsite radiological hazards and for conducting the required offsite surveys, monitoring and sampling. Field team activities are coordinated by the Field Team Coordinator. At least three teams will be available to conduct environmental sampling in the field.

2.3.3.5 EOF Telecommunications Manager

Basic Emergency Function: Provide for the operability of Energy Northwest communications systems. Will direct and dispatch Telecommunications Technicians to areas requesting assistance with phones or other telecommunications equipment.

2.3.4 Essential Joint Information Center Emergency Organization

The essential Joint Information Center emergency organization consists of the Joint Information Center Manager. This function ensures timely, accurate releases of information and assists offsite organizations in developing coordinated information for release to the public.

2.3.4.1 Joint Information Center Manager

Basic Emergency Function: The Joint Information Center (JIC) Manager will ensure timely and accurate releases of information to the media and public and will monitor and respond to misinformation. The JIC Manager will also coordinate Energy Northwest's emergency public information activities with those of Benton and Franklin counties, Washington State, Oregon State, and the Federal Government. The JIC Manager reports to the EOF Manager.

2.4 AUGMENTING EMERGENCY ORGANIZATION

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential Energy Northwest emergency organization described in Section 2.3. In addition to the positions described in this section, other augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures are listed in the Emergency Response Organization List.

2.4.1 Augmenting Plant Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential plant emergency organization described in Section 2.3.1. These positions will be filled by activating previously selected personnel who can respond as required.

2.4.1.1 TSC Plant Administrative Manager

Basic Emergency Function: The Plant Administrative Manager is responsible for providing the TSC Manager with the necessary administrative services including accountability, requests for additional personnel and office services support. The TSC Administrative staff reports to the Plant Administrative Manager.

2.4.1.2 TSC Maintenance Manager

Basic Emergency Function: The Maintenance Manager is responsible for assigning tasks to be performed by the Operations Support Center (OSC) teams, determining the priority to be assigned for each task, and acting as the focal point between the TSC and OSC for the work control process.

2.4.1.3 Information Coordinators

Basic Emergency Function: Provide information and plant status updates to the center manager and staff. Communicate pertinent emergency related information from their assigned center to the other information coordinators. Information Coordinators are assigned to the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

2.4.1.4 TSC Chemistry/Effluent Manager

Basic Emergency Function: The Chemistry/Effluent Manager is responsible for monitoring the Plant effluent and ARM monitors. Changes in radiological conditions are reported to the Radiation Protection Manager. The Chemistry/Effluent Manager may also perform emergency dose projections. In addition, the Chemistry/ Effluent Manager advises the TSC Manager of chemistry concerns.

2.4.1.5 OSC Team Tracker

Basic Emergency Function: The OSC Team Tracker is responsible for maintaining communications with in-plant Repair Teams performing actions during the event following dispatch from the OSC. The Team Tracker is responsible for keeping the OSC Manager informed of team status and location. The Team Tracker also is responsible for coordination of site personnel accountability.

2.4.1.6 Repair Team Coordinator

Basic Emergency Function: Communicates maintenance tasks from the TSC and relays information about actions taken to the TSC. Responsible for directing repair team activities.

2.4.1.7 OSC Craft Leads

Basic Emergency Function: The Craft Leads will assist the OSC Manager in briefing and debriefing Repair Teams. They will also assist the Team Tracker in tracking of teams and personnel as required. Craft leads respond for Electrical, Mechanical, I&C and Health Physics disciplines.

2.4.2 Augmenting Emergency Operations Facility Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Emergency Operations Facility essential organization which is described in Section 2.3.2. These positions will be filled by activating previously selected personnel.

2.4.2.1 Assistant EOF Manager

Basic Emergency Function: The Assistant EOF Manager will assist the EOF Manager in the overall management of Energy Northwest resources and will assume the EOF Manager duties including Emergency Director responsibilities if the EOF Manager is not available at the EOF.

2.4.2.2 EOF Manager Secretary

Basic Emergency Function: The responsibilities of the EOF Manager Secretary include maintaining a log of EOF Manager actions, monitoring EOF Manager's phones, initiating Crash calls and performing other EOF administrative support duties as requested by the EOF Manager.

2.4.2.3 Dose Projection Health Physicist

Basic Emergency Function: The Dose Projection Health Physicist is responsible for completing dose projections, providing input to Protective Action Recommendations, and keeping the Radiological Emergency Manager informed of radiological release status. Refer to Section 6.4.2 for a description of the Meteorology and Unified Dose Assessment Center (MUDAC).

2.4.2.4 EOF Engineering Manager

Basic Emergency Function: The Engineering Manager and staff members are responsible for analyzing plant information and for developing plans and procedures in direct support of plant.

2.4.2.5 Emergency Operations Facility Public Information Officer

Basic Emergency Function: The Emergency Operations Facility Public Information Officer (EOF PIO) will prepare and transmit news releases to the Joint Information Center which can be used by Energy Northwest and offsite agencies. The EOF PIO keeps the EOF Manager up-to-date on public relations matters.

2.4.2.6 EOF Radiation Detection Systems Engineer

Basic Emergency Function: Analyzes radiation detection systems and assists in location of radiation source.

2.4.2.7 EOF Security Manager

Basic Emergency Function: The Security Manager is responsible for ensuring that security is maintained at all Energy Northwest facilities and security support groups are fully operational. This individual provides information and advice to the EOF Manager concerning the coordination of Energy Northwest Security and local law enforcement agency (LLEA) response actions. The Security Manager reports to the EOF Manager and supervises the Security staff.

2.4.2.8 EOF Site Support Manager

Basic Emergency Function: The Site Support Manager is responsible for coordinating requests for administrative and technical support to the plant and EOF. He also makes provisions to secure necessary supplies and equipment requested. The Site Support Manager reports to the EOF Manager and supervises the Offsite Agency Coordinator, EOF Information Coordinator, Telecommunications Manager, Manpower Scheduler and Admin Support staff.

2.4.2.9 Energy Northwest Representatives to County Emergency Operation Centers

Basic Emergency Function: Energy Northwest representatives will keep the staff members at the Benton and Franklin Counties Emergency Operations Center (EOCs) informed of the emergency conditions and Energy Northwest responses. The offsite representative will report to the Site Support Manager, normally through the EOF Offsite Agency Coordinator.

2.4.3 Augmenting Joint Information Center Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Joint Information Center Manager described in Section 2.3.3. In addition to the positions described below, other administrative augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures will be filled by personnel who can respond as required.

2.4.3.1 Assistant JIC Manager

Basic Emergency Function: The Assistant JIC Manager manages the preparation of Energy Northwest news releases, coordinates the process for news releases prepared by agencies and jurisdictions represented in the JIC, manages the team responsible for distribution of news releases to the media and other emergency centers and assumes the duties of JIC Manager, if requested. The Assistant JIC Manager supervises the Distribution Team Supervisor and News Release Editor and reports to the JIC Manager.

2.4.3.2 JIC Media Manager

Basic Emergency Function: The Media Manager will address the information needs of media representatives at the Energy Northwest JIC. The Media Manager supervises the JIC Receptionist and reports to the JIC Manager.

2.4.4 Support Emergency Organization

2.4.4.1 Administrative Support Staff

Basic Emergency Function: Performs duplication and facsimile services, record searches, verification of document revision.

2.4.4.2 TSC Manager Secretary

Basic Emergency Function: Maintains a log of activities for the TSC Manager, initiates and monitors crash calls, and screens phone calls.

2.4.4.3 TSC/OSC Communicator:

Basic Emergency Function: Communicates maintenance tasks to the OSC and relays OSC information about actions taken to the TSC staff.

2.4.4.4 TSC Computer Engineer

Basic Emergency Function: The Computer Engineer is responsible for ensuring that the computer systems available in the TSC are operating as required. The Computer Engineer will troubleshoot system problems and assist TSC Engineering staff in obtaining information from the various Plant computers.

2.4.4.5 TSC Trending Forecaster

Basic Emergency Function: Trend plant parameters and forecast plant status.

2.4.4.6 EOF Plant Systems Assessment Engineer

Basic Emergency Function: Analyzes plant systems and provides technical input to the INPO Network Coordinator

2.4.4.7 EOF Fuels Assessment Engineer

Basic Emergency Function: Evaluates core damage, interfaces with the TSC Core Thermal Engineer and EOF Engineering Manager to provide results and projections of core damage. Provides input for PAR determinations to the Radiological Emergency Manager.

2.4.4.8 EOF PDIS Analyst

Basic Emergency Function: Provides technical data for EOF engineering and monitors the information network for problems.

2.4.4.9 EOF Manpower Scheduler

Basic Emergency Function: Coordinates the preparation of overall shift staffing rosters.

2.4.4.10 EOF State/County Technical Liaison

Basic Emergency Function: Informs Energy Northwest representatives to the state and counties of plant conditions.

2.4.4.11 EOF Offsite Agency Coordinator

Basic Emergency Function: Coordinates requests from offsite agencies for information and keeps the EOF Manager informed of those requests. Coordinates airspace or airport closure requests with the Federal Aviation Agency.

2.4.4.12 EOF INPO Network Coordinator

Basic Emergency Function: Prepares and transmits technical descriptions of major events during an emergency to INPO.

2.4.4.13 Health Physics Center Staff

Basic Emergency Function: Prepares the Health Physics Center for use by setting up tables, lanes, and signs.

2.4.4.14 EOF Electrical/I&C Engineer

Basic Emergency Function: Analyzes plant electrical and I&C systems and provides information to the Emergency Manager.

2.4.4.15 EOF PIO Technical Support

Basic Emergency Function: Provides technical interpretations of information for the EOF PIO to formulate accurate news releases for the JIC.

2.4.4.16 EOF Field Team Dispatcher

Basic Emergency Function: Dispatch of field teams and log keeping.

2.4.4.17 Energy Northwest Representative to the State

Basic Emergency Function: Dispatched to Washington State EOC, provides technical expertise to EOC personnel.

2.4.4.18 EOF Licensing Manager

Basic Emergency Function: Interface with onsite NRC response team and communciate with the NRC on licensing issues.

2.4.4.19 JIC Information Manager

Basic Emergency Function: The Information Manager coordinates response to telephone requests for information from news media representatives or the general public. The Information Manager coordinates responses to rumors and public concerns and insures timely and accurate information is provided. This individual directs activities of the Media and Public Phone Team Supervisors and reports to the JIC Manager.

2.4.4.20 JIC Offsite Agency Representatives

Basic Emergency Function: The Offsite Agency Representatives reporting to the JIC will coordinate the emergency public information activities of the organizations thay represent. The representatives report to their parent agencies. Their activities are coordinated by the JIC Manager or the Assistant JIC Manager.

2.4.4.21 JIC Phone Team Supervisor

Basic Emergency Function: The Phone Team Supervisor, Public Phone Teams and Media Phone Teams will respond to incoming calls from the public and media, provide information updates as necessary, and make efforts to correct misinformation as necessary. The Public Phone Team Supervisor supervises the Public and Media Phone Teams and reports to the Information Manager.

2.4.4.22 JIC Support Manager

Basic Emergency Function: Provides administrative support and procurement of supplies for JIC personnel.

2.4.4.23 JIC Spokesperson

Basic Emergency Function: Conducts news conferences at the JIC and provides timely information during the conferences

2.4.4.24 JIC Technical Spokesperson

Basic Emergency Function: Provides technical information in an easy to understand format.

2.4.4.25 JIC Health Physics Spokesperson

Basic Emergency Function: Provides health physics information in an easy to understand format.

2.4.4.26 JIC News Release Editor

Basic Emergency Function: Assists in preparing news releases for dissemination to the media.

2.4.4.27 JIC Public and Media Phone Teams

Basic Emergency Function: Answer phone calls made by the public and media to disseminate correct information and dispel rumors.

2.4.4.28 JIC Audio/Visual

Basic Emergency Function: Coordinates operation of A/V equipment during news conferences at the JIC.

2.4.4.29 JIC Distribution Team Supervisor

Basic Emergency Function: Supervises the JIC Distribution Team.

2.4.4.30 JIC Distribution Team

Basic Emergency Function: Distributes faxes, news releases, and makes copies for the JIC staff.

2.4.4.31 JIC Receptionist

Basic Emergency Function: Provides receptionist duties for the JIC

2.4.4.32 JIC Secretary

Basic Emergency Function: Provides secretarial duties for the JIC staff.

ENERGY NORTHWEST EMERGENCY RESPONSE ORGANIZATION
MINIMUM STAFFING REQUIREMENTS

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Senior Management	Emergency Operations Facility Mgr[3]		1
	Technical Support Center Mgr[3]		1
	Joint Information Center Mgr		1
Operations	Shift Manager[3]	1	
	Control Room Supervisor	1[1]	
	Reactor Operator	2	
	Equipment Operator	2	
	Operations Manager[5]		1
Notification/Communication	Control Room ENS Communicator[4]	1	
	SCC Duty Officer	1	
	Security Responder	1[2]	
	Telecom Manager		1
	Plant/NRC Liaison		1
Health Physics	Radiation Protection Manager		1
	HP Technicians (In Plant Surveys)	1	2
	HP Technicians (Protective Actions)	2	4
	Field Team Coordinator[5]		1
	Environmental Field Teams (Offsite Surveys)		4
	Environmental Field Teams (Onsite Surveys Out of Plant)		2
	Radiological Emergency Manager (Offsite Dose Assessment)		1

Table 2-1

MINIMUM STAFFING REQUIREMENTS(Continued)

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Nuclear Chemistry	Chemistry Technicians	1	1
Maintenance	Operations Support Center Mgr[5]		1
	Electrical Maintenance/	1[2]	2
	I/C Support		1
	Mechanical Maintenance/Radwaste	1[2]	1
	Operator		1
Engineering	Shift Technical Advisor	1[1]	
	Core/Thermal Hydraulics		1
	Electrical		1
	Mechanical		1
	Technical Manager[5]		1
Security	Per Security Plan		
Firefighting	Fire Brigade	Fire Brigade per FSAR Section 13	Local Support
First Aid and Rescue Operations	Fire Brigade	2[2]	Local Support

1 On Shift as required by Technical Specifications in Modes 1, 2, and 3. Available within 60 minutes for call in for Modes 4 and 5.
2 May be provided by shift personnel assigned other functions
3 Shift Manager initially assumes the responsibility for emergency direction and control, then is relieved by the TSC Manager or EOF Manager
4 Duties of ENS Communicator are assumed by an individual designated by Shift Manager
5 Not identified as a Table B-1, NUREG 0654 requirement

Table 2-1

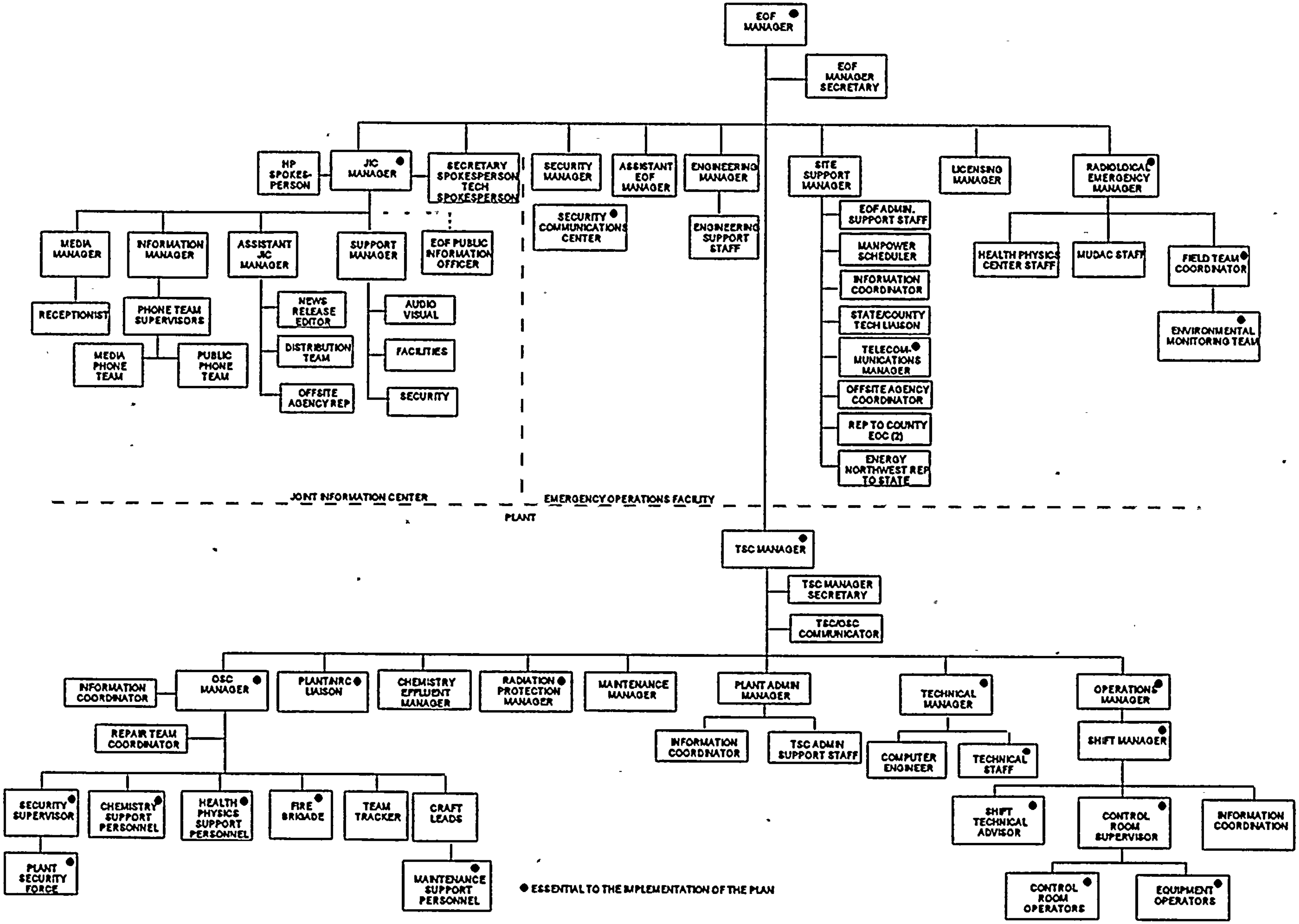

Figure 2-1, Emergency Response Organization Chart

SECTION 3
EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.1 COORDINATION OF SUPPORT ORGANIZATIONS

The Energy Northwest individual assigned the Emergency Director function is responsible for coordinating the use of emergency response resources available from outside Energy Northwest. These external resources are available through formal agreements referenced in Appendix 4 or in the emergency plans referenced in Appendix 1. Figure 3-1 shows the relationship between Energy Northwest emergency centers and the various outside response agencies. The Shift Manager/Emergency Director can call on any or all of these resources for support during an emergency.

The Energy Northwest Emergency Operations Facility contains provisions for outside organizations to coordinate actions with Energy Northwest. Specific areas in the Emergency Operations Facility and Energy Northwest Office Complex (ENOC) are designated in the Emergency Plan Implementing Procedures to be utilized by various offsite response organizations.

Energy Northwest representatives will normally be dispatched to the Benton and Franklin County Emergency Operations Centers at the Alert or higher emergency classification. The Energy Northwest representative to the state will normally report to the EOF at the Alert level, and be dispatched to the Washington State Emergency Operations Center at Site Area Emergency to assist. Energy Northwest representatives will assist in providing clarification of information and data.

The Offsite Agency Coordinator in the EOF will provide necessary support to responding agencies.

Figure 3-1 illustrates the various assistance organizations which may respond to the Emergency Operations Facility.

3.2 LOCAL SUPPORT SERVICES

A rapid response is available to Energy Northwest from local fire, medical, law enforcement, and radiological organizations. Agreements have been made with response agencies either through agreement letters or through their emergency plans. In cooperation with Energy Northwest and Benton and Franklin Counties Emergency Management, a training program has been established to familiarize responding agencies with their role at the plant site during an emergency. Energy Northwest will provide escorts, assistance, and dosimetry for all persons entering the plant protected areas, as requested.

3.2.1 Fire

Agreements established between the Department of Energy and Energy Northwest provide for Hanford Contract Fire Department response to all Energy Northwest facilities on the Hanford Reservation. Additional fire department response, if needed, is available through mutual aid agreements between county and municipal fire departments. The Hanford Contract Fire Department personnel are specifically trained to handle nuclear facility fire incidents and have specially equipped vehicles and personnel for rescue and other emergencies. Fire organizations performing functions onsite will interface directly with the Fire Brigade Leader.

3.2.2 Medical

The Emergency Director or designee is responsible for notifying the medical facility and providing qualified health physics personnel to assist. Communications with medical response agencies is coordinated through the radio network described in Section 6.5.1 of this Plan. The fixed medical facilities (i.e., hospitals) can also be reached by telephone using the numbers provided in the Emergency Phone Directory.

3.2.2.1 Local Hospitals

Kennewick General Hospital in Kennewick, Washington; Our Lady of Lourdes Hospital in Pasco, Washington; and Kadlec Medical Center in Richland, Washington, provide hospital and medical services. Any combinations of these three hospitals serves as the primary and backup medical facility. These hospitals have emergency room coverage twenty-four hours per day. The State of Washington also maintains agreements for handling contaminated patients with other hospitals in the State of Washington.

Energy Northwest has placed and maintains kits containing radiological monitoring equipment and decontamination supplies for use in the care of radiation accident patients at these hospitals. Energy Northwest also assists each hospital in developing procedures for the care of radiation accident patients as requested. Training and assistance on radiological decontamination procedures is offered by Energy Northwest to these hospitals when requested. Drills are periodically conducted to evaluate hospital proficiency for handling contaminated victims

3.2.2.2 Special Medical Facilities

The Emergency Decontamination Facility (EDF), located next to Kadlec Medical Center, can be used for handling highly contaminated patients.

If high levels of radioactive contamination or exposure are involved, injuries will be pre-treated at the specially equipped EDF. The EDF is a sophisticated unit specifically designed for handling and treatment of radiation/contamination accident victims. Provisions include decontamination equipment, shielded surgery tables, remote TV viewing, contaminated water retention, air filtration, radiation monitoring instrumentation, whole body counting, and communications equipment.

The EDF is operated by the Hanford Environmental Health Foundation (HEHF) for the Department of Energy in support of nuclear activities on the Hanford Reservation. The physicians responding to the EDF are prepared and qualified to make radiation exposure and uptake evaluations.

3.2.2.3 Medical Transportation

Medical emergency transportation will be provided by the Department of Energy - Richland Operations (DOE-RL). If additional assistance is required, local ambulance services may be used. An Energy Northwest employee knowledgeable in health physics will accompany contaminated patients to the hospital or meet the ambulance at the hospital to assist in the emergency. Additional health physics assistance may be requested from DOE-RL, or Washington State Department of Health.

3.2.3 Law Enforcement

The Benton County Sheriff has jurisdiction on the Hanford Reservation highways. Arrangements have been made for this organization to provide traffic control in order to limit access to the Hanford Reservation during an Energy Northwest emergency.

The Sheriff has jurisdiction at the Energy Northwest site for all civil disturbances or threats. Request for assistance to the Benton County Sheriff can be made directly to the Sheriff's office or through the 24 hour Emergency Dispatch Center (SE COMM) located in Richland. The Energy Northwest communications centers are capable of communicating with responding law enforcement agencies.

The Security Manager is the main interface with local law enforcement personnel and administers the agreement for law enforcement services. Activation of this support is under the direction of the Emergency Director.

In the event that evacuation is needed for areas off the Hanford Reservation, the Emergency Director, or designee, will notify the County Emergency Chairman or designee, at the Benton and Franklin County Emergency Operations Centers and provide available information concerning the nature of releases. Within the guidelines established by Washington State, a recommendation concerning necessary protective actions to be taken by the general public will be made by Energy Northwest. Following receipt of a protective action decision by an appropriate county authority, the Sheriffs of Benton and Franklin Counties will be responsible for implementing evacuation, traffic control, community security and search and rescue activities in their respective jurisdictions.

The Washington State Patrol provides assistance to the Sheriff concerning traffic control and area access. The local State Patrol headquarters has direct radio communications with the Benton and Franklin County sheriffs and the Emergency Dispatch Center (SE COMM).

3.2.4 Radiological

The Department of Energy (see Section 3.6.2) and Siemens Power Corporation (see Section 3.3.1) can provide a large number of trained personnel capable of assisting during a radiological emergency. Additionally, a training program for local support organizations (i.e., hospital, ambulance and fire companies) developed jointly by Energy Northwest and Benton and Franklin Counties, provides information on proper actions to take during a radiological emergency. Supporting emergency plans for this service are listed in Appendix 1.

3.3 PRIVATE RESPONSE ORGANIZATIONS

3.3.1 Siemens Power Corporation

Siemens Power Corporation facility located just outside the Southern boundary of the Hanford Reservation, approximately 8 miles south of Columbia Generating Station, maintains 24-hour health physics coverage of operations. As provided for in their Emergency Plan, listed in Appendix 1, assistance can be quickly provided during an Energy Northwest emergency to monitor radiological conditions along the southern Hanford Site boundary. Assistance will be provided upon request of the Emergency Operations Facility Manager and will be coordinated from the Emergency Operations Facility.

3.3.2 Environmental Sample Analysis

Service contracts are currently maintained with appropriate vendors by Energy Northwest's Radiological Environmental Monitoring Program group for environmental sample analytical services.

3.3.3 General Electric Company

The General Electric Company, suppliers of the Columbia Generating Station nuclear steam supply system, provides a support program utilizing the resources of their Nuclear Energy Group in San Jose, California. An emergency response team can be dispatched to the Emergency Operations Facility within twenty-four hours to provide technical assistance. A technical support team with experts in appropriate technical disciplines will be activated at General Electric Headquarters and will establish telephone communications with the onsite General Electric Emergency Response Team. The response team, dispatched to Energy Northwest, will be provided work space in the Emergency Operations Facility and will coordinate efforts with the EOF Engineering Manager. General Electric personnel may be used in the plant as needed. When in the plant, the TSC Technical Manager will be the primary interface.

3.3.4 Institute of Nuclear Power Operations

The Institute of Nuclear Power Operations (INPO) will provide assistance in identifying and mobilizing the resources of the nuclear industry in the event of an emergency. INPO will be notified of any emergency at the alert or greater classification.

INPO will provide the following assistance, if requested:

a. Designated INPO representatives who can be dispatched to the utility.

b. Dedicated 24-hour emergency notification system.

c. Ability to locate personnel with specific technical expertise.

d. Obtaining industry experience regarding plant equipment through NPRDS.

3.3.5 American Nuclear Insurers

American Nuclear Insurers (ANI) provides insurance coverage for Energy Northwest's nuclear facilities. If an accident occurs which involves the general public, ANI will provide financial assistance and reimbursement of reasonable expenses to persons required to relocate. Within 24 hours of the declaration of the emergency, ANI will dispatch a representative to the local area and will coordinate with the Emergency Response Team.

3.3.6 Hanford Environmental Health Foundation

The Hanford Environmental Health Foundation provides physicians trained in the treatment of radiation accident patients and for response and consultation services to the plant and to the hospitals which have agreements with Energy Northwest. Refer to Appendix 4.

3.3.7 Dosimetry

Energy Northwest has provisions for thermoluminescent dosimeters and related services.

3.4 <u>COUNTY ORGANIZATIONS</u>

3.4.1 Benton and Franklin Counties

The Benton and Franklin County plans for responding to a nuclear emergency, referenced in Appendix 1, provides for a coordination of effort, resources, and facilities. Mitigation and preparedness responsibilities include coordinating local radiological emergency response planning, exchanging emergency preparedness information and, along with Energy Northwest assisting local agencies and officials in developing appropriate emergency capabilities, establishing a radiological emergency response program, emergency response training, and promoting the development of effective communications and other emergency resources. Local law enforcement agencies provide access control services for the Hanford reservation.

Emergency response activities of the Benton and Franklin Counties emergency organizations include implementing local emergency public information and instruction activities, establishment of emergency worker and assistance centers and the Benton and Franklin County Emergency Operations Centers, making protective action decisions, activation of the early warning system, and coordination of local protective action implementation and support. County officials are notified of an emergency through the Emergency Dispatch Centers, and also receive any recommendations provided by Energy Northwest in this manner. When activated, the county staff in the Emergency Operations Centers will communicate with the staff at the Emergency Operations Facility over Energy Northwest dedicated communications systems. Activation of the county plans is automatic for an Alert, a Site Area Emergency, or General Emergency and county representatives will be dispatched to the Emergency Operations Facility and the Joint Information Center.

Benton and Franklin Counties will also play an active role during recovery operations and will work closely with the State of Washington and Energy Northwest to ensure appropriate measures are taken for affected members of the public within their jurisdiction.

3.4.2 Counties Within the Ingestion Exposure Pathway Emergency Planning Zone

Six Washington counties (in addition to Benton and Franklin Counties) as well as two Oregon counties are located within the Ingestion Exposure Pathway Emergency Planning Zone (EPZ). A portion of the Yakama Indian Nation also falls within the Ingestion Exposure EPZ. The State of Washington will provide notification to these counties and the Yakama Indian Nation will be notified by Yakima County. This will be coordinated through the Washington State Emergency Management, or the Oregon Department of Energy, by the EOF Radiological Emergency Manager. Local governments will be kept informed regarding the status of the plant and recommended protective actions by the state(s).

3.5 STATE ORGANIZATIONS

3.5.1 State of Washington

The Washington State Plan referenced in Appendix 1 describes the detailed response which will be given during an emergency. Responsibilities are outlined for all state agencies which have a response role. The following list outlines the response actions of several of the state agencies which would respond during an Energy Northwest emergency. A Washington State Representative will proceed to the Emergency Operations Facility during a Site Area or General Emergency, and if conditions warrant during an Alert, to coordinate State resources. The Offsite Agency Coordinator will provide support and function as a working liaison with the State Representative when in the Emergency Operations Facility. Response time is estimated to be less than 6 hours.

3.5.1.1 Washington Emergency Management

Washington Emergency Management is the State agency responsible for radiological response planning and coordination of operations. The responsibility of this agency includes the following items:

a. Develop and maintain the Washington State Fixed Nuclear Facility Emergency Response Plan and assist the counties in developing their individual emergency response plans.

b. Arrange training programs for state and local agencies designed to promote effective response to radiological incidents.

c. Provide affected communities with warning confirmation, upon request.

d. Coordinate communications and other available support to affected local governments.

e. Coordinate the support of other state agencies and political subdivisions near the affected area and obtain assistance of federal agencies as required.

Dedicated communications with the State Emergency Operation Center are available. Representatives from Washington Emergency Management will have access to the Emergency Operations Facility (EOF) and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.5.1.2 Department of Health

The Department of Health (DOH) is responsible for administering and directing radiation control program activities within the State. DOH provides local authorities with technical guidance, assistance in establishing monitoring and decontamination programs, and recommending appropriate emergency countermeasures and recovery actions offsite. Responding at an Alert or higher classification, DOH provides representatives to support the emergency response as follows:

a. To the Meteorology and Unified Dose Assessment Center (MUDAC) for joint control of environmental field monitoring teams, assessment of dose projection information, preparation of protective action recommendations for the plume exposure pathway and ingestion zones, and estimation of total dose exposure. Also, DOH provides Radiation Control (Radcon) monitoring teams that perform radiological monitoring, collect samples and provide limited field analysis and monitoring and decontamination support to the counties at emergency worker and assistance centers.

b. Outside of the EOF, DOH normally furnishes a representative to the Joint Information Center (JIC) for the coordination of public information. At the State Emergency Operations Center (EOC), DOH representatives furnish guidance on implementation of protective actions and assist local health officials with the implementation of protective actions. Agency response times to the Richland area are expected to be less than six hours.

3.5.1.3 Washington State Patrol

The Washington State Patrol (WSP) will assist each affected county and provide, upon request from either state or county officials law enforcement functions, communications support, and transportation assistance to other agencies when the WSP's law enforcement commitment is not jeopardized. Energy Northwest has space available in the Emergency Operations Facility for a representative from the WSP to coordinate their activities with Energy Northwest Security Manager as needed.

3.5.1.4 Energy Facility Site Evaluation Council

The Energy Facility Site Evaluation Council (EFSEC) is the lead state organization for siting of power generating facilities in the State of Washington. EFSEC is responsible for assessing compliance with the Site Certification Agreement and administering contracts with state agencies and local governments for emergency preparedness services in support of the Columbia Generating Station Emergency Plan.

The council is periodically apprised of Energy Northwest's emergency preparedness per section V.A.2 of the Columbia Generating Station Site Certification Agreement.

3.5.1.5 Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for the control and protection of agricultural products within the boundaries of Washington State. This is accomplished by implementing agricultural protection measures in coordination with other participating agencies and local jurisdictions. These measures include preparing and issuing agricultural advisories to protect the public; preparing and implementing plans in coordination with affected agencies and jurisdictions to reduce the Food Control Area, release food, dispose of contaminated food and conduct embargoes. They will also provide input, as requested by other agencies, in the areas of soil, water and crop decontamination; claims procedures; reduction of Food Control Area and public information.

3.5.2 State of Oregon

The State of Oregon has the responsibility to protect the health and safety of Oregon residents during a radiological emergency at Columbia Generating Station. The Oregon Office of Energy has prepared a Columbia Generating Station Emergency Response Program for that purpose.

A major emergency at Columbia Generating Station is not expected to have immediate, life-threatening radiological impacts on Oregon. During the emergency phase, Oregon's involvement will be limited to maintaining communications and monitoring the emergency. If the emergency involves ingestion exposure considerations, however, Oregon will be involved in a cooperative effort with Energy Northwest, Washington State, and federal response agencies to assess conditions within the state boundaries, initiate necessary public protective measures, and provide public information (e.g., news releases) as may be required. Upon declaration of a Site Area Emergency, Oregon will begin a limited activation of the Oregon EOC in Salem. They will also send representatives to Energy Northwest EOF, JIC, and the Washington EOC. In addition, they will send one or more field teams to Morrow and Umatilla Counties and will provide field team assistance to Washington State as requested.

The Governor or designee will make protective action decisions for Oregon. During ingestion pathway events, Oregon will coordinate protective actions with other members of the protective action recommendation/decision group at the EOF and the Washington EOC.

Communications with the State Emergency Operations Center in Salem are available. Representatives from Oregon Office of Energy will have access to the EOF and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.6 FEDERAL ORGANIZATIONS

3.6.1 Nuclear Regulatory Commission

Personnel from the Nuclear Regulatory Commission (NRC), including Resident Inspectors, may elect to respond to any emergency. The NRC Resident Inspectors assigned to Energy Northwest facilities will be notified of any emergency condition on-site by pager and/or by phone contact and may proceed to the control room or any other areas. Facilities are available for NRC personnel in the Technical Support Center, Joint Information Center, and the Emergency Operations Facility. Dedicated communications are available between these facilities and the NRC. Additionally, the NRC duty officer in White Flint, Maryland is notified of the emergency by the Emergency Notification System (a dedicated phone circuit provided by NRC) of every emergency condition and will adapt their response to the situation as it evolves. If the dedicated phone circuit fails, the NRC duty officer can be reached by commercial phone lines using the numbers provided in the Emergency Phone Directory.

The role of NRC personnel during incidents at nuclear power plants is to monitor actions by the licensee to ensure that people in the vicinity of the plant are adequately protected and to provide any assistance requested by the licensee or offsite officials. NRC's principal role in the event of a power plant emergency is to ensure that appropriate protective actions are being taken. If it appears that warranted protective actions are not being recommended by the licensee or are not being taken by offsite officials, NRC representatives will contact the licensee or offsite officials and present their concerns.

NRC is the lead federal agency concerned with technical aspects of an accident at one of its licensed facilities (e.g., nuclear power plants). The specific NRC response roles are to:

a. monitor the licensee to ensure that appropriate protective action recommendations are being made off site:

b. support offsite authorities, including confirming the licensee's recommendation to offsite authorities, if requested;

c. support the licensee;

d. keep other federal agencies and entities (e.g., Congress and the White House) informed of the status of the incident;

e. keep the media informed of NRC's knowledge of the status of the incident, including coordination with other public affairs groups; and

f. intervene in a limited fashion to direct the licensee's on-site response in some unusual and very rare situations.

3.6.2 Department of Energy

Assistance from of the Department of Energy can be requested by the Emergency Director. The Department of Energy-Richland Operations office located in Richland, Washington, is capable of providing radiological response, such as field monitoring teams, within two hours. The Department of Energy will provide additional federal field monitoring and dose assessment capability when requested. Coordination with Energy Northwest will be through the Offsite Agency Coordinator or the Radiological Emergency Manager. A representative from the Department of Energy may proceed to the Emergency Operations Facility to coordinate the effort.

The Department of Energy-Richland Operations (RL) has large resources of equipment and manpower available. Technical personnel and laboratory facilities can quickly be made available. RL will provide support for the alerting of personnel, and establishment of a safety zone on the portion of the Columbia River within the Columbia Generating Station Ten-Mile Emergency Planning Zone. Also, RL will coordinate and implement protective actions for portions of the 10-mile Emergency Planning Zone on Hanford outside of the Columbia Generating Station Exclusion Area.

Assistance which can be requested via the Department of Energy includes:

a. Emergency Decontamination Facility staffed by qualified radiological emergency personnel able to treat contaminated patients.

b. Hanford contractor ambulances with qualified EMT support personnel.

c. Hanford contractor Fire Department resources to respond to fires on the Hanford Reservation.

d. Hanford contractors with additional respirators, protective clothing and equipment for personnel decontamination.

e. Hanford contractors that can assist with field monitoring, dose assessment, meteorological data and laboratory analysis.

Eight DOE Regional Coordinating Offices for Radiological Assistance provide radiological assistance on request in any region of the country. The radiological assistance teams are the front lines of Federal assistance under the Federal Radiological Emergency Response Plan (FRERP). RAP teams will generally be requested quite early in an event by the State and/or the NRC. RAP teams typically are composed of four to six people. They are capable of conducting gross gamma, alpha, and beta monitoring. They will require only one half to two hours to prepare for a response. Response time will depend on travel time to the location of the accident. The RAP team will also act as an advance team for coordination of further DOE assistance such as the Federal Radiological Monitoring and Assessment Center (FRMAC) or the Aerial Measuring System (AMS).

When assistance is requested, DOE coordinates the monitoring and assessment efforts of all Federal agencies. The FRMAC is usually established near the site of the accident as part of or in conjunction with the Federal Response Center established by the Federal Emergency Management Agency (refer to Section 3.6.3). The size and complexity of the assistance effort will depend on the incident. DOE can provide the most extensive monitoring and assessment capabilities available in the United States. It will require about 24 hours for a fully operational unit to be established. DOE has delegated the responsibility for establishing this service to the DOE Nevada Operations Office.

The AMS is an airborne radiological detection system that can respond to radiological incidents and perform plume tracking, radiation surveys, and radiation mapping over large

areas around the site of an incident. Most of the aerial monitoring assets are located in Las Vegas, Nevada, but there are also some capabilities based at Andrews Air Force Base, near Washington, D.C. The AMS will be integrated into the assistance effort once it is established.

3.6.3 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) coordinates federal responses to nuclear facilities for both radiological and non-radiological emergencies. In the event of a radiological emergency a number of federal agencies can be activated through FEMA to support State and County activities. FEMA would coordinate these activities through provisions of the Federal Radiological Emergency Response Plan (FRERP). For a Site Area or General Emergency, FEMA would normally establish a Federal Response Center (FRC) in the Tri-Cities area. Space would also be made available at the Energy Northwest Emergency Operations Facility (EOF) for representatives of responding federal agencies. If resources are needed from FEMA to support offsite emergency activities, the State has the authority to request offsite assistance. Energy Northwest will coordinate with the FEMA representative concerning field response activities.

3.6.4 U.S. Coast Guard

The U.S. Coast Guard, through the Thirteenth District Commander in Seattle, Washington, and the Captain of the Port in Portland, Oregon, regulates activities on navigable waters. For Site Area or General Emergencies, the Coast Guard may establish a safety zone on the Columbia River and broadcast a river closure notice to mariners.

U.S. Coast Guard assistance is a special case which, by virtue of pre-coordination with Benton and Franklin Counties, is automatically provided or may be made directly. Coast Guard Officers of authority may establish the "Safety Zone" within the 10-Mile Emergency Planning Zone (EPZ) for the Columbia River when notified of a Site Area or General Emergency. This Safety Zone provides authority for DOE and Sheriff's Office patrol craft to control river access within the EPZ. This service is provided for by the plan and procedures maintained by Benton and Franklin Counties, via the Fixed Nuclear Facility Response Plans referenced in Appendix 1.

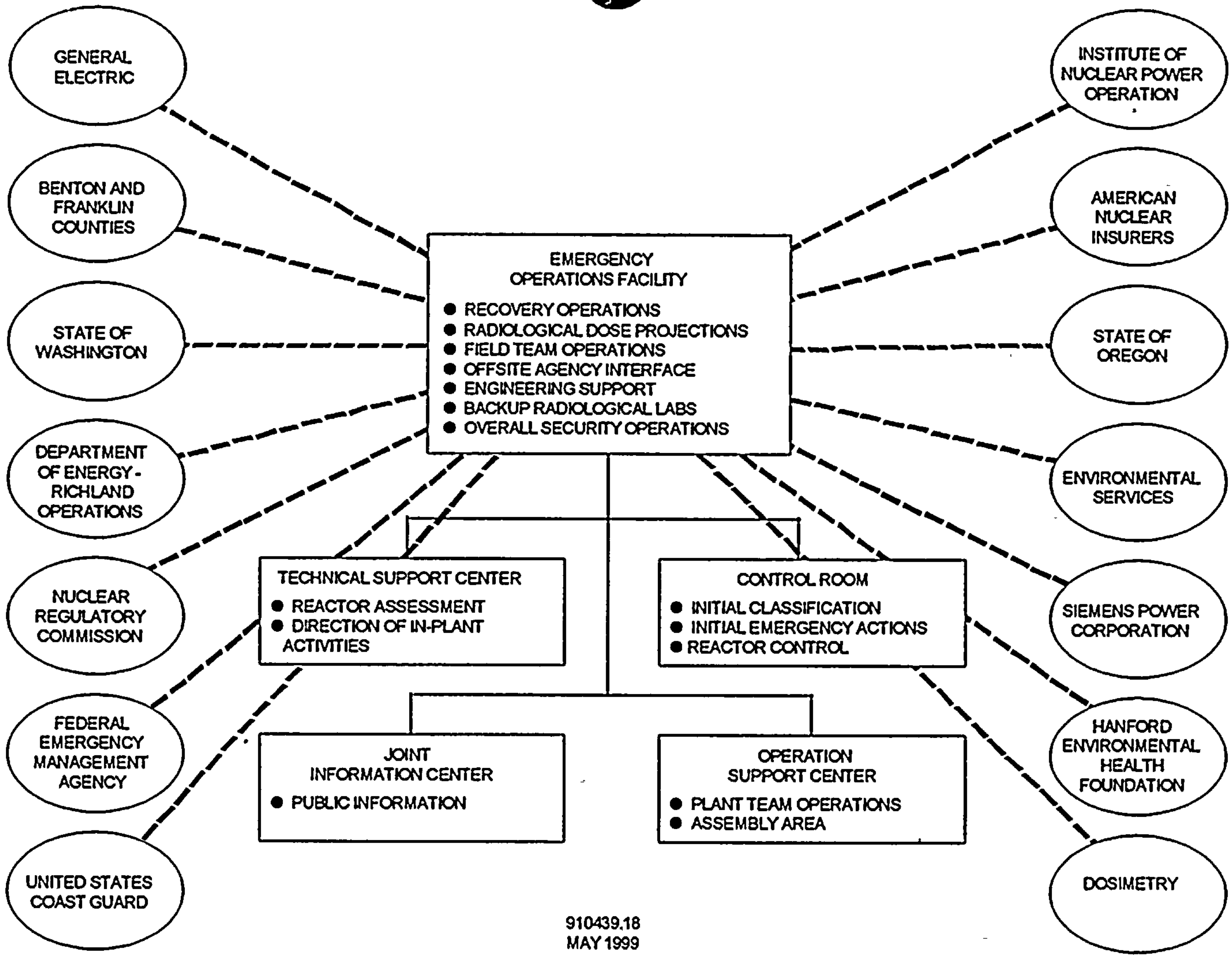

Figure 3-1, Outside Response Agency Resources

SECTION 4
EMERGENCY CLASSIFICATION AND NOTIFICATION

4.1 EMERGENCY CLASSIFICATION

The Emergency Plan provides for four classes of emergency to cover a spectrum of plant events that could lead to a loss of control over radioactive materials which could result in the need to initiate protective measures for the public. These four classes, in order of increasing severity of plant conditions, are Unusual Event, Alert, Site Area Emergency, and General Emergency. The basic regulatory premise for these classifications is found in 10 CFR 50 Part 47, with further guidance in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1, where example initiating conditions are provided for each emergency classification.

The initiating conditions (ICs) form the basis for establishing specific indications, i.e., plant instrument readings or personal observations, which would indicate that a given initiating condition had been met and thus an emergency classification must be declared. These instrument readings and personal observations are known as Emergency Action Levels (EALs).

Classifying an event based on plant abnormal conditions is the responsibility of the Emergency Director. Initiating events or conditions are included in this section, and implemented by Emergency Plan Implementing Procedure EPIP 13.1.1, Classifying the Emergency.

A conservative philosophy for emergency classification is used to declare the highest category for which an EAL has been met. For example, a Site Area Emergency would be declared directly if a Site Area Emergency EAL is met. This would be done without having first declared the Unusual Event or Alert emergency classifications. Also, if two or more EALs have been met, the EAL representing the highest emergency classification would be used to declare the emergency to ensure that appropriate notifications and actions are taken.

The initiating conditions presented in Table 4-1 are all inclusive of EALs and demonstrate how the EPIP 13.1.1 EALs are arranged. Due to the comprehensive nature of the initiating conditions, however, all postulated accidents in the Final Safety Analysis Report (FSAR) for Columbia Generating Station are fully covered and could be classified, when necessary, by using this scheme. Since some FSAR accidents are not representative of a significant plant event and do not pose a challenge to the fission product barriers, not all FSAR accidents would require declaration of an emergency classification.

Events occurring offsite at nearby nuclear facilities or transportation accidents involving hazardous materials, such as chemicals or nuclear fuel, will only be classified under the Columbia Generating Station EALs when conditions onsite are changed by the event to where they meet the criteria in EPIP 13.1.1. Columbia Generating Station actions will be based on the significance of these events. A transportation accident that does not directly impact the Plant site will be categorized as a Transportation Emergency.

4.2 EMERGENCY ACTION LEVEL CRITERIA

The Columbia Generating Station EAL criteria is based on a combination of methods. The combination ranges from primarily event-based EALs for Unusual Events, to primarily symptom-based or barrier-based EALs for General Emergencies. This type of an approach to EAL development ensures that timely recognition and notification occurs, that events occurring during refueling and cold shutdown are appropriately covered, and that multiple events can be effectively classified.

The symptom-based and barrier-based parameters used in the EALs are consistent with the parameters used in the Plant Emergency Operating Procedures, which are derived from accident analysis done by General Electric and the Boiling Water Reactor (BWR) Owner's Group after the Three Mile Island-2 accident. Symptom-based parameter examples are provided in EPIP 13.1.1, and represent conditions of plant system malfunctions or failures. Some of the parameters are linked to an electronic system which displays an alarm on the Computerized Graphic Display System (GDS) in the Control Room whenever certain abnormal conditions are met.

Situation-based parameters used in the EALs define other abnormal conditions which cannot be easily computerized or quantitatively defined and for which classification may require some judgement. In these cases, personnel are instructed to make decisions based on conservative principles and the definitions and purposes for event classification. Further guidance and justification for the Columbia Generating Station EALs is provided in a technical bases document, EPIP 13.1.1.A, Classifying the Emergency Technical Bases.

4.3 OFFSITE AGENCY REVIEW OF EMERGENCY ACTION LEVELS

EPIP 13.1.1 is the document provided to the NRC, the states, the US Department of Energy, Richland Operations, and the local government agencies to use for review and comment on emergency classification criteria.

A major revision of EPIP 13.1.1 EALs were discussed and agreed upon with state and local governments, and approved by the NRC on December 9, 1994. On at least an annual basis, the most recent revision to EPIP 13.1.1 is reviewed with state and local government representatives.

4.4 CLASSIFICATION DEFINITIONS AND PURPOSES

The conditions for event classification presented here are not intended to cover all situations. Other events and combinations of situations can warrant conservative action and emergency classifications. Classifications shall be made utilizing conservative principles and in situations not covered by examples. The Emergency Director shall declare an appropriate emergency classification where, in his judgement, plant status warrants such a declaration.

4.4.1 Unusual Event

a. Definition

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Purpose

To bring the plant operating staff to a heightened state of readiness, provide for a more systematic handling of information and decision making, and to ensure that notification is made to the emergency response organization, including all offsite emergency authorities.

c. Rationale

The rationale for the Unusual Event classification is to provide early notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. Emergency response organizations are typically not activated for an Unusual Event declaration.

d. Actions:

(1) Promptly inform states and/or local offsite authorities of the nature of the unusual condition as soon as discovered.

(2) Augment on shift resources as needed.

(3) Assess and respond.

(4) Escalate to a higher classification, if appropriate, or

(5) Close out with verbal summary to offsite authorities, followed by written summary within 24 hours.

4.4.2 Alert

a. Definition

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

b. Purpose

To provide additional help in responding to the situation and provide systematic handling of information and decision making. Declaring an Alert will provide additional manpower in the Technical Support Center to help the normal operating crew in those duties not directly related to plant control, such as offsite dose assessment, technical problem evaluation, and communications with outside organizations. It will also activate the Operations Support Center, which will provide additional manpower to respond to plant conditions, and the Emergency Operations Facility and Joint Information Center to improve offsite communications and the ability to relay information to the news media and the public.

c. Rationale

The rationale for the Alert classification is to provide prompt notification of minor events of more significance than the Unusual Event category and to ensure fuller response preparations are performed. The Columbia Generating Station emergency response organization is activated for an Alert declaration.

d. Actions:

(1) Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered.

(2) Augment resources and activate on-site Technical Support Center, on-site Operations Support Center near site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site monitoring teams and associated communications.

(5) Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

(6) Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases, from the appropriate emergency center.

(7) Escalate to a more severe class, if appropriate.

(8) Close out or recommend reduction in emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction.

4.4.3 Site Area Emergency

a. Definition

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

b. Purpose

To assure that all emergency response centers are activated, field monitoring teams dispatched, evacuation coordinators readied, predetermined protective actions issued for the public, and to keep the public informed.

c. Rationale

The rationale for the Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring but where a fuel failure situation is not indicated based on current information. In this situation full mobilization of emergency personnel, and the assembly, accountability and evacuation of non-essential personnel in the near site environs is indicated, as well as associated offsite communications, and the dispatch of radiation monitoring personnel.

d. Actions:

(1) Promptly inform State and/or local offsite authorities of site area emergency status and reason for emergency as soon as discovered.

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provided meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Escalate to general emergency class, if appropriate

or

(10) Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.4 General Emergency

a. Definition

Events are in progress or have occurred which involve actual or imminent substantial fuel degradation or failure with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite at distances more than the immediate site area.

b. Purpose

To initiate predetermined actions for the public, provide for continuous offsite assessment, initiate additional measures, as indicated by radiological releases or plant conditions, and to provide for consultation and flow of information to and from the various offsite authorities.

c. Rationale

The rationale for the General Emergency classification reflects conditions where actual or imminent substantial fuel degradation or failure with the potential for loss of containment are occurring. In this situation, evacuation becomes the preferred immediate action.

d. Actions:

(1) Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local).

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF), and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Close out or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.5 One-Hour Reportability

Events are evaluated against the criteria of 10CFR50.72(b)(1). PPM 1.10.1, Notifications and Reportable Events, implements this criteria. NUREG 1022 contains clarifying NRC guidance.

4.5 STATE AND COUNTY CLASSIFICATION SYSTEM

The States of Washington and Oregon have adopted a fixed nuclear facility emergency classification scheme with classification levels. Each State maintains individual emergency response plans with these classification levels and specific guidelines for responding to emergencies at Columbia Generating Station.

The Columbia Generating Station 10-Mile Emergency Planning Zone lies within two counties. These counties, Benton and Franklin, have agreed to use the emergency classification scheme used by Columbia Generating Station and the States.

As part of the annual EAL review process, Energy Northwest ensures that both the counties' emergency response plans and the State emergency response plan continue to use a classification scheme consistent with the Columbia Generating Station scheme.

4.6 NOTIFICATION METHODS AND PROCEDURES

The Energy Northwest notification process for activating the emergency organizations includes notification of emergency response personnel and assistance organizations, who are notified when an emergency is declared. Initial communication links between Energy Northwest, Benton and Franklin Counties, and the State of Washington are available on a 24 hour per day basis. The extent of notification will depend upon the emergency classification. A means for verifying the authenticity of all initial offsite notifications is established.

Communication links are established among the various on-site and offsite emergency centers. Descriptions of the emergency response positions at each center include responsibilities for communications with specific positions or other emergency response facilities. Those communication responsibilities are further specified in the EPIPs.

4.6.1 Energy Northwest Emergency Organization Notification

Activation of response teams during normal working hours will be via the telephone system, the inplant public address system, or the paging system. Activation during hours other than normal working hours will be accomplished by the paging system, automatic notification system. This system will be initiated by the Security Communication Center Duty Officer. The Duty Officer will be directed to make the notifications by the Emergency Director. A manual call list will serve as a backup notification method. Instructions will be provided if protective measures are required.

The in-plant paging system, high noise area paging devices, a radio paging system, and an Automated Notification System will be used to notify Energy Northwest ERO personnel. Instructions will be provided if protective measures are required.

On-duty Energy Northwest personnel will notify Washington Emergency Management, Benton County Emergency Management, Franklin County Emergency Management, and the Department of Energy.

The extent of the notification will depend upon the emergency classification. However, the Emergency Director may call anyone deemed necessary to support the emergency effort. Table 4-2 outlines the response organizations that will be notified by Energy Northwest for each emergency class. The above scheme is established in procedures.

4.6.2 Nearby Facilities Notification

Initial emergency notification to nearby facilities will be made. Instructions will be provided if protective measures are required.

The Department of Energy is responsible for notifying facilities on the Hanford Reservation during an Energy Northwest emergency; however, Energy Northwest will notify the Fast Flux Test Facility (FFTF) control room when an Exclusion Area evacuation is implemented. DOE notifies Energy Northwest in the event of a sodium oxide release from FFTF.

4.6.3 Support Organizations Notification

Initial notification to Benton County Emergency Management, Franklin County Emergency Management, Department of Energy, and Washington Emergency Management will be made from the Control Room, the Technical Support Center or the Emergency Operations Facility. The Nuclear Regulatory Commission Emergency Response Center will be notified. The Nuclear Regulatory Commission offices will patch the call through to the Nuclear Regulatory Commission offices in Region IV, Arlington, Texas. A means for verifying the authenticity of the notification is established.

4.6.4 General Public Notification

Emergency notification to both transients and residents is the responsibility of the County Emergency Chairman. Notification will be based on information received from Energy Northwest and, if time permits, consultation with the staffs of the Benton County Emergency Operations Center, Franklin County Emergency Operations Center, and Washington State Emergency Operations Center.

Transient and resident populations are advised in public information material to monitor the Emergency Alerting System (EAS) for emergency announcements and protective action instructions. The initial instructions will consist of prescribed emergency messages consistent with the Emergency Classification and will contain information such as:

a. Identification of agency/organization issuing information.

b. A statement that a facility has had an accident.

c. Identification of the communities or geographical areas affected by the emergency.

d. A brief description of the type of emergency and the nature of the hazard.

e. Specific protective measures such as sheltering or evacuation to be taken by residents of the affected areas.

f. A statement that further information will be given over the Emergency Alerting System (EAS).

Copies of the text of prerecorded EAS messages and the messages to be read over the siren system are provided in the Benton and Franklin Counties Emergency Response Plans.

Initial and follow-up notifications of an emergency at the plant are made to the County Emergency Dispatch Center, to the Department of Energy-Richland Operations, and to the State of Washington from the control room, the TSC or the EOF. Washington State is responsible for notifying Oregon DOE. The Benton County Emergency Operations Center is responsible for notifying the public in Benton County. The Franklin County Emergency Operations Center is responsible for notifying the public in Franklin County. Benton County is responsible for making Protective Action Decisions (PADs) in Benton County during the Plume phase of an emergency. Franklin County is responsible for making PADs in Franklin County during the Plume phase of an emergency. They will notify the public within fifteen minutes after a Protective Action Decision is made. The State of Washington is responsible for making PADs during the ingestion phase of an emergency. The Department of Energy has the responsibility to alert and provide information to its employees and contractors on the Hanford Reservation. The Joint Information Center will coordinate public news releases with responding agencies.

The Early Warning System is designed to alert and provide information to the population in the Ten-Mile Emergency Planning Zone.

Tone activated radios provide the primary means of notification. These radios are activated by the Emergency Alerting System signal and provide instructions for protective actions. Transient population along the Columbia River is notified by sirens within the 10-mile EPZ, a Coast Guard marine band broadcast and, if necessary, by Sheriffs Department. Transient population along the Yakima River and in the Horn Rapids area within the 10-mile EPZ are notified by sirens. In addition, Washington State Department of Fish and Wildlife may inform members of the public of protective response actions required.

4.6.5 Initial Messages to Offsite Response Organizations

Initial messages to response organizations will contain such information as:

a. Type of notification
b. Facility experiencing emergency
c. Time of incident
d. Emergency classification
e. Protective action recommendation

4.6.6 Follow-up Messages

Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as:

a. Name and telephone number of caller
b. Location of incident
c. Date/Time of incident
d. Classification of Emergency
e. Type of actual or projected release and estimated duration/impact times
f. Estimate of quantity of radioactive material released or being released, and the points of release
g. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
h. Meteorological conditions
i. Actual or projected dose rates at site boundary; projected integrated dose at site boundary
j. Projected dose rates and integrated dose at the projected peak and at 2 and 10 miles, including sector(s) affected
k. Estimate of any surface radioactive contamination; in-plant, onsite or offsite
l. Emergency response actions underway
m. Recommended emergency actions, including protective action recommendations
n. Request for offsite organization support needed onsite
o. Prognosis for worsening or termination of event based on plant information

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.1 Coolant Activity	Fuel Clad Degradation 1.1.U.1 1 2 3 4 RCS sample activity GT Technical Specification 3.4.8 for GT LCO Action Statement time.	Loss OR potential loss of fuel clad 1.1.A.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine.	Loss or potential loss of any two fission product barriers 1.1.S.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND ANY of the following: • <u>Any</u> RCS Loss Indicators, Table 1 • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • <u>Any</u> PC Loss Indicators, Table 2 • Cannot maintain plant parameters within SRVTPLL, or PSP	A loss of any two fission product barriers and loss or potential loss of the third 1.1.G.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Drywell pressure response not consistent with LOCA conditions 1.1.G.2 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2, upscale high AND <u>Any</u> PC Loss Indicators, Table 2 1.1.G.3 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND <u>Any</u> RCS Loss Indicators, Table 1 AND either of the following: <u>Any</u> PC Loss Indicators, Table 2 OR Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.2 Radiation Monitors	Fuel Clad Degradation 1.2.U.1 1 2 3 SJAE CONDSR OUTLET RAD HI-HI alarm (P602)	Loss OR potential loss of RCS 1.2.A.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Loss or potential loss of any two fission product barriers 1.2.S.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr	A loss of any two fission product barriers and loss or potential loss of the third 1.2.G.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr 1.2.G.2 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr AND ANY of following: • Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP. • Drywell pressure response not consistent with LOCA conditions. • Any PC Loss Indicators, Table 2

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.3 Refueling Incidents	Unexpected decrease in water covering irradiated fuel assemblies 1.3.U.1 1 | 2 | 3 | 4 | 5 | def Uncontrolled water level decrease in the reactor cavity or SFP below the level of the weirs with all irradiated fuel assemblies remaining covered by water	Major damage to irradiated fuel OR loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the RPV 1.3.A.1 1 | 2 | 3 | 4 | 5 | def HIGH alarm on ARM-RIS-1 (Fuel Pool ARM) resulting from an uncontrolled irradiated fuel handling process		
		Loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel 1.3.A.2 1 | 2 | 3 | 4 | 5 | def Water level, when not intentionally lowered, observed to be below the top of the gate sill separating the reactor cavity and the SFP 1.3.A.3 1 | 2 | 3 | 4 | 5 | def Report of visual observation of irradiated fuel uncovered or uncovering imminent.		

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<u>EMERGENCY CLASSIFICATION INITIATING CONDITIONS</u>

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.1 RPV Water Level	RCS Leakage 2.1.U.1 1 | 2 | 3 Valid unidentified leakage GE 10 gpm or upscale high indicated on recorder EDR-FRS-623, Pen 1 (P632) (Non RCC) OR Valid identified leakage GE 25 gpm indicated on recorder EDR-FRS-623, Pen 2 (P632)	Loss OR potential loss of RCS 2.1.A.1 1 | 2 | 3 Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Loss or potential loss of any two fission product barriers 2.1.S.1 1 | 2 | 3 | 4 | 5 RPV level LT -161 inches (for ATWS conditions, RPV level LT -192") or cannot be determined	A loss of any two fission product barriers and loss of potential loss of the third 2.1.G.1 1 | 2 | 3 Entry into Severe Accident Guidelines 2.1.G.2 1 | 2 | 3 RPV level LT -161 inches, (for ATWS conditions, RPV level LT -192") or cannot be determined AND ANY of following: • Rapid unexplained decrease of PC pressure following an initial increase. • Drywell pressure response not consistent with LOCA conditions • Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists

TABLE

<u>EMERGENCY CLASSIFICATION INITIATING CONDITIONS</u>

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.2 Reactivity Control	Inadvertent Criticality 2.2.U.1 | | 2 | 3 | 4 | 5 | | An extended and unplanned sustained positive period observed on NIs, while NOT performing a reactor startup.	Failure of Reactor Protection System (RPS) instrumentation to complete or initiate a reactor scram AND manual scram was successful. 2.2.A.1 | 1 | 2 | | | | | <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Manual Actions (mode switch in shutdown, manual push buttons and ARI) result in reactor power LE 5%.	Failure of RPS instrumentation to complete or initiate an automatic reactor scram once a RPS setpoint has been exceeded AND manual scram was NOT successful 2.2.S.1 | 1 | 2 | | | | | <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND either: Reactor power GT 5% or unknown OR Wetwell temperature GT 110°F	Failure of the RPS to complete an automatic scram AND manual scram was NOT successful AND there is indication of an extreme challenge to the ability to cool the core. 2.2.G.1 | 1 | 2 | | | | | <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Wetwell temperature cannot be maintained LT the HCTL

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.1 Primary Containment Pressure	Loss or potential loss of primary containment 3.1.U.1 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase	Loss or potential loss of either fuel clad or RCS 3.1.A.1 1 2 3 Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	Loss or potential loss of any two fission product barriers 3.1.S.1 1 2 3 Drywell pressure response not consistent with LOCA conditions 3.1.S.2 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	A loss of any two fission product barriers and loss or potential loss of the third 3.1.G.1 1 2 3 PC pressure exceeds PCPL
3.2 Wetwell Temperature/ Level	Loss or potential loss of primary containment 3.2.U.1 1 2 3 Cannot maintain plant parameters within SRVTPLL		Loss or potential loss of any two fission product barriers 3.2.S.1 1 2 3 RPV pressure and wetwell temperature cannot be maintained below HCTL	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.2 Wetwell Temperature/Pressure			Loss or potential loss of any two fission product barriers 3.2.S.2 1 | 2 | 3 | | | Cannot maintain plant parameters within SRVTPLL or PSP AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.3 Combustible Gas Concentration				A loss of any two fission product barriers and loss or potential loss of the third 3.3.G.1 1 2 3 PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
3.4 Containment Isolation Status	Loss or potential loss of primary containment 3.4.U.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment ,exists	Main steam line break outside containment with isolation 3.4.A.1 1 2 3 Indications of a MSL break AND MSIV closure <u>has isolated</u> the break	Loss or potential loss of any two fission product barriers 3.4.S.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists. AND ANY of following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell 3.4.S.2 1 2 3 Indications of a MSL break AND MSIV closure <u>has not isolated</u> the break	A loss of any two fission product barriers and loss or potential loss of the third 3.4.G.1 1 2 3 Intentional venting of Primary Containment to prevent failure.

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EMERGENCY CLASSIFICA[illegible] INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4 Secondary Containment 4.1 Reactor Building Temperature/ Radiation Levels			Loss or potential loss of any two fission product barriers 4.1.S.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures).	A loss of any two fission product barriers and loss of potential loss of the third 4.1.G.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures). AND ANY of the following: • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr • RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches) or cannot be determined • Coolant activity GT 300 μCi/gm dose equivalent iodine

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.1 Offsite Release	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times ODCM limits for 60 minutes or longer 5.1.U.1 1 2 3 4 5 def	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological specifications for 15 minutes or longer 5.1.A.1 1 2 3 4 5 def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release 5.1.S.1 1 2 3 4 5 def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the release using actual meteorology 5.1.G.1 1 2 3 4 5 def
	A valid reading exists which exceeds or is expected to exceed Table 3 column "UE" for GT 60 minutes 5.1.U.2 1 2 3 4 5 def	A valid reading exists which exceeds or is expected to exceed Table 3 column "Alert" for GT 15 minutes 5.1.A.2 1 2 3 4 5 def	A valid reading exists which exceeds or is expected to exceed Table 3 column "Site Area" for GT 15 minutes 5.1.S.2 1 2 3 4 5 def	A valid reading exists which exceeds or is expected to exceed Table 3 column "General" for GT 15 minutes 5.1.G.2 1 2 3 4 5 def
	Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" OR Sample analysis indicates release GT 2 times ODCM 6.2.1.1 limits for GT 60 minutes	Offsite dose calculations indicate dose rates GT Table 4 column "Alert" OR Sample analysis indicates release GT 200 times ODCM 6.2.1.1 limits for GT 15 minutes	Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area"	Offsite dose calculations indicate doses or dose rates GT Table 4 column "General" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "General".

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.2 Area Radiation	Unexpected increase in plant radiation levels 5.2.U.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 5E3 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-20 thru ARM-RIS-30 • ARM-RIS-32 thru ARM-RIS-34 (High Range)	Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown 5.2.A.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 15 mR/hr on ARM-RIS-19 (CR) OR Valid reading GT 1E4 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-23 • ARM-RIS-24 • ARM-RIS-32 thru ARM-RIS-34 (High Range)		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
6 Electrical Failures 6.1 AC Power Loss	Loss of all offsite power to critical AC busses for greater than 15 minutes 6.1.U.1 1 | 2 | 3 | 4 | 5 | def Power is unavailable to SM-7 and SM-8 from offsite AC sources GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.A.1 | | | 4 | 5 | def Complete loss of all AC power to SM-7 and SM-8 GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.S.1 1 | 2 | 3 | | | Complete loss of all AC power to SM-7 and SM-8 GT 15 minutes	Prolonged loss of all offsite power and prolonged loss of all onsite power to critical AC busses 6.1.G.1 1 | 2 | 3 | | | Complete loss of all AC power to SM-7 and SM-8 AND either of the following: In the judgement of the Emergency Director, AC power to either SM-7 or SM-8 is not likely to be restored within 4 hours OR RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
		Power capability to critical AC busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout. 6.1.A.2 1 | 2 | 3 | | | Available emergency bus AC power has been reduced to only one of the following sources for GT 15 min • TR-N1 (SM-7 and/or SM-8) • TR-S (SM-7 and/or SM-8) • TR-B (SM-7 and/or SM-8) • DG-1 (SM-7) • DG-2 (SM-8)		
6.2 DC Power Loss	Degradation of all critical DC power for greater than 15 minutes. 6.2.U.1 | | | 4 | 5 | def Degradation of both Division 1 and Division 2 critical DC voltage as indicated by bus voltage LT 110 VDC on both 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes		Degradation of all critical DC power for greater than 15 minutes 6.2.S.1 1 | 2 | 3 | | | Degradation of both Division 1 and Division 2 critical DC voltage as indicted by bus voltage LT 110 VDC on both 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.1 System Failures	Inability to reach required shutdown within technical specification limits 7.1.U.1 1 2 3 Plant is not brought to required operating mode within T.S. LCO action statement time 7.1.U.2 1 2 3 4 5 def Uncontrolled flooding in a safe shutdown building, Table 5, that has the potential to affect safety related equipment needed for the current operating mode	Inability to maintain plant in cold shutdown 7.1.A.1 4 5 Inability to restore and maintain reactor coolant temp LT 200°F 7.1.A.2 1 2 3 4 5 def Report by plant personnel confirming the occurrence of plant uncontrolled internal flooding in a safe shutdown building, Table 5 AND Affected safe shutdown system parameters indicate degraded performance		
7.2 Control Room Evacuation		Control room evacuation has been initiated 7.2.A.1 1 2 3 4 5 The decision to evacuate the Control Room has been made.	Control room evacuation has been initiated, but plant control CANNOT be established 7.2.S.1 1 2 3 4 5 CR evacuation initiated AND Control of plant equipment needed to maintain adequate core cooling cannot be established at either the Remote Shutdown Panel or Alternate Remote Shutdown panel within 15 minutes of the SRO in charge of the CR physically leaving the CR	

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Unplanned loss of most or all safety system annunciators or indication in the control room for greater than 15 minutes 7.3.U.1 1 2 3 Unplanned loss of most or all annunciators on P601, P602, P603, and Bd. C associated with safety related equipment GT 15 minutes	Unplanned loss of most or all safety system annunciators or indications in the control room with EITHER: 1) a significant transient in progress; OR 2) Compensatory non-alarming indicators are unavailable 7.3.A.1 1 2 3 Unplanned loss of most or all annunciators on P601, P602, P603, and Bd C associated with safety related equipment GT 15 minutes AND either of the following: A significant plant transient is in progress OR Compensatory non-alarming indications are not available (plant computer system and GDS)	Inability to monitor a significant transient in progress. 7.3.S.1 1 2 3 Loss of most or all annunciators on P601, P602, P603 and Bd. C associated with safety related equipment AND Compensatory nonalarming indications are unavailable (process computer system and GDS) AND Significant transient in progress AND Loss of indications needed to monitor ANY of the following plant critical safety parameters: • Reactor power • RPV level • RPV pressure • Drywell pressure • Drywell temperature • Wetwell pressure • Wetwell/Drywell H2/O2 Concentrations • Wetwell level • Wetwell temperature • Radioactive Gaseous Effluents	
	Significant loss of onsite OR offsite communications capabilities 7.3.U.2 1 2 3 4 5 def Unplanned loss of ALL of the following onsite communications capability: • Plant Public Address (PA) System • Plant Telephone System • Plant Radio System Operations and Security Channels			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Significant loss of onsite or offsite communications capabilities 7.3.U.3 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following offsite communications capability: • State/County Notification (CRASH) System • Offsite calling capability from the Control Room via direct telephone and fax lines • Long distance calling capability on the Plant ("2000") Switch and Kootenai (Plant Support Facility)/Deschutes (Plant Engineering Center) ("8000") Switch			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.1 Security Threats	Confirmed security event which indicates a potential degradation in the level of safety of the plant 8.1.U.1 1 | 2 | 3 | 4 | 5 | def Bomb device discovered within plant protected area <u>but</u> outside a Safe Shutdown Building, Table 5 OR Confirmed report of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes	Security event in a Plant Protected Area 8.1.A.1 1 | 2 | 3 | 4 | 5 | def Confirmed report of an intrusion by a hostile force into the Plant Protected Area	Security event in a Plant Vital Area 8.1.S.1 1 | 2 | 3 | 4 | 5 | def Bomb device discovered or detonated within a Safe Shutdown Building, Table 5 OR Confirmed report of intrusion by a hostile force into a Safe Shutdown Building, Table 5	Security event resulting in loss of ability to reach and maintain cold shutdown 8.1.G.1 1 | 2 | 3 | 4 | 5 | def Loss of physical control of the CR due to security event OR Loss of physical control of the remote shutdown capability due to security event
8.2 Fire/Explosion Caused by Equipment Failure	Fire within the Protected Area Boundary not extinguished within 15 minutes of detection OR an explosion within Protected Area Boundary 8.2.U.1 1 | 2 | 3 | 4 | 5 | def Fire within or adjacent to any Safe Shutdown Building, Table 5, which is <u>not</u> extinguished within 15 minutes of either CR notification by plant personnel or receipt of an alarm OR Report by plant personnel of an unplanned explosion within the Protected Area boundary resulting in visible damage to permanent structures or equipment	Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown 8.2.A.1 1 | 2 | 3 | 4 | 5 | def Confirmed fire or explosion in a safe shutdown building, Table 5 AND either of the following: Affected safe shutdown system parameters indicate degraded performance OR Report by plant personnel of visible damage to the affected safe shutdown building or equipment contained within the affected safe shutdown building		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.3 Man-Made Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.3.U.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash into or projectile which impacts a Safe Shutdown Building, Table 5 8.3.U.2 1 | 2 | 3 Turbine failure resulting in casing penetration or damage to turbine or generator seals	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.3.A.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash or projectile impact which impedes access to or damages equipment in a Safe Shutdown Building, Table 5 8.3.A.2 1 | 2 | 3 Missiles generated from a turbine failure have resulted in visible structural damage to or penetration of a safe shutdown building, Table 5		
	Release of toxic or flammable gases affecting the Protected Area Boundary deemed detrimental to safe operation of the plant. 8.3.U.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for evacuation or shelter of site personnel based on offsite event	Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. 8.3.A.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases within a safe shutdown building, Table 5, in concentrations that will be life threatening to plant personnel or impede access to equipment needed for safe plant operation.		

TABLE 1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary	Natural and destructive phenomena affecting Safe Shutdown Buildings		
	8.4.U.1 1 | 2 | 3 | 4 | 5 | def MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake	8.4.A.1 1 | 2 | 3 | 4 | 5 | def OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake		
	8.4.U.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 80 mph OR CR measured winds GT 66 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary	8.4.A.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 100 mph OR CR measured winds GT 76 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5		
	8.4.U.3 1 | 2 | 3 | 4 | 5 | def Range fires near the plant which threaten to reduce the level of safety	8.4.A.3 1 | 2 | 3 | 4 | 5 | def Ash fallout from volcanic activity is severe enough to warrant plant shutdown		

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.4 1 | 2 | 3 | 4 | 5 | def Visible ash fallout from volcanic activity 8.4.U.5 1 | 2 | 3 | 4 | 5 | def River level increase which threatens to flood the river pumphouse	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.4 1 | 2 | 3 | 4 | 5 | def Report by plant personnel of an event causing visible structural damage to a safe shutdown building, Table 5		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Other 9.1 Other	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Unusual Event. 9.1.U.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Alert. 9.1.A.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred which indicate actual or potential substantial degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a Site Area Emergency 9.1.S.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a General Emergency 9.1.G.1 1 2 3 4 5 def In the judgement of the Emergency Director, other conditions exist which indicate either of the following: Actual or imminent substantial core degradation or melting with the potential for loss of containment integrity OR Potential for uncontrolled radionuclide releases which can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary
	Loss OR potential loss of Primary Containment 9.1.U.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment as indicted by Fission Product Barrier Degradation Table, Table 6	Loss OR potential loss of fuel clad or RCS 9.1.A.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier as indicted by Fission Product Barrier Degradation Table, Table 6	Loss or potential loss of any two fission product barriers 9.1.S.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of any two fission product barriers as indicted by Fission Product Barrier Degradation Table, Table 6	A loss of any two fission product barriers and loss or potential loss of the third 9.1.G.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third as indicated by Fission Product Barrier Degradation Table, Table 6

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines
					Loss of pressure suppression function
					Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP
					PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

Table 1 RCS Barrier Loss Indicators
• Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr
• RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
• Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell

Table 2 PC Barrier Loss Indicators
• Rapid unexplained decrease of PC pressure following an initial increase
• Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 3

Table 3 Effluent Monitor Classification Thresholds				
Monitor	UE	Alert	Site Area	General
NOTE: If a dose projection cannot be performed, and the monitor reading is sustained for longer than the specified time then the declaration must be made based on the valid reading.				
	60 minutes	15 minutes	15 minutes	15 minutes
PRM-RE-1B Reactor Bldg. Exhaust Inter.	1.35E4 cps	N/A	N/A	N/A
PRM-RE-1C Reactor Bldg. Exhaust Hi	N/A	1.14E3 cps	9.65E3 cps	9.35E4 cps
TEA-RIS-13 Turbine Bldg. Exhaust. Low	1.7E4 cpm	4.4E4 cpm	4.4E5 cpm	N/A
TEA-RIS-13A Turbine Bldg. Exhaust, Int.	N/A	N/A	N/A	11 PMU
WEA-RIS-14 Rad Waste Bldg. Exhaust	1.2E5 cpm	1.7E5 cpm	1.7E6 cpm	N/A
WEA-RIS-14A Rad Waste Bldg. Int.	N/A	N/A	N/A	29 PMU
TSW-RIS-5 TSW Effluent	3.9E3 cpm	3.9E5 cpm	N/A	N/A
FDR-RIS-606 Rad. Waste Effluent	2 x Hi-Hi alarm	200 x Hi-Hi alarm	N/A	N/A
SW-RIS-604 SW 'A' Process	2.0E2 cps	2.0E4 cps	N/A	N/A
SW-RIS-605 SW 'B' Process	2.0E2 cps	2.0E4 cps	N/A	N/A

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

TABLES 4 & 5

cps = counts per second cpm = counts per minute PMU = panel meter units N/A = not applicable (outside of meter range)

Table 4 Offsite Dose Calculation/Field Survey Sample Analysis Classification Thresholds at 1.2 miles

	UE	Alert	Site Area	General
TEDE	N/A	N/A	100 mrem	1000 mrem
CDE Thyroid	N/A	N/A	500 mrem	5000 mrem
TEDE rate	0.1 mrem/hr	10 mrem/hr	100 mrem/hr (projected GT 60 min)	1000 mrem/hr (projected GT 60 min)
CDE Thyroid rate	0.3 mrem/hr	50 mrem/hr	500 mrem (for GT 1 hr inhalation)	5000 mrem (for GT 1 hr inhalation)

Table 5 Safe Shutdown Buildings

- Vital portions of the RadWaste/Control Building
- Reactor Building
- Vital portions of the Turbine Building
- Standby Service Water Pump Houses
- Diesel Generator Building
- Diesel Generator Fuel Oil Storage Area

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP PC pressure exceeds PCPL
<u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		<u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		<u>Any</u> event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

TABLE 4-2
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Energy Northwest:				
Technical Support Center	N,R	A	A	A
Operations Support Center	N,R	A	A	A
Security Communications Center	A	A	A	A
Emergency Operations Facility	N,R	A	A	A
Joint Information Center (Energy Northwest Richland Office Complex)	N,R	A	A	A
County:				
Benton Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
Benton and Franklin County Sheriffs[1]	N,R	A	A	A
County:				
Franklin Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
State:				
Washington State Emergency Management	N	A	A	A
Oregon State[2] Department of Energy	N	N	A	A

A = Activate N = Notify for information only R = Respond if requested
[1] Notified by Benton County or Franklin County, as appropriate, Emergency Dispatch
[2] Notified by Washington State

TABLE 4-2 (Cont'd.)
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Federal:				
Nuclear Regulatory Commission	N	N	A	A
U.S. Coast Guard		R	N,A	A
Federal Emergency Management Agency	N	N,R	A	A
Department of Energy Richland (will notify and activate DOE contractors)	N	N,R	A	A
Support Services:				
Siemens Corporation	R	R	N,R	N,R
General Electric	R	R	N,R	N,R
Institute of Nuclear Power Operations		N	N,R	N,R
American Nuclear Insurers		N	N,R	A
Northwest Health Services	R	R	N,R	N,R
Hospitals	R	R	R	R
BPA Substation	N	N	N	N

A = Activate N = Notify for information only R = Respond if requested

SECTION 5
ACCIDENT ASSESSMENT AND PROTECTIVE RESPONSE

5.1 ASSESSMENT ACTIONS, PLANT INSTRUMENTATION, AND RADIOLOGICAL MONITORING

Effective coordination and direction of all elements of the emergency response organization requires that accident assessment be continued throughout the emergency. Using plant instrumentation and radiological monitoring, each emergency class invokes similar assessment methods. The magnitude of the assessment actions posed by each classification varies. An important focus of assessment actions is to track the ability of plant systems to contain the core inventory of radioactive material (i.e., radionuclides) and to monitor whether the potential exists for accidental release of this material into the environment. Assessment actions also include determining the consequences of a radioactive material release on both a projected and actual basis.

For the Unusual Event classification level, assessment actions will generally involve situations that do not pose a threat to containment of the reactor core's radioactive material. Usually, declaration of an emergency classification will result from alarms, instrument readings, severe weather warnings, operating experience, or any combination thereof. Continuing assessment for an Unusual Event category of emergency will consist of the normal monitoring of Control Room and plant instrumentation and status. Tornado and severe weather assessment actions consist of keeping in contact with the load dispatcher and appropriate public authorities. If a fire prompted the declaration of an Unusual Event, the Fire Brigade Leader will go to the fire location, make continuing assessments, and report to the Shift Manager on whether offsite fire fighting support is required.

Once an incident has been classified as an Alert, assessment actions will include:

a. Increased surveillance of in-plant instrumentation.

b. If possible, the dispatching of shift personnel to the identified problem area to confirm and visually assess the problem.

c. The dispatching of personnel to monitor for possible releases, and to confirm the correct classification.

d. If a radiological incident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected offsite doses will occur. Dose assessment activity will continue until termination of the emergency so that assessment updates may be provided to all concerned offsite agencies and to the Emergency Director. Emergency Plan Implementing Procedures are provided to allow a rapid, consistent projection of offsite doses.

Assessment actions for the Site Area Emergency and General Emergency category are similar to the actions for an Alert. However, due to the increased magnitude of the possible release, assessment activity of greater scope will occur. The personnel necessary for this assessment effort will be provided by full mobilization of the onsite and offsite emergency response organizations. The assessment actions at these levels will include:

a. An increased amount of plant instrumentation will be monitored. (In particular, indications of core status, e.g., saturation temperature, core covery/uncovery indications etc.)

b. Radiation monitoring efforts will be greatly increased. Field Monitoring Teams will be available for dispatch. Beta-gamma field measurements will be performed; air sampling, environmental thermoluminescent dosimeter (TLD) change out, and collection of environmental media for assessment of material transport and deposition will be performed as necessary.

c. Dose assessment activities will be performed more frequently, with an increased emphasis on dose projection for use as a factor in determining necessary protective actions. Radiological and meteorological instrumentation readings will be used to project the dose rate at predetermined distances from the plant, and to project the potential integrated dose.

   In reporting the dose projections to the Emergency Director, the dose rate, dose, and basis for the time used for the dose estimate should be provided. Confirmation of dose rates by Field Monitoring Teams will be reflected in reports or revised dose estimate information provided to offsite agencies.

   All dose projections will be performed in accordance with the Emergency Plan Implementing Procedures which incorporate recommendations found in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." Reports to offsite authorities will include the relationship of dose to these guidelines. Emergency Plan Implementing Procedures provide for the recording of pertinent information.

Detailed plant operating procedures are available for use during emergencies, as well as during normal operations. Specific Emergency Operating Procedures and Abnormal Condition Procedures are provided to assist the Control Room operators in placing the plant in a safe condition and taking corrective actions.

5.1.1 Plant Instrumentation

Plant instrumentation measures appropriate parameters that are indicative of the status of various plant systems and the reactor. Instrumentation used to ensure safe reactor operation is deemed safety related. An important group of safety related parameters is commonly referred to as the Safety Parameter Display System (SPDS). The purpose of this system as outlined in NUREG-0696, is to help Control Room personnel make quick assessments of plant safety status. At Columbia Generating Station, the SPDS is made up of hard wired Control Room instrumentation. This instrumentation is sufficiently concentrated in the Main Control Room to allow rapid assessment of plant conditions. Additional information that is useful for emergency response is supplied by the Graphic Display System (GDS) which is part of SPDS. The SPDS provides information related to assessment of the following plant functions:

- Reactivity control,
- Reactor core cooling and heat removal,
- Reactor coolant system integrity,
- Radioactivity control, and
- Containment integrity.

The SPDS and other post-accident monitoring instrumentation provide the means to assess plant status during and following an accident. For more detailed information on plant instrumentation, refer to the Final Safety Analysis Report, Chapter 7.

The structures, systems, components and instrumentation important to safety at Columbia Generating Station are designed and located to minimize the probability and effect of fires and explosions, as well as to withstand the effects of natural phenomena such as earthquakes, tornadoes, and floods without the loss of capability to perform their safety functions.

Facilities and equipment for detecting, annunciating, and extinguishing fires are provided to protect both plant and personnel. These include fire detection and alarm systems, deluge water spray systems, dry and wet pipe sprinkler systems, carbon dioxide systems, hose stations, portable fire extinguishers, and halon flooding systems. In addition, noncombustible and heat resistant materials are used wherever practical throughout the Plant, particularly in locations such as the containment and Control Room. For more detailed information on the fire protection systems, refer to the Columbia Generating Station Fire Protection Evaluation.

The Plant site is near the Columbia River, which is the predominant hydrologic feature of the area. The elevations of safety related systems and components, however, are sufficient to protect the Plant against design basis flood conditions. All safety related structures, systems and components are also designed to withstand the effects of an earthquake, estimated as the maximum earthquake potential for this area. Instrumentation used to monitor earthquake seismic motion at Columbia Generating Station complies with Regulatory Guide 1.12 requirements and provides both a printout and an alarm annunciation if certain levels of seismic motion are detected. For more detailed information on tornado, flood and earthquake protection, refer to the Final Safety Analysis Report, Chapter 3. If needed as backup, flood information can be obtained from the U.S. Coast Guard and seismic information can be

obtained from the Department of Energy, Richland Operations. Both agencies are listed in the Emergency Phone Directory.

5.1.2 Radiological Monitoring Instrumentation

The plant radiation monitoring instrumentation is used to provide information in regard to general area radiation levels as well as the radiation levels in process and effluent streams, i.e., fluids in piping systems or air in ventilation systems. The area radiation and airborne radioactivity monitoring systems are comprised of area monitoring components located throughout the plant. Under normal operating conditions, the area monitors warn personnel both locally and remotely of increasing radiation levels. These monitors provide information to assessment personnel so that decisions can be made with respect to deployment of personnel or initiation of protective actions in the event of a radiation accident. For more detailed information on the area radiation and airborne radioactivity monitoring systems, refer to the Final Safety Analysis Report, Chapter 12.

The process and effluent radiological monitoring and sampling systems provide the means for sampling and continuously monitoring paths by which significant amounts of radioactivity could be released to the environment during normal operation and anticipated operational occurrences. As part of the plant radiological monitoring program, the process and effluent radiological monitoring and sampling systems assist in limiting effluent radioactivity to within the limits of 10CFR 20 and 10CFR 50, Appendix I and provide measurement for reporting radioactivity released to the environs in compliance with Regulatory Guide 1.21. These systems also provide the accident radiation monitoring required for compliance with NUREG-0737. Portions of these systems are also employed during postulated accident conditions for monitoring effluent discharge paths, and initiating automatic control features. A detailed description of the process and effluent monitoring and sampling systems is included in the Final Safety Analysis Report, Chapter 11.

5.2 METEOROLOGICAL AND ENVIRONMENTAL MONITORING

5.2.1 Meteorological Monitoring System

The primary onsite meteorological equipment includes a 240-foot tower with a 5 ft. wind mast located approximately 1700 feet west of Columbia Generating Station and provides data to Columbia Generating Station. System measurements include wind speed, wind direction, sigma theta, temperature, dew point, barometric pressure, precipitation, and temperature differential. The Operational Meteorological Program is described in Chapter 2 of the Final Safety Analysis Report.

Wind speed, wind direction, and temperatures, except the temperature at 245 feet, are available in the control room as near real-time digital displays, (five-minute averages). The averaged data is sent via the supervisory system to the Control Room. The data is then sent to chart recorders and the PPCRS computer. The data is also accessible at the Emergency Operations Facility, the Technical Support Center, and the control room via the plant computer system.

Backup meteorological information is available. Wind speed and direction, temperature, dew points, and sigma theta parameters are available. This and other information is available from Pacific Northwest National Laboratory (PNNL) or the National Weather Service, for 15-minute averaging (manual) and input to the computer systems.

The outputs of the primary tower sensors are fed to the plant process computer for 15 minute averaging for input to the Emergency Dose Projection System (EDPS). Error diagnostics, simulated data entry, and archiving are performed concurrently. Near real time access for both emergency and routine operations is thus provided.

A procedure shall be available for the use of normal and backup meteorological data.

5.2.2 Radiological Environmental Monitoring Program

A routine radiological environmental monitoring program is established in accordance with the Offsite Dose Calculation Manual (ODCM) requirement. Energy Northwest activities include air, milk, water, garden produce, fish, soil and sediment sampling, and thermoluminescent dosimeter (TLD) placement. Energy Northwest environmental monitoring locations are similar to Figure 5-1 and are fully listed in Section 5.0 of Energy Northwest ODCM.

In case of an emergency at Columbia Generating Station, TLDs will provide a time integrated exposure record. Permanent TLD stations are located within the Ten-Mile Emergency Planning Zone, around the Exclusion Area Boundary, and at various points of interest around the Hanford Reservation and across the Columbia River in Franklin County. A control station is located near Grandview, approximately 30 miles southwest of the site. Exchange frequency during normal operations is quarterly; however, during an emergency the TLDs may be exchanged more frequently based on release conditions. In addition, continuous air samplers are located within the Ten-Mile Emergency Planning Zone. The air samplers collect airborne radioiodines and particulates on filters which are analyzed either in the field or at the radiological laboratory in the Emergency Operations Facility.

5.3 OFFSITE DOSE PROJECTIONS

5.3.1 Source Term Determinations

Release data, such as volumetric flow rates and gross radiation levels, in conjunction with calibration factors and time dependent nuclide ratios, will be utilized during an accident to assess the radiological source term. Capability exists on shift to perform dose assessment projections using real time meteorological and effluent monitor data at all times. Data from instrumentation in the airborne effluent release pathways are available to be entered into the Emergency Dose Projection System (EDPS) to calculate the source term. A more detailed assessment of the isotopic composition of the release will be determined by laboratory analysis of effluent and field sampling media. Methods for determining release rate in the event the instrumentation is offscale or inoperative are contained in the Emergency Plan Implementing Procedures.

5.3.2 Emergency Dose Projection System

The Emergency Dose Projection System (EDPS) consists of 2 programs, QEPDS and EDPS Main. Both programs are accessed via personal computer. Both programs rely on a precalculated, real time, site-specific relationship between effluent monitor readings and on-site and offsite dose rates.

QEDPS is designed for rapid evaluation of a release with restricted data input and a straight-line dispersion model. QEDPS provides incremental dose projections from the site boundary out to 10 miles. QEDPS is available in the Control Room, TSC, EOF, and Alternate EOF, and provides text and map output. Field Team data may be used to calculate dose projections or validate previous projections.

Having the QEDPS software loaded on multiple, stand-alone computers located in the Control Room and EOF ensures backup dose projection capability.

EDPS Main is designed to accept much more detailed inputs for a more thorough release evaluation with more extensive text and graphical output. EDPS Main has the choice of puff or straight-line dispersion models and incremental dose projections from the site boundary out to 10 or 50 miles. EDPS Main has a graphical map output as well as a text output of the dose projection. EDPS Main is available in the TSC and EOF.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

5.3.3 Total Population Exposure

The Columbia Generating Station plant data systems collect and maintain files of effluent flow, radiation monitor readings, and five minute average meteorology data. These data are manually input into a joint frequency program, into the XOQDOQ program, and then to the GASPAR II computer code to calculate total population dose for occupied areas. The GASPAR II code can be adapted to emergency operations by input of short term atmospheric dispersion factors and appropriate exposure pathway parameters out to 50 miles.

5.4 FIELD MONITORING

5.4.1 Environmental Field Teams

Field monitoring capabilities will be activated whenever an Alert classification occurs. Field monitoring will be performed by environmental field teams that have been selected and trained to perform these duties.

Sufficient personnel are identified within Energy Northwest and outside assistance agencies to maintain 24-hour shift coverage if needed for an extended period. Energy Northwest maintains sufficient dedicated equipment to adequately equip four Energy Northwest environmental field teams.

Field team members responding during offshift hours will report to their emergency duty station within 60 minutes. Field team deployment time from their emergency duty station will be as needed, and can be achieved in less than 30 minutes. This is based on the time necessary to brief the team, load equipment, and depart the staging area. This deployment time could be shorter during normal work hours when field team personnel are more available and could respond sooner than the 60 minute required response time.

Field monitoring will concentrate in the downwind area from the plant. Locations used during the normal environmental monitoring program will be used as preselected monitoring points when applicable (Figure 5-1).

5.4.2 Aerial Monitoring

Aerial monitoring may be used to locate a plume in a delayed or extended release, or to identify areas of radioactive deposition following a release. Aerial monitoring capability is available through federal emergency resources. The decision to employ aerial monitoring will be made by representatives of the Washington Department of Health, Oregon Department of Health, US Department of Energy, and Energy Northwest. Any request for federal resources to conduct aerial monitoring will be directed through the Washington State Emergency Operations Center (EOC).

5.4.3 Environmental Field Team Kits

Environmental field team monitoring kits are maintained in a state of readiness. Additional supplies and equipment are available to replace equipment out of service for repair and recalibration. Equipment in the calibration laboratory provides an additional resource. Appendix 3 provides lists of equipment and their location.

5.4.4 Radioiodine Determinations

Environmental air samples are analyzed for particulate and radioiodine concentrations. Analysis of particulate filters and iodine sampling cartridges are performed using a portable count rate meter. Procedures concerning sampling time and field analysis techniques are established to measure airborne radioiodine concentrations as low as 10^{-7} microcuries per cubic centimeter under field conditions.

5.4.5 Laboratory Capability

Laboratory analysis of environmental field samples can be conducted at Energy Northwest facilities as described in Section 6.2.8 of this Plan. In addition, the States of Oregon and Washington both maintain laboratories under the direction of their respective Departments of Health. These laboratories have the capability to identify, both qualitatively and quantitatively, the constituent elements that might be contained in radiological releases from Columbia Generating Station during a nuclear incident. Following such an event, samples of air, drinking water, milk, pasture and other agricultural products would be obtained by field teams and brought to the labs for analysis. The results of this analysis would then be used to

determine the existence of radiological hazards in food products. The specific capabilities of the state laboratories are evaluated by FEMA.

5.5 PROTECTIVE ACTION AND RESPONSIBILITIES

The appropriate protective actions for an airborne release of radioactive material are evacuation and sheltering. The decision to evacuate or shelter is based on the dose to be avoided by the protective action relative to the risk associated with implementing a protective action. Dose to be avoided by a protective action can be affected by duration and quantity of radioactive release as well as time of release relative to time of implementation of the protective action. Protective Action Guides, discussed in Section 5.5.1, provide pre-planned guidance for making response decisions. When applied with professional judgement, they help to ensure rapid action to protect members of the public. Specifically:

a. Evacuation - Evacuation and control of access to an affected area can be the most effective protective action for reducing the dose to the public. However, constraints such as severe weather conditions, obstruction of roads, and limited time may impact the benefits of evacuation.

b. Sheltering - Sheltering in buildings with windows and doors closed and ventilation turned off can provide partial protection from a passing radioactive plume. The extent of the protection depends on the duration and isotopic mixture of the release and the type of building.

The provisions for relating measured parameters to dose rates for key isotopes and for estimating integrated dose from projected and actual dose rates shall be described in procedures.

5.5.1 Recommendations to Counties, States and Department of Energy-Richland Operations (RL)

Energy Northwest will make prompt recommendations for protective actions to state, county and DOE-RL officials. These officials will make decisions on the specific actions to be implemented in their jurisdiction.

Protective Action Recommendations (PARs) will be made based on plant or radiological conditions. Recommendations for evacuation and sheltering of certain areas are required upon classification of a General Emergency without regard to whether a radiological release is occurring. If plant conditions and a radiological release both warrant PARs, the most conservative recommendation will be made.

Shelter, evacuation or access control guidelines are based on the EPA Protective Action Guidelines and NUREG-0654 Supplement 3 recommendations.

The preferred initial action to protect the public from a severe reactor accident is to evacuate immediately about two miles around the plant and 10 miles downwind unless other conditions

make evacuation dangerous. Persons in the remainder of the plume zone should be directed to stay indoors and listen to EBS/EAS broadcasts while the situation is evaluated further.

Travel conditions that may present extreme hazard may prompt offsite officials to recommend shelter until conditions improve. Shelter may also be appropriate for special, transit-dependent populations, or during controlled, short duration releases of radioactivity.

Plant and offsite officials will continue to assess plant conditions to determine additional protective actions. These protective actions should be based on field monitoring data and dose projections that indicate EPA PAGs may be exceeded in areas beyond those that have been evacuated.

5.5.2 Energy Northwest Responsibilities

Primary responsibilities of Energy Northwest associated with offsite area protective actions are to:

a. Provide the best possible effort to resolve the emergency onsite, thus alleviating the offsite condition.

b. Notify the affected county, DOE, and state officials responsible for Protective Action Decisions of the emergency condition and provide the best possible information, recommendations, and support services.

c. Coordinate Energy Northwest actions with those of federal, state, and local agencies involved in implementing protective actions.

d. Ensure that all required agencies are advised of the protective actions recommended and provided periodic updates.

5.6 POPULATION DISTRIBUTION

Figures 5-3 and 5-4 present the compass sector population estimates for the Columbia Generating Station site. Estimates for the Ten-Mile Emergency Planning Zone were acquired from population surveys conducted by the Benton and Franklin County Offices of Emergency Management. The transient industrial worker populations on the Hanford Site have been updated by the appropriate facilities. Transient recreationist figures for the Columbia River and Horn Rapids areas were updated through contacts with local representatives of the Washington Department of Fisheries and the Washington Department of Wildlife.

5.6.1 Permanent Residents

Permanent residents include all persons residing in the area. In 1996 an estimated 3,044 people were living within the Ten-Mile Emergency Planning Zone. The nearest inhabitants occupy farms which are located east of the Columbia River and are thinly spread over five compass sectors. There are no permanent residents located within three miles of the site. About 274 persons reside between the three-mile and the five-mile radii; these are all located east of the Columbia River. Of the 3,044 people residing in the Ten-Mile Emergency Planning Zone, about 2,186 live in Franklin County and about 858 in Benton County.

There are no significant changes in land use expected in Franklin County over the next several years. As it is currently irrigated to about the maximum amount practicable, little population increase is foreseen. No significant change in land use on the Hanford Reservation is expected, and no foreseeable population will reside there. The unincorporated area near the Horn Rapids Dam on the Yakima River in the SSW sector is expected to be the primary growth area within the Ten-Mile Emergency Planning Zone. Population growth within the Ten-Mile Emergency Planning Zone is projected to be about 6% per annum.

5.6.2 Transient Population

The transient population is divided into three main subgroups: 1) industrial employees, 2) migratory agricultural workers, and 3) recreationists. Figure 5-4 illustrates this population location graphically.

Industrial employees in the Ten-Mile EPZ total 7,926. Most will be located in Benton County and form the main population to be evacuated. About 1200 industrial employees work at Columbia Generating Station and at the Kootenai Building.

Industrial employment in the Ten-Mile Emergency Planning Zone includes:

WNP-1 (Energy Northwest & Non-Energy Northwest personnel) (5/96)	27
Ashe Substation (5/96)	10
Columbia Generating Station (5/96 Operational dayshift value)	728
Deschutes Building (5/96)	246
Kootenai Building (5/96)	122
DOE 400 Area (FFTF, Fast Flux Test Facility) (5/96)	454
Siemens Nuclear Power Corporation (5/96)	800
DOE 300 Area (5/96)	1,671
DOE 3000 Area, (Battelle and other contractors in POB area) (5/96)	2,896
Battelle (Private) (5/96)	972
TOTAL	7,926

The majority of these employees work days, but there may be some shift workers in the DOE figures. Credit is not deducted from the population values due to emergency personnel remaining in place. Therefore, the planning figure of 7,926 to be evacuated is conservatively high.

There are up to approximately 4,244 migrant farm workers in the Ten-Mile Emergency Planning Zone. This figure may be high due to the possibility of double counting during the different harvest periods. The peak season for these workers is May and June; the next highest employment season is during the fall harvest. These workers consist of both permanent and temporary residents of the Tri-Cities area, some living within the Ten-Mile Emergency Planning Zone. The numbers shown on Figure 5-4 and Table 5-1 reflect their work locations in Franklin County within the Ten-Mile Emergency Planning Zone, not their residences.

Recreationists, consisting of hunters, fishermen and boaters, enjoy activities mainly along the east bank of the Columbia river. The primary fishing season is from June through November; the main hunting season being October through January. The heaviest use of the area by recreationists is on weekends and holidays in the early morning hours. On the average, 52 fishermen and 80 hunters are present in Franklin County during the weekdays. This increases to about 155 fishermen and 200 hunters on weekends and holidays. Recreationists also use the Yakima River with an estimated maximum of 42 at any time in this area. During peak fishing or hunting times, up to 1,275 fishing and hunting recreationists may be located

within the Ten-Mile Emergency Planning Zone. Of these, 1,233 are assigned to Franklin County and 42 to Benton County.

The main concentration of recreationists consists of fishermen located just south of the Ringold Fish Hatchery spillway on the Franklin County side of the Columbia River. Hunting consists of both water fowl, hunted at the Wahluke Hunting Area on the Franklin County side of the Columbia River, and upland game birds, hunted inland on the farm land of Franklin County. Up to 600 recreationists may be located around the Ringold Fish Hatchery and the Wahluke Hunting Area and the rest distributed inland.

An additional recreation attraction is in the south section of the Ten-Mile Emergency Planning Zone in Benton County as an Off-Road Vehicle Park (ORV). As many as 1,500 participants and spectators may be present during an event. Thus, a maximum total of 2,775 recreationists may be located within the Ten-Mile Emergency Planning Zone. Additional provisions have been made for the Horn Rapids housing development and golf course.

5.6.3 Special Facility Population

There are no individuals within the Ten-Mile Emergency Planning Zone confined to facilities such as hospitals, nursing homes, or penal institutions. There are four schools, the Edwin Markham Elementary School, the Country Haven Academy, the Country Christian Center, and the Big River Country School, with a total enrollment of approximately 580 (students and faculty). Most of the students live within the Ten-Mile Emergency Planning Zone.

5.7 EVACUATION ROUTES AND ASSISTANCE CENTERS

5.7.1 Public Evacuation Routes

The Benton County Fixed Nuclear Facility Response Plan and the Franklin County Radiological Columbia Generating Station Response Plan (referred to in Appendix 1) contain information concerning evacuation routes and assistance centers for personnel who would be evacuated from the Ten-Mile Emergency Planning Zone. See Figure 5-5 for Assistance Center locations.

5.7.2 Site Evacuation Routes

Several evacuation routes are available to site personnel. These are shown in Figure 5-5 and include:

a. Route 4 South - This four-lane road leads southeast from the site to Richland and is the main route from the plants.

b. Route 10 South - A two-lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads on into Richland.

c. Route 4 South - A two-lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.

d. Route 2 South - A two-lane road leading north from the plants, intersecting with Highway 240 and Highway 24 to Yakima.

All of these roads have an expected vehicle capacity of between 1200 and 1800 vehicles per lane per hour.

5.7.3 Plant and Nearby Facilities Evacuation

Radiological conditions may dictate evacuation of the plant and nearby facilities. If an evacuation of the plant is ordered by the Emergency Director, plant personnel, visitors, and contract personnel other than those with emergency functions will evacuate plant areas. Procedures and equipment are provided to immediately determine the habitability of the area. Preliminary surveys will also be made to determine the contamination or exposure status of personnel and identify those individuals needing decontamination.

For a Site Area Emergency or General Emergency, personnel within the Protected Area may be evacuated to the Kootenai Building (PSF) or the Energy Northwest Office Complex, for monitoring or decontamination as necessary. Procedures provide for personnel accountability and assessment of contamination/exposure status. Personnel that do have assigned emergency functions will proceed to their emergency center.

Non-essential personnel in the Exclusion Area will be evacuated as needed at a Site Area Emergency or General Emergency. They will be directed to go home if radiological contamination concerns do not exist, otherwise they will be directed to the Energy Northwest Office Complex (or other area as appropriate and designated by procedure). Personnel assigned emergency functions will proceed to their emergency center.

5.7.4 Radiological Monitoring and Decontamination of Personnel

Personnel will be monitored for contamination prior to leaving the plant if conditions permit. Whole body friskers and portable detectors are available at the plant exit. Personnel decontamination facilities in the plant include showers, sinks, and cleaning agents. Decontamination capabilities for emergency purposes are also available at the Kootenai Building, at remote decontamination locations, and for injured personnel at the Hanford Environmental Health Foundation Emergency Decontamination Facility in Richland.

For the general population, monitoring will be conducted under provisions of the Benton County Fixed Nuclear Facility Response Emergency Plan and the Franklin County Radiological Response: Energy Northwest plan. Emergency Worker/Assistance Centers (EWAC) are identified for the monitoring of personnel leaving the affected sectors of the 10 mile EPZ. Personnel evacuated from affected segments of the Columbia River will be monitored when necessary at a location along the river. The Washington State Department of Health will be in charge of the monitoring and decontamination effort.

5.7.5 Personnel Accountability

Personnel accountability will be conducted at predetermined locations. The Operations Support Center Manager is responsible for ensuring performance of accountability within the Protected Area and reporting the results to the TSC Manager or Shift Manager if the TSC is not activated. Non-essential personnel will be logged offsite utilizing the electronic access control system or personnel logs. The goal is to complete personnel accountability inside the Protected Area within 30 minutes. The last known location of unaccounted individuals will be obtained and search and rescue procedures initiated to locate the missing individuals.

For the Exclusion Area, personnel are alerted by the evacuation siren, public address announcement or telephones and will follow evacuation procedures. Energy Northwest personnel will be available to initiate the search and rescue procedures as needed.

5.8 EVACUATION TIME ESTIMATES

Evacuation time estimates for the Columbia Generating Station site have been developed in the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study, Revision 3, June 1996. Table 5-1 of this section summarizes the results.

5.8.1 Emergency Planning Zone Sub-Areas

The Ten-Mile Emergency Planning Zone was divided into several sub-areas as follows:

0-2 miles	entire circumference
0-5 miles	four approximate 90° sections
2-10 miles	four approximate 90° sections
0-10 miles	entire EPZ

The two-mile radius was not subdivided because it contains no residential population and the only institution populations are transients all working on contiguous Energy Northwest properties. Only three of the four 5 and 10 mile sectors (about 90°) were examined because the fourth, entirely on the Hanford Reservation, contains no residential, transient or special population. These sectors are graphically shown on Figure 5-5. The Columbia River forms a natural border between Benton and Franklin Counties and was used to form the division between Sector 2 and Sector 3. Franklin County was divided, approximately in half, since it was assumed that those persons north of the plant location would evacuate north toward Mesa and Connell and those persons south of the plant would evacuate south towards Pasco. When making estimates for outer portions of the sectors it was assumed that the inner adjacent portions were being simultaneously evacuated.

5.8.2 Notification, Preparation, Response and Confirmation Times

The evacuation time estimates shown in Table 5-1 include preparation time and response time. Notification times and confirmation times are shown as separate items.

Energy Northwest has established procedures to notify officials of Washington State, Benton and Franklin Counties and the Department of Energy-Richland Operations within 15 minutes of a declaration of any emergency classification. The Energy Northwest early warning system was designed to enable the county to notify the permanent 10-mile population within 15 minutes from the time the decision to take a protective action is made by county officials. Therefore, a maximum of 30 minutes notification time is assumed.

In the event of an evacuation, residents needing transportation are instructed to call the respective county emergency management office to request transportation. The respective emergency management office will dispatch emergency workers to collect these residents. Energy Northwest will be responsible for personnel accountability at Energy Northwest facilities (estimated to take a maximum of 30 minutes). The calculated evacuation time estimates start at the time of the announcement over the Emergency Broadcast System (EBS) or Emergency Alerting System (EAS) station to begin evacuation and end when the evacuation is complete.

The Figure 5-6 series illustrates "S-curves" for various populations and conditions. In the congested traffic environment which is characteristic of an evacuation process, travel time on a roadway section is, to a large extent, determined by the capacity of that section. Roadway capacities were based upon the type of roadway considered and the presence of traffic control. The following table presents the per-lane capacities utilized:

Roadway Type	Per-lane Capacity (Veh/hr)
Freeway	1800
Arterial/Rural Road	1500
Local Street	1200

A vehicle occupancy of three persons per vehicle was generally used for residents and transients. Exceptions are the industrial plants for which 1.5 persons per vehicle was used, the schools for which 35 persons per school bus was used, and the Off-Road Vehicle Park for which 2 persons per vehicle was used.

5.8.3 Adverse Weather

Severe weather conditions such as blizzards, heavy rain storms, flooding, fog, or high winds could seriously hamper evacuation. However, historical records indicate that severe conditions of this nature have occurred rarely in the past. Because of the effect of weather on the capacity of roadway and the fact that capacity is a controlling factor in deriving evacuation times, it is necessary to adjust capacity figures to represent estimated road conditions during adverse weather. Based on limited empirical data, weather conditions such as heavy rain reduce the values of capacity for the highways utilized as evacuation routes by approximately 20 percent. For adverse conditions during the winter months, estimated capacity reductions and free-flow speed reductions of 30 percent each, relative to normal weather conditions are assumed.

5.8.4 Special Facilities

The only special facilities within the Ten-Mile Emergency Planning Zone are Edwin Markham Elementary School, Country Haven Academy, the Big River Country School, and the Country Christian Center, with a total enrollment of approximately 580 students and faculty. Because of the small size of this population, it was considered counted as part of the permanent population in making evacuation time estimates. Buses which could be used in the evacuation are located at the district bus lot in north Pasco during the day. The buses can be dispatched to the schools within the one hour preparation time assumed for this section.

Public transportation, although not specifically identified as being needed, is available to the public in a portion of the Ten-Mile Emergency Planning Zone and is not relied upon for evacuation. The sheriffs' departments will be patrolling the area during an emergency and could make transportation arrangements for anyone not already evacuated.

5.9 RADIOLOGICAL EXPOSURE CONTROL

Radiation exposure limits and guidelines have been established for the control of radiation exposure to workers during an emergency. Facilities are available and arrangements can be made for internal and external personnel dose assessment. The individual functioning as Emergency Director has the responsibility to authorize exposures in excess of 10CFR20 limits or EPA-400 guidance, but can delegate this responsibility if necessary to improve command and control operations.

5.9.1 ALARA Policy

ALARA is an acronym meaning As Low As Reasonably Achievable. Energy Northwest's ALARA policy states:

> "Energy Northwest shall conduct all operations involving radiation and radioactive material such that radiation exposures to employees, contractors and the general public are maintained as low as is reasonably achievable. "Reasonably achievable" takes into account the state of technology and the economics of exposure reduction in relationship to the benefits to health and safety."

The principles of ALARA will be considered during all phases of the emergency and applied where practical. Refer to Section 5.9.3.

5.9.2 Administrative Exposure Hold Points

Administrative exposure hold points are used during normal operations to bring exposures which are or could be significant to the attention of Plant Management. Energy Northwest administrative exposure hold points will be automatically waived upon declaration of an Alert or higher emergency classification. The Radiation Protection Manager (RPM), for onsite, and the Radiological Emergency Manager (REM), for offsite, are still responsible for limiting personnel exposures in keeping with the ALARA philosophy.

Whenever the administrative exposure hold points are waived, efforts shall be made to keep all exposures below 10 CFR 20 limits.

5.9.3 Protective Action Guides (PAGs)

The Environmental Protection Agency (EPA) has established Emergency Worker and Lifesaving Activity Protective Action Guides as follows:

PROTECTIVE ACTION GUIDES FOR EMERGENCY WORKERS		
DOSE LIMIT	ACTIVITY	PROTECTIVE ACTIONS
5 rem TEDE[1]	ALL	Emergency Workers continuously monitor and limit exposure.
10 rem TEDE	PROTECTING VALUABLE PROPERTY	Evaluate alternatives prior to granting authorization to exceed limits. Exposures above 5 rem require approval of the Emergency Director or designee.
25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Lower doses not practicable.
>25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Provide specific review and decision for each VOLUNTARY life-saving mission. Only volunteers fully aware of the risks should request exceeding this limit.

Energy Northwest will at all times attempt to keep exposures below EPA 400 Guidelines. However, situations such as the following may arise which could necessitate application of the above Protective Action Guides:

a. lifesaving activities
b. removal of injured persons
c. undertaking corrective actions
d. performing assessment actions
e. providing first aid
f. performing personnel decontamination
g. providing ambulance services
h. providing medical treatment services

Permission for emergency workers to receive additional radiation exposure is contained in procedures which includes expeditious decisions and comparison of relative risk.

[1]The total effective dose equivalent (TEDE) is the sum of the deep dose equivalent (DDE) resulting from exposure to external sources and the committed effective dose equivalent (CEDE) projected over 50 years for internal exposures. CEDE is the risk weighted sum of committed dose equivalents (CDE) to organs. CDE is the total dose from an internally deposited radionuclide over the subsequent 50 year period.

5.9.4 Contamination Control

5.9.4.1 Area Access

Controls have been established at Columbia Generating Station to ensure there is no detectable fixed or loose contamination (beta-gamma or alpha) outside of the Radiologically Controlled Area (RCA) under normal or emergency conditions. Energy Northwest policy is to minimize the potential for personnel contamination and to prevent the spread of contamination to uncontrolled areas at all times. Normally all personnel and equipment leaving the RCA are monitored to ensure the limits for contamination levels are met. However, normal in-plant contamination control procedures may be suspended during an emergency by the plant Radiation Protection Manager to allow for prompt emergency response and to minimize personnel exposure to other hazards. Contamination control measures intended to prevent transport of radioactive materials out of the plant or into continuously occupied areas such as the control room shall retain high priority.

5.9.4.2 Personnel

Personnel work practices within the RCA are controlled by Health Physics procedures. Upon leaving a radiologically contaminated area, each worker will normally proceed to the nearest personnel monitoring station which has a background count rate of less than 300 cpm and perform a personal survey. Individuals leaving the RCA are normally monitored for contamination before entering an uncontrolled area.

If survey of an individual indicates contamination levels in excess of established contamination limits, decontamination will be performed. Records will be maintained in accordance with established Health Physics procedures. Potassium Iodide, respirators and protective clothing can be distributed to plant personnel if needed.

5.9.4.3 Decontamination

Decontamination limits apply to personnel and equipment during routine and emergency operations. Only the Radiation Protection Manager or his delegate can waive these limits and then only on a case by case basis.

Normal personnel decontamination is accomplished in the 487′ elevation Radwaste Building decontamination facility. All drains lead to the Radwaste system where the liquid is processed and monitored prior to discharge. During site emergency evacuation conditions, personnel decontaminations can be accomplished at the Kootenai Building where a decontamination shower and supplies are maintained.

Energy Northwest policy requires decontamination of personnel, equipment, and material prior to release from a radiologically controlled area according to the criteria found in Chapter 12.5 of the FSAR.

If the contamination cannot be reduced to these limits by reasonable methods, such as with radioiodine skin contamination, the Radiation Protection Manager (for inside the Protected Area) and the Radiological Emergency Manager (for outside of that area) shall determine a further course of action. This may include referral to a local medical facility or placing the individual in an on-going exposure tracking program.

5.9.4.4 Drinking Water and Food Supplies

Radiological surveys will periodically be made in areas where food is stored onsite and isotopic analyses will periodically be made of the Columbia Generating Station drinking water supply. The primary source of potable water for Columbia Generating Station is the Columbia River. It is unlikely that an airborne release of radioactive material could affect this supply.

Offsite vegetation and milk samples are also analyzed routinely as part of the Radiological Environmental Monitoring Program (REMP). In the event of an airborne release of radioactive materials, environmental samples are collected and analyzed.

5.9.5 Personnel Dose Assessment

Routine and emergency personnel exposure monitoring and dose assessments are accomplished by issuing thermoluminescent dosimeters (TLDs), electronic or direct reading dosimeters and monitoring for airborne radioactivity. A twenty-four hour per day capability to analyze Energy Northwest issued dosimetry is available. Energy Northwest maintains a personnel monitoring program through the use of appropriate dosimetry and whole body counters.

5.9.5.1 Thermoluminescent Dosimeters

Issuance of personnel TLDs will be in accordance with established Health Physics procedures. Special provisions are included to increase the frequency of TLD processing, as necessary, during emergencies.

The measured dose as determined by TLDs shall serve as the permanent and official record of the individual's deep dose equivalent (DDE) and skin dose. Radiation dose to the hands, forearms, feet and ankles shall be obtained by placing additional TLDs in those locations when extremity exposure may be the controlling factor.

5.9.5.2 Direct Reading Dosimeters

Electronic or direct reading pocket dosimeters are issued to personnel entering radiologically controlled areas. Personnel shall be instructed to read these dosimeters frequently. Dosimeter readings provide an estimated record of external exposure received on a daily basis.

5.9.5.3 Issuance of Dosimetry to Offsite Emergency Personnel Responding Onsite

Offsite emergency personnel who respond onsite and do not have preassigned dosimetry will be issued the appropriate personnel dosimetry upon arrival at the site access point.

Emergencies requiring immediate response are characterized by the necessity for access by emergency response personnel with minimal or no delay. Examples include fire fighting teams, emergency medical personnel or bomb squads. In this situation, dosimetry will be dispensed by Security personnel at the access point. Procedures are established to ensure dosimeters are read at appropriate frequencies. Dosimetry and necessary personal and exposure information will be collected upon leaving the site. Energy Northwest Security will be provided with sufficient dosimetry devices, procedures, and data forms for this type of occurrence.

Offsite (State and County) personnel responding to the EOF will respond with their own dosimetry or will be provided dosimetry by Energy Northwest if necessary.

5.9.5.4 Airborne Radioactivity Monitoring

The primary method utilized to determine potential internal exposure of plant personnel is the measurement of airborne radioactivity. Standard Health Physics procedures describe the collection and analysis of air samples.

5.9.5.5 Whole Body Counting and In-Vitro Bioassays

Whole body counting and in-vitro bioassay will be available during and after an emergency to aid in determining the extent of an individual's internal exposure to radioactive materials. Measurements of radioactivity in the body (in-vivo), and/or radioactivity excreted from the body (in-vitro), will be performed as necessary. This will enable timely evaluation of uptakes of radioactive material whenever it is suspected that the individual has been exposed to airborne radioactivity above predetermined levels specified in established procedures.

5.9.5.6 Radiation Exposure Records

Exposure records are maintained by the Total Exposure System for external and internal radiation exposure for each person entering a radiologically controlled area at an Energy Northwest nuclear facility. These records include external dose [Deep Dose Equivalent (DDE)], skin and extremities dose [Skin Dose Equivalent (SDE)] and internal dose [Committed Dose Equivalents (CDE)] determined by dosimetry, whole body counting and/or in-vitro bioassay.

5.9.6 Respiratory Protection

Selected personnel assigned in-plant emergency response duties are trained in the use of respiratory protective equipment and qualified through quantitative respiratory fit testing. Respiratory protective equipment is maintained at strategic locations in the plant with backup supplies available. Respiratory protection under emergency conditions is administered in

accordance with normal operating procedures with special provisions for prompt emergency action requirements.

Facilities and equipment are available to qualify outside response personnel on the use of respiratory protective equipment.

5.9.7 Thyroid Blocking Agent

Potassium Iodide (KI) is maintained for use by emergency workers at strategic locations.

In the event of a release involving radioiodine, the TSC Manager, in consultation with the Radiation Protection Manager, will issue instructions concerning the use of potassium iodide by in-plant emergency workers. The EOF Manager, in consultation with the Radiological Emergency Manager, will issue instructions to Energy Northwest environmental field teams and emergency workers in the Exclusion Area concerning the use of potassium iodide and will recommend that other offsite (State, County, etc.) emergency workers be issued instructions concerning use of potassium iodide. The EOF Manager will forward his recommendations to the appropriate offsite authorities. The thyroid blocking capability of KI is most effective when taken prior to or immediately after exposure to radioiodine. Therefore, a timely decision is necessary concerning this action.

Whenever offsite resources are expended, Energy Northwest will provide KI, along with personnel monitoring, dosimetry and decontamination services, when needed by offsite emergency workers.

Description	Total Within 2 Miles	Areas Within 5 Miles				Areas Within 10 Miles			
		I	II	III	Total	I	II	III	Total
Permanent Population	-	124	40	-	164	1050	1136	858	3044
Permanent Population Vehicles	-	41	13	-	54	347	380	286	1013
Transient Population	1133	1744	141	1560	3445	1571	7154	3931	12,656
Transient Population Vehicles	971	581	64	964	2580	5763	2636	2944	6102
General Population	1133	1868	181	1560	3609	2621	8290	4789	15,700
Total Vehicles	971	622	77	964	2634	670	3016	3230	7115
Notification Time Minutes	15	30	30	30	30	30	30	30	30
Permanent Population Evac. Time Normal Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Normal Conditions Hours Minutes	1:00	1:00	1:00	1:30	1:30	1:30	1:20	2:15	2:15
Permanent Population Evac. Time Adverse Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Adverse Conditions Hours Minutes	1:30	1:00	1:00	2:00	2:00	1:30	1:30	2:30	2:30
Confirmation Time Minutes	30	60	60	60	60	60	60	60	60

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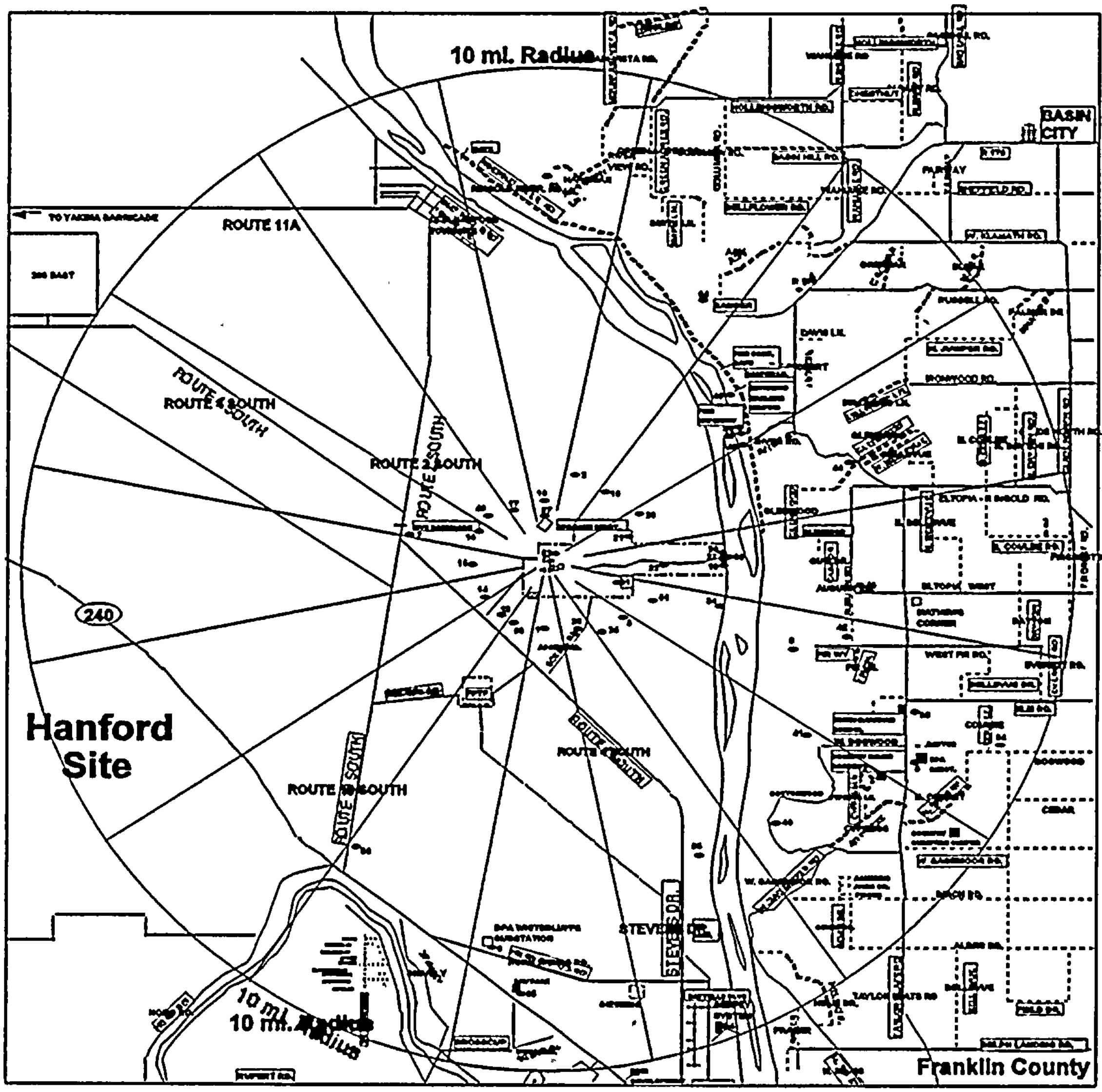
August 1998

Table 5-1, Summary of Results of Evacuation Times Analysis



Station	Reactor	Radial Miles*	TLD	AP/AI
1	S	1.3	O	X
2	NNE	1.8	O	
3	SE	2.8	X	
4	ESE	9.3	O	O
5	ESE	7.7	O	X
6	S	7.7	O	X
7	WNW	2.7	O	X
8	ESE	4.7	O	O
9A*	WSW	30.0	O	O
9B*	WSW	36.0		
9C*	WSW	33.0	O	
10	E	3.1	X	
11	ENE	3.1	X	
12	NNW	6.1	O	
13	SW	1.4	O	
14	WSW	1.4	O	
15	W	1.4	O	
16	WNW	1.4	O	
17	NNW	1.2	O	
18	N	1.1	O	

Station	Reactor	Radial Miles*	TLD	AP/AI
19	NE	1.8	O	
20	ENE	1.3	O	
21	ENE	1.5	X	X
22	S	2.1	O	
23	ESE	3.0	X	X
24	SE	1.9	O	
25	SSE	1.6	O	
26*	E	3.2		
27	E	3.2		
29	SSE	11.0		
30	E	3.5		
31	E	1.1		
32	E	1.2		
33	ENE	3.3		
34	ESE	3.3		
35	ENE	10.5		
36	ESE	7.2		
37A	SSE	17.0		
37B	SSE	16.0		
38*	E	26.5 (95.0)		

Station	Reactor	Radial Miles*	TLD	AP/AI
40 •	SE	6.4	O	O
41	SE	5.8	O	
42	ESE	5.6	O	
43	E	5.7	O	
44	ENE	5.7	O	
45	ENE	4.2	O	
46	NE	4.7	X	
47	N	0.5		O
48	NE	4.3	O	
49	NW	1.2	O	
50	SSW	1.2	O	
51	ESE	2.1	O	
52	N	0.1		
53	N	7.5	O	
54	NNE	6.5	O	
55	SSE	7.0	O	
56	SSW	7.0	O	
57	N	0.7		O
65	S	8.7		X

880334.1 Map
990292
June 1999

LEGEND
PAVED ROAD
UNPAVED RD OR GOVT. ROAD
BOUNDARY LINES
SCALE
0 1 2 MI.

• Control location.
X Sample collected at station (non-ODCM)
O Offsite Dose Calculation Manual (ODCM) sample collected at station.
* Estimated from center at WNP-2 Containment from map position.
AP/AI Air Particulate and Iodine

.Figure 5-1, Environmental Sampling Points

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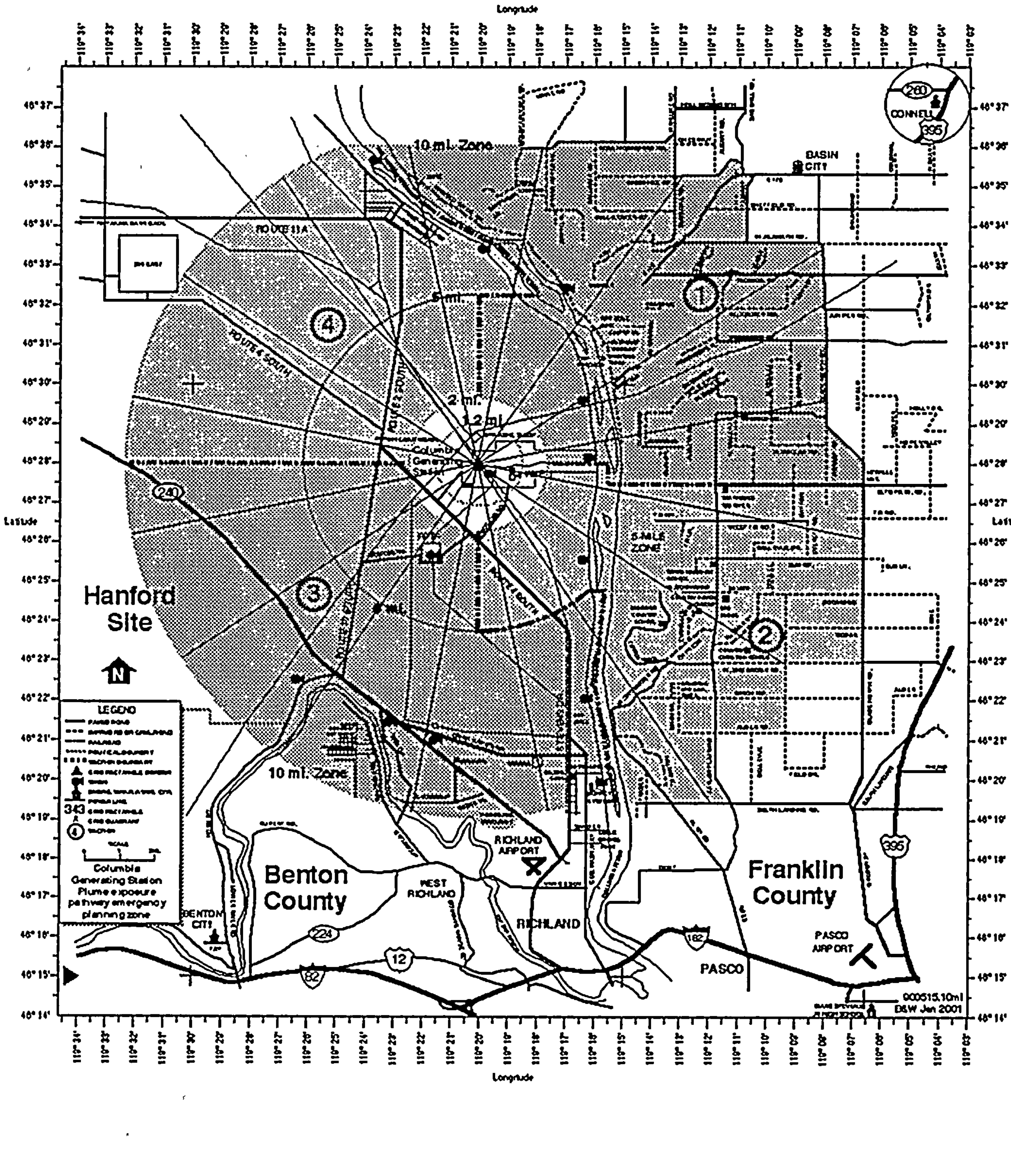
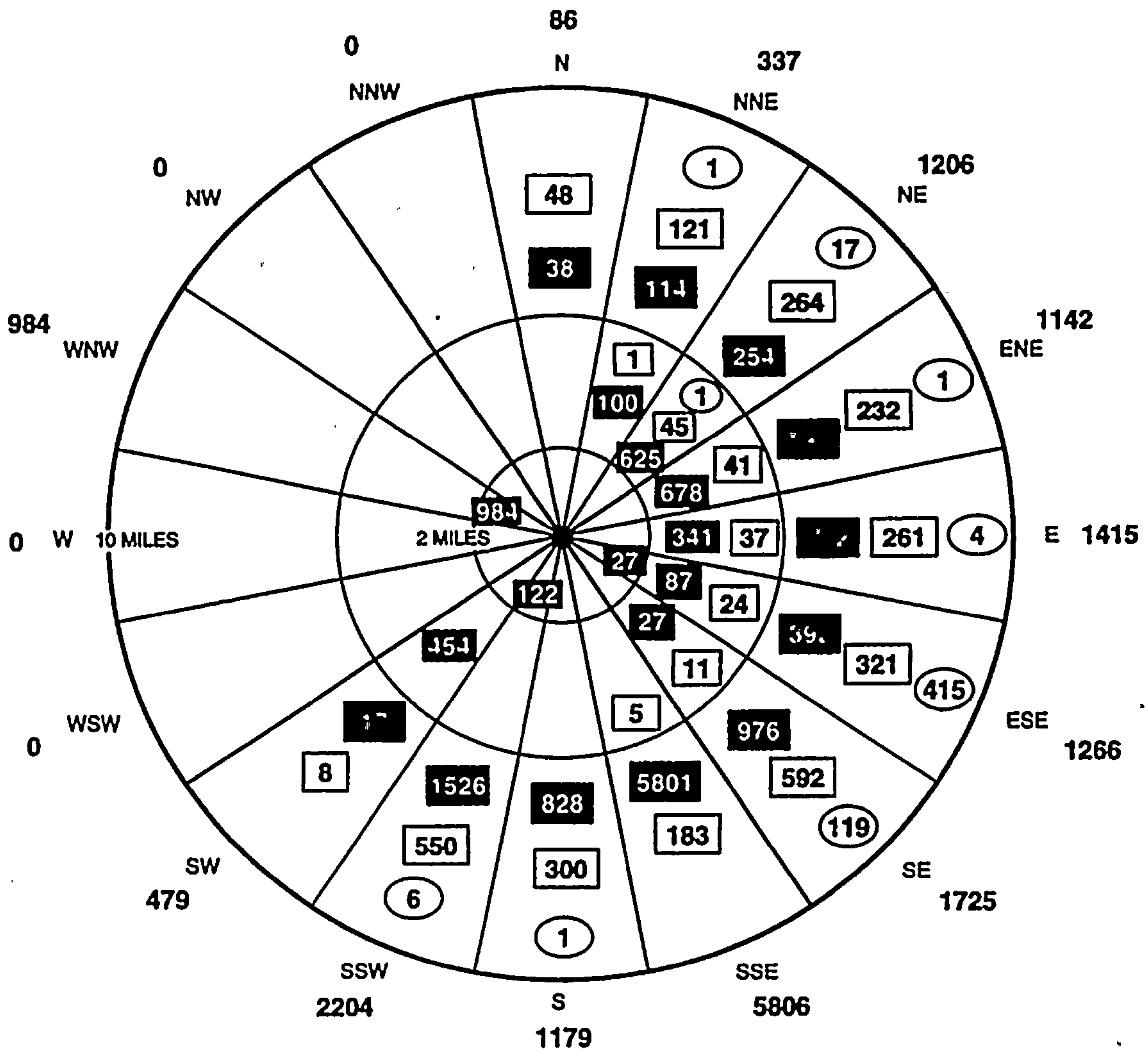


Figure 5-2, Ten Mile Grid Map



17,829 TOTAL SEGMENT POPULATION 0 TO 10 MILES

POPULATION TOTALS - PERMANENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	164	0-5	164
5-10	2880	0-10	3044

POPULATION TOTALS - TRANSIENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2312	0-5	3445
5-10	10,775	0-10	14,220

POPULATION TOTALS - SPECIAL			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	1	0-5	1
5-10	564	0-10	565

POPULATION TOTALS			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2477	0-5	3610
5-10	14,219	0-10	17,829

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Rev 18

Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down Into Classifications

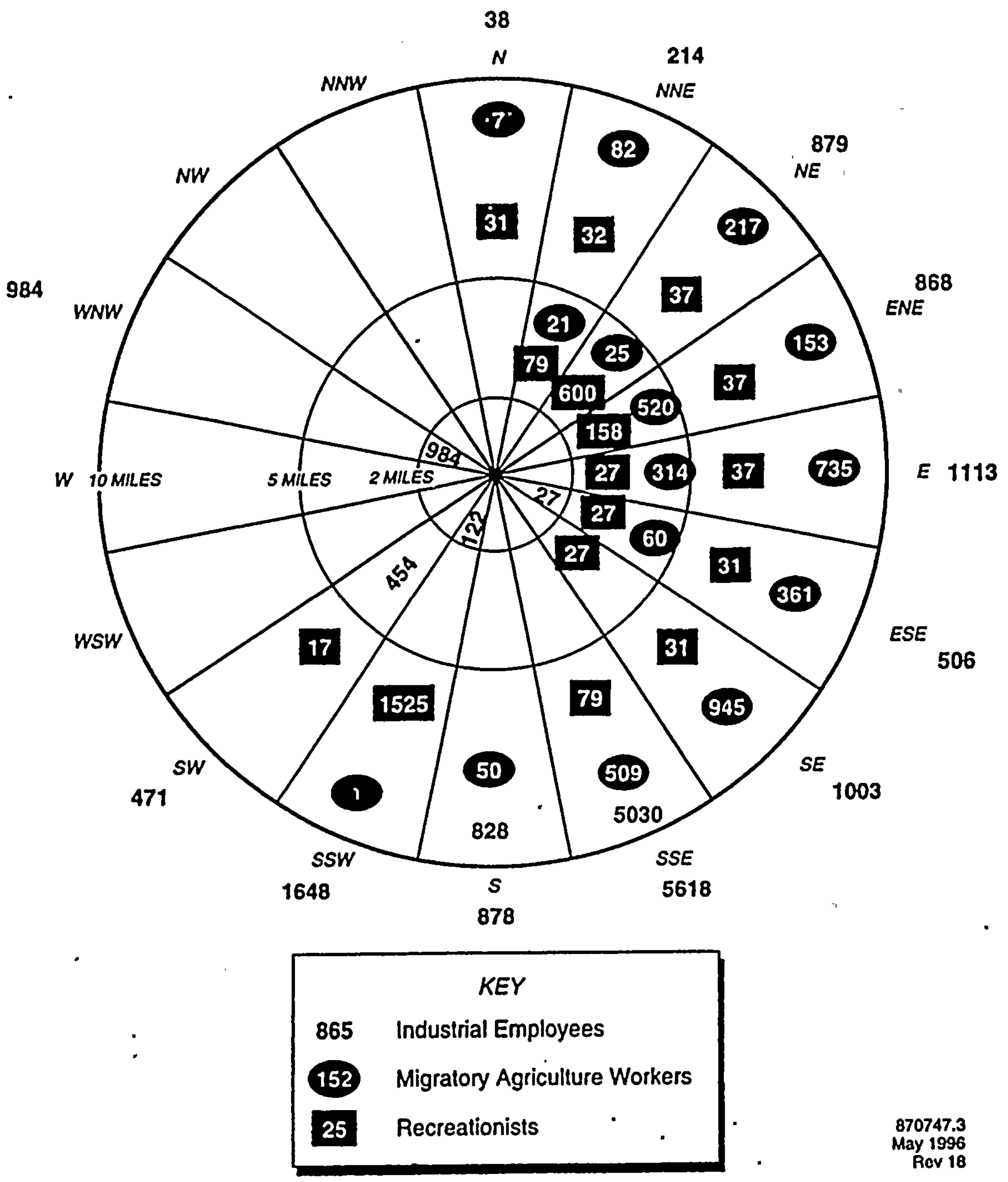

Figure 5-4, Distribution of Transient Population Within 10-Mile EPZ

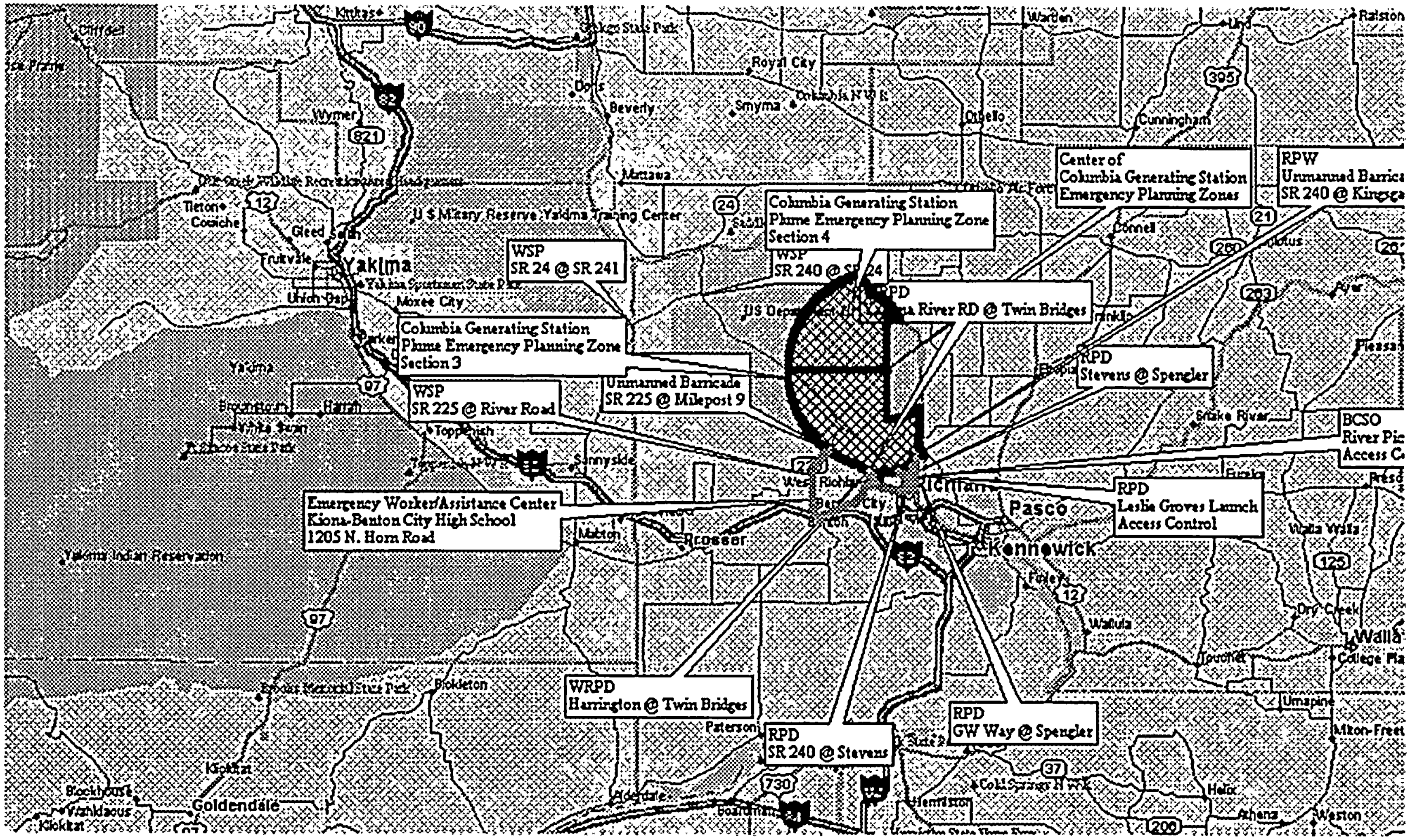

Figure 5-5, Benton County Evacuation Routes

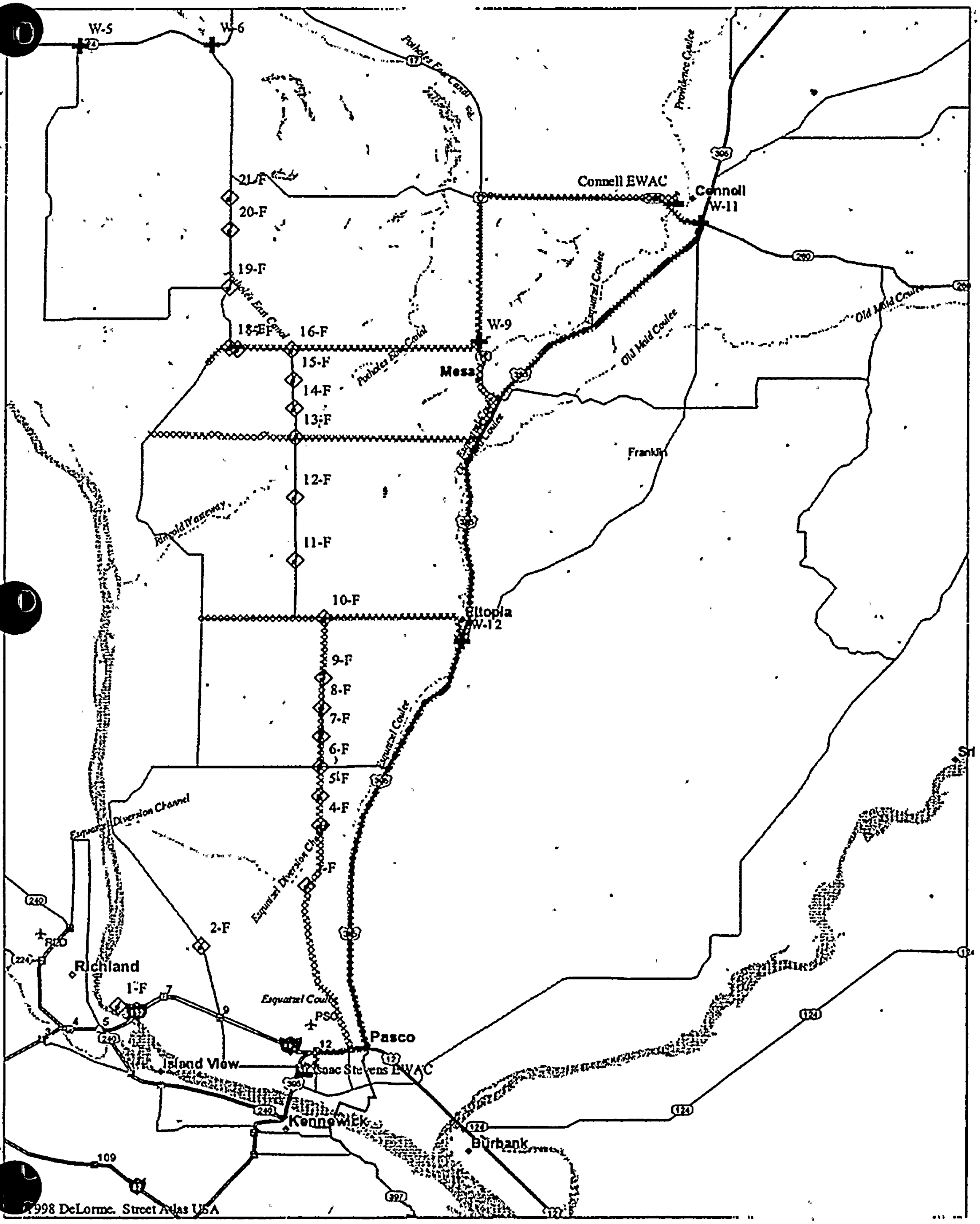

Figure 5-6, Franklin County Evacuation Routes

FRANKLIN COUNTY ACCESS CONTROL POINTS

ID #	LOCATION	RESPONSIBLE AGENCY
1-F	Road 68 @ Dent	Pasco PD
2-F	Dent Rd @ Court St	Pasco PD
3-F	Selph Landing @ Glade North	FC Sheriffs Office
4-F	Alder @ Glade North	FC Public Works *
5-F	Birch @ Glade North	FC Public Works *
6-F	West Sagemoor @ Glade North	FC Sheriffs Office
7-F	Cedar @ Glade North	FC Public Works *
8-F	Dogwood @ Glade North	FC Public Works *
9-F	Fir @ Glade North	FC Public Works *
10-F	Eltopia West @ Glade North	FC Sheriffs Office
11-F	Ringold @ Glade North	FC Public Works *
12-F	Ironwood @ Glade North	FC Public Works *
13-F	Russell @ Glade North	FC Public Works *
14-F	Klamath @ Glade North	FC Public Works *
[illegible]	Sheffield @ Glade North	FC Public Works *
[illegible]	SR 170 @ Glade North	FC Sheriffs Office
17-F	Fairway @ SR 170	FC Public Works *
18-F	SR 170 @ Sagehill	FC Sheriffs Office
19-F	Hollingsworth @ Sagehill	FC Public Works *
20-F	Fern @ Sagehill	FC Public Works *
21-F	North Wahluke @ Sagehill	FC Public Works *
W-5	Hwy 24 @ Mountain Vista	Washington State Patrol
W-6	Hwy 24 @ Sagehill	WSP
W-9	Hwy 17 @ Road 170	WSP
W-11	Hwy 395 @ Connell	WSP
W-12	Hwy 395 @ Eltopia West	WSP

Figure 5-7

NOTE: Asterisk (*) indicates Access Control Point is an unmanned barricade.

LEGEND:
- = EWAC
- = Evacuation Route
- = Franklin Co. ACP
- = WA State Patrol ACP

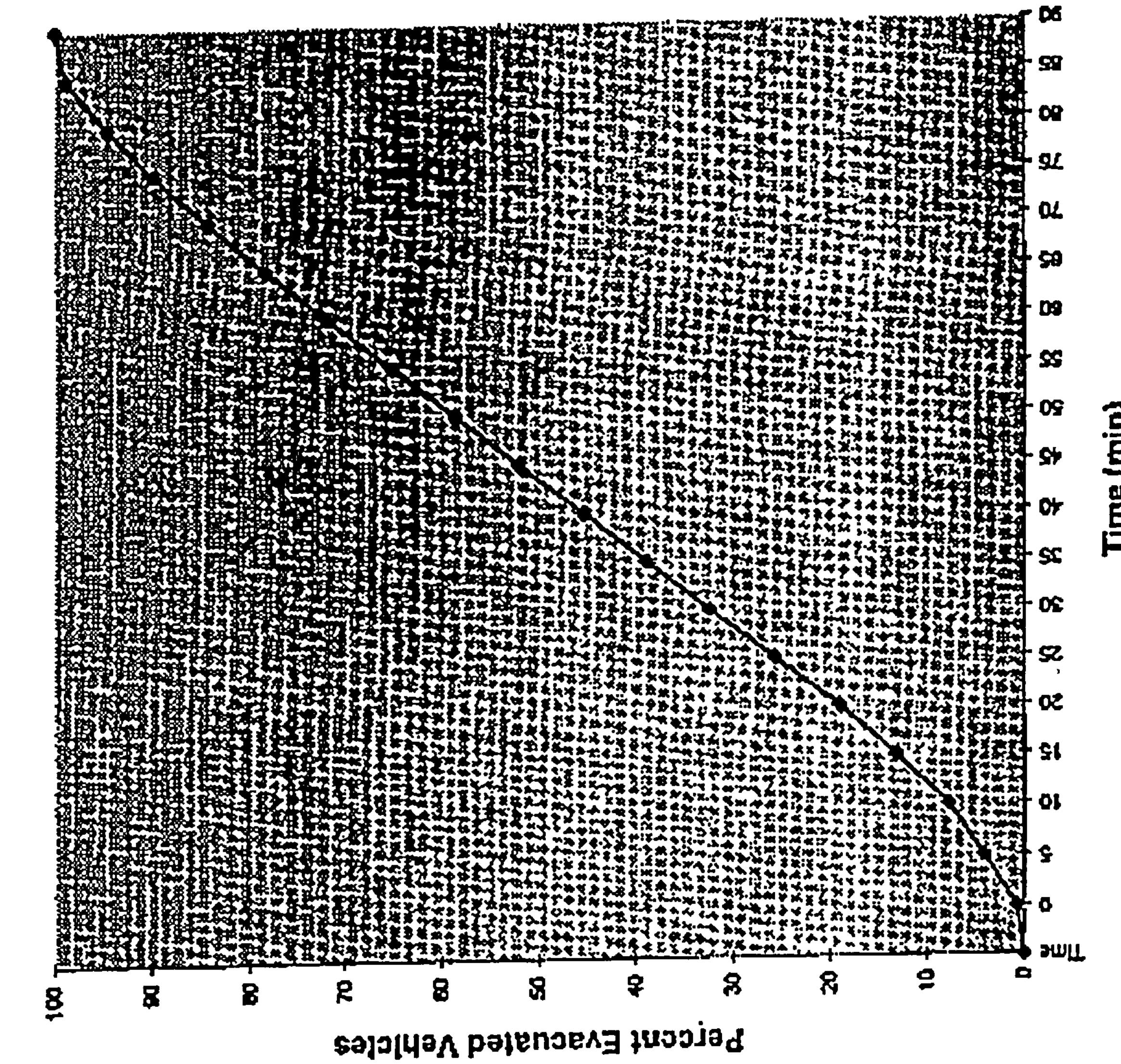

Figure 5-8.A Permanent Population-Normal Conditions

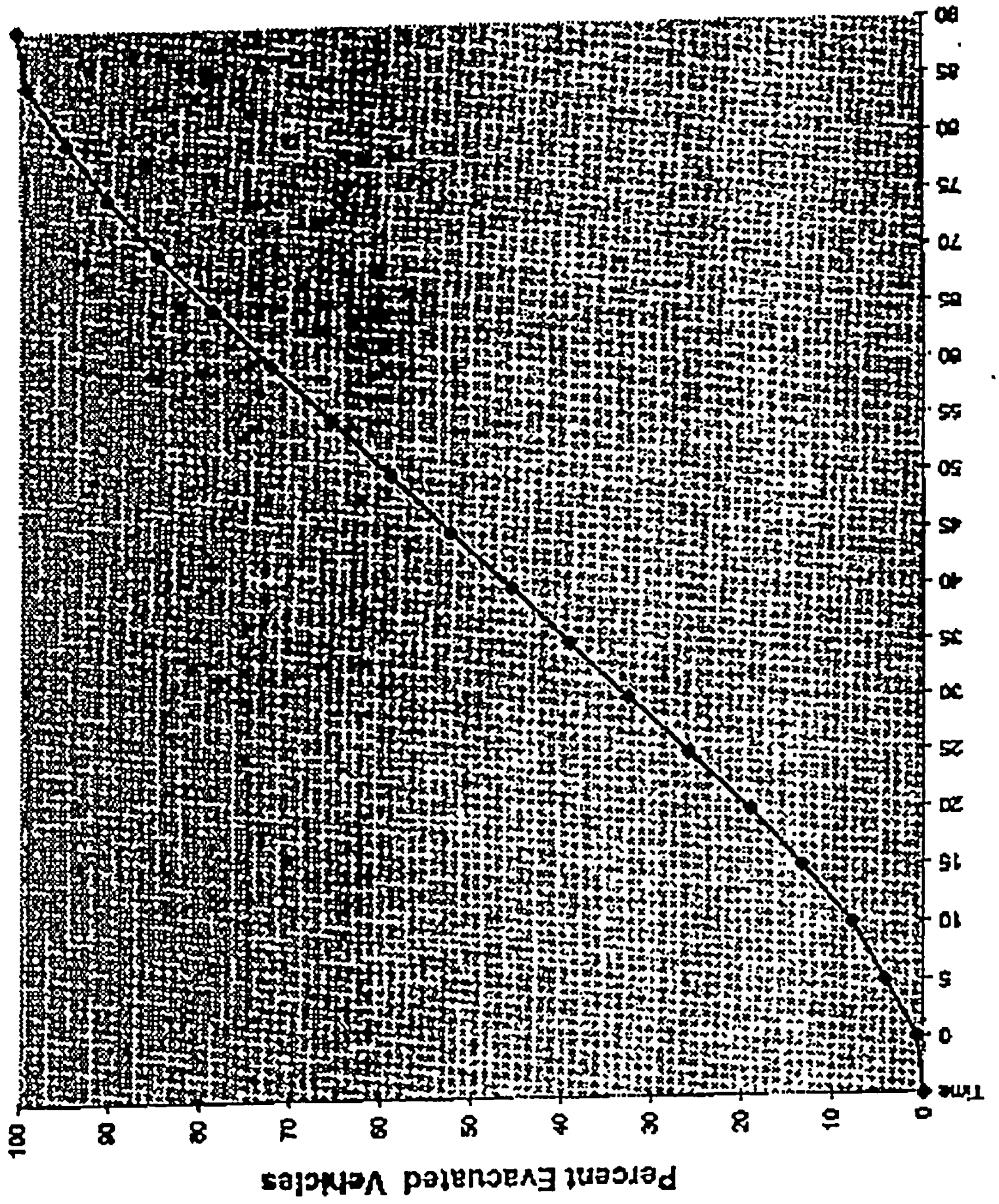

Figure 5-8.B Permanent Population-Adverse Conditions

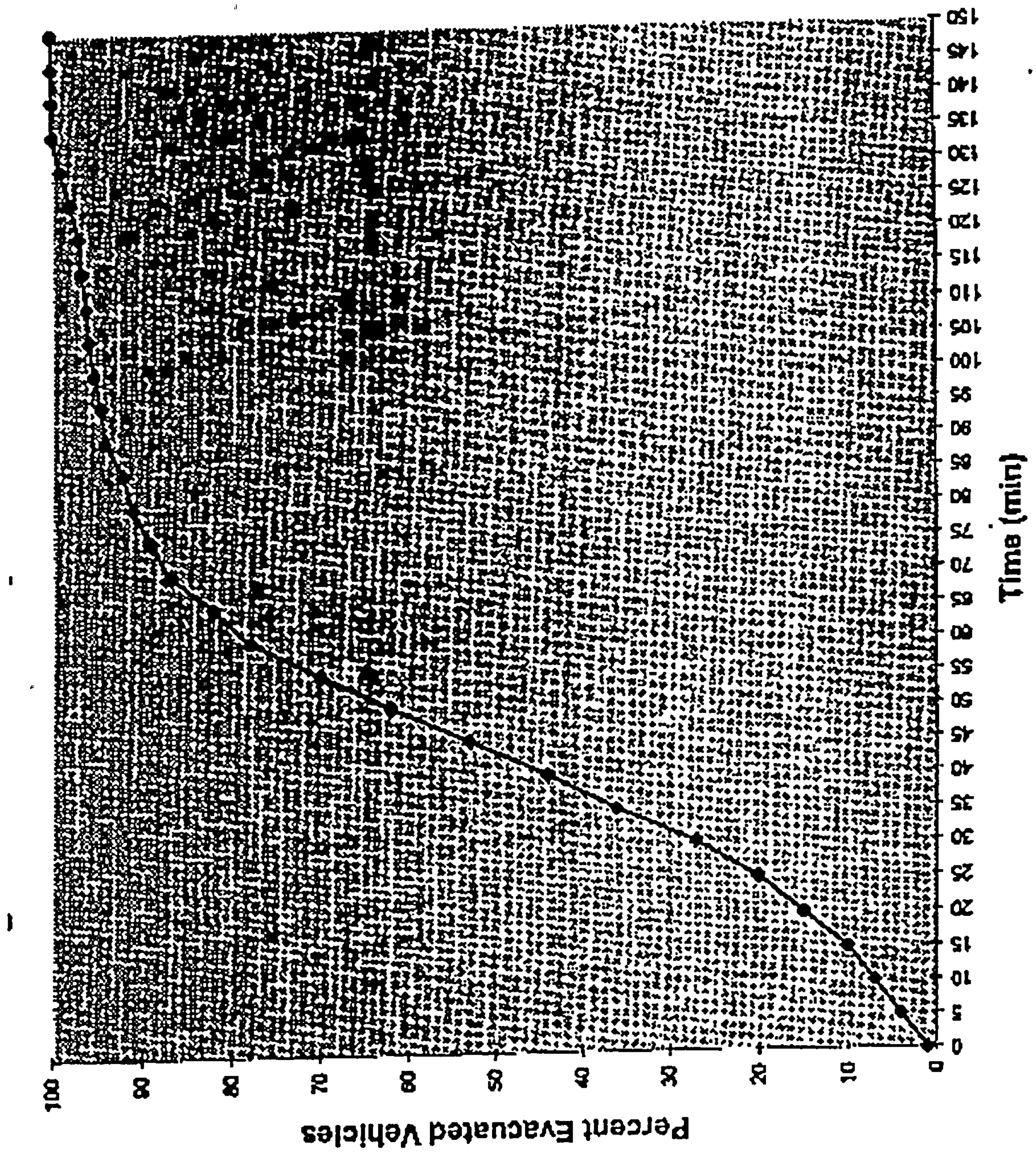

Figure 5-8.C General Population-Normal Conditions

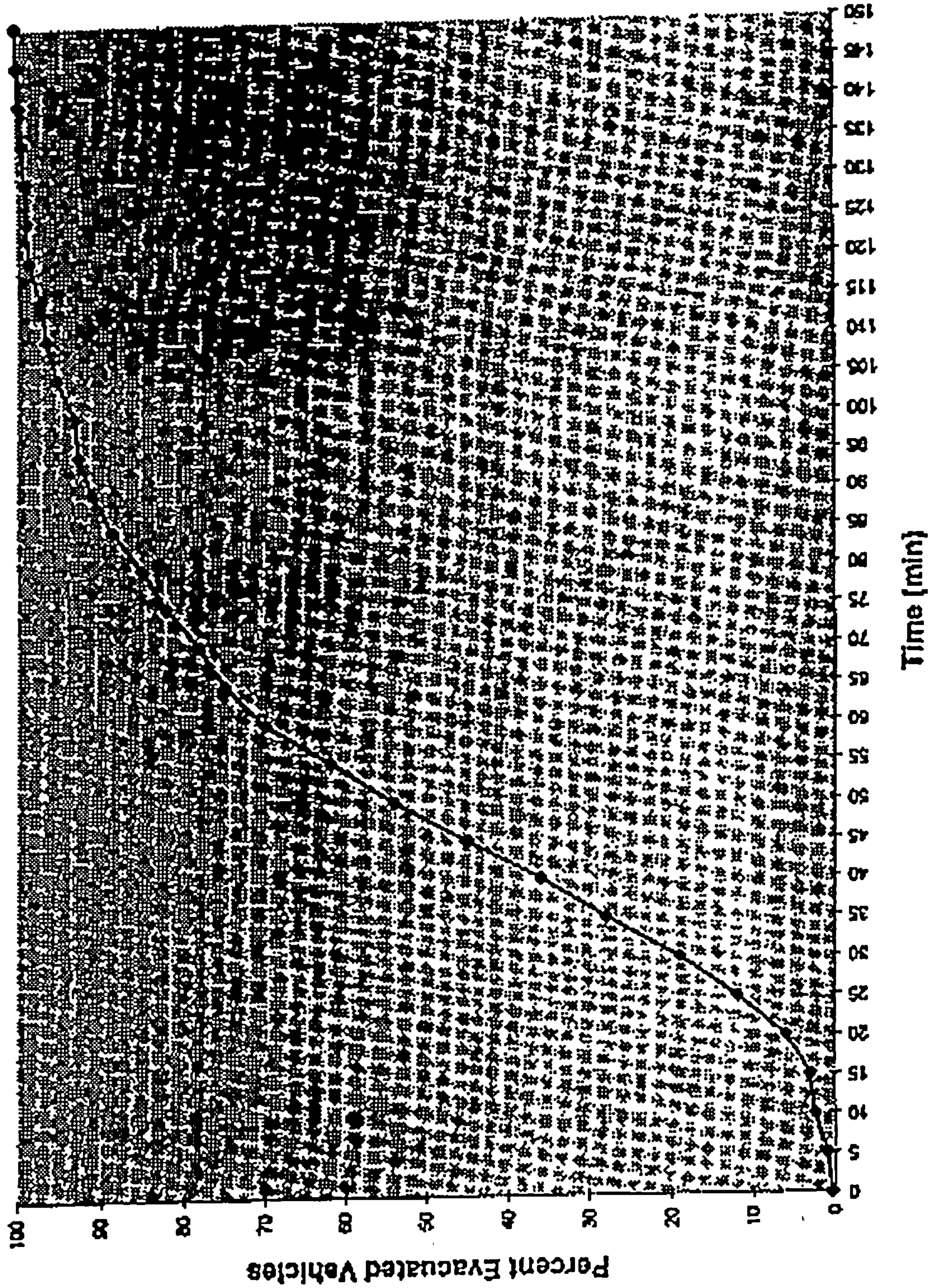

Figure 5-8.D General Population-Adverse Conditions

SECTION 6
EMERGENCY FACILITIES AND EQUIPMENT

6.1 PLANT FACILITIES

Located within the Columbia Generating Station facilities are several areas which will be used for evaluation and initiation of emergency actions. These facilities have the capability to manage the short term response and maintain plant control through sustained emergency and recovery operations.

6.1.1 Control Room

The Columbia Generating Station Control Room is located in the Radwaste Building, adjacent to the Reactor Building, as shown in Figure 6-1. Several entrance/exit points, each with airlocks, are provided. The Control Room contains instrumentation, controls and displays for the nuclear, reactor coolant, electrical, safety and accident monitoring systems and is where an emergency would be initially classified and declared.

The Control Room is staffed by licensed reactor operators and senior reactor operators and is under the direction of the plant Shift Manager twenty-four hours per day. Control Room personnel are responsible for coordinating all emergency response activities until other emergency facilities are activated. Control Room personnel are responsible to diagnose any abnormal plant conditions, perform corrective actions to mitigate the abnormal conditions, manage plant operations and perform initial emergency response activities.

Access to the Control Room during an emergency will be limited to essential personnel such as operators on duty or persons given specific permission for entry by the Technical Support Center Manager or the Shift Manager.

The Control Room has been designed for accessibility and habitability during the occurrences of postulated accidents that could result in the release of fission products and/or hazardous chemicals. To limit inward migration of hazardous materials the Control Room is maintained at a positive pressure with respect to adjacent areas using the pressurization mode of the control room ventilation system. The Control Room will be informed of a sodium oxide release from FFTF. Refer to FSAR section 6.4.4.2.2.

The system has been designed with both normal and remote sources of air to ensure the availability of uncontaminated air at all times. Both HEPA and charcoal filters are included. Shielding is provided to ensure that the combined radiation exposure of Control Room personnel during a postulated design-basis accident would remain within regulatory guidelines.

The Control Room communication system permits contact with the onsite Technical Support Center (TSC), the onsite Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the federal, state and local emergency response organizations on a twenty-four hour per day basis.

6.1.2 Technical Support Center

The Columbia Generating Station Technical Support Center (TSC) is a structure attached to the Radwaste Building on the west side of the plant (refer to Figure 6-1). A typical floor diagram is shown in Figure 6-2. The TSC is as habitable as the Control Room during accidents. The TSC ventilation HEPA filters and charcoal absorbers are the same type as those used for the Control Room System. The ventilation system normal air intake will automatically switch to the Control Room remote air intake upon receipt of an isolation signal. Should the TSC become uninhabitable, the TSC Manager in consultation with radiation protection personnel, will decide on an alternate TSC location and setup where the TSC functions can continue to be performed.

The TSC is activated during an Alert or higher emergency classification and is under the direction of the TSC Manager. The TSC Manager may assume the duties of Emergency Director from the Shift Manager if not transferred directly to the EOF Manager. Staffing includes designated technical, engineering and senior management personnel. Space is available for a small staff of Nuclear Regulatory Commission personnel during emergency conditions.

Functions of the TSC are to provide management and technical support to plant operations personnel during emergencies. This relieves the reactor operators of peripheral duties not directly related to reactor systems manipulation and prevents congestion in the Control Room. The TSC will perform Emergency Operations Facility functions during Alert, Site Area Emergency and General Emergency classifications until the Emergency Operations Facility becomes functional. TSC personnel have ready access to up-to-date plant documents needed to perform emergency functions.

The TSC is the primary onsite communications center for the plant during an emergency. It has reliable voice communications with the onsite Operations Support Center, Emergency Operation Facility, Energy Northwest Office Complex (ENOC), Control Room, NRC, and state and local Emergency Operations Centers.

Plant status, meteorological instrumentation, Plant Display and Information System (PDIS), display equipment and power supplies are provided in the TSC to support a comprehensive analysis of emergency conditions. A power circuit supplies the TSC from a Class 1E source located in the plant. This power source is backed by a diesel generator. Radiological monitoring equipment is available to continuously monitor dose rates and airborne radioactivity concentrations in the TSC. The TSC also assesses plant radiological conditions. In addition, protective equipment such as anti-contamination clothing, respirators and potassium iodide are provided in the TSC should conditions warrant their use.

6.1.3 Operations Support Center

A designated portion of the Yakima Building will serve as the Operations Support Center (OSC) for Columbia Generating Station and will be activated for an Alert or higher emergency classification. The location of this center is shown in Figure 6-1. If the primary OSC location becomes uninhabitable, the OSC Manager, in consultation with radiation protection personnel, will decide on an alternative OSC setup, and OSC personnel will be evacuated to an alternate location where OSC functions can continue to be performed.

The OSC will be under the control of the OSC Manager who is responsible for dispatching and coordinating in-plant team activities during emergencies. The OSC is activated during an Alert or higher emergency classification and provides a location for coordinated logistic support outside the Control Room.

The OSC Manager has communications necessary to dispatch and coordinate emergency team activities with the Shift Manager and TSC Manager, for other necessary onsite and offsite communication, and for emergency team communications (see Section 6.5). Equipment and supplies are available in the OSC for emergency team use. A list of emergency equipment kits is provided in Appendix 3.

6.1.4 Security Alarm Stations

Two security alarm stations are maintained at Columbia Generating Station. The Central Alarm Station (CAS) is the primary security center and is located in a separate building near the Yakima Building. The Secondary Alarm Station (SAS) is the backup security center located in the Control Room.

6.1.5 Protected Area Access Point

Persons requesting entrance to the plant will report to the Protected Area Access Point. Security will issue dosimeters as needed, maintain personnel accountability, and notify the onsite Operations Support Center of the arrival of persons and receive permission to allow entry. In situations which require immediate access by personnel and equipment, such as fire or medical emergencies, Security will be notified to permit immediate entry. The Security Shift Lieutenant will coordinate with the Technical Support Center Manager for implementation of the Safeguards Contingency Plan.

6.1.6 Personnel Decontamination and First Aid Facilities

First aid equipment kits required by the Washington Industrial Safety and Health Act are located as close as feasible to areas which have the heaviest concentration of workers. Designated locations are similar to those shown in Appendix 3.

Initial first aid for employees is provided by the Fire Brigade Team (FB) which is composed of first aid trained personnel who are designated FB members during each work shift.

Medical emergencies are reported via a special phone number that is posted throughout the plant. The special number rings into the Control Room where personnel can then dispatch FB members to an emergency by radio, telephone, or by the plant public address system.

Fire Brigade members receive initial and annual continuing education training in first aid from an in-house program that is certified as meeting "First Responder" requirements by the State of Washington.

A decontamination facility is provided on the 487′ elevation of the Radwaste Building (refer to Figure 6-3). The facility consists of a large shower area with drains connected to the radwaste effluent treatment system. First aid equipment and decontamination supplies are located nearby and will be used whenever a contamination incident is involved. Decontamination will also be implemented as necessary at the Energy Northwest Office Complex and Emergency Worker Assistance Centers (EWACs)

6.2 EMERGENCY OPERATIONS FACILITY (KOOTENAI BUILDING)

The Kootenai Building is located 0.75 miles southwest of Columbia Generating Station. This facility is used to support normal plant operations and includes a 20,000 square foot shielded area in the lower level which includes the 4,500 square foot Emergency Operations Facility (EOF).

A typical floor plan of the Kootenai Building is shown in Figure 6-4. The EOF contains several functional areas which are provided for various groups and will be activated as necessary for an Unusual Event and fully for an Alert, Site Area Emergency or General Emergency.

The EOF is under the direction of the Emergency Operations Facility (EOF) Manager and assists the plant by handling those functions associated with evaluating and minimizing the offsite effects of the accident, as well as supporting the TSC and Control Room with technical data analysis. This assistance includes such functions as field monitoring, dose projections, area security, interfacing with outside organizations, recommendation of protective actions for the public, assisting the plant technical staff, public information, administrative services, scheduling of personnel, and establishing a recovery program. If response to the primary EOF is hampered by radiological or other conditions, personnel unable to respond to the primary EOF will be directed to respond to the alternate EOF located at the Energy Northwest Richland Office Complex. Sufficient telephone links are available at the alternate EOF to communicate with the primary EOF and TSC. If the primary EOF location becomes uninhabitable, the EOF Manager in consultation with radiation protection personnel, will determine whether to evacuate the primary EOF, what equipment to take, and where to relocate. Select EOF staff will then evacuate and continue to perform the EOF functions.

The EOF will be used by representatives of the various offsite agencies to coordinate activities, resolve problems, maintain duty rosters, and make periodic status reports to their respective agencies. A close working relationship between these agencies and Energy Northwest is essential to the success of operations involving the general public. The personnel in the EOF receive information from all functional areas and provide clarifications to their respective agencies. Periodic briefings will be provided by Energy Northwest personnel to keep Energy Northwest and offsite agency personnel up-to-date on plant conditions and emergency measures underway.

The EOF is not used as a normal work location outside of drill and emergency use. It is subjected to periodic walkdowns by emergency preparedness personnel, as well as regularly scheduled inspections to ensure its readiness.

6.2.1 Emergency/Recovery Operations Area

The EOF Manager and his immediate staff will coordinate activities from the Emergency/ Recovery Operations Area of the EOF. The EOF Manager is responsible for the overall emergency effort and provides the necessary support to the TSC Manager. The Emergency/ Recovery Operations Area will maintain up-to-date information on plant and offsite status, recovery planning and scheduling, and will function as the designated area for periodic update briefings with selected personnel assigned to the EOF, including outside agency personnel.

6.2.2 Engineering Support Area

A segment of the EOF is designated as an Engineering Support Area which is established for use by Energy Northwest's engineering personnel, and architect/engineers, vendors, and contractors requested to assist Energy Northwest. A technical data information system including meteorological, radiological, and plant system status is available. Essential plant technical information is available in this area.

Using this area in the EOF, personnel from organizations outside the plant staff can provide needed technical assistance without responding directly to the plant. This provides technical personnel readily available to the plant if needed. The Engineering Support Area also provides a secondary location to track plant conditions and provides current and projected plant status reports to MUDAC and to the EOF Manager for inclusion in the formulation of Protective Action Recommendations.

6.2.3 Logistics Support Area

A designated portion of the EOF is established for logistics support functions which are provided by the Site Support Manager and staff. The Site Support Manager and his staff will provide general administrative support and logistical support to the EOF staff and as directed for other emergency centers.

6.2.4 Meteorology and Unified Dose Assessment Center

The Meteorology and Unified Dose Assessment Center (MUDAC) is utilized as a joint center by Energy Northwest, DOE-RL, and States of Washington and Oregon Departments of Health to coordinate field team operations, project dose rates, record actual measured dose rates during an emergency, and determine protective action recommendations. The computerized Emergency Dose Projection System as described in Section 5 is located in this center. Actual and projected doses obtained will be available for use in determining protective action recommendations for the general populations. From the MUDAC information can be sent by facsimile to the Benton and Franklin County Emergency Operations Centers, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and other Energy Northwest emergency centers. Communications with the field monitoring teams is provided in MUDAC. This capability allows for relaying instructions and receiving survey results.

6.2.5 Security Communications Center

The Security Communications Center is utilized in the notification process and has voice and hard copy transmission capabilities as detailed in Section 4.6. Any information received here will be delivered to the appropriate personnel.

6.2.6 News Release Preparation and Media Briefing

A news release preparation area is provided in the EOF for Energy Northwest's public relations personnel to develop public information status reports. These status reports will be updated and distributed to the Joint Information Center (JIC) located at the ENOC. Groups of media personnel may be escorted to the EOF, as conditions permit, for briefings and tours. This action will be taken under the direction of the EOF Public Information Officer (PIO), and with approval of the EOF Manager.

6.2.7 Work Areas

Several work areas are identified for Energy Northwest personnel as well as for Government agencies (DOE, FEMA, NRC, Washington and Oregon States, etc.), outside consultants, architect/engineers, contractors, and vendors in the EOF. Other general office or classrooms are available as needed.

6.2.8 Health Physics Center

The Health Physics Center consists of several areas in the protected Emergency Operations Facility and the non-protected Kootenai Building, a radiological laboratory, and counting lab. Energy Northwest contracts with a vendor to process thermoluminescent dosimeters and provide results to Energy Northwest in a timely manner. This vendor is certified to the standards of the National Voluntary Laboratory Accreditation Program (NVLAP). Results are recorded into a computerized Total Exposure System (TES) which can be accessed for information from the plant health physics areas as well as the Operations Support Center and Emergency Operations Facility.

A whole body counting, respiratory testing, and computerized internal dose assessment system is in use at Energy Northwest. The respiratory testing area consists of fitting and testing equipment. A large supply of respirators is available if required for emergency response or recovery operations.

The radiological laboratory and adjoining counting lab provide for radiological analysis of environmental samples as well as partial backup capability for plant laboratories. If plant analytical capabilities become unusable, plant samples can be transported to the Emergency Operations Facility or a support agency laboratory for chemical and/or radiological analysis. Energy Northwest contracts with outside laboratories for backup environmental sample analysis.

6.2.9 First Aid and Decontamination Area

A first aid facility is located near the Protected Area of the plant, and a decontamination facility is located in the unprotected portion of the Kootenai Building. The relative locations of these facilities provide for treatment and decontamination of injured personnel as well as independent operation of both facilities. Drains from the decontamination area are connected to an isolable tank. Energy Northwest contracts with HEHF for treatment of severely contaminated injured personnel. This first aid facility is staffed by qualified personnel and first aid equipment is available for normal first aid treatment.

6.2.10 Environmental Programs Area

The environmental programs area includes an environmental equipment area and biology lab. The environmental equipment area will be used to store any backlog of environmental samples. Additional storage is available in the biology lab. Provisions have been made for cataloging stored samples.

6.2.11 Habitability

The Emergency Operations Facility is a protected area in the Kootenai Building which has special shielding and ventilation to maintain habitability requirements. The ventilation system is designed to provide maximum habitability during an accidental radiological release. HEPA filters condition entering air during emergency conditions. Ion chambers are strategically located in the ventilation system to detect potential infiltration of contaminated air thus automatically allowing reconfiguration of airflows from replenishment to recirculation modes.

The EOF is designed to ensure that the total dose to occupying personnel is less than the Environmental Protection Agency Protective Action Guide limit of 5 rem TEDE for the duration of the postulated accident. Shielding requirements were determined using source terms from BWR/PWR accident scenarios described in the WASH 1400 Reactor Safety Study. Calculations considered worst case meteorology and assumed a 0.75 miles distance from the plant to the Emergency Operations Facility.

6.2.12 Emergency Power

A 365 kilowatt emergency power generator provides power to the Emergency Operations Facility during power loss. Vital equipment such as communication systems, counting equipment, dose assessment equipment, and lights are connected to the emergency power generator.

6.3 ALTERNATE EMERGENCY OPERATIONS FACILITY

The Alternate Emergency Operations Facility (EOF) is located approximately 10 miles south of the plant. This facility may be activated in the event of the primary EOF becoming uninhabitable, or inaccessible to offsite responders. The EOF Manager, in consultation with radiation protection personnel, will determine when to activate this facility, and appropriate staffing levels.

A Crash phone, dedicated facsimile machines, and a NRC Emergency Notification System phone are available to provide notifications to offsite agencies. The emergency functions for direction and control, emergency classification, notifications, protective action recommendations, dose projection operations, and field team dispatch and control may be provided from this facility. The Alternate EOF has sufficient communications capability to continue to communicate with the control room, TSC, primary EOF, field teams, and offsite agencies.

6.4 JOINT INFORMATION CENTER

The Energy Northwest Joint Information Center, (JIC), located approximately 10 miles south of the plant, integrates emergency response/recovery public information functions with the resources normally available to upper management personnel. Figure 6-5 shows the typical floor plan for the JIC.

Designated staff may support the EOF Manager and the emergency effort from the JIC.

Dedicated phones provide continuous contact with the plant and Emergency Operations Facility. Facsimile is available for the exchange of the latest data with other emergency centers. Access to certain areas are controlled when emergency centers are activated. The JIC will function as a joint news release center for Energy Northwest, county, state, DOE-RL and other federal agencies to facilitate consistent media releases. Areas will be set up to provide work space for the various media personnel.

Emergency power is provided for the JIC and telephone system.

6.5 EMERGENCY EQUIPMENT AND SUPPLIES

Appendix 3 identifies the emergency equipment staged for Fire Brigade Response at Columbia Generating Station. In addition to the Fire Brigade turnout stations, other equipment is staged throughout the plant for use by the Fire Brigade. This includes fire fighting hose stations, foam kits for Class B fires, and smoke removal.

Equipment is stored for field team use at the Emergency Operation Facility and at an offsite location. Vehicles and survey equipment kits are available for use by the field teams.

An inspection, inventory, and operational check of emergency equipment/instruments in each emergency cabinet or kit is conducted at least quarterly and after each drill which utilized that

particular cabinet and kit. The equipment designated for emergency use will be calibrated at the intervals recommended by the manufacturer. Sufficient reserves of instruments and equipment are maintained to replace instruments removed from kits for repair or calibration. Emergency respiratory equipment will be inspected monthly. Required quantities in each cabinet or kit are established by procedure.

6.6 COMMUNICATION SYSTEMS

6.6.1 Radio Network

The radio system consists of radio channels covering several different radio bands. The Emergency Operations Facility is the primary facility for communication with emergency responders and offsite response organizations.

Limited radio capability is available in the Central Alarm Station, the Secondary Alarm Station (in the Control Room), the Technical Support Center, and the Operations Support Center. Mobile and portable radios are provided for selected vehicles and plant personnel.

Field monitoring teams will utilize the state sanctioned common emergency radio channel of 46.00 MHz. This system has a mountaintop base station that provides communications with field monitoring teams.

The mountaintop radio repeaters and 46.00 MHz base station are powered by a battery and charger system to provide communications capability during a loss of power.

Radio communication with the Department of Energy and the Benton and Franklin County Emergency Operations Centers is also available. The Department of Energy Communications Center and the Benton County Emergency Dispatch Center provide 24-hour monitoring of these radio links. See Table 6-1 for a listing of available radio channels.

6.6.2 Company Telephone System

Energy Northwest's Richland phone system is a computer based, software controlled telephone exchange (Computerized Branch Exchange). It is equipped with redundant computerized processor units and is served by an uninterruptible power supply.

The direct-dial private telephone system provides communication between the Hanford Energy Northwest facilities. The phone system is arranged such that plant telephones can reach other Energy Northwest facilities by direct-dialing and without the need of an operator. Telephones are at various strategic locations throughout the plants, including the Control Room, the remote shutdown panel, the Technical Support Center and Operations Support Center.

There are multiple direct inward dialing trunks to the Computerized Branch Exchange. Columbia Generating Station is connected to this exchange via company owned tie trunk lines. The Emergency Operations Facility has tie trunk lines connected to the Energy Northwest Office Complex (ENOC) Computerized Branch Exchange. The Computerized Branch

Exchange in the plant is connected to the outside public telephone system via a minimum of 15 central office trunks. Each plant also has access to a number of long distance State Controlled Automatic Network Circuit (SCAN) trunks. Energy Northwest headquarters also has access to long distance SCAN lines. These SCAN lines are wired direct to Spokane and bypass the local toll centers. This allows bypassing of the local central office in the event of congestion.

6.6.3 Dedicated Telephone Circuits

The following dedicated phone networks are available for emergency communications in addition to the normal Energy Northwest phone network:

a. Energy Northwest Emergency Center Network,
b. Response Agency Network, and
c. NRC Emergency Notification System.

The Energy Northwest Emergency Center Network interconnects the plant and emergency centers. The network uses a push button system in which the caller selects the area to be called, pushes the appropriate button which in turn automatically rings into the selected area.

The Response Agency Network connects the Energy Northwest emergency centers with State and local emergency centers. Lines to the Washington State Emergency Operations Center are routed through the local State Patrol Office switchgear and transmitted via the state microwave system to Camp Murray. By dialing a unique series of numbers the user is able to reach a specific agency. Facilities serviced by these dedicated lines are Columbia Generating Station, the Benton and Franklin County Emergency Operations Centers in Richland and Pasco, the Department of Energy Patrol Occurrence Notification Center on the Hanford site, and the Washington State Emergency Operations Center in Camp Murray. In addition, the network has a crash function, which is why it is referred to as the Crash line or Crash Notification System. This feature of the system operates by dialing a unique activator number that automatically rings all the phones on the system. The Crash line is available in the Alternate EOF.

A federal telephone system (FTS 2000) connects Energy Northwest emergency centers to the Nuclear Regulatory Commission. The Emergency Notification Network (ENS) and the Health Physics Network (HPN) are included in this system. ENS is available in the Control Room, the Technical Support Center and the Emergency Operations Facility. The HPN, ENS, and Crash are available in the Technical Support Center, the Emergency Operations Facility, and the Alternate EOF.

Call list telephone numbers associated with activation of the Emergency Plan are updated at least quarterly by the Emergency Preparedness section.

6.6.4 Sound Powered Phone System

The plant Sound Powered System, designed to provide communications without the use of batteries or other outside power sources, is powered by voice sound energy. This system is completely separate and distinct from the computerized Branch Exchange telephone system.

The Sound Powered System has separate communications loops which are arranged by building and elevation. All sound powered jacks in each loop are wired in parallel and terminated on a switching device. This device provides the capability to merge and isolate various combinations of loops for maintenance and testing activities. Extension cords, handsets, and sound powered head or head-chest sets are provided for use with the jack stations.

6.6.5 In-Plant Public Address System

The Public Address System (PA) is composed of separate public address zones, each accessible through the Plant Computerized Branch Exchange telephone system. An additional phone number accesses all zones for group paging. Paging microphones located in the Control Room, Central Alarm Station, Secondary Alarm Station, Technical Support Center (TSC) and other areas override telephonic paging and transmit to all zones simultaneously. Tone generators operated from the Control Room or the TSC allow an alerting tone to be broadcast over the PA system. The paging microphones have priority over all other functions of the Public Address System.

Portable high noise evacuation devices, each composed of a radio-controlled siren and strobe light, are located in selected areas throughout the plant. These devices are activated by the PA alerting tone.

6.6.6 Area Wide Radio Paging

A Radio Paging System is used to alert on-call members of Energy Northwest's emergency response organization of an emergency.

6.6.7 Facsimile System

Various locations such as the Control Room, Technical Support Center, Emergency Operations Facility, Joint Information Center, Department of Energy-RL, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and the Benton and Franklin County Emergency Operations Centers have facsimile transceivers. The facsimile transceivers enable the transmission and receipt of printed material. The facsimile system which connects the Energy Northwest emergency centers with the county and state emergency centers uses dedicated phone lines.

6.6.8 Early Warning System

Tone activated radios are made available to all households within the Ten-Mile Emergency Planning Zone. These radios monitor the local Emergency Alerting System. If an Emergency Alerting System signal is received, a light is activated and an audible tone is heard. The radio then broadcasts the message. The radios contain a battery backup.

In addition to the tone activated radios, sirens located on the Columbia and Yakima Rivers, and in the Horn Rapids area are provided to assist in notifying sportsmen, boaters, and other recreationists that may be present. The Department of Energy also maintains a system for alerting its employees and its contractor's employees.

6.6.9 Automatic Dialer

An automatic dialing system is used similarly to and at times in conjunction with the area wide radio paging system as a means to notify Energy Northwest emergency personnel.

6.6.10 Emergency Response Data System

The Emergency Response Data System (ERDS) has been established to transmit raw reactor parametric data to the NRC when an Alert or higher emergency is declared. The data is conveyed over an FTS 2000 phone circuit.

6.7 COMMUNICATION SYSTEMS TESTS

The following test schedule of the communication system is established to ensure operability. This test schedule includes:

a. Communications with Emergency Dispatch Center and Department of Energy-RL

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

b. Communications with Washington State Emergency Operation Center

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

c. Communications with Nuclear Regulatory Commission Headquarters

   1. Dedicated telephone lines -- tested monthly.
   2. ERDS - tested quarterly.

d. Communications among Energy Northwest Emergency Facilities

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.
3. Data circuits -- tested monthly.
4. Installed Radio links -- tested monthly.
5. Environmental Field Team radios -- tested quarterly.

e. Notification System

1. Siren system

   a) status test -- monthly documentation of status tests conducted at least bi-weekly.
   b) complete system test -- annually.

2. EAS Radio receivers test

   a) operability -- weekly (performed by the Emergency Alerting System).
   b) coverage -- annually (performed by Energy Northwest and Benton and Franklin counties).

3. Automatic Dialer

   Perform activation tests -- quarterly.

f. Emergency communications equipment (not covered above)

1. Area Wide Radio Paging -- operational test quarterly.

g. Fire Brigade Equipment

1. Replace batteries and perform operational tests monthly on portable radios (OSC).
2. Perform annual FCC checks on portable radios.

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

I. Emergency Facility Radio Channel Availability

A. Control Room

- In-Plant Operations Channel
- Area Wide Security Channel (Secondary Alarm Station)

B. Technical Support Center (TSC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Field Team - 46.00 MHz

C. Operations Support Center (OSC)

- In-Plant Operations Channel

D. Central Alarm Station (CAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

E. Secondary Alarm Station (SAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

F. Security Communications Center (SCC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel
- LERN (Law Enforcement Radio Network)

G. Emergency Operations Facility

- Area Wide Security Channel Link

1. Franklin County Sheriff

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

2. Emergency Dispatch Center
3. Department of Energy Patrol Emergency Office

- Field Team - 46.00 MHz Channel
- Department of Energy Emergency Response Channel
- LERN Channel (Law Enforcement Radio Network)

H. Department of Energy

- Area Wide plant Security Channel

I. Benton County Emergency Dispatch Center

- Area Wide Security Channel

K. Franklin County Emergency Dispatch Center

- Area Wide Security Channel

J. Benton and Franklin Counties Emergency Operations Centers

- Area Wide Security Channel

II. Energy Northwest Emergency Center Telephone Capability

A. Technical Support Center (TSC) dedicated phone system interconnects with:

- Control Room
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Emergency Operations Facility
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System

B. Operations Support Center (OSC) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Emergency Operations Facility
- Central Alarm Station/Secondary Alarm Station
- Facsimile System

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

C. Control Room dedicated phone system interconnects with:

- Technical Support Center
- Operations Support Center
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System
- Emergency Operations Facility

D. Emergency Operations Facility (EOF) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

E. Alternate Emergency Operations Facility (EOF) phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

F. Joint Information Center (JIC) dedicated phone system interconnects with:

- Crash Notification System
- EOF
- Facsimile System

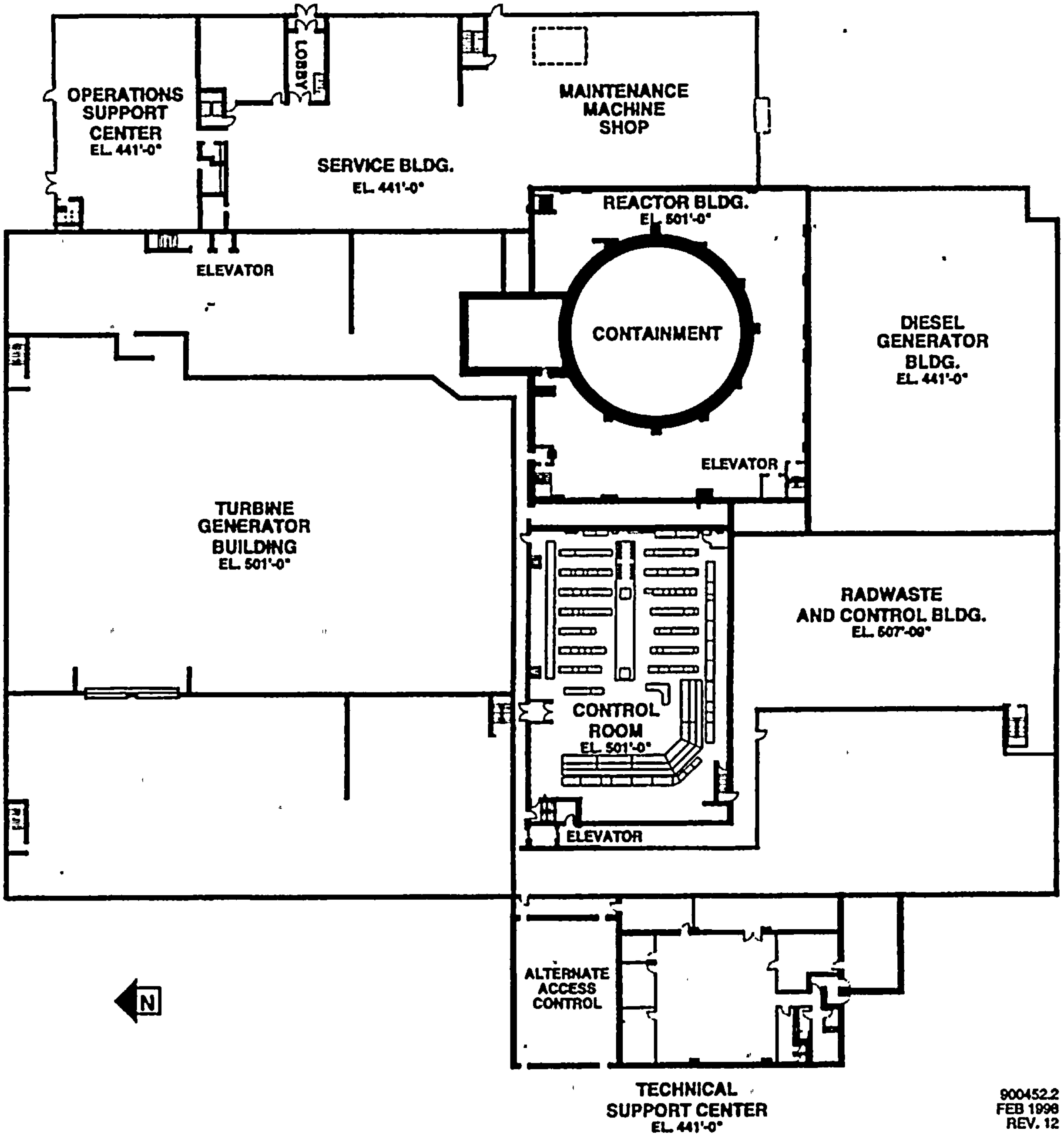

Figure 6-1, Columbia Generating Station Control Room, Technical Support Center and Operations Support Center Locations (Typical Arrangement)

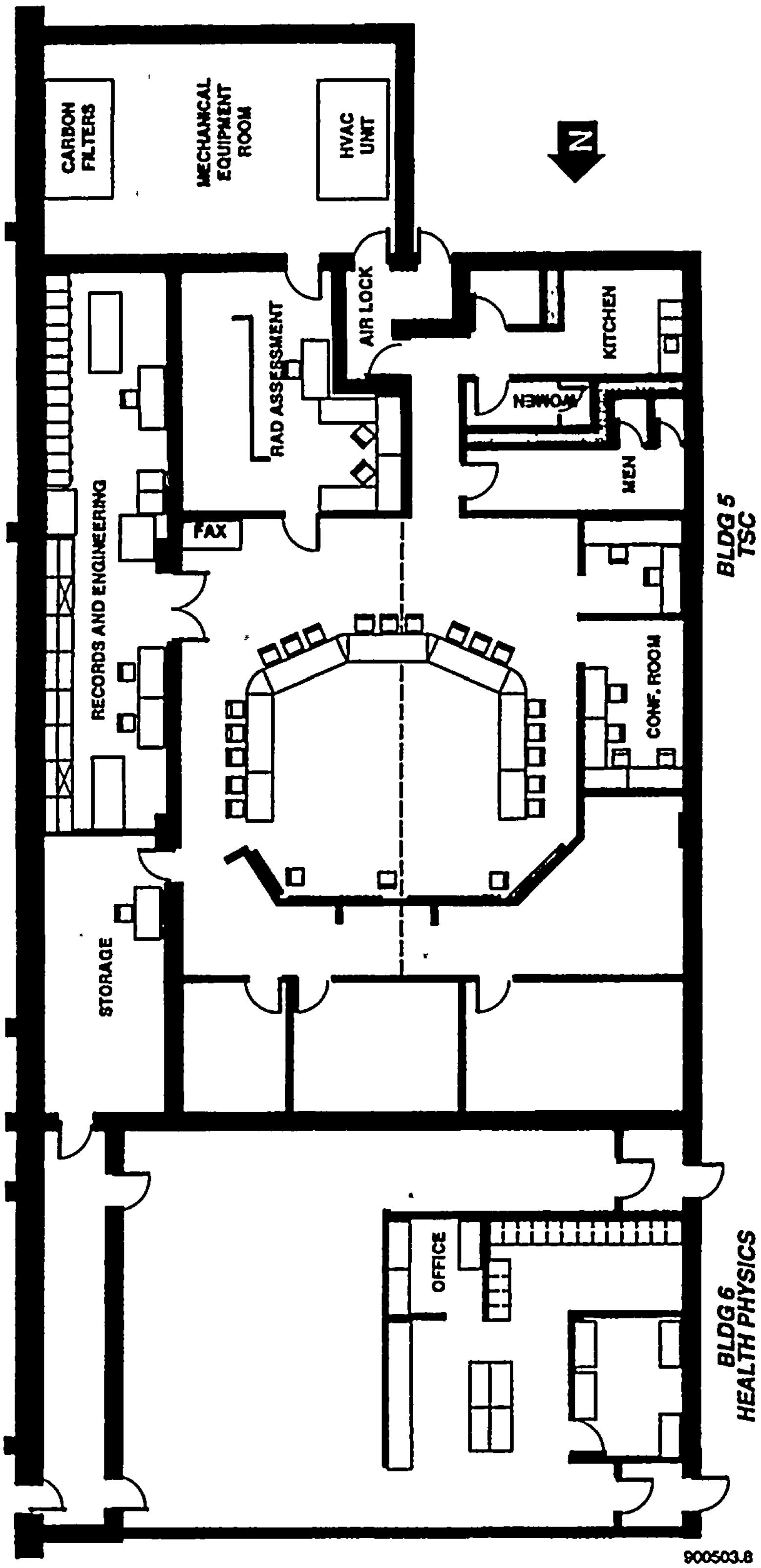

Figure 6-2, Columbia Generating Station Technical Support Center
(Typical Arrangement)

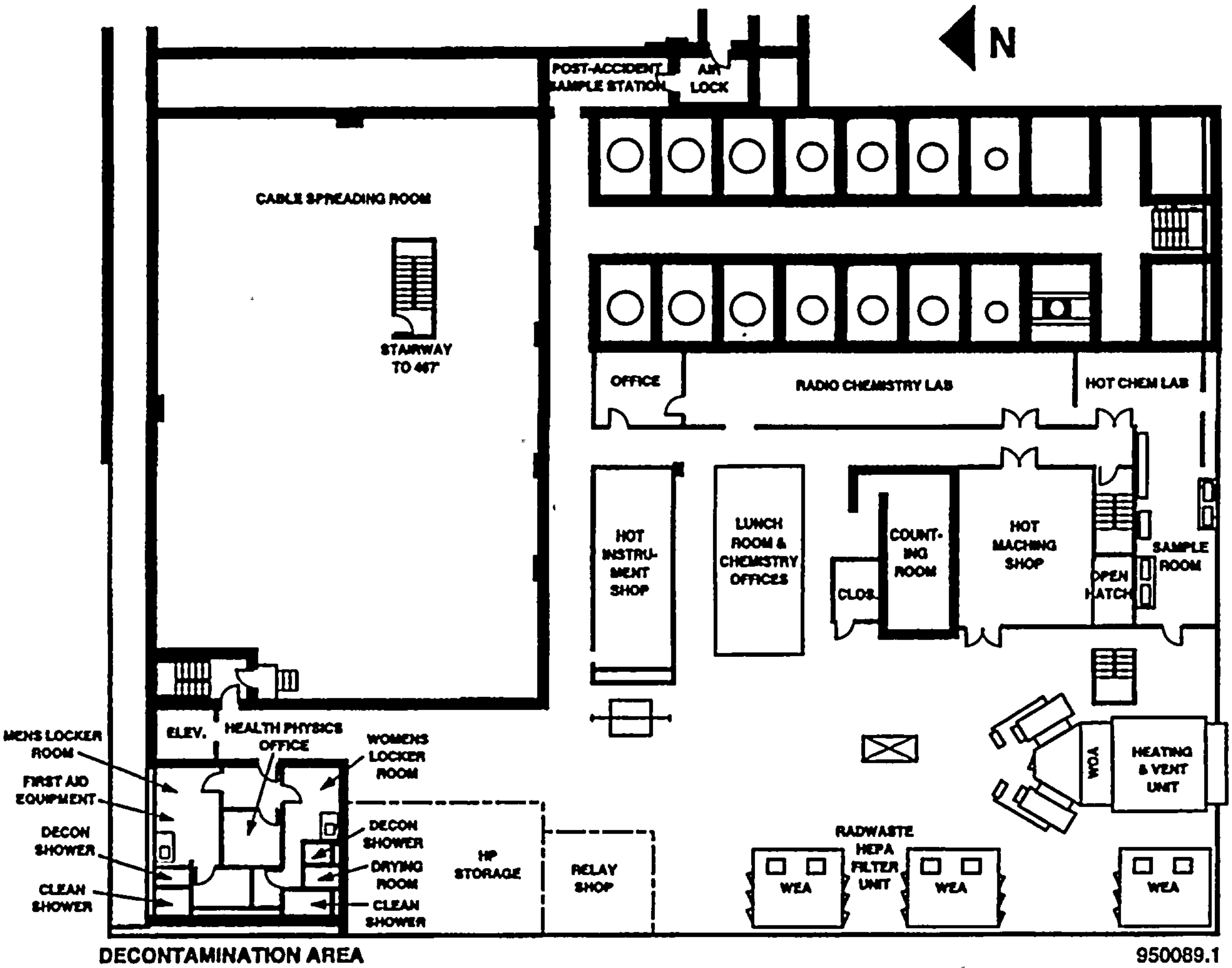

Figure 6-3, Columbia Generating Station Decontamination Area
(Typical Arrangement)

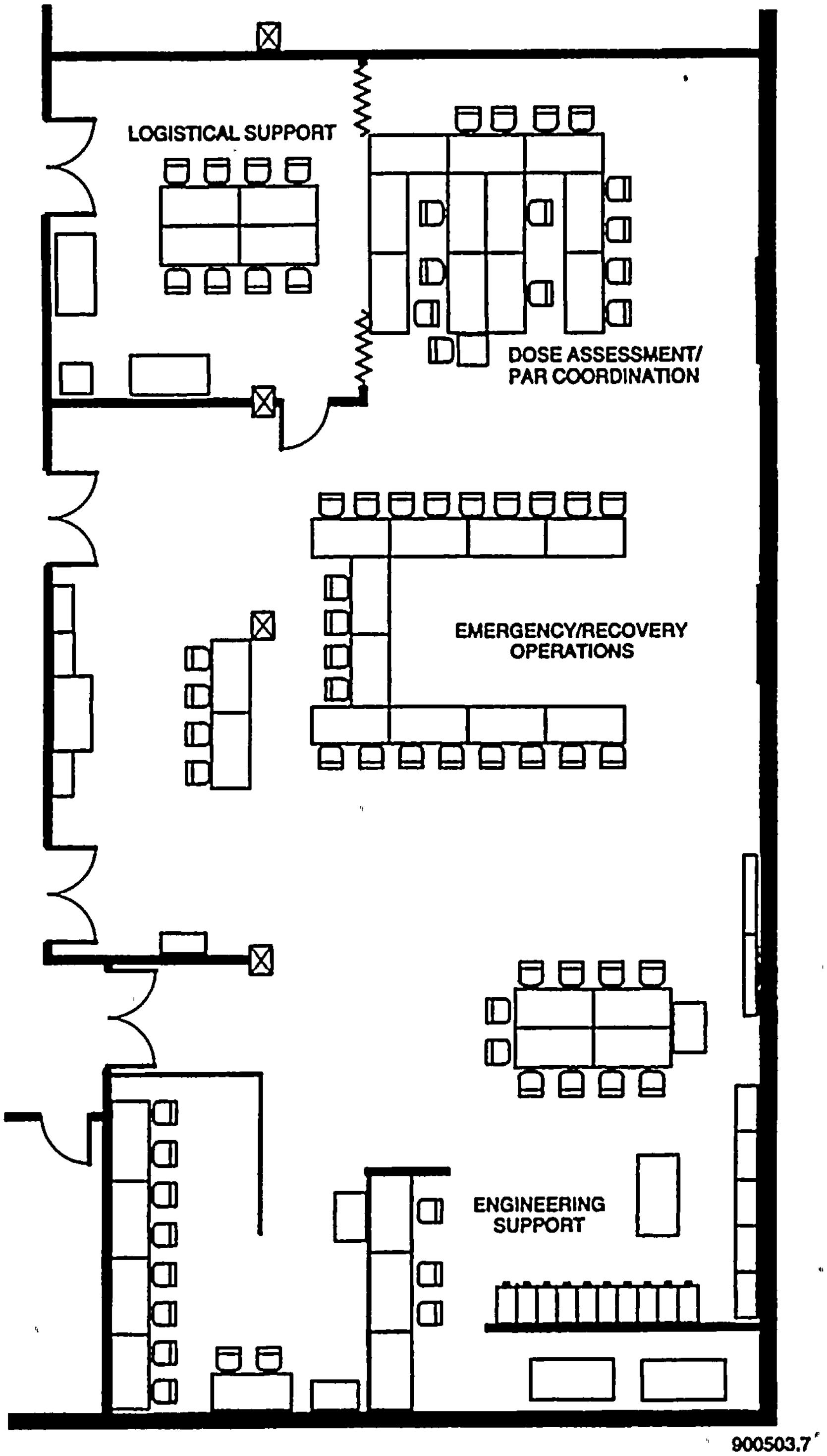

Figure 6-4, Kootenai Building
Emergency Operations Facility (EOF)
(Typical Arrangement)

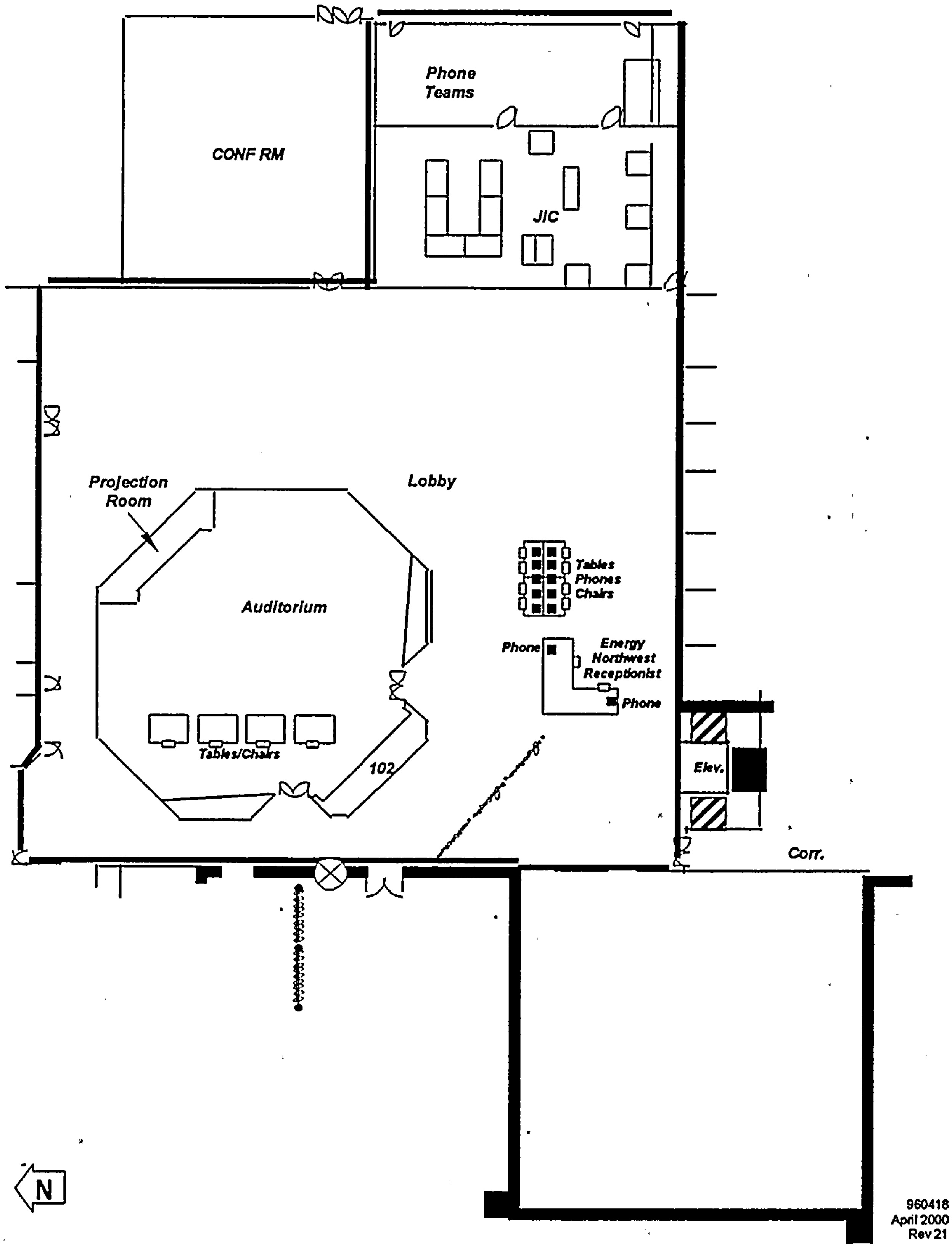

Figure 6-5, Joint Information Center - Typical Arrangement

SECTION 7
REENTRY AND RECOVERY OPERATIONS

7.1 REENTRY AND RECOVERY OPERATIONS

Emergency actions will shift to the recovery phase once the immediate corrective and protective actions have established effective control over the incident. Onsite reentry and recovery operations are addressed in 7.2 and 7.3. Offsite reentry and recovery operations are discussed in 7.4.

7.2 REENTRY INTO ONSITE AREAS

Reentry into evacuated onsite areas may be required during and after an emergency. This could include search and rescue, actions to minimize further accident consequence, or assessment of plant conditions to determine the scope of recovery operations. Exposure guidelines, as outlined in Section 5 of this plan, should not be relaxed without sufficient justification.

Prior to reentry, the Radiation Protection Manager or his representative shall:

a. Review all available radiation survey data and determine plant areas with high radiation exposure and/or contamination potential,

b. Review the radiation exposure records of personnel participating in the reentry operation and determine the need for additional personnel,

c. Review the adequacy of the radiological sampling and survey instrumentation to be used by the team (type, ranges, number, calibration etc.),

d. Review protective clothing, dosimetry, and respiratory protection requirements,

e. Ensure that appropriate communications are available, and

f. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry.

The initial recovery efforts should encompass the following actions:

a. Conduct comprehensive radiation surveys of the plant facilities and define all radiological problem areas;

b. Isolate and post all radiation and contamination areas with appropriate warning signs as conditions and available time allow, and

c. Identify potential hazards that may impact recovery operations.

During the reentry activities immediately following an accident, initial radiation monitoring functions involve only gross hazard evaluations, isolation of the hazard, and the definition of radiological problem areas. This immediate radiation surveillance activity is used to provide the basic information for the development of recovery operations.

7.3 ONSITE RECOVERY OPERATIONS

The EOF Manager and TSC Manager have the joint responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. A Recovery Manager will be appointed and a Recovery Organization will be established to develop and coordinate plans and schedules for the recovery operations. Following a Site Area Emergency or General Emergency, the Corporate Nuclear Safety Review Board (CNSRB) will review and comment on the recovery planning effort to assure that all nuclear safety aspects of the recovery are satisfied. (The CNSRB will report their findings to the Recovery Manager, who shall take the actions deemed appropriate for safe recovery operations.) Refer to Figure 7-1 for key positions and responsibilities of the recovery organization.

7.3.1 Initiating the Recovery Phase

Prior to terminating an emergency and entering the recovery phase, the EOF Manager will coordinate with the TSC Manager to ensure that the following criteria have been considered:

a. The conditions which caused the emergency have stabilized, are under control, and are unlikely to deteriorate further.

b. Plume tracking is no longer required. The only environmental assessment activities in progress may be those necessary to assess the extent of deposition resulting from passage of the plume.

c. In-plant radiation levels are stable or decreasing.

d. Radioactive releases are under control.

e. The potential for an uncontrolled radioactive release is acceptably low.

f. Containment pressure is within technical specifications.

g. The reactor is in a stable safe shutdown condition and long-term core cooling is available as required.

h. Any fire, flood, earthquake or similar emergency conditions no longer exist.

i. Offsite conditions will not limit access of personnel and support resources to the site.

j. Discussions have been held with DOE-RL, Washington, Oregon, affected counties and select regulatory agencies, and agreement has been reached to begin the recovery phase.

The extent of recovery activities will dictate the precise framework of the Recovery Organization:

a. For events of a minor nature, the normal onshift organization should be adequate to perform necessary close-out actions (e.g., for UNUSUAL EVENT classifications).

b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization, or portions thereof, should be adequate to coordinate the necessary recovery actions (e.g., for ALERT classifications).

c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, a formal Recovery Organization will be established to manage the recovery actions. Specific members of the Recovery Organization will be selected based upon the sequence of events that preceded the recovery activities.

7.3.2 Conducting Recovery Operations

Recovery operations will be performed in accordance with written procedures developed by the Recovery Manager and staff prior to implementation of any recovery action. These procedures shall be based upon information collected by the initial reentry team(s) and any subsequent updates. Special precautions will be identified for any potentially hazardous conditions. If radiological hazards exceed the boundaries of the radiation access controlled areas, the security access lists should be reviewed and revised to prevent unauthorized or unintentional entry into hazardous areas.

The Recovery Manager is responsible for directing the activities of the Recovery Organization and should:

a. Ensure that sufficient personnel from Columbia Generating Station and other organizations are available to support recovery.

b. Direct the development of a recovery plan and implementing procedures, as required.

c. Coordinate with the CNSRB to ensure adequate review of engineering activities and proper review and approval of the recovery plan and implementing procedures.

d. Coordinate the deactivations of emergency response facilities and personnel as appropriate.

e. Coordinate the integration of available state and federal assistance into recovery activities.

f. Coordinate with offsite authorities, and provide support as required for offsite recovery activities.

g. Approve all technically oriented recovery information released by the Public Information Organization.

h. Periodically estimate total population exposure.

When criteria to enter the recovery phase are met, the Recovery Manager will inform emergency centers and offsite agencies by crash call of the transition to recovery. The Recovery Manager then initiates a discussion of recovery items with the Recovery Task Force members to develop a shutdown safety plan focusing on procedurally defined priorities.

The Recovery Task Force will produce initial plans to cope with near and long term activities, provide direct input to the maintenance organization for an integrated outage plan, and provide assistance to the Recovery Manager to transition from a recovery phase to an outage, as appropriate.

During the recovery operations, particular attention should be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine the extent of any equipment damage and to determine the sequence of events that led up to the accident for event reporting and lessons learned findings.

The Recovery Manager will ensure that onsite ERO and appropriate offsite agencies are notified prior to initiating any recovery operation with a potential for a radiological release. The ERO and offsite agencies will also be notified of any changes in the key positions of the recovery organizational structure.

All recovery operations are considered to be terminated when the plant has returned to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.4 OFFSITE REENTRY AND RECOVERY OPERATIONS

A Reentry and Recovery Task Force is established by the State and County emergency response plans and is responsible for coordinating offsite recovery following radiological incidents including the requirements for reentry conditions for any offsite evacuated areas. Energy Northwest will provide a representative and additional assistance to this Task Force, as requested. Specific details of offsite reentry and recovery operations can be found in the State and County emergency response plans and implementing procedures.

RECOVERY TASK FORCE ORGANIZATION CHART

- Recovery Manager
  - Recovery Phase Task Force Manager
    - Recovery Plan Operations Manager
    - Recovery Plan Radiological Manager
    - Recovery Plan Technical Manager
    - Recovery Plan Quality Assurance Manager
    - Recovery Plan Support Manager

<u>Areas of Oversight Responsibilities:</u>

Recovery Plan Operations Manager	Recovery Plan Radiological Manager	Recovery Plan Technical Manager	Recovery Plan Quality Assurance Manager	Recovery Plan Support Manager
Production Scheduling	Environmental	Fuels	Commitments	Procedures
Safety	Decon	Licensing	Reviews	Scheduling
Maintenance	Restoration HP	Vendors	Oversight	Finance
Security (Plant)	Radwaste	Analysis	Qualifications	Public Relations
OPS	Surveys	Plant Support		Legal
Shutdown Safety				Site Support
				Procurement
				Add'l Staffing

<u>NOTE</u>: The NRC will be invited to participate in this task force as deemed appropriate.

Figure 7-1

SECTION 8
MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES FOR THE PLANNING EFFORT

Overall responsibility and authority for emergency planning lies with the Vice President, Operations Support/Public Information Officer. The Manager, Regulatory Affairs, reports directly to this Vice President, and has emergency preparedness as one of his general areas of responsibility. Reporting to the Manager, Regulatory Affairs, is the Corporate Emergency Preparedness, Safety and Health Officer, who has specific responsibility for the Emergency Preparedness organization, and implementation of the program itself. Formal position descriptions specify minimum qualifications for the emergency planning personnel. Professional qualifications are maintained by periodic attendance at industry seminars and short courses, through observation of and participation in radiological emergency exercises conducted at other nuclear facilities, and through job-related in-house topical training sessions.

Specific responsibilities for the Corporate Emergency Preparedness, Safety and Health Officer include, but are not necessarily limited to, the following:

a. Ensure that the information, data, and procedures detailed in the Emergency Plan Implementing Procedures are consistent with the Columbia Generating Station Emergency Plan.

b. Ensure that the Emergency Plan Implementing Procedures and other procedures are coordinated and interface properly (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

c. Ensure the coordination of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures with the State, County and DOE-RL Plans.

d. Ensure an adequate staffing of the ERO.

e. Ensure emergency preparedness related training documentation is sent to Records Management.

f. Ensure emergency preparedness related drills and exercises are coordinated as described in this Plan.

g. Ensure periodic review and update of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures occurs as described in this Plan.

h. Ensure the maintenance and inventory of emergency facilities, equipment and supplies as described in this Plan.

i. Maintain knowledge current with respect to changes in the federal regulations and guidance that impact emergency preparedness activities.

j. Public information and education on emergency preparedness issues.

8.2 EMERGENCY PREPAREDNESS PLAN REVIEW

The Emergency Plan and the Agreements which support the plan are reviewed annually and updated as necessary. Critiques of past exercises, changes in company organizational structure, and issuance of new regulations provide the primary input to plan review. The Corporate Emergency Preparedness, Safety and Health Officer is responsible for developing and updating the Emergency Plan and coordinating the plan with other response organizations. The Plant Operations Committee is responsible for reviewing any proposed changes and submittal of the proposed revision to the Corporate Nuclear Safety Review Board.

The Corporate Emergency Preparedness, Safety and Health Officer provides a distribution list of all organizations and individuals with responsibility for implementation of the Emergency Plan. The Emergency Plan and all subsequent revisions are then distributed through a manuals control system which verifies receipt of the revisions by the implementing organization or individual. Revised pages are dated and marked to indicate where changes have occurred. If no revisions have occurred, the Corporate Emergency Preparedness, Safety and Health Officer will certify by letter to all Emergency Plan manual holders that the plan and supporting agreements have been reviewed and are current.

8.3 INDEPENDENT AUDIT OF THE EMERGENCY PREPAREDNESS PROGRAM

Either of two types of audit groups may be employed to ensure an adequate Emergency Preparedness Program. Audits may be performed by an outside organization with technical expertise in emergency planning or by an organization within Energy Northwest which is independent of the emergency preparedness program.

An audit will be conducted in accordance with 10 CFR 50.54(t) and the OQAPD. The review shall include the Emergency Plan, the Emergency Plan Implementing Procedures, training, readiness testing, equipment, and interfaces with state and local governments. The results of the audit, along with recommendations for improvement, shall be documented and reported to the Chief Executive Officer, the Plant General Manager, Vice President, Operations Support/PIO, and appropriate corporate and plant management. In addition, involved federal, state, and local organizations will receive results of the audit. The report and recommendations will be retained for a minimum period of five years.

The Corporate Nuclear Safety Review Board has the responsibility to review the Emergency Preparedness Program audit findings to determine if the conduct is adequate, and if the audit responses are appropriate and timely. The Board may expand these audit activities if necessary.

8.4 FACILITIES AND EQUIPMENT MAINTENANCE

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for ensuring that the facilities and equipment specified in Section 6 of this Plan are maintained in operational readiness. In addition to the routine tests and scheduled maintenance evolutions, the Emergency Preparedness staff members conduct periodic facility walk-downs of the on-site emergency response facilities. Various departments within Energy Northwest share the responsibility for performing maintenance and calibration on the equipment necessary to implement the provisions of the Emergency Plan, including survey meter calibration and testing, backup power source maintenance and testing (e.g., uninterruptible power supply batteries, diesel generators, etc.), emergency ventilation system maintenance and operational checks, field team vehicle maintenance, communications systems maintenance and testing, and tone alert radio and siren maintenance and periodic testing.

8.5 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The radiological emergency response training program is one of the most important aspects of the emergency preparedness effort. This training is intended to keep an adequate number of emergency personnel sufficiently familiar with the Emergency Plan and procedures to perform effectively in an emergency. Fire Brigade personnel are trained per FSAR 13.2. Security personnel are trained per the Physical Security Plan.

8.5.1 Emergency Training Program Description

Initial training for emergency responders is provided to all new Energy Northwest emergency response organization candidates. Refresher training is provided to the emergency response organization on an annual basis.

Personnel from local, state, and federal organizations who may be requested to assist during an emergency will be invited to participate in the site specific training program which may include tours to gain familiarization with the facilities. Support organization personnel will be provided qualified escorts if they enter the Plant Site during an emergency.

a. The Emergency Preparedness Training Program will include, but is not limited to the following:

- Applicable Emergency Plan Implementing Procedures
- Location of emergency equipment and supplies
- Names, locations, and functions of the emergency response facilities
- Use of plant communication systems
- Personnel accountability, assembly, and evacuation

b. As a minimum, all Emergency Response Organization personnel shall receive Emergency Preparedness Initial training. Emergency Plan training program lesson plans are developed using applicable guidance from the systematic approach to training process.

c. Initial training for Emergency Response Organization personnel shall include formalized classroom training, and examinations. Additionally, "hands on" training with completion of performance evaluation sign off forms may be used, as appropriate. It is the intent of this training program to qualify Emergency Response Organization personnel in the requirements of the Emergency Plan Implementing Procedures applicable to their emergency positions.

The training courses will provide the necessary information to enable each member of the emergency organization to perform assigned emergency tasks. Selected emergency personnel will attend specialized classes related to particular emergency assignments. Specific training course assignments for members of the emergency organization, and overall training responsibilities, may be found in the Qualification Directory. Detailed training responsibilities may be found in the Site Wide Procedures. The training course descriptions are found in the specific qualification directories.

8.5.1.1 Emergency Training for Essential Personnel

The emergency organization positions which are essential to implementation of this Emergency Plan are identified in Table 2-1. The individuals identified to function in these emergency organization positions will receive appropriate specialized initial training in the duties and responsibilities of the position and the applicable procedures. This training will consist of formal classroom instruction, written examination to verify a satisfactory level of comprehension, and where appropriate will include "hands-on" training with completion of performance evaluation sign off forms.

a. In addition to Emergency Center Overview training, essential personnel receive the following training:

- Emergency Director (Shift Manager, TSC Manager, EOF Manager)
  - > Protective Action Recommendations
  - > Emergency Classification
- Control Room Staff (Shift Manager, Control Room Supervisor, Control Room Operators, STA)
  - > Protective Action Recommendations (except Control Room Operators)
  - > Emergency Classification

> Dose Projection (except Control Room Operators)

> Emergency Notification

- Accident Assessment and Rad Monitoring Teams (RPM, Chemistry/Effluent Manager, REM, Dose Projection HP, Field Team Members, Field Team Coordinator)

    > Protective Action Recommendations (RPM and REM only)

    > Dose Projection (Chemistry/Effluent Manager, REM and Dose Projection HP only)

    > Field Team Overview and Operations (FT members and FT Dispatcher only)

- Fire Brigade

    > Trained per the requirements of FSAR Chapter 13.2

- Repair Teams (HP, Mechanic, Electrician, I&C, Chemistry)

    > OSC Maintenance Craft Overview

- First Aid/Rescue teams

    > Equivalent to Red Cross standard First Aid

8.5.1.2 Emergency Training for Augmenting and Support Personnel

Individuals assigned to emergency organization augmenting and support positions (not identified in Table 2-1) will receive training as described in the Qualification Directory.

8.5.2 Training for Offsite Agencies

Orientation and training of state and county agencies and personnel involved in the Columbia Generating Station emergency preparedness efforts will be made available by Columbia Generating Station, as follows:

a. The offsite organizations listed below will be invited, on at least an annual basis, to participate in a training program. The invitation will provide a schedule of drills and exercises to enable offsite agencies to request participation.

- Washington Emergency Management
- Washington Department of Health
- Benton County Emergency Management
- Franklin County Emergency Management
- Oregon Office of Energy
- Oregon State Health Division
- Local media personnel (newspapers, radio, tv, etc.)

b. The program will cover the basics of emergency preparedness as it relates to regulations and public safety. The program will include a review of select Emergency Plan Implementing Procedures with particular emphasis given to:

- Classification of emergencies,
- Reporting requirements,
- Assessments,
- Corrective and protective actions, and
- Communications networks.

Training for local services personnel includes, but is not necessarily limited to, procedures for notification and, where applicable, site access procedures, onsite contact identity, basic radiation protection and emergency response functions. This training is provided to the following organizations:

- Richland, Kennewick, and Pasco Fire Departments

  Initial and annual retraining is provided to the local fire department personnel concerning response requirements for accidents involving a threat of radiological contamination.

- Richland, Kennewick, and Pasco Hospitals

  Hospital personnel who may be involved in response to an emergency involving a potential of radiological contamination receive initial and annual retraining. Training covers how to deal with radiation accident cases.

8.5.3 Frequency of Training

Training for all individuals assigned to emergency organization positions will be successfully completed prior to their initial assignment to the emergency organization. Continuing training will also be administered to insure retention and familiarity with the subjects covered in the initial training. The continuing training will be administered annually.

The annual retraining program for ERO personnel is accomplished using classroom instruction and drill performance with immediate on the spot correction. Completion of self study information or examinations may be used to maintain qualifications of personnel unable to attend classroom sessions or drills.

Classroom instruction is used to refresh ERO personnel on information such as industry events, lesson learned from the past year's experience, significant procedure changes, and a review of response requirements.

Self guided performance evaluations may be used to refresh specific skills necessary for adequate emergency response skills. Written examinations may be used to evaluate comprehension and retention for refresher training.

Drills are used to provide practical experience to enhance information gained in the classroom. During the year, as many emergency response personnel as possible participate in scheduled drills, exercises and team training drills to broaden their experience base and that of the entire emergency organization.

When used, self-study by reading and acknowledgement is used to make responsible emergency response personnel aware of important changes to procedures. This method is primarily used when such information should not be delayed until classroom training can be provided.

8.5.4 Training Records

Responsibility for maintaining documentation of the training program is described in the Site Wide Procedures. Formal lesson plans for each course, including instructor qualifications and performance objectives will be maintained. Attendance records for all courses will also be maintained.

8.6 DRILLS AND EXERCISES

Periodic drills and exercises will be conducted in order to test the overall state of emergency preparedness. The prime objective of this form of training is to determine the level of emergency preparedness of all participating personnel, organizations, and agencies. More specifically, each drill or exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their duties and responsibilities.

b. Verify the adequacy of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures.

c. Test communications networks and systems.

d. Check the availability of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

8.6.1 Drill and Exercise Responsibilities

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for the planning, scheduling, and coordination of all emergency preparedness related drills and exercises. All exercises are subject to the approval of the Manager, Regulatory Affairs, and the Plant General Manager.

When a drill or exercise is to be conducted, the Corporate Emergency Preparedness, Safety and Health Officer will:

a. Schedule a date for and assign a drill or exercise coordinator.

b. Assign personnel to prepare a scenario and to act as controllers.

c. Coordinate efforts with other participating emergency personnel, organizations, and agencies.

d. Oversee conduct of the drill or exercise.

e. Critique the results of the drill or exercise.

f. Assign personnel to correct any deficiencies.

Combined functional drills and exercises will involve onsite as well as offsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted simulating, as closely as possible, actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Whenever practical this will incorporate provisions for "free play" on the part of the participants. Drill scenarios will be prepared that involve the participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations. This may include varying degrees of participation of state, county, and federal organizations and agencies, and local service support personnel and organizations. The Corporate Emergency Preparedness, Safety and Health Officer will make every effort to notify the offsite emergency response organizations and agencies at least 180 days in advance of the scheduled date of the drill or exercise.

Drills will involve on-the-spot correction of erroneous performance and a demonstration of the proper performance for the evaluator. During the conduct of exercises, the controllers are

restricted in their ability to correct erroneous performance, and may only intercede to prevent damage to equipment or assure safety of personnel.

Recommendations for revisions to the Emergency Plan, Emergency Plan Implementing Procedures, and/or the upgrading of emergency equipment and supplies as a result of a drill or exercise are forwarded to the Corporate Emergency Preparedness, Safety and Health Officer by observers or participants for appropriate disposition.

8.6.2 Drill/Exercise Package

A drill/exercise package is the controlling document for each drill or exercise. It includes, as a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s) and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
- A description of the arrangements for and advance materials to be provided to official observers.

8.7 <u>TYPES OF DRILLS</u>

This section gives details of some of the types of drills which will be conducted periodically. Other types of drills may be developed as needed to test various portions of the emergency support organization.

8.7.1 Communication Drills

Communication drills are conducted in the following manner:

- Operability of the various communications systems is tested by two-way communication. See Section 6 for a detailed list of the systems tested. These tests may be included as part of a scheduled drill or exercise.
- Communication drills involving the field assessment teams are conducted as a part of the radiological monitoring drills.

- Communication drills with Washington State and local governments, (Benton and Franklin Counties), and DOE-RL are conducted to evaluate the message distribution process, including the ability of participants to understand the content of example messages.

8.7.2 Fire Drills

The Fire Brigade will be activated for response to a simulated fire or may respond to a training area to actually fight a fire under the supervision of the Fire Brigade Leader.

8.7.3 Medical Emergency Drills

This drill involves a simulated injury with contamination and will include provisions for participation by ambulance personnel and offsite medical treatment facilities. This drill shall occur annually. The offsite and onsite portions may be performed out of sequence and at different times. The onsite portion of the medical emergency drill should involve evaluation, packaging, and transport of the simulated victim to the ambulance pickup point.

8.7.4 Radiological Monitoring Drills

These drills involve the Environmental Field Teams. Plant and field activities may involve conducting surveys, tracking radiological plume(s) and deposition, and collecting and analyzing various samples such as water, soil, air, and vegetation. Provisions for communications and record keeping will also be tested.

8.7.5 Health Physics Drills

- The first type of health physics drill involves response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- The second type of health physics drill requires analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system.

8.8 FREQUENCY OF DRILLS AND EXERCISES

Scenarios will be varied from year to year so that all major elements of the plan and preparedness organizations are tested within a six-year period. Drills and exercises will be conducted under various weather conditions and may be unannounced. Provisions will be made to demonstrate an off hours drill between 6:00 P.M. and 4:00 A.M., at least once each six years. Additional drills may be conducted to provide practical training to emergency organization members. These drills may include components that satisfy the required drill elements in Table 8-1.

8.9 DRILL/EXERCISE PREPARATIONS AND CONDUCT

The Emergency Preparedness organization is responsible for initiating and coordinating the development of the drills and exercises necessary to meet the requirements of the Emergency Plan. The drill/exercise coordinator is responsible for overall development of the drill/exercise package and to ensure all preparatory activities between departments and agencies are coordinated (see Section 8.10.1). The minimum necessary actions to be taken in preparation for a drill or exercise are as follows:

a. Develop the drill/exercise scenario including:

   1. The objectives and evaluation criteria;

   2. The desired participants (i.e., response agencies);

   3. The primary actions/plans expected to be implemented, activated; and

   4. The tentative date.

b. Distribute the scenario to the desired participants for review and concurrence.

c. For all exercises, Federal, State, and local government agencies will be invited to observe, evaluate, and critique the exercise.

The use of the Columbia Generating Station Probabilistic Safety Assessment (PSA) should be considered when constructing drill and exercise scenarios. The use of PSA allows efforts to be directed at the most likely accident scenarios. Planning efficiency may therefore be increased by allowing the available resources to be directed at the most likely events. The Columbia Generating Station PSA considers both the likelihood and consequences of severe accidents possible at Columbia Generating Station and thus can be utilized to ensure the drill and exercise scenarios are more realistic to the players.

One of the major objectives of drills and exercises is to test the ability of emergency response organization personnel to utilize the emergency response procedures and to make effective and timely decisions based on available data. To effectively accomplish this objective, the drill/exercise controllers will provide the players with any data which the player would have available to them under the conditions being simulated by the drill or exercise.

Facilitative critique session(s) will be held as soon as practicable after each drill/exercise. The comments of the evaluators, controllers, players and observers including federal and state observers or evaluators, will be discussed and the significant comments will be identified. As a part of the critique report, deficiencies (involving needed plan/procedure changes) will be identified. The Emergency Preparedness Section will be responsible for tracking Energy Northwest corrective actions to completion and maintaining sufficient records to document correction of the deficiencies.

TABLE 8-1

REQUIRED DRILL ELEMENTS

	Drill/Exercise	Frequency
a.	Communications Tests	(As described in Section 6. Can be performed as part of drills or exercises.)
b.	Communications Drills	Monthly (with WA State, DOE RL, and Benton and Franklin County Response Agencies) Quarterly (with state and federal response agencies) Annually (with Columbia Generating Station, state and local field monitoring teams)
c.	Fire Brigade Drills	As described in FSAR Section 13.2 (See Note 1)
d.	Medical Emergency Drills	Annually (See Note 2)
e.	Radiological Monitoring Drills	Annually
f.	Health Physics Drills	
	1. Analysis of simulated samples and measurements in the environment	Semi-Annually
	2. Analysis of in plant liquid samples with actual elevated radiation levels	Annually
g.	Major Exercises, including tests of Public Notification System	Biennially (See Note 3)
h.	Combined Functional Drills	Biennially (See Note 4)

NOTE 1: One of the fire drills may be conducted as a portion of the major exercise or combined functional drill.

NOTE 2: The portion of the medical emergency drill involving offsite support agencies may be performed as a portion of the radiological monitoring, major exercise or combined functional drill.

NOTE 3: Department of Energy - Richland Operations, Benton and Franklin County and Washington State Emergency Management will be afforded the opportunity to participate biennially or more frequently if they so request.

NOTE 4: Performed during the alternating years from the major exercises, and testing a major portion of the basic elements of the plans and organizations.

SECTION 9
PUBLIC EDUCATION AND INFORMATION

9.1 PUBLIC EDUCATION AND INFORMATION PROGRAM

Energy Northwest has developed a public education and information program with the purpose of educating the public concerning power plant safety, expected effects of a reactor accident, and actions which should be taken by the public in the unlikely event of a release of radioactive material. This program is targeted for the transients and residents within the Ten-Mile Emergency Planning Zone (EPZ), as well as other interested members of the general public. Special programs have also been designed to address the special needs of the news media.

9.1.1 Annual Public Information Program

In coordination with the Department of Energy - Richland Operations, State of Washington and Benton and Franklin Counties, Energy Northwest provides information to permanent and transient populations within the Ten-Mile EPZ on such topics as radiation, recommended protective measures, selected evacuation routes and assistance centers, sheltering, respiratory protection, thyroid blocking agents, special needs for the handicapped, tone activated radio operation and contacts for additional information. This program includes written material updated and distributed annually to residences within the Ten-Mile EPZ for reference during an emergency.

Brochures at designated recreational facilities are available to transient populations within the 10-Mile EPZ.

9.1.2 Media Information Program

In addition to Energy Northwest's ongoing media program, special presentations coordinated with county and state emergency management offices are made annually to acquaint the news media with emergency preparedness, radiation hazards, and points of contact for release of public information during an emergency.

9.1.3 Warning Signs

Warning signs are posted and maintained at selected areas frequented by sportsmen within the Ten-Mile EPZ.

The signs inform the transients that upon hearing a steady siren tone to leave the area immediately and tune to the local Emergency Broadcast System frequency.

9.2 PUBLIC INFORMATION DURING EMERGENCIES

9.2.1 Emergency Public Information

During an emergency the Joint Information Center (JIC) Manager is responsible for ensuring an accurate and reliable flow of information. Emergency public information procedures are activated during an emergency and will include provisions for exchange of information between Energy Northwest, the public, and outside agencies.

It is likely that the perceived threat, hence media interest and public concern, will be greater than that actually associated with the emergency. The degree to which the emergency public information program is activated by the JIC Manager will depend upon the classification of the emergency and upon the public perception of the event. Therefore, accelerated operations beyond the requirements expected for the declared class of emergency may be implemented.

9.2.2 Emergency Operations Facility Public Information Operations

The Emergency Operations Facility (EOF) Public Information Officer and news writing staff are responsible for developing media release information, and will work closely with technical personnel in the EOF to assure accurate information.

9.2.3 Public Information Operations

The Joint Information Center, located outside the 10-mile EPZ, can accommodate a large number of media personnel and is activated automatically at an alert or higher classification or at the direction of the JIC Manager.

A News Coordination Team, chaired by the JIC Manager, will be established to issue accurate, coordinated and timely information to the media by conducting media briefings and preparing news releases. This team is composed of representatives from Energy Northwest, the Nuclear Regulatory Commission, the Department of Energy-RL, the Federal Emergency Management Agency (coordinating the rest of the federal agencies), and state and local officials. The team will assure that the spokepersons designated from each group have access to all necessary information, opportunity to exchange information, and have the opportunity to participate in media briefings.

Media briefings will be held at regular intervals. The Joint Information Center has space for briefing over 150 members of the media. Areas in the center will be provided for media work space. Copies of news releases and other support materials will be made available for media use.

A media briefing area is available in the Kootenai Building outside of the EOF. The main media center is located at the Energy Northwest Richland Office Complex in Richland.

9.2.4 Media Telephone Team Operations

A Media Phone Team can be activated and remain operational twenty-four hours per day until the emergency is terminated. This team will respond to incoming media calls with the latest available information. This team may be manned jointly by Energy Northwest, federal, local, and state representatives.

9.2.5 Public Information Telephone Team Operations

Public Information Phone Team operations will begin as directed by JIC Manager. This Team will respond to calls and correct misinformation distributed by the media or other groups. This team may be manned jointly by Energy Northwest, Federal, Local and State Representatives. The Public Information Phone Team, combined with the Media Phone Team, will ensure a comprehensive rumor control effort.

SUPPORTING PLANS AND CONTRACTS

Annually Energy Northwest will review the supporting plans and/or contracts listed below to ensure they remain accurate and applicable relative to Columbia Generating Station activities. The results of this review may be communicated informally, but some form of record will be maintained.

Plan	Source
Washington State Fixed Nuclear Facility Emergency Response Plan	Washington Emergency Management
Benton County Fixed Nuclear Facility Response Plan	Benton County Emergency Management
Franklin County Radiological Emergency Response: Energy Northwest	Franklin County Emergency Management
Oregon Columbia Generating Station Emergency Response Plan	Oregon Office of Energy
Hanford Emergency Management Plan	Department of Energy, Richland Operations
Siemens Pre Emergency Plan Manual	Siemens Power Corporation
INPO 86-032, Emergency Resources Manual	Institute of Nuclear Power Operations
Federal Radiological Emergency Response Plan (FRERP)	Federal Emergency Management Agency
NUREG-0845, Agency Procedures for NRC Incident Response Plan (and supplements)	United States Nuclear Regulatory Commission

APPENDIX 2

EMERGENCY PLAN IMPLEMENTING PROCEDURES
Index for Implementation of Emergency Plan Sections

Procedure	Title	Section of Plan Implemented
	13.1 Emergency Classification	
13.1.1	Classifying the Emergency	4.1 thru 4.4
13.1.1A	Classifying the Emergency - Technical Bases	4.2
	13.2 Protective Measures	
13.2.1	Emergency Exposure Level/Protective Action Guides	5.9
13.2.2	Determining Protective Action Recommendations	5.5
	13.3 Natural Emergency Actions	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.1.1 and the Abnormal Condition Procedures, Section 4.12, of the Plant Procedures Manual.	
	13.4 Notifications	
13.4.1	Emergency Notifications	4.6
	13.5 Evacuation and Accountability	
13.5.1	Localized and Protected Area Evacuations	5.7.2, 5.7.3
13.5.3	Evacuation of Exclusion Area and/or Nearby Facilities	1.6.2 5.7.2, 5.7.3
13.5.5	Personnel Accountability/ Search and Rescue	5.7.5
	13.6 Emergency Security Procedures	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.10.8 and other Security Plan Implementing Procedures.	

Procedure	Title	Section of Plan Implemented
	13.7 Personnel Monitoring, Decontamination, First Aid	
13.7.5	Offsite Assembly Area Operations	5.7.3
	13.8 Offsite Dose Calculations	
13.8.1	Computerized Emergency Dose Projection System Operations	5.3
	13.9 Environmental Field Monitoring	
13.9.1	Environmental Field Monitoring Operations	2.3.3.3, 2.4.4.16, 5.4, 6.2.4
13.9.5	Environmental Sample Collection	5.2.2, 5.4
13.9.8	River Evacuation Monitoring	5.7.4
	13.10 Plant Emergency Facilities	
13.10.1	Control Room Operations and Shift Manager Duties	2.3.1.1 thru 2.3.1.3, 2.3.1.6
13.10.2	TSC Manager Duties	2.3.2.1
13.10.3	Technical Manager and Staff Duties	2.3.2.4, 2.3.2.7
13.10.4	Radiation Protection Manager Duties	2.3.2.2
13.10.5	Operations Manager Duties	2.3.2.8
13.10.6	Plant/NRC Liaison Duties	2.3.2.3
13.10.7	Plant Administrative Manager Duties	2.4.1.1
13.10.8	Security Lieutenant Duties	2.3.1.4
13.10.9	OSC Manager and Staff Duties	2.3.1.8, 2.3.1.9 2.4.1.6, 2.4.1.7 2.10, 2.5.2-11

Procedure	Title	Section of Plan Implemented
13.10.14	Maintenance Manager Duties	2.4.1.2
13.10.16	Chemistry/Effluent Manger Duties	2.14.1.4
	13.11 Emergency Operations Facility	
13.11.1	EOF Manager Duties	2.3.3.1
13.11.2	Assistant EOF Manager Duties	2.4.2.1
13.11.3	Site Support Manager and Staff Duties	2.4.2.8
13.11.7	Radiological Emergency Manager Duties	2.3.3.2
13.11.8	Licensing Manager Duties	2.4.4.18
13.11.10	Security Manager Duties	2.4.2.7
13.11.12	EOF Engineering Manager and Staff Duties	2.4.2.4, 2.4.2.6
13.11.18	Information Coordinator Duties	2.4.1.3
	13.12 Headquarters Emergency Centers	
13.12.19	JIC Management	2.3.4.1
13.12.20	Media and Information Management	6.3
13.12.21	JIC Support Services	6.3
	13.13 Reentry/Recovery	
13.13.1	Reentry	7.2
13.13.2	Recovery Operations	7.3
13.13.3	Intermediate Phase MUDAC Operations	7.3.2
13.13.4	After Action Reporting	4.4

Procedure	Title	Section of Plan Implemented
	13.14 Supporting Information Procedures	
13.14.1	Nearby Nuclear Facility Emergencies/ Requests for Assistance	4.1
13.14.4	Emergency Equipment	6.4, 8.4
13.14.8	Drills and Exercises Program	8.6
13.14.9	Emergency Program Maintenance	8.1 thru 8.4
SWP-EPP-01	Emergency Response Organization and Training	8.5

APPENDIX 3

EMERGENCY KITS

Columbia Generating Station Fire Brigade Stations

Fire Brigade turnout stations are strategically located inside and outside the Radiologically Controlled Area (RCA). Contents include fire fighter protective equipment, self-contained breathing apparatus (SCBA) units, radios, fire fighter tools and equipment, First Responder medical kits, hazardous materials response kits, and radiological monitoring equipment.

Columbia Generating Station Decontamination Kits

Two decontamination kits are located in the Radwaste Building decontamination area, and one is located in the Yakima Building (GSB) Emergency Equipment Area.

Columbia Generating Station Protective Equipment Kit

A kit containing protective equipment and radiological monitoring equipment is located in the Technical Support Center.

Energy Northwest Field Monitoring Kits

Kits containing protective equipment, radiological monitoring equipment, communications equipment, and emergency supplies for Environmental Monitoring Field Teams are located at the Kootenai Building and Energy Northwest's Office Complex (ENOC). Kits located at ENOC also include a River Evacuation Monitoring Kit.

Hospital Radiological Emergency Kits

Kits containing protective equipment, radiological monitoring equipment, and emergency supplies are located at Kadlec Medical Center in Richland, Our Lady of Lourdes Hospital in Pasco, and Kennewick General Hospital in Kennewick.

APPENDIX 4

AGREEMENT LETTERS

This appendix refers to signed letters of agreement which formalize commitments between Energy Northwest and outside organizations to provide or receive mutual aid and support during emergency conditions.

Listed below are the outside agencies Energy Northwest has agreements with. Agreements are maintained in files by Energy Northwest's Emergency Preparedness Group.

Agreements already in place or provided for in existing response plans provide detailed, formalized commitments to provide or receive mutual aid or support during emergency conditions. These plans are referenced in Appendix 1 of this plan.

In addition, Federal commitment to support Columbia Generating Station is provided in Federal response plans maintained by Nuclear Regulatory Commission and Federal Emergency Management Agency. These plans are listed in section 3.6.1 and 3.6.3, as well as Appendix 1.

Annually, Energy Northwest will review the agreements listed below to ensure they remain accurate and applicable. The results of this review will be communicated to the affected organizations. Acknowledgements for this annual review are requested and maintained in the agreement file. Records of verbal acknowledgements are acceptable and will be maintained.

1. Agreement Letter With Our Lady of Lourdes Hospital
2. Agreement Letter With Kennewick General Hospital
3. Agreement Letter With Kadlec Medical Center
4. (Memorandum of Understanding Between) Department of Energy Richland Operations Office, Hanford Environmental Health Foundation, Emergency Response At the Hanford Site - Use of the Emergency Decontamination Facility
5. Law Enforcement Agency Agreement - Benton County
6. Hanford Site Support Services, Fire and Ambulance

APPENDIX 5

NUREG-0654

CROSS-REFERENCE

APPENDIX 5

NUREG-0654

CROSS-REFERENCE

NUREG-0654 CROSS-REFERENCE

II. Planning Standards and Evaluation Criteria

A. Assignment of Responsibility (Organizational Control)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.a.	Each plan shall identify organizations that are intended to be part of the overall response. (See Appendix 5)	Sect. 2 X Sect. 3	X	X
b.	Specify its concept of operations, and its relationship to the total effort.	X Sect. 3	X	X
c.	Illustrate these interrelationships in a block diagram.	1.6.5 X Table 1-1	X	X
d.	Identify a specific individual by title who shall be in charge of the emergency response.	X 2.1	X	X
e.	Provide for 24-hour per day emergency response, including manning of communications links	X 2.2, 2.3	X	X
2.a.	Specify the functions and responsibilities for major elements and key individuals by title. (See Section B for licensee.)		X	X
b.	The legal basis for such authorities.		X	X
3.	Include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations.	X App. 4	X	X
4.	Shall be capable of continuous (24-hour) operations for a protracted period.	X 2.1	X	X

B. Onsite Emergency Organization

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Specify the onsite emergency organization of plant staff personnel.	2.2 X 2.3		
2.	Designate an individual as emergency coordinator who shall be on shift at all times.	X 2.2		
3.	Identify a line of succession for the emergency coordinator.	X 2.1		
4.	Establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated.	X 2.11		
5.	Specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1.	Sect. 2, Table 2-1		
6.	Specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram.	X Sect. 3, Figure 21		
7.	Specify the corporate management, administrative, and technical support personnel who will augment the plant staff.	X 2.4		
a.	logistics support for emergency personnel;	2.4.1.1, X 2.4.2.8		

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
B. Onsite Emergency Organization (Cont'd.)	Licensee	State	Local
b. technical support for planning and reentry/recovery operations;	X 2.3.3.1		
c. management level interface with governmental authorities; and	X 2.3.3.1		
d. release of information to news media during an emergency.	X 2.3.3.1		
8. Specify the contractor and private organizations who may be requested to provide technical assistance	X 3.3		
9. Identify the services to be provided by local agencies for handling emergencies. Provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan.	3.2 X App. 4		

C. Emergency Response Support and Resources

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Make provisions for incorporating the Federal response capability into its operation plan, including the following:			
a. specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.	2.3.3.2, X 3.6.2	X	

C. Emergency Response Support and Resources (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and	X 3.6.2	X	
c.	specific licensee, State and local resources available to support the Federal response.	X 3.6.2	X	X
2.a.	Each principal offsite organization may dispatch representatives to the licensee's near-site Emergency Operations Facility.		X	X
b.	Prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.	X 3.1		
3.	Identify radiological laboratories and their general capabilities and expected availability.	3.3.1 3.3.2 3.3.3 X 3.6.2	X	
4.	Shall identify nuclear and other facilities, organizations or individuals which can be relied upon.	3.3 X App. 4	X	X

D. Emergency Classification System

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee.	X 4.1, 4.2, 4.4		
2.	The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the FSAR.	X 4.1		

D. Emergency Classification System (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
3. Establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.		X	X
4. Have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility.		X	X

E. Notification Methods and Procedures

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish procedures which describe mutually agreeable bases for notification of response organizations.	X 4.6 Table 4-2	X	X
2. Establish procedures for alerting, notifying, and mobilizing emergency response personnel.	X 4.6.1	X	X
3. Establish the contents of the initial emergency messages to be sent from the plant.	X 4.6.5		
4. Make provisions for followup messages from the facility.	X 4.6.6		
5. Establish a system for disseminating to the public appropriate information.		X	X
6. Establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public.	X 4.6.4	X	X

E. Notification Methods and Procedures (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide written messages intended for the public, consistent with the licensee's classification scheme.	X 4.6.5	X	X

F. Emergency Communications

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish reliable primary and backup means of communication.			
a. provision for 24-hour per day notification to and activation of the State/local emergency response network;	X 4.6	X	X
b. provision for communications with contiguous State/local governments within the Emergency Planning Zones;	X 4.6.3	X	X
c. provision for communications as needed with Federal emergency response organizations;	X 4.6	X	X
d. provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations centers, and radiological monitoring teams;	X Table 6-1	X	X
e. provision for alerting or activating emergency personnel in each response organization; and	X 4.6.1	X	X

F. Emergency Communications (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
f. provision for communication with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.	4.6.3 X 6.5.3		
2. Ensure that a coordinated communication link for fixed and mobile medical support facilities exists.	X 3.2.2	X	X
3. Conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).	X 6.6	X	X

G. Public Education and Information

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1. Provide a coordinated periodic (at least annually) dissemination of information to the public.	X 9.1.1	X	X
2. Provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material. Shall also be used to disseminate to any transient population appropriate information that would be helpful if an emergency or accident occurs.	X 9.1.1, 9.1.3	X	X
3.a. Designate the points of contact and physical locations for use by news media during an emergency.	X 9.2.3	X	X

G. Public Education and Information (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
b. Provide space which may be used for a limited number of the news media at the nearsite Emergency Operations Facility.	X 9.2.3		
4.a. Designate a spokesperson who should have access to access to all necessary information.	X 9.2.3	X	X
b. Establish arrangements for timely exchange of information among designated spokespersons.	X 9.2.3	X	X
c. Establish coordinated arrangements for dealing with rumors.	X 9.2.5	X	X
5. Conduct coordinated programs at least annually to acquaint news media with the emergency plans	X 9.1.2	X	X

H. Emergency/Facilities and Equipment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
1. Establish a Technical Support Center and an onsite operations support center	6.1.2 X 6.1.3		
2. Establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out.	X 6.2		
3. Establish an emergency operations center for use in directing and controlling response functions.		X	X

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
4.	Provide for timely activation and staffing of the facilities and centers described in the plan.	X 6.5.6 6.5.9	X	X
5.	Identify and establish onsite monitoring systems that are to be used to initiate emergency measures, as well as those to be used for conducting assessment.	X 5.1, 5.2		
	The equipment shall include:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1 5.2		
b.	radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	X 5.1.2 App. 3		
c.	process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and	X 6.3 5.1.1		
d.	fire and combustion products detectors.	X 5.1.1		
6.	Make provisions to acquire data from or for emergency access to offsite monitoring and analysis equipment including:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1.1		
b.	radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided; and	X 5.2.2		
c.	laboratory facilities, fixed or mobile.	X 5.4.5		

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.	X 5.4.3	X	X
8.	Provide meteorological instrumentation and procedures, and provisions to obtain representative current meteorological information from other sources.	X 5.2.1		
9.	Provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies.	X 6.1.3		
10.	Make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use.	6.4 X 8.4	X	X
11.	Each plan shall, in an appendix, include identification of emergency kits by general category.	X App. 3	X	X
12.	Establish a central point for the receipt and analysis of all field monitoring data and coordination of sample media.	6.2.4 6.2.8 X 6.2.10	X	X

I. Accident Assessment

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents	Table 4-1 X 5.1		

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
2. Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident.	5.1 thru X 5.3		
3. Establish methods and techniques to be used for determining:			
a. the source term of releases of radioactive material within plant systems.	X 5.3.1		
b. the magnitude of the release of radioactive materials.	X 5.3.2		
4. Establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.	X 5.3.2		
5. Have the capability of acquiring and evaluating meteorological information.	5.2.1 X 6.2.4		
6. Establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.	X 5.3.1		
7. Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone.	X 5.4	X	X
8. Provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.	5.1 5.3 X 5.4	X	X

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
9. Have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uCi/cc.	X 5.4.4	X	
10. Establish means for relating the various measured parameters and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.	5.9.3 X 5.5	X	
11. Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.		X	

J. Protective Response

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish the means and time required to warn or advise:			
a. Employees not having emergency assignments;	X 5.7.3		
b. Visitors;	X 5.7.3		
c. Contractor and construction personnel; and	X 5.7.3		
d. Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.	3.2.3 X 5.7.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans: Licensee	State	Local
2.	Make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.	5.7.2 X 5.7.3		
3.	Provide for radiological monitoring of people evacuated from the site.	X 5.7.4		
4.	Provide for the evacuation of onsite non-essential personnel and shall provide a decontamination capability at or near the monitoring point specified in J.3.	X 5.7.3		
5.	Provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.	X 5.7.5		
6.	Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:			
a.	Individual respiratory protection;	X 5.9.6		
b.	Use of protective clothing; and	X 5.9.4.2		
c.	Use of radioprotective drugs, (e.g., individual thyroid protection).	X 5.9.7		
7.	Establish a mechanism for recommending protective actions to the appropriate State and local authorities.	X 5.9.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
8. Contain time estimates for evacuation within the plume exposure EPZ.	Table 5-1 X 5.8		
9. Establish a capability for implementing protective measures based upon protective action guides and other criteria.		X	X
10. The organization's plans to implement protective measures for the plume exposure pathway shall include:			
a. Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	Fig. 5-1 Fig. 5-2 X Fig. 5-5	X	X
b. Maps showing population distribution around the nuclear facility;	Fig. 5-3 X Fig. 5-4	X	X
c. Means for notifying all segments of the transient and resident population;	X 5.8.2	X	X
d. Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;		X	X
e. Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.		X	X

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
f.	Include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;		X	X
g.	Means of relocation;		X	X
h.	Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone;		X	X
i.	Projected traffic capacities of evacuation routes under emergency conditions;		X	X
j.	Control of access to evacuated area and organization responsibilities for such control;		X	X
k.	Identification of and means for dealing with potential impediments to use of evacuation routes, and contingency measures;		X	X
l.	Time estimates for evacuation of various sectors and distances; and		X	X
m.	The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions.	X 5.5.1	X	

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
11. Specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food-stuffs. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained.		X	
12. Describe the means for registering and monitoring of evacuees at relocation centers in host areas.		X	

K. Radiological Exposure Control

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish onsite exposure guidelines for:			
a. removal of injured persons;	X 5.9.3		
b. undertaking corrective actions;	X 5.9.3		
c. performing assessment actions;	X 5.9.3		
d. providing first aid;	X 5.9.3		
e. performing personnel decontamination;	X 5.9.3		

K. Radiological Exposure Control (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	providing ambulance service; and	X 5.9.3		
g.	providing medical treatment services.	X 5.9.3		
2.	Provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.	X 5.9		
3.a.	Make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X 5.9.5	X	X
b.	Ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records.	X 5.9.5.2	X	X
4.	Establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides.		X	X
5.a.	Specify action levels for determining the need for decontamination.	X 5.9.4.2	X	X
b.	Establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.	X 5.9.4.3	X	X
6.	Provide onsite contamination control measures including:			
a.	area access control;	X 5.9.4.1		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
b. drinking water and food supplies;	X 5.9.4.4		
c. criteria for permitting return of areas and items to normal use.	X 7.1		
7. Provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.	X 5.9.4.3		

L. Medical and Public Health Support

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1. Arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X 3.2.2	X	X
2. Provide for onsite first aid capability.	6.1.5 X 6.2.9		
3. Develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities		X	
4. Arrange for transporting victims of radiological accidents to medical support facilities.	X 3.2.2.3	X	X

M. Recovery and Reentry Planning and Postaccident Operations

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Develop general plans and procedures for reentry and recovery.	X Sect. 7	X	X
2.	Plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization.	X 7.3		
3.	Specify means for informing members of the response organizations that a recovery operation is to be initiated.	X 7.3.2	X	
4.	Establish a method for periodically estimating total population exposure.	X 5.3.3	X	

N. Exercises and Drills

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.a.	Exercises shall be conducted as set forth in NRC and FEMA rules.	X 8.9	X	X
b.	Provide for a critique of the evaluated exercise by Federal and State observers/evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once each six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.	8.6.1 X 8.8	X	X

N. Exercises and Drills (Con'td.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
2.	Conduct drills, in addition to the annual exercise at the frequencies indicated below.	X Table 8-1		
a.	Communication Drills			
	Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually.	X Table 8-1	X	X
b.	Fire Drills			
	Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.	8.7.2 X Table 8-1		
c.	Medical Emergency Drills			
	A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies shall be conducted annually.	8.7.3 X Table 8-1		X
d.	Radiological Monitoring Drills			
	Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually.	8.7.4 X Table 8-1	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
e. Health Physics Drills			
(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	8.7.5 X Table 8-1	X	
(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.	8.7.5 X Table 8-1		
3. Describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.			
a. The basic objective(s) of each drill and and exercise and appropriate evaluation criteria;	X 8.6.2	X	X
b. The date(s), time period, place(s) and participating organizations;	X 8.6.2	X	X
c. The simulated events;	X 8.6.2	X	X
d. A time schedule of real and simulated initiating events;	X 8.6.2	X	X
e. A narrative summary describing the conduct of the exercises or drills;	X 8.6.2	X	X
f. A description of the arrangements for and advance materials to be provided to official observers.	X 8.6.2	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
4. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.	X 8.6.1	X	X
5. Each organization shall establish means for evaluating observer and participant comments on areas needing improvement.	X 8.6.1	X	X

O. Radiological Emergency Response Training

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Each organization shall assure the training of appropriate individuals.	X 8.5	X	X
a. Provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.	X 8.5.1		
b. Each offsite response organization shall participate in and receive training.		X	X
2. The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills.	X 8.5.1		
3. Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.	6.1.6 X 8.5.1.1		

O. Radiological Emergency Response Training (Cont'd.)

	Abbreviated Evaluation Criteria	Licensee	State	Local
		Applicability and Cross Reference to Plans		
4.	Establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs shall be provided in the following categories:			
a.	Directors or coordinators of the response organizations;	X 8.5.1.1	X	X
b.	Personnel responsible for accident assessment;	X 8.5.1.1	X	*
c.	Radiological monitoring teams and radiological analysis personnel;	X 8.5.1.1	X	*
d.	Police, security and fire fighting personnel;	X 8.5.2	*	X
e.	Repair and damage control/correctional action teams (onsite);	X 8.5.1.1		
f.	First aid and rescue personnel;	X 8.5.1.1	*	X
g.	Local support services personnel including Civil Defense/Emergency Service personnel;	X 8.5.2		X
h.	Medical support personnel;	X 8.5.2	X	X
i.	Licensee's headquarters support personnel;	X 8.5.1.2		
j.	Personnel responsible for transmission of emergency information and instructions.	X 8.5.1.1	X	X

*NRC and FEMA encourage State and Local Governments which have these capabilities to continue to include them in their training programs.

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
5. Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.	X 8.5.2	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide for the training of individuals responsible for the planning effort.	X 8.1	X	X
2. Identify by title the individual with the overall authority and responsibility for radiological emergency response training.	X 8.1	X	X
3. Designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X 8.1	X	X
4. Update its plan and agreements as needed, review and certify it to be current on an annual basis.	X 8.2	X	X
5. Changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans.	X 8.2	X	X
6. Each plan shall contain a detailed listing of supporting plans and their source.	X App. 1	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Each plan shall contain as an appendix listing, by title, procedures required to implement the plan.	X App. 2	X	X
8.	Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.	Table of Contents X App. 5	X	X
9.	Arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.	X 8.3		
10.	Provide for updating telephone numbers in emergency procedures at least quarterly.	X 6.5.3	X	X

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Superseded pages per Rev. 29 to Emergency Plan Ltr. 6/28/01
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ENERGY NORTHWEST

EMERGENCY PLAN

COLUMBIA GENERATING STATION

Revision 28

APPROVALS: PRIOR NRC APPROVAL REQUIRED: __ Yes _X_ No

RECEIVED: __________ Date Correspondence No.: ____________

Tim M. [signature] 3/21/01
Corporate Emergency Preparedness, Safety and Health Officer — Date

D.W. Coleman 3/21/01
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[signature] 3/28/01
Plant Operations Committee Chairman — Date

[signature] 3/28/01
Plant General Manager — Date

ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 28 - SYNOPSIS OF CHANGES

Summary

Revision 28 of the Columbia Generating Station Emergency Plan reflects editorial changes resulting from an organizational change where the Emergency Preparedness group is combined with the station Security department vice reporting to the Regulatory Affairs department. Additionally, the title of Manager, Regulatory Affairs, is changed to read, "Manager, Resource Protection" when used to refer to this corporate level position. The title of "Security Manager" is retained where used as an Emergency Response Organization (ERO) position title. Aligned Sections 4 and 8 of the Emergency Plan to reflect requirements of 10CFR50 Appendix E.

Affected Pages	Description of Changes
EP 3.4	Corrected the title of Section 3.3.1, Siemens Power Corporation, to Framatome ANP due to the company's name change. Since no change in the level of outside agency response occurs, no change in the effectiveness of the Emergency Plan occurs as a result of this change.
EP 3.13	Corrected the name of Siemens Power Corporation to Framatome ANP in Figure 3-1. Since no change in the level of outside agency response occurs, no change in the effectiveness of the Emergency Plan occurs as a result of this change.
EP 4.8	Identified individuals, by position, who are notified of an emergency declaration in Section 4.6. Providing this additional detail more closely aligns this Section with the requirements of 10CFR50, Appendix E (IV)(D.1). Providing additional detail does not reduce the effectiveness of the Emergency Plan.
	Clarified the description of the Emergency Response Organization notification process in Section 4.6.1, and replaced the description of manual call lists used as a backup notification method with a description of manual pager activation. Energy Northwest relies on the ability of the Security Duty Officer to manually activate the radio paging system as a backup notification method. This method is faster and more efficient than initiating a manual call list. The effectiveness of the emergency plan is not reduced as a result of this change.

ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 28 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 6.10	Added a new paragraph discussing what specific backup methods and devices may be used for emergency notifications in Section 6.6. Providing this additional detail more closely aligns this Section with the requirements of 10CFR50 Appendix E (IV)(E.9). Providing additional detail does not reduce the effectiveness of the Emergency Plan.
EP 8.1	Changed the title of Manager, Regulatory Affairs, to Manager, Resource Protection in Section 8.1 due to an organizational change that combines the Emergency Preparedness group with the station Security department. No changes to managerial responsibilities related to administration of the emergency preparedness program occur as a result of this change. It should be noted that the title of Security Manager is still retained as an official Emergency Response Organization title. Therefore, no change of effectiveness of the Emergency Plan occurs with this change.
EP 8.8	Added "timing of drills and exercises" to Section 8.6.b to reflect the requirements of 10CFR50 Appendix E (IV)(F.2.f) concerning exercises conducted to verify the adequacy of the Emergency Plan and Implementing Procedures. This change does not decrease the effectiveness of the Emergency Plan because it aligns the Emergency Plan more closely with Appendix E requirements. Added a description of the requirement to conduct a remedial exercise if NRC cannot find reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency, to Section 8.6. This change does not decrease the effectiveness of the Emergency Plan because it aligns the Emergency Plan more closely with Appendix E requirements. The title of Manager, Regulatory Affairs, is changed to Manager, Resource Protection in Section 8.6.1. This change has no affect on the effectiveness of the Emergency Plan as stated for the description of the change for page EP 8.1 above.

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SECTION 1
INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

The Energy Northwest Emergency Plan (or Plan) was written to address emergencies at the Columbia Generating Station located on the Hanford Reservation and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations as required by Title 10, Code of Federal Regulations, Part 50. It was developed in conjunction with the Washington State and the Benton County Fixed Nuclear Facility Emergency Response Plan and the Franklin County Radiological Response: Energy Northwest plan. All plans were developed to meet the intent of NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2 PURPOSE OF THE EMERGENCY PREPAREDNESS PROGRAM

The emergency preparedness program provides concepts and protective actions that are necessary to limit the consequences of radiation accidents and other emergencies. The primary objectives include the necessary arrangements, procedures and organizations necessary to effectively resolve any plant emergency to ensure the safety of the general public and to safeguard plant personnel and property.

1.3 ENERGY NORTHWEST COMMITMENT TO SAFETY

Energy Northwest is committed to the safe operation of its nuclear project. The commitment begins at the highest level of management and is reflected in the day-to-day activities of all employees. In addition to meeting, or in many cases exceeding, regulatory requirements, Energy Northwest is committed to providing a comprehensive program of personnel safety and corporate loss prevention. This Plan is a description of the comprehensive preparedness exhibited by Energy Northwest and its employees.

A trained staff of emergency response personnel is available, equipped and ready to respond to any emergency at Energy Northwest's nuclear project. Arrangements have been made with federal, state, and local response organizations and other nuclear facilities for assistance, if needed, during an emergency. Together these organizations can quickly implement a unified effort to assess the hazards, make the necessary decisions, and initiate actions to protect the health and safety of both emergency workers and the general population.

Energy Northwest works closely with all involved agencies. A coordinated training program between Energy Northwest and the Department of Energy in Richland provides emergency personnel from Benton and Franklin counties and the State of Washington with the training needed to assist during an emergency. Participation by Energy Northwest in joint programs with the Department of Energy to upgrade county and state emergency response capabilities is an example of the commitment to safety which Energy Northwest recognizes as its responsibility.

1.4 SITE CHARACTERISTICS

Energy Northwest leases 1089 acres of land on the Hanford Reservation, located north of Richland, Washington, and controlled by the Department of Energy. The land leased by Energy Northwest is approximately three miles west of the Columbia River and 12 miles north of the populated area of Richland. Figures 1-1 and 1-2, the Plume Exposure and Ingestion Exposure Emergency Planning Zone maps, show the location of the facilities on the Hanford Reservation.

1.4.1 Plant Design

Columbia Generating Station is a boiling water reactor (BWR-5) with the reactor system supplied by the General Electric Company. This plant has an approximate electrical output of 1250 megawatts (MWe). Fuel for the reactor consists of slightly enriched uranium dioxide pellets sealed in Zircaloy-2 fuel rods. These fuel rods are assembled into individual fuel assemblies. Control of the core is achieved by movable, bottom-entry control rods.

The principal structures located on the plant site are shown in Figure 1-3 and include:

a. Reactor Building - envelopes the Mark II primary containment and provides a secondary containment structure. It also contains the new and spent fuel storage, refueling equipment, emergency core cooling systems and auxiliary equipment.

b. Radwaste and Control Building - houses the liquid and solid radwaste system, components of the off-gas system, and the main control room.

c. Turbine Building - houses the turbine-generator consisting of one high pressure and three low pressure turbines connected to a single generator.

d. Diesel Generator Building - location of the standby diesel generators and associated controls and instrumentation.

e. Yakima Building (GSB) - houses the makeup water treatment system, machine shop, and office area.

f. Technical Support Center - this emergency response facility is utilized by the plant staff during an emergency. A more detailed description is provided in Section 6, "Emergency Facilities and Equipment."

g. Wind River Building (Circulating Water Pumphouse) - houses the circulating water pumps, plant service water pumps, and fire pumps.

h. Spray Ponds - the ultimate heat sink providing cooling water to the reactor for emergency shutdown.

i. Cooling Towers - six mechanical draft cooling towers used to dissipate the main condenser cooling water heat to the atmosphere.

1.4.2 Kootenai Buidling (PSF)

The Kootenai Building is used for support of the plant site and the interface with off-site support agencies. It houses the Plant Simulator, the Site Training Center, and the Emergency Operations Facility. Its location is shown in Figure 1-4. See Section 6 for a detailed description of the emergency centers located in this facility.

1.5 ACTIVATION OF THE EMERGENCY PLAN AND PROCEDURES

This Emergency Plan provides the basis for classifying emergencies according to severity, assigning responsibilities, and outlining the most effective course of action to safeguard the public and plant personnel in the event of an incident. Detailed emergency procedures required to implement the Emergency Plan are listed in Appendix 2. The Emergency Plan Implementing Procedures prescribe the appropriate course of action necessary to activate the emergency response organizations and minimize the consequences of an incident.

The Emergency Plan Implementing Procedures (EPIPs) are used when an emergency is declared in accordance with Section 4 of this plan. In the absence of other controlling procedures, EPIPs are used as appropriate. The section of EPIPs designated as "Supporting Information Procedures" are implemented on a continuing basis and are used to ensure long term program maintenance.

1.6 ASSIGNED AUTHORITIES

1.6.1 Hanford Reservation

The 570 square mile Hanford Reservation is under the control of the Department of Energy - Richland Operations. The Department of Energy maintains a well-trained and qualified organization capable of responding to emergencies on the Hanford Reservation. The Department of Energy maintains responsibility for response actions on the Hanford Reservation outside the exclusion area boundaries.

Representatives from the Department of Energy will coordinate their response efforts to an Energy Northwest emergency with Energy Northwest, State, and County organizations from Energy Northwest's Emergency Operations Facility. Communications will be maintained with the Department of Energy's Occurrence Notification Center in Richland, Washington.

An Energy Northwest emergency may require response by local, state and federal organizations. Because of the unique siting of Energy Northwest facilities on a federal reservation, several areas of responsibility must be defined. A coordinated effort by the response organizations will be jointly conducted from Energy Northwest's Emergency Operations Facility. Responsibilities concerning jurisdictional areas are defined in the following sections. Statements made within this document are not intended to exclude one agency from providing assistance to another agency upon request.

1.6.2 Exclusion Area

The exclusion area for Columbia Generating Station consists of a 1.2 mile radius around the plant. The exclusion area will be monitored by teams from Energy Northwest during an emergency and access will be controlled under the direction of Energy Northwest's Security Force. Coordination of activities within the exclusion area will be under the control of Energy Northwest and directed by the individual serving as the Emergency Director.

Energy Northwest has the authority to control and coordinate all activities within this exclusion area, as granted by Title 10 of the Code of Federal Regulations, Part 100.3. The agreement between Energy Northwest and the Department of Energy concerning the site lease on the Hanford Reservation includes provision for this authority.

1.6.3 Plume Exposure Pathway Emergency Planning Zone

The response to an emergency will usually require actions only within the site boundary; however, accidents are possible that may affect areas several miles from the facility. The planning basis for Energy Northwest's Emergency Preparedness Plan utilizes the emergency planning zone concept as first outlined in NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, dated December, 1978. The emergency planning zones are designated as areas for planning to assure that prompt and effective actions shall be taken to protect the public in the event of an accident. The emergency planning zone concept establishes two zones, a ten-mile Plume Exposure Pathway Emergency Planning Zone and an approximately 50-mile Ingestion Exposure Pathway Emergency Planning Zone.

In the Plume Exposure Pathway (Ten-Mile) Emergency Planning Zone (EPZ) the principal exposure sources are:

a. Whole body external exposure to beta/gamma radiation from the plume and from deposited radioactive material.

b. Inhalation exposure from the passing radioactive plume.

The Plume Exposure Pathway EPZ includes parts of the Hanford Reservation and Benton and Franklin Counties. Response actions will be coordinated between the two counties from their respective County Emergency Operations Centers.

The counties will coordinate all activities off the Hanford Reservation during the initial phases of the emergency. The Benton and Franklin County Emergency Operations Centers will coordinate activities with Energy Northwest and Department of Energy through county representatives at Energy Northwest's Emergency Operations Facility. Energy Northwest will provide dose assessment and protective action recommendations to state and local governments.

The Director for the Washington State Military Department, Emergency Management Division, is responsible for ensuring that the State maintains the capability to protect the public health and safety in the event of a fixed nuclear facility incident.

The Washington State Department of Health (DOH) is responsible for safeguarding the health of the public. Coordination of monitoring activities will be provided from Energy Northwest's Emergency Operations Facility.

1.6.4 Ingestion Exposure Pathway Emergency Planning Zone

The Ingestion Exposure Pathway Emergency Planning Zone (EPZ) as shown in Figure 1-2 extends into the Yakama Indian Nation, eight counties within the State of Washington, and two counties in the State of Oregon. These are Benton, Franklin, Yakima, Kittitas, Grant, Adams, Walla Walla, and Klickitat in the State of Washington[1], and Morrow and Umatilla Counties in the State of Oregon. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The State of Washington maintains communication with the Washington counties in the Ingestion Exposure Pathway EPZ. The State of Oregon does the same for Morrow and Umatilla Counties. Communications with the Yakama Indian Nation are handled by Yakima County. Dose projections and environmental sampling are also the responsibility of the States and will be coordinated from Energy Northwest's Emergency Operations Facility by State representatives. Support to the States of Washington and Oregon is provided by Energy Northwest through the sharing of field team data and other resources.

1.6.5 Emergency Plan Interrelationships

Interrelationships of this plan with procedures, other plans, and emergency arrangements are summarized as follows:

- Detailed actions to be taken by individuals in response to onsite emergency conditions are described in the Emergency Plan Implementing Procedures.

- The Columbia Generating Station Physical Security Plan and Procedures and this plan are coordinated to ensure that appropriate emergency actions can be taken. For example, the Physical Security Plan and Procedures contain provisions for emergency response personnel and vehicle access when required by the Emergency Plan Procedures.

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[1]Kittitas and Klickitat Counties do not actively participate in radiological emergency preparedness efforts. The State of Washington has established measures to ensure that appropriate actions will be taken for these two counties. Refer to the State of Washington Emergency Response Plan.

- Site construction groups at WNP-1 and the maintenance contractors at Columbia Generating Station that develop emergency procedures for their personnel are tasked with coordinating their procedures with this plan.

- The Columbia Generating Station Plant Procedure Manual, Radiological Protection Procedures Section defines administrative controls and procedures such as radiological control limits and precautions, use of personnel monitoring devices, use of protective clothing and equipment, personnel decontamination, etc. Additionally, the Chemistry Procedure Section and Radiation Protection Procedure Section provide instructions for conducting surveys, analyzing samples, operating health physics/radiation protection equipment, etc. Information and details provided in these documents have either been incorporated into the Plan or Emergency Plan Implementing Procedures, or have been appropriately referenced.

- Columbia Generating Station has formulated Abnormal Condition Procedures, as part of the Plant Procedure Manual, which discuss generic emergencies such as floods, volcanic ash, and other severe weather conditions. The methods and equipment developed for such emergencies are available for use in concert with emergency actions described in this plan.

- Formal agreements have been negotiated to define the coordination and interface between onsite and offsite organizations and agencies having related radiological emergency planning responsibilities. Continuing liaison with the offsite organizations ensures compatibility and proper interfacing with this plan. Section 3 of this plan further describes those agencies' activities with respect to an emergency at Columbia Generating Station.

- Other offsite organizations, not within the immediate area, may also be requested to offer technical assistance (e.g., Institute of Nuclear Power Operations, General Electric, NPS Energy Services, etc.).

1.7 DEFINITIONS

1.7.1	Activated	-	An Emergency Center may be activated when all appropriate personnel are present and capable of appropriately addressing the emergency condition.
1.7.2	ALARA	-	As Low as Reasonably Achievable.
1.7.3	Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.
1.7.4	Annually, or Annual	-	Performed or executed at anytime during a calendar year.
1.7.5	Augmenting Emergency Organization Personnel	-	Emergency Response Organization personnel not designated as essential, but are desired for efficient operation of emergency centers.
1.7.6	Columbia Generating Station	-	Columbia Generating Station is an operational General Electric boiling water reactor rated at approximately 3486 MWth.
1.7.7	Drill	-	A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise and is supervised and evaluated by qualified drill controller(s) and/or evaluator(s).
1.7.8	Early Warning System	-	A system designed to alert all residents and transients within the Ten-Mile Emergency Planning Zone. This system will include sirens for areas along the Columbia River and the Horn Rapids area, and tone alert radios for residents within the ten mile Emergency Planning Zone.
1.7.9	Emergency Action Level	-	Plant-specific indications, conditions or instrument readings which are utilized to determine emergency classifications.

1.7.10	Emergency Decontamination Facility	-	A facility located adjacent to Kadlec Medical Center in Richland to be used for decontamination and emergency medical care of contaminated persons.
1.7.11	Emergency Director	-	This functional position is responsible for all emergency activities at the plant and coordination of outside assistance as needed. The position will be held by either the Shift Manager, the TSC Manager or the EOF Manager.
1.7.12	Emergency Operations Facility (EOF)	-	An area located within the Kootenai Building which is equipped to facilitate command and control decision-making for the coordination of emergency activities and environmental assessments.
1.7.13	EOF Manager	-	This position is responsible for overall management of Energy Northwest resources and will oversee all activities related to the plant emergency response effort when the EOF is activated.
1.7.14	Emergency Response Organization (ERO)	-	Employees designated as emergency response personnel.
1.7.15	Essential ERO Personnel	-	Emergency response positions designated as essential to coordinate a response to a Columbia Generating Station emergency.
1.7.16	Exercise	-	An exercise is an event that tests the integrated capability and a major portion of the Columbia Generating Station emergency preparedness plans and response organizations. It will consist of a simulated emergency that results in offsite radiological releases and may include mobilization of state and local personnel and resources adequate to verify their capability to respond to a Columbia Generating Station accident. Federal and State agencies will be invited to participate as observers/evaluators in exercises.
1.7.17	Exclusion Area	-	An area extending out to a radius of 1.2 miles from the Columbia Generating Station reactor.

1.7.18	Fixed Nuclear Facility	-	A permanent facility (plant) with an operable nuclear reactor.
1.7.19	General Emergency	-	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
1.7.20	Hanford Reservation	-	A federally owned reservation under the control of the Department of Energy, Richland Operations, Richland, Washington. The reservation covers 570 square miles and is located north of the City of Richland in Benton County.
1.7.21	Ingestion Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions for the public is based on potential ingestion of contaminated water and/or foods. This zone consists of the area within a 50-mile radius of Columbia Generating Station including a portion of the State of Oregon. The boundaries of the zone are shown in Figure 1-2.
1.7.22	Monthly	-	Performed or executed at any time during a calendar month.
1.7.23	Nonessential Personnel	-	Personnel not designated as Emergency Response Personnel.
1.7.24	Owner Controlled Area	-	That area that Energy Northwest maintains industrial and process control of.
1.7.25	Onsite Emergency Centers	-	Includes the Control Room, Technical Support Center, and Operations Support Center. Plant personnel will implement emergency actions and make decisions to support plant operations and repair activities from these centers.

1.7.26	Plant	-	That area containing the Columbia Generating Station reactor and certain support structures within the Protected Area.
1.7.27	Kootenai Building	-	A facility located approximately 0.75 miles southwest of Columbia Generating Station. The structure includes a shielded area designated as the Emergency Operations Facility.
1.7.28	Plume Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions by the public are based on potential exposure to or inhalation of materials carried by a passing radioactive plume released during an accident. This zone consists of the area within an approximate 10-mile radius of Columbia Generating Station, including portions of Benton and Franklin Counties.
1.7.29	Protected Area	-	An area located within the Owner-Controlled Area which contains the Columbia Generating Station power block and is surrounded by chain link fence.
1.7.30	Protective Action Guides	-	Numerical doses and concentrations which act as trigger points to initiate protective actions such as sheltering, evacuation, or placement of dairy herds on stored feed. These guides are established by the States of Washington and Oregon, and take the Environmental Protection Agency Protective Action Guides into consideration.
1.7.31	Quarterly	-	Performed or executed at any time during a calendar quarter.
1.7.32	Recovery Manager	-	This position is responsible for overall management of Energy Northwest's resources and will be in charge of all activities related to the recovery operations following a plant emergency.
1.7.33	Release in Progress	-	Any radioactive release that exceeds the Emergency Action Levels for an Unusual Event.

1.7.34	SE Comm	-	South East Communications, the 911 answering division of Benton County Emergency Services.
1.7.35	Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guides exposure levels except near the site boundary.
1.7.36	Energy Northwest	-	Energy Northwest is a "Joint Operating Agency" incorporated under the laws of the State of Washington. Its members include public utility districts and municipalities. Energy Northwest holds the license to operate Columbia Generating Station.
1.7.37	Support Emergency Response Organization	-	Consists of personnel that perform limited support functions, or may only be needed under certain conditions.
1.7.38	Thermoluminescent Dosimeter (TLD)	-	A device for measuring gamma, neutron and some beta radiation exposure.
1.7.39	Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

1.8 ACRONYMS

AMS	Aerial Measuring System
ARC	American Red Cross
ARM	Area Radiation Monitor
ATWS	Anticipated Transient Without Scram
BOP	Balance of Plant
BPA	Bonneville Power Administration
CAS	Central Alarm Station
Ci	Curie
CR	Control Room
CRS/SM	Control Room Supervisor/Shift Manager
DAC	Derived Air Concentration
DBA	Design Basis Accident
DEM	Department of Emergency Management
DG	Diesel Generator
DIL	Derived Intervention Level
DOE-RL	Department of Energy - Richland Operations
DOH	Department of Health
DW	Drywell
EAL	Emergency Action Level
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ED	Emergency Director
EDPS	Emergency Dose Projection System
EFPD	Effective Full Power Days
EFSEC	Energy Facility Site Evaluation Council, Washington State
EMD	Emergency Management Division
EMT	Emergency Medical Technician
EO	Equipment Operator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data Systems
ERO	Emergency Response Organization
ERP	Elevated Release Point
EWAC	Emergency Worker/Assistance Center
FAX	Facsimile
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRERP	Federal Radiological Emergency Response Plan
GPM	Gallons Per Minute
HP	Health Physics
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning

I&C	Instrumentation and Control
JIC	Joint Information Center
KI	Potassium Iodide (Thyroid Blocking Agent)
KV	Kilovolt
LERN	Law Enforcement Radio Network
LLEA	Local Law Enforcement Agency
LOCA	Loss of Cooling Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
mREM	Millirem
MPF	Multipurpose Facility
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Safety/Relief Valve
MUDAC	Meteorology and Unified Dose Assessment Center
NPRDS	Nuclear Plant Reliability Data System
NRC	Nuclear Regulatory Commission
OAC	Offsite Agency Coordinator
OSC	Operations Support Center
PAD	Protective Action Decision
PAG	Protective Action Guide
PAAP	Protected Area Access Point
PAR	Protective Action Recommendation
PASS	Post-Accident Sampling System
PIO	Public Information Officer
PSIG	Pounds Per Square Inch Gauge
RACES	Radio Amateur Civil Emergency Service
RB	Reactor Building
RCIC	Reactor Core Isolation Cooling
REM	Radiological Emergency Manager
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RW	Radioactive Waste
SAS	Secondary Alarm Station
SC	Suppression Chamber
SCC	Security Communications Center
SE COMM	South East Communications
SECON	Security Condition
SFP	Spent Fuel Pool
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SM	Shift Manager
SP	Suppression Pool

SSW	Standby Service Water
TGB	Turbine Generator Building
TSC	Technical Support Center
USCG	United States Coast Guard
WEIC	Washington Emergency Information Center
WSDA	Washington State Department of Agriculture
WSP	Washington State Patrol
WW	Wetwell

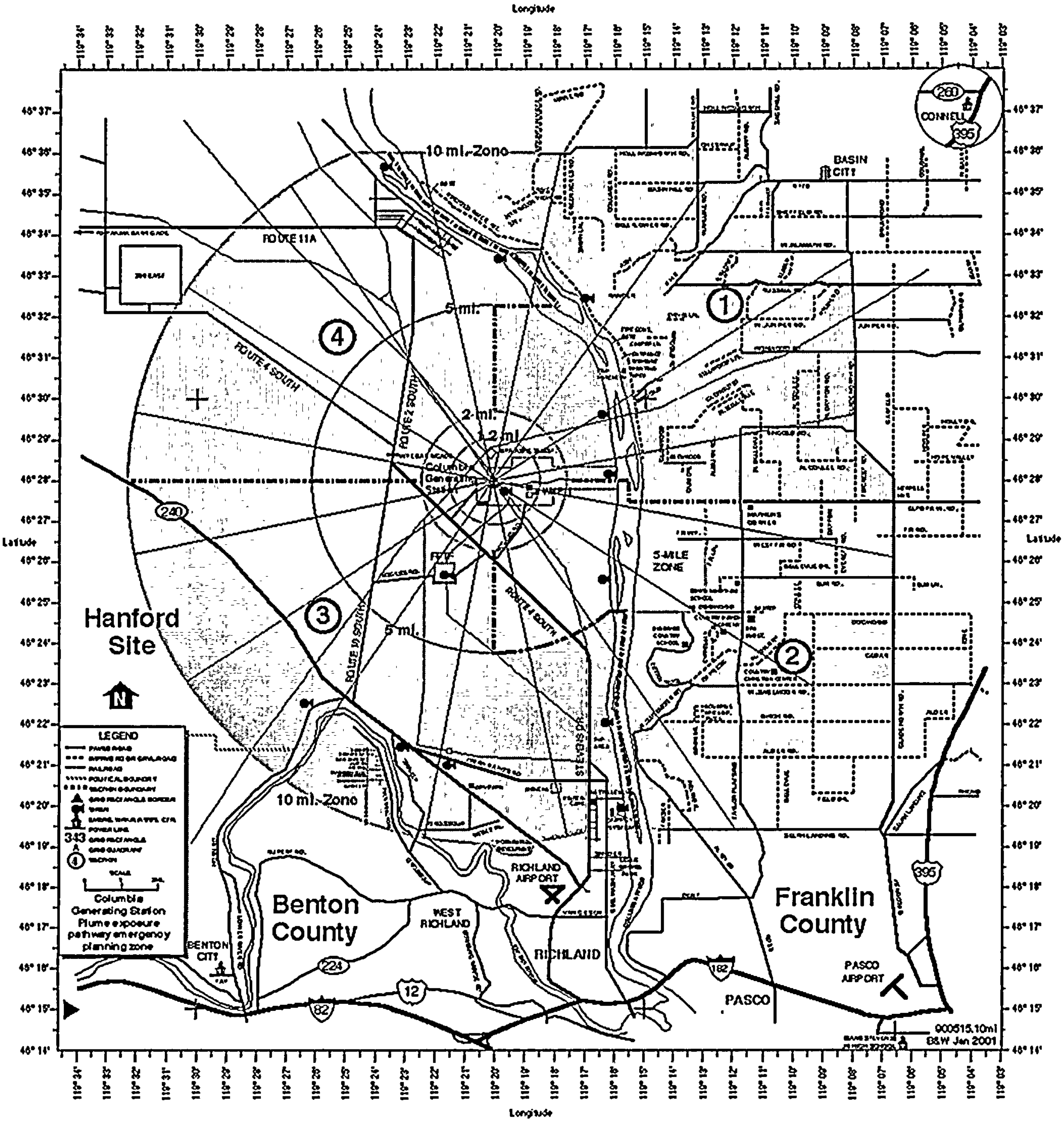
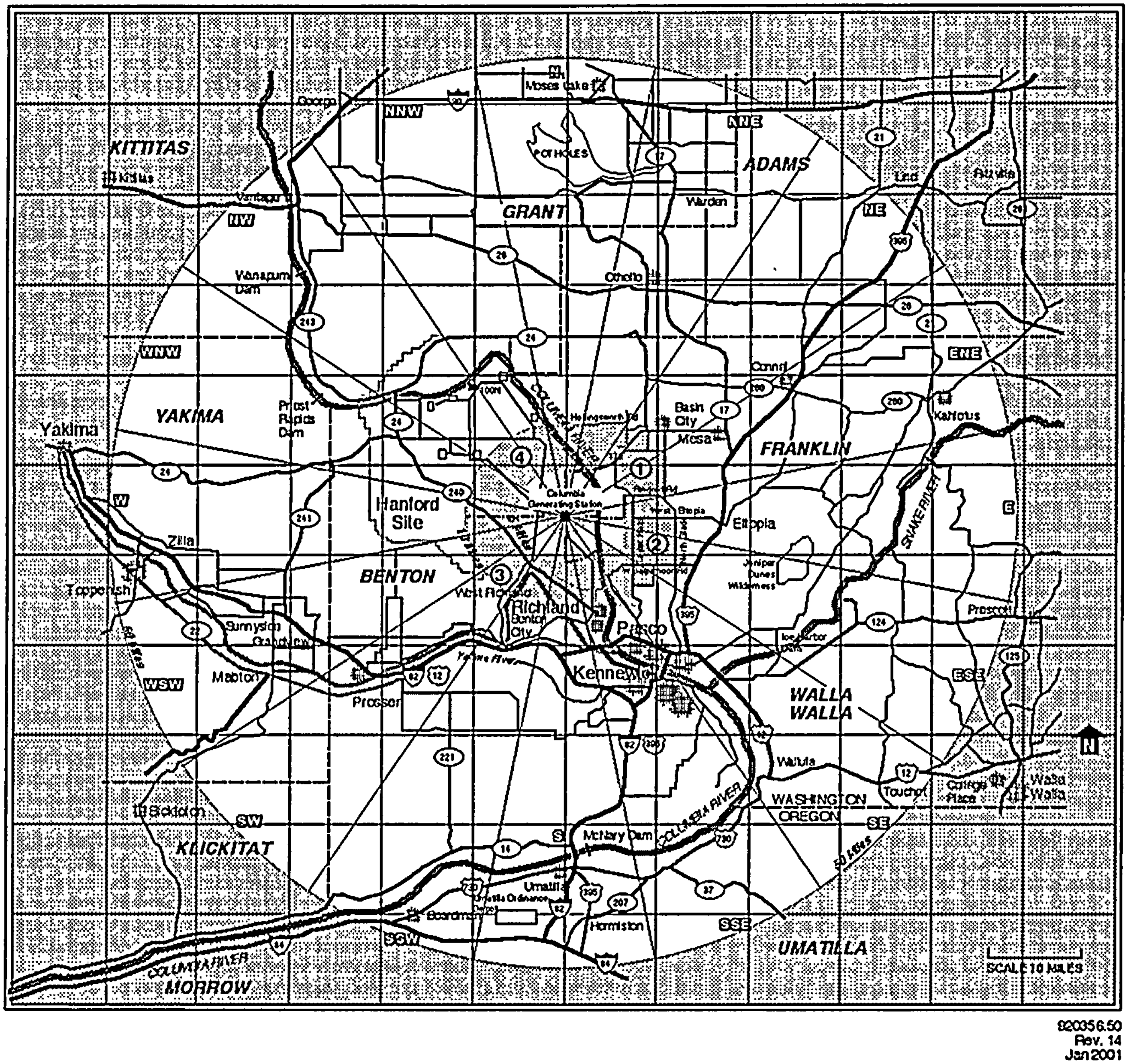


Figure 1-1, Ten-Mile Emergency Planning Zone (EPZ)



50 Mile Map

Figure 1-2, Fifty-Mile Emergency Planning Zone (EPZ)

Site Plan

Bldg No.	Building Description
2	Reactor Building
3	Radwaste Building
4	Turbine Generator Building
5	Technical Support Building
6	Health Physics Access Point
7	Diesel Generator Building
8	ASD Building
9	Palouse - Engineering
11	Chelan - Facilities
12	Heavy Equip. Maintenance
13	Cowlitz - Facilities
15	Laborers Storage
17	Wenatchee - Site Maintenance
19	Battery Storage
21	Backflow Preventer Building
22	Service Substation
23	Diesel Fuel Polishing Building
24	Visitor Center
25	Protected Area Access Point (P.A.A.P.)
26	Deschutes - Plant Engineering Center
30	Wind River Bldg. - Circ Water Pumphouse
32	Colville - Site Contractor Fab Shop
47	Document Storage
62	Primary Access Point (P.A.P.) (Security)
64	Willamette - Site Support Contractor/Records Mgmt.
75	Warehouse /Painters
88	Okanogan - Site Cafeteria/NDE/I&C Security
94	Laborers/Procedures
100	Fitness for Duty Facility/First Aid

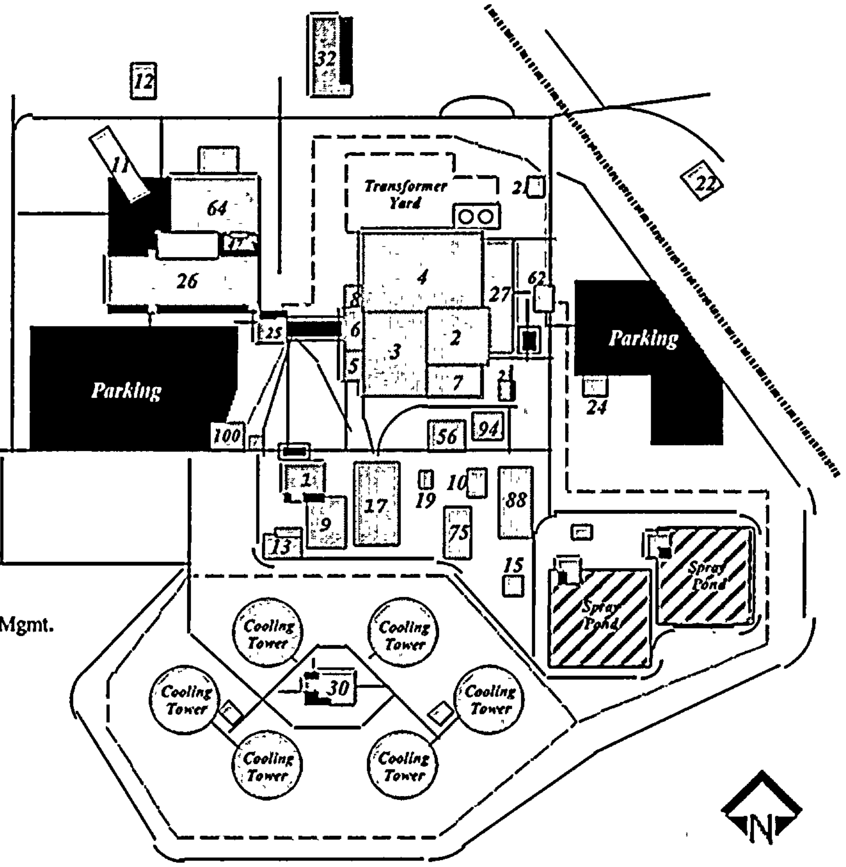


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Figure 1-3, Columbia Generating Station Site

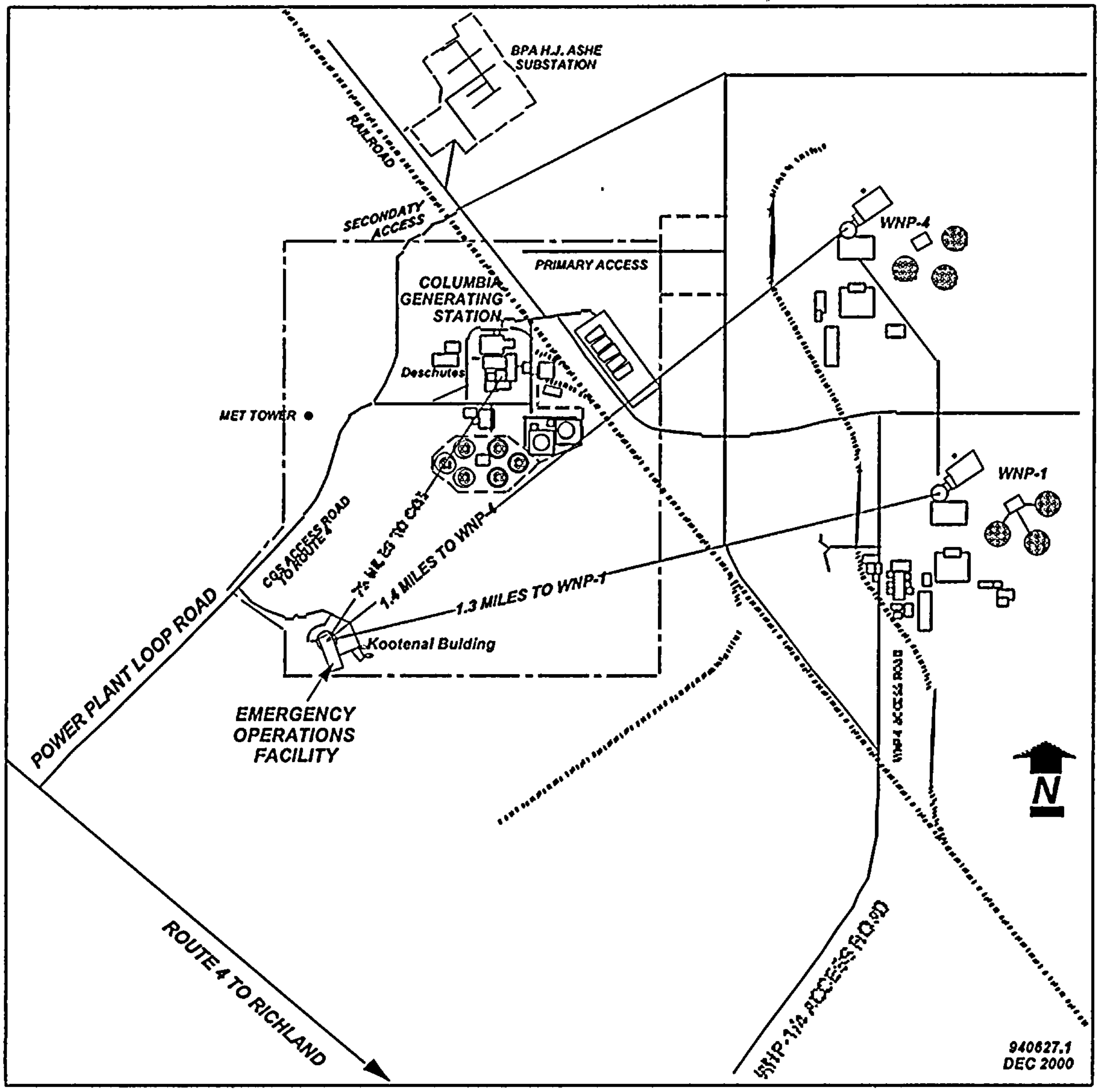

Figure 1-4, Emergency Operations Facility Location

SECTION 2
ENERGY NORTHWEST EMERGENCY ORGANIZATION

2.1 ORGANIZATIONAL CONCEPTS

This section of the Plan describes the emergency response organization at Energy Northwest. The normal plant operating organization serves as a foundation for the emergency organization and is augmented by the on-call Emergency Response Organization (ERO) at an Alert or higher emergency class. The normal organization is described in the corporate organization charts. An overview of the emergency organization is shown in Figure 2-1.

Energy Northwest's Emergency Response Organization consists of positions that satisfy requirements for initial and augmented staffing during declared emergency as well as positions that may be summoned as needed. The members of the emergency organization which are essential to implementation of the Plan and the augmenting organization which supports the essential personnel are shown in Figure 2-1. The Emergency Organization Assignment List contains a listing of the personnel assigned to the ERO. The title of Shift Technical Advisor (STA) is generic, and the responsibility may be performed by other personnel on shift for purposes of NUREG-0737 and NUREG-0654.

Responsibility for emergency direction and control (i.e., overall direction of the plant's emergency response which must include the non-delegable responsibilities for emergency classification, the decision to notify, and to recommend protective actions to authorities responsible for offsite emergency measures) is normally transferred from the Shift Manager to the TSC Manager to the EOF Manager. However, if the situation dictates, the responsibilities may be transferred from the Shift Manager directly to the EOF Manager. The transfer of responsibilities only takes place when the individual relieving the Shift Manager is at his assigned location, has minimum staffing level or greater in place, and has received a formal turnover.

2.2 SHIFT ORGANIZATION

The operating crew for each shift at the plant normally consists of a Shift Manager, to whom reports a Control Room Supervisor, Shift Support Supervisor, Shift Technical Advisor, licensed reactor operators, equipment operators, health physics technicians, chemistry technicians, and Security Force personnel. Operations personnel are trained to perform emergency maintenance functions in the absence of on shift maintenance personnel. The Shift Manager on duty has the immediate responsibility for the plant at all times, and has full authority and responsibility for recognizing and declaring emergencies. Each shift is provided with a complement of qualified individuals who have specialized training in notifications, the operation of the reactor and other plant systems, plant instrumentation, radiation safety, and maintenance.

Security force personnel and the control room have 24 hour communications capability with the ERO and offsite response agencies.

Plant Technical Specifications and 10 CFR 50.54 (m) provide for reduced staffing in reactor operational modes 4 and 5. Energy Northwest recognizes that these are minimum staffing levels and that additional personnel are necessary to perform emergency functions. On shift staffing, in all modes, includes adequate numbers of qualified personnel to perform classification, notification, and dose assessments within time requirements.

The Plant General Manager has full authority and responsibility for the overall supervision and administration of the nuclear plant. Technical support is provided by a staff experienced in reactor physics, nuclear power plant systems technology and operation and health physics and chemistry. The normal plant operating organizations are complemented by a group of specialists available from other departments of Energy Northwest and are identified in the corporate organization charts.

2.3 EMERGENCY RESPONSE ORGANIZATION

Energy Northwest's Emergency Response Organization (ERO) consists of positions that satisfy requirements for initial and augmented staffing during a declared emergency as well as positions that may be summoned as needed. This organization has the capability of continuous (24 hour) operations for a protracted period. The ERO is arranged in the following response categories:

On Shift:

On shift positions consist of the Shift Manager, Control Room Supervisor, Reactor Operators, Shift Technical Advisor (not required in Mode 4 and 5, thus can't provide initial response in these modes), Equipment Operators, HP Technicians, Chemistry Technicians, I&C Technicians, Electrical and Mechanical Craft, and Security. These positions provide initial response to an emergency.

Essential:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means at any time to respond within a specified time. Essential ERO personnel will normally assist on shift personnel to provide assessment and mitigation of accident conditions, notifications to offsite agencies, or provide overall direction, control and logistical support for emergency operations.

Augmenting:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means to respond at any time within a specified time. Augmenting personnel provide additional emergency assessment, accident mitigation and logistics support to on shift and essential personnel.

Support:

Consists of positions which may or may not be designated on a rotating on-call list or ERO assignment list, but may be summoned by electronic or manual means when needed to support emergency operations.

The essential emergency organization has the capability to provide manpower and other resources to assist the normal plant organization within approximately one hour if an emergency situation arises. The essential organization has been established with responders designated on a rotating on call list. The emergency duties of the normal plant staff are transferred to the ERO as the corresponding members arrive on site and the emergency centers are activated.

If an emergency situation arises, the Shift Manager will activate the ERO to supplement the normal operating staff. Those members of the ERO who are not on site at the time of the emergency will be able to respond within about one hour of the emergency. In addition, designated members of the Emergency Preparedness department are available to assist with Emergency Operation Facility activation.

Following are general descriptions of the Essential Emergency Response Organization. Duties are discussed in more detail in the Emergency Plan Implementing Procedures. Table 2-1 demonstrates how these positions align with NUREG-0654/FEMA-REP-1, Rev. 1, Table B-1 requirements.

2.3.1 On Shift Emergency Organization

2.3.1.1 Shift Manager

Basic Emergency Function: The Shift Manager reports to the Operations Manager and is responsible for overall plant control. The Shift Manager assumes the Emergency Director duties and responsibilities upon initial emergency classification until relieved by the TSC Manager or EOF Manager. Once an emergency classification is declared, the Shift Manager, as the Emergency Director, is responsible for activation and direction of the emergency response organization to the extent required by the emergency.

NOTE: The Shift Manager is responsible for ensuring safe operation of the plant under all conditions. The Shift Manager, as the Emergency Director, ensures necessary protective actions are carried out. The priority of actions shall be in the following order:

- Public Safety
- On Site Personnel Safety
- Equipment Protection
- Plant Reliability

The Senior Reactor Operator (SRO) license holders on shift and the STAs are available to perform offsite dose assessment at all times when required.

2.3.1.2 Control Room Supervisor (On shift as required by Technical Specifications)

Basic Emergency Function: The Control Room Supervisor (CRS) is the senior individual responsible for plant control actions during both normal and emergency operations. The Control Room Supervisor will assume Shift Manager responsibilities, including emergency direction and control authority, in the absence of the Shift Manager.

2.3.1.3 Reactor (Control Room) Operators

Basic Emergency Function: The Reactor Operators (RO) are responsible for the day to day operations of the reactor and implement necessary actions under the direction of the Control Room Supervisor to terminate the condition causing the emergency and place the plant in a safe condition.

2.3.1.4 Security Communication Center Staff

Basic Emergency Function: The Security Communication Center (SCC) Staff will assist with notifications to Energy Northwest ERO personnel and to offsite agencies during both the emergency and recovery phases. The SCC staff reports to the Security Manager.

2.3.1.5 Equipment Operators

Basic Emergency Function: The Equipment Operators (EO) are responsible for responding to the emergency as directed by the Control Room Supervisor or Fire Brigade (FB) Leader. The location of the Equipment Operators is assigned by the Control Room Supervisor/FB Leader. Control and accountability of Equipment Operators may, after discussion between the Shift Manager and OSC Manager, be transferred to the OSC.

2.3.1.6 Shift Technical Advisor (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Shift Technical Advisor (STA)/Shift Engineer is responsible for assessing the plant operating status, recognizing that an Emergency Action Level (EAL) initiating condition exists and advising the Shift Manager on mitigating actions. They provide specific information to the Shift Manager concerning the Emergency Plan Implementing Procedures required response actions.

2.3.1.7 Fire Brigade

Basic Emergency Function: The Fire Brigade (FB) is responsible for fire fighting, first aid and search and rescue operations. The team will perform radiological surveys and contamination control as necessary. Members of the FB may also perform plant systems manipulation tasks to mitigate consequences of an accident. The FB is under the direction of the Shift Manager until directed to report to the OSC Manager.

2.3.1.8 Health Physics, Chemistry, and Maintenance Support Personnel

Basic Emergency Function: Health Physics, Chemistry, and Maintenance Support personnel are responsible for providing radiation surveillance, chemistry analyses, and maintenance operations as repair or reentry and recovery team members. These support staff will report to the OSC Manager for in plant team activities.

2.3.2 Essential Plant Emergency Organization

Figure 2-1 identifies the key shift personnel who are sufficiently trained to perform all necessary duties until relief personnel arrive. Figure 2-1 provides a diagram of the ERO showing the reporting chain within the ERO. The following sections detail duties of the essential emergency response organization.

2.3.2.1 TSC Manager

Basic Emergency Function: The Technical Support Center Manager (TSC Manager) is responsible for the coordination of onsite response efforts during an emergency. This position is also responsible for the overall development and implementation of accident mitigation and repair/damage control efforts. In some cases the TSC Manager may assume the responsibility for emergency direction and control until the EOF Manager assumes this responsibility at the Emergency Operations Facility. The TSC Manager initiates evacuation and onsite recovery actions as necessary. The TSC Manager is also responsible for ensuring plant security is maintained and provisions are made for immediate entry of necessary emergency assistance such as ambulance or fire equipment.

The Maintenance Manager, Operations Manager, Technical Manager, Radiation Protection Manager, Plant Admin Manager, Plant/NRC Liaison, and OSC Manager report to the TSC Manager.

2.3.2.2 TSC Radiation Protection Manager

Basic Emergency Function: The Radiation Protection Manager (RPM) is responsible for directing the health physics staff, assessing radiological conditions, reviewing radiological data received, ensuring personnel exposures are maintained As Low As is Reasonably Achievable (ALARA), and providing recommendations concerning radiation safety matters to the TSC Manager.

The Radiation Protection Manager will also assess offsite doses and make recommendations concerning protective actions to the TSC Manager until the Radiological Emergency Manager at the EOF takes over this function.

2.3.2.3 TSC Plant/NRC Liaison

Basic Emergency Function: The Plant/NRC Liaison is the primary plant interface with the NRC Headquarters concerning emergency matters and will coordinate commitments made to the NRC. He will keep the TSC Manager advised of NRC activities and, as necessary, will staff the NRC/ENS phone. The Plant/NRC Liaison is responsible for ensuring activation of the Emergency Response Data System (ERDS) for an Alert or higher classification.

2.3.2.4 TSC Technical Manager

Basic Emergency Function: The Technical Manager is responsible for analysis of plant data and the development of plans and procedures in direct support of plant operations personnel. The primary objective is to achieve a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This position supervises the analysis of plant safety parameters by the plant technical and operations staff.

2.3.2.5 TSC Core Thermal Engineer

Basic Emergency Function: Provides information on reactor water pressures and temperature distribution, heat transfer and fluid flow rates, and performs core damage assessments.

2.3.2.6 TSC Electrical Engineer

Basic Emergency Function: Provides information and recommendations about plant and offsite electrical power sources and distribution.

2.3.2.7 TSC Mechanical Engineer

Basic Emergency Function: Provides information and recommendations on mechanical systems and hardware modifications.

2.3.2.8 TSC Operations Manager

Basic Emergency Function: The Operations Manager will assist the TSC Manager by providing oversight and direction to Control Room operations. He provides the interface between the TSC and Control Room. The Operations Manager keeps the TSC Manager informed of plant status and provides input concerning plant operations necessary for the accident and recovery process.

2.3.2.9 OSC Manager

Basic Emergency Function: The Operations Support Center (OSC) Manager is responsible for assigning and dispatching Repair Teams. This individual provides updates to the TSC Manager via the Maintenance Manager on team activities. The OSC Manager is also responsible for ensuring plant personnel accountability is performed. The Fire Brigade reports to the OSC Manager once it is released by the Shift Manager.

2.3.2.10 HP Lead

Basic Emergency Function: The HP Lead identifies hazardous areas within the plant, provides repair team HP briefings and assigns HP resources to repair teams. The HP Lead communciates with the OSC Manager and TSC RPM.

2.3.2.11 Repair Team

Basic Emergency Function: The Repair Teams provide the necessary manpower to perform tasks throughout the plant involving investigation of the accident, repair of equipment or taking actions to minimize the extent of damage. The Repair Teams report to the OSC Manager.

2.3.3 Essential Emergency Operations Facility Emergency Organization

The Emergency Operations Facility (EOF) is activated at the Alert classification and will be utilized by the EOF Manager and his staff to implement necessary actions during an Alert, Site Area or General Emergency. The EOF Manager normally assumes responsibility for emergency direction and control within approximately one hour of the declaration of an Alert or higher emergency. He normally receives a turnover from the TSC Manager but in some cases may receive a turnover from the Shift Manager. The EOF Manager is responsible for the overall management of Energy Northwest emergency resources and has full authority to make commitments for the company. The basic functions which will be directed from the Emergency Operations Facility are:

a. Manage the overall Energy Northwest emergency effort.

b. Evaluate the magnitude and consequences of actual or potential radiological releases.

c. Coordinate field sampling and analysis of radioactive material released from the plant.

d. Coordinate emergency response activities with local, state, and federal agencies and provide recommendations concerning appropriate offsite protective measures.

e. Provide technical support to the plant.

f. Provide necessary security controls.

g. Provide decontamination and medical assistance for personnel evacuated from the plant.

h. Secure necessary supplies and equipment.

i. Develop public information reports for the Joint Information Center concerning plant status, emergency actions underway, and hazards to the public.

j. Advise upper management concerning plant conditions.

k. Coordinate the overall recovery effort including the development of procedures and schedules, procurement of equipment, and identification of necessary licensing actions.

l. Provide for adequate work area for the recovery effort.

2.3.3.1 EOF Manager

Basic Emergency Function: The Emergency Operations Facility (EOF) Manager is responsible for the overall management of Energy Northwest resources and will be in charge of activities related to plant emergency and recovery operations. The EOF Manager has the authority to request outside assistance, including resources available from the federal government, and will assume the responsibility for emergency direction and control. The decision to request outside assistance, change emergency classifications, approve offsite protective action recommendations and make decisions concerning the notification of offsite authorities cannot be delegated once the EOF Manager has assumed the Emergency Director duties.

The Engineering Manager, Site Support Manager, Offsite Agency Coordinator, EOF Public Information Officer, Radiological Emergency Manager, TSC Manager, Security Manager, Licensing Manager, and Joint Information Center Manager report to the EOF Manager.

At his discretion, the EOF Manager may request one or more assistants. The assistant(s) perform duties as assigned by the EOF Manager.

2.3.3.2 EOF Radiological Emergency Manager

Basic Emergency Function: The Radiological Emergency Manager (REM) reports to the EOF Manager. The REM is responsible for managing radiological dose assessment and field monitoring activities. The REM assists in development of Protective Action Recommendations and, during the late phases of the response, coordinates this activity with the States of Washington and Oregon and the US DOE and provides offsite radiological Protective Action Recommendations to the EOF Manager. The REM also coordinates Energy Northwest offsite radiological monitoring effort with the States of Washington and Oregon and the US DOE.

2.3.3.3 EOF Field Team Coordinator

Basic Emergency Function: The Field Team Coordinator provides overall management of field teams, identifies plume path and areas requiring survey; directs the Field Team Dispatcher, and makes field teams available for river evacuation; communicates field team summary information to the REM.

2.3.3.4 Environmental Field Teams

Basic Emergency Function: The Environmental Field Teams are responsible for determining offsite radiological hazards and for conducting the required offsite surveys, monitoring and sampling. Field team activities are coordinated by the Field Team Coordinator. At least three teams will be available to conduct environmental sampling in the field.

2.3.3.5 EOF Telecommunications Manager

Basic Emergency Function: Provide for the operability of Energy Northwest communications systems. Will direct and dispatch Telecommunications Technicians to areas requesting assistance with phones or other telecommunications equipment.

2.3.4 Essential Joint Information Center Emergency Organization

The essential Joint Information Center emergency organization consists of the Joint Information Center Manager. This function ensures timely, accurate releases of information and assists offsite organizations in developing coordinated information for release to the public.

2.3.4.1 Joint Information Center Manager

Basic Emergency Function: The Joint Information Center (JIC) Manager will ensure timely and accurate releases of information to the media and public and will monitor and respond to misinformation. The JIC Manager will also coordinate Energy Northwest's emergency public information activities with those of Benton and Franklin counties, Washington State, Oregon State, and the Federal Government. The JIC Manager reports to the EOF Manager.

2.4 AUGMENTING EMERGENCY ORGANIZATION

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential Energy Northwest emergency organization described in Section 2.3. In addition to the positions described in this section, other augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures are listed in the Emergency Response Organization List.

2.4.1 Augmenting Plant Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential plant emergency organization described in Section 2.3.1. These positions will be filled by activating previously selected personnel who can respond as required.

2.4.1.1 TSC Plant Administrative Manager

Basic Emergency Function: The Plant Administrative Manager is responsible for providing the TSC Manager with the necessary administrative services including accountability, requests for additional personnel and office services support. The TSC Administrative staff reports to the Plant Administrative Manager.

2.4.1.2 TSC Maintenance Manager

Basic Emergency Function: The Maintenance Manager is responsible for assigning tasks to be performed by the Operations Support Center (OSC) teams, determining the priority to be assigned for each task, and acting as the focal point between the TSC and OSC for the work control process.

2.4.1.3 Information Coordinators

Basic Emergency Function: Provide information and plant status updates to the center manager and staff. Communicate pertinent emergency related information from their assigned center to the other information coordinators. Information Coordinators are assigned to the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

2.4.1.4 TSC Chemistry/Effluent Manager

Basic Emergency Function: The Chemistry/Effluent Manager is responsible for monitoring the Plant effluent and ARM monitors. Changes in radiological conditions are reported to the Radiation Protection Manager. The Chemistry/Effluent Manager may also perform emergency dose projections. In addition, the Chemistry/ Effluent Manager advises the TSC Manager of chemistry concerns.

2.4.1.5 OSC Team Tracker

Basic Emergency Function: The OSC Team Tracker is responsible for maintaining communications with in-plant Repair Teams performing actions during the event following dispatch from the OSC. The Team Tracker is responsible for keeping the OSC Manager informed of team status and location. The Team Tracker also is responsible for coordination of site personnel accountability.

2.4.1.6 Repair Team Coordinator

Basic Emergency Function: Communicates maintenance tasks from the TSC and relays information about actions taken to the TSC. Responsible for directing repair team activities.

2.4.1.7 OSC Craft Leads

Basic Emergency Function: The Craft Leads will assist the OSC Manager in briefing and debriefing Repair Teams. They will also assist the Team Tracker in tracking of teams and personnel as required. Craft leads respond for Electrical, Mechanical, I&C and Health Physics disciplines.

2.4.2 Augmenting Emergency Operations Facility Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Emergency Operations Facility essential organization which is described in Section 2.3.2. These positions will be filled by activating previously selected personnel.

2.4.2.1 Assistant EOF Manager

Basic Emergency Function: The Assistant EOF Manager will assist the EOF Manager in the overall management of Energy Northwest resources and will assume the EOF Manager duties including Emergency Director responsibilities if the EOF Manager is not available at the EOF.

2.4.2.2 EOF Manager Secretary

Basic Emergency Function: The responsibilities of the EOF Manager Secretary include maintaining a log of EOF Manager actions, monitoring EOF Manager's phones, initiating Crash calls and performing other EOF administrative support duties as requested by the EOF Manager.

2.4.2.3 Dose Projection Health Physicist

Basic Emergency Function: The Dose Projection Health Physicist is responsible for completing dose projections, providing input to Protective Action Recommendations, and keeping the Radiological Emergency Manager informed of radiological release status. Refer to Section 6.4.2 for a description of the Meteorology and Unified Dose Assessment Center (MUDAC).

2.4.2.4 EOF Engineering Manager

Basic Emergency Function: The Engineering Manager and staff members are responsible for analyzing plant information and for developing plans and procedures in direct support of plant.

2.4.2.5 Emergency Operations Facility Public Information Officer

Basic Emergency Function: The Emergency Operations Facility Public Information Officer (EOF PIO) will prepare and transmit news releases to the Joint Information Center which can be used by Energy Northwest and offsite agencies. The EOF PIO keeps the EOF Manager up-to-date on public relations matters.

2.4.2.6 EOF Radiation Detection Systems Engineer

Basic Emergency Function: Analyzes radiation detection systems and assists in location of radiation source.

2.4.2.7 EOF Security Manager

Basic Emergency Function: The Security Manager is responsible for ensuring that security is maintained at all Energy Northwest facilities and security support groups are fully operational. This individual provides information and advice to the EOF Manager concerning the coordination of Energy Northwest Security and local law enforcement agency (LLEA) response actions. The Security Manager reports to the EOF Manager and supervises the Security staff.

2.4.2.8 EOF Site Support Manager

Basic Emergency Function: The Site Support Manager is responsible for coordinating requests for administrative and technical support to the plant and EOF. He also makes provisions to secure necessary supplies and equipment requested. The Site Support Manager reports to the EOF Manager and supervises the Offsite Agency Coordinator, EOF Information Coordinator, Telecommunications Manager, Manpower Scheduler and Admin Support staff.

2.4.2.9 Energy Northwest Representatives to County Emergency Operation Centers

Basic Emergency Function: Energy Northwest representatives will keep the staff members at the Benton and Franklin Counties Emergency Operations Center (EOCs) informed of the emergency conditions and Energy Northwest responses. The offsite representative will report to the Site Support Manager, normally through the EOF Offsite Agency Coordinator.

2.4.3 Augmenting Joint Information Center Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Joint Information Center Manager described in Section 2.3.3. In addition to the positions described below, other administrative augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures will be filled by personnel who can respond as required.

2.4.3.1 Assistant JIC Manager

Basic Emergency Function: The Assistant JIC Manager manages the preparation of Energy Northwest news releases, coordinates the process for news releases prepared by agencies and jurisdictions represented in the JIC, manages the team responsible for distribution of news releases to the media and other emergency centers and assumes the duties of JIC Manager, if requested. The Assistant JIC Manager supervises the Distribution Team Supervisor and News Release Editor and reports to the JIC Manager.

2.4.3.2 JIC Media Manager

Basic Emergency Function: The Media Manager will address the information needs of media representatives at the Energy Northwest JIC. The Media Manager supervises the JIC Receptionist and reports to the JIC Manager.

[illegible] [illegible]

2.4.4 Support Emergency Organization

2.4.4.1 Administrative Support Staff

Basic Emergency Function: Performs duplication and facsimile services, record searches, verification of document revision.

2.4.4.2 TSC Manager Secretary

Basic Emergency Function: Maintains a log of activities for the TSC Manager, initiates and monitors crash calls, and screens phone calls.

2.4.4.3 TSC/OSC Communicator:

Basic Emergency Function: Communicates maintenance tasks to the OSC and relays OSC information about actions taken to the TSC staff.

2.4.4.4 TSC Computer Engineer

Basic Emergency Function: The Computer Engineer is responsible for ensuring that the computer systems available in the TSC are operating as required. The Computer Engineer will troubleshoot system problems and assist TSC Engineering staff in obtaining information from the various Plant computers.

2.4.4.5 TSC Trending Forecaster

Basic Emergency Function: Trend plant parameters and forecast plant status.

2.4.4.6 EOF Plant Systems Assessment Engineer

Basic Emergency Function: Analyzes plant systems and provides technical input to the INPO Network Coordinator

2.4.4.7 EOF Fuels Assessment Engineer

Basic Emergency Function: Evaluates core damage, interfaces with the TSC Core Thermal Engineer and EOF Engineering Manager to provide results and projections of core damage. Provides input for PAR determinations to the Radiological Emergency Manager.

2.4.4.8 EOF PDIS Analyst

Basic Emergency Function: Provides technical data for EOF engineering and monitors the information network for problems.

2.4.4.9 EOF Manpower Scheduler

Basic Emergency Function: Coordinates the preparation of overall shift staffing rosters.

2.4.4.10 EOF State/County Technical Liaison

Basic Emergency Function: Informs Energy Northwest representatives to the state and counties of plant conditions.

2.4.4.11 EOF Offsite Agency Coordinator

Basic Emergency Function: Coordinates requests from offsite agencies for information and keeps the EOF Manager informed of those requests. Coordinates airspace or airport closure requests with the Federal Aviation Agency.

2.4.4.12 EOF INPO Network Coordinator

Basic Emergency Function: Prepares and transmits technical descriptions of major events during an emergency to INPO.

2.4.4.13 Health Physics Center Staff

Basic Emergency Function: Prepares the Health Physics Center for use by setting up tables, lanes, and signs.

2.4.4.14 EOF Electrical/I&C Engineer

Basic Emergency Function: Analyzes plant electrical and I&C systems and provides information to the Emergency Manager.

2.4.4.15 EOF PIO Technical Support

Basic Emergency Function: Provides technical interpretations of information for the EOF PIO to formulate accurate news releases for the JIC.

2.4.4.16 EOF Field Team Dispatcher

Basic Emergency Function: Dispatch of field teams and log keeping.

2.4.4.17 Energy Northwest Representative to the State

Basic Emergency Function: Dispatched to Washington State EOC, provides technical expertise to EOC personnel.

2.4.4.18 EOF Licensing Manager

Basic Emergency Function: Interface with onsite NRC response team and communciate with the NRC on licensing issues.

2.4.4.19 JIC Information Manager

Basic Emergency Function: The Information Manager coordinates response to telephone requests for information from news media representatives or the general public. The Information Manager coordinates responses to rumors and public concerns and insures timely and accurate information is provided. This individual directs activities of the Media and Public Phone Team Supervisors and reports to the JIC Manager.

2.4.4.20 JIC Offsite Agency Representatives

Basic Emergency Function: The Offsite Agency Representatives reporting to the JIC will coordinate the emergency public information activities of the organizations thay represent. The representatives report to their parent agencies. Their activities are coordinated by the JIC Manager or the Assistant JIC Manager.

2.4.4.21 JIC Phone Team Supervisor

Basic Emergency Function: The Phone Team Supervisor, Public Phone Teams and Media Phone Teams will respond to incoming calls from the public and media, provide information updates as necessary, and make efforts to correct misinformation as necessary. The Public Phone Team Supervisor supervises the Public and Media Phone Teams and reports to the Information Manager.

2.4.4.22 JIC Support Manager

Basic Emergency Function: Provides administrative support and procurement of supplies for JIC personnel.

2.4.4.23 JIC Spokesperson

Basic Emergency Function: Conducts news conferences at the JIC and provides timely information during the conferences.

2.4.4.24 JIC Technical Spokesperson

Basic Emergency Function: Provides technical information in an easy to understand format.

2.4.4.25 JIC Health Physics Spokesperson

Basic Emergency Function: Provides health physics information in an easy to understand format.

2.4.4.26 JIC News Release Editor

Basic Emergency Function: Assists in preparing news releases for dissemination to the media.

2.4.4.27 JIC Public and Media Phone Teams

Basic Emergency Function: Answer phone calls made by the public and media to disseminate correct information and dispel rumors.

2.4.4.28 JIC Audio/Visual

Basic Emergency Function: Coordinates operation of A/V equipment during news conferences at the JIC.

2.4.4.29 JIC Distribution Team Supervisor

Basic Emergency Function: Supervises the JIC Distribution Team.

2.4.4.30 JIC Distribution Team

Basic Emergency Function: Distributes faxes, news releases, and makes copies for the JIC staff.

2.4.4.31 JIC Receptionist

Basic Emergency Function: Provides receptionist duties for the JIC

2.4.4.32 JIC Secretary

Basic Emergency Function: Provides secretarial duties for the JIC staff.

ENERGY NORTHWEST EMERGENCY RESPONSE ORGANIZATION
MINIMUM STAFFING REQUIREMENTS

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Senior Management	Emergency Operations Facility Mgr[3]		1
	Technical Support Center Mgr[3]		1
	Joint Information Center Mgr		1
Operations	Shift Manager[3]	1	
	Control Room Supervisor	1[1]	
	Reactor Operator	2	
	Equipment Operator	2	
	Operations Manager[5]		1
	Control Room ENS Communicator[4]		
Notification/Communication	SCC Duty Officer	1	
	Security Responder	1	
	Telecom Manager	1[2]	
	Plant/NRC Liaison		1
			1
	Radiation Protection Manager		
Health Physics	HP Technicians (In Plant Surveys)		1
	HP Technicians (Protective Actions)	1	2
	Field Team Coordinator[5]	2	4
	Environmental Field Teams		1
	(Offsite Surveys)		4
	Environmental Field Teams		
	(Onsite Surveys Out of Plant)		2
	Radiological Emergency Manager		
	(Offsite Dose Assessment)		1

Table 2-1

MINIMUM STAFFING REQUIREMENTS(Continued)

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Nuclear Chemistry	Chemistry Technicians	1	1
Maintenance	Operations Support Center Mgr[5]		1
	Electrical Maintenance/	1[2]	2
	I/C Support		1
	Mechanical Maintenance/Radwaste	1[2]	1
	Operator		1
Engineering	Shift Technical Advisor	1[1]	
	Core/Thermal Hydraulics		1
	Electrical		1
	Mechanical		1
	Technical Manager[5]		1
Security	Per Security Plan		
Firefighting	Fire Brigade	Fire Brigade per FSAR Section 13	Local Support
First Aid and Rescue Operations	Fire Brigade	2[2]	Local Support

[1] On Shift as required by Technical Specifications in Modes 1, 2, and 3. Available within 60 minutes for call in for Modes 4 and 5.
[2] May be provided by shift personnel assigned other functions
[3] Shift Manager initially assumes the responsibility for emergency direction and control, then is relieved by the TSC Manager or EOF Manager
[4] Duties of ENS Communicator are assumed by an individual designated by Shift Manager
[5] Not identified as a Table B-1, NUREG 0654 requirement

Table 2-1

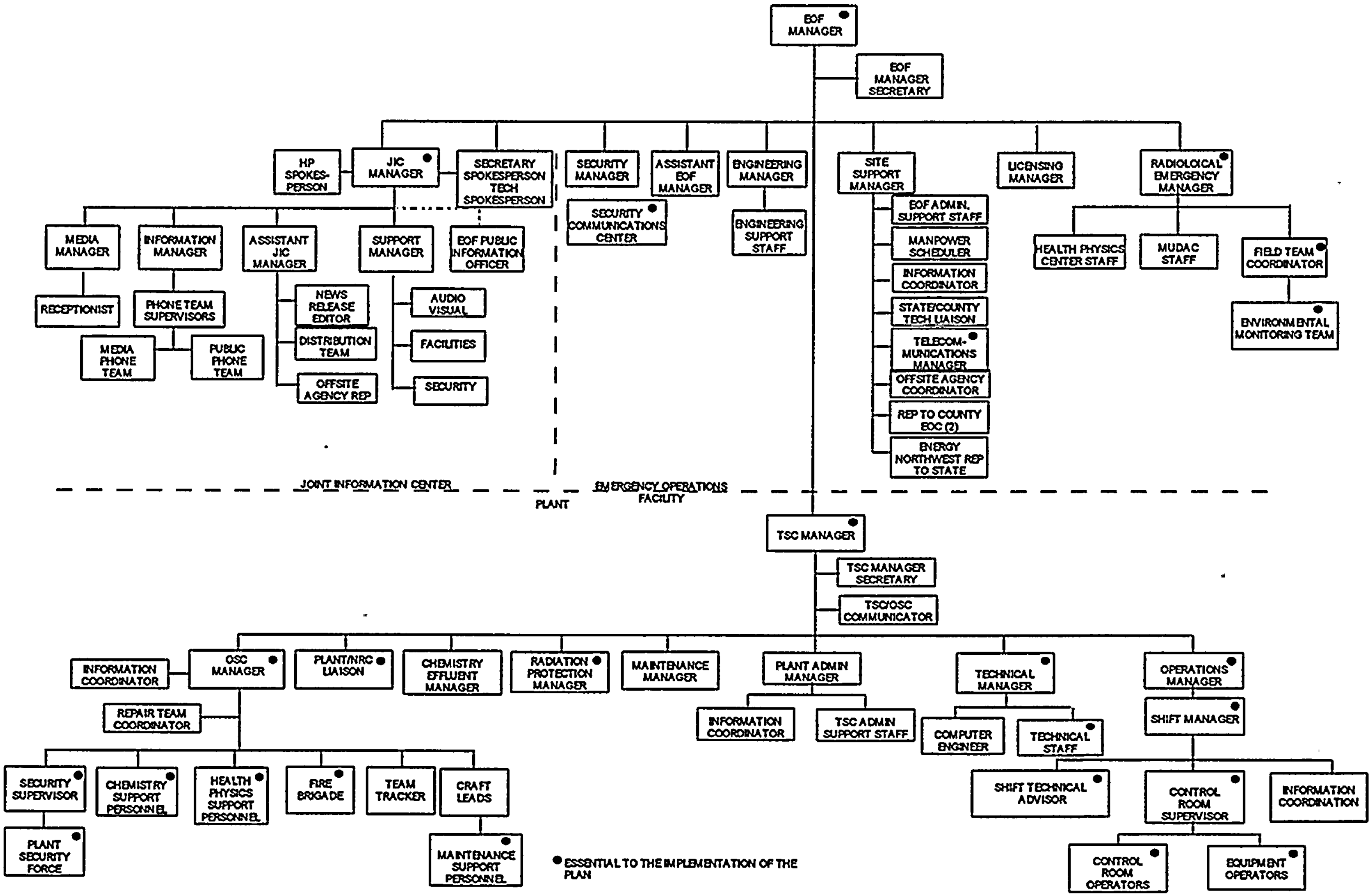

Figure 2-1, Emergency Response Organization Chart

SECTION 3
EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.1 COORDINATION OF SUPPORT ORGANIZATIONS

The Energy Northwest individual assigned the Emergency Director function is responsible for coordinating the use of emergency response resources available from outside Energy Northwest. These external resources are available through formal agreements referenced in Appendix 4 or in the emergency plans referenced in Appendix 1. Figure 3-1 shows the relationship between Energy Northwest emergency centers and the various outside response agencies. The Shift Manager/Emergency Director can call on any or all of these resources for support during an emergency.

The Energy Northwest Emergency Operations Facility contains provisions for outside organizations to coordinate actions with Energy Northwest. Specific areas in the Emergency Operations Facility and Energy Northwest Office Complex (ENOC) are designated in the Emergency Plan Implementing Procedures to be utilized by various offsite response organizations.

Energy Northwest representatives will normally be dispatched to the Benton and Franklin County Emergency Operations Centers at the Alert or higher emergency classification. The Energy Northwest representative to the state will normally report to the EOF at the Alert level, and be dispatched to the Washington State Emergency Operations Center at Site Area Emergency to assist. Energy Northwest representatives will assist in providing clarification of information and data.

The Offsite Agency Coordinator in the EOF will provide necessary support to responding agencies.

Figure 3-1 illustrates the various assistance organizations which may respond to the Emergency Operations Facility.

3.2 LOCAL SUPPORT SERVICES

A rapid response is available to Energy Northwest from local fire, medical, law enforcement, and radiological organizations. Agreements have been made with response agencies either through agreement letters or through their emergency plans. In cooperation with Energy Northwest and Benton and Franklin Counties Emergency Management, a training program has been established to familiarize responding agencies with their role at the plant site during an emergency. Energy Northwest will provide escorts, assistance, and dosimetry for all persons entering the plant protected areas, as requested.

3.2.1 Fire

Agreements established between the Department of Energy and Energy Northwest provide for Hanford Contract Fire Department response to all Energy Northwest facilities on the Hanford Reservation. Additional fire department response, if needed, is available through mutual aid agreements between county and municipal fire departments. The Hanford Contract Fire Department personnel are specifically trained to handle nuclear facility fire incidents and have specially equipped vehicles and personnel for rescue and other emergencies. Fire organizations performing functions onsite will interface directly with the Fire Brigade Leader.

3.2.2 Medical

The Emergency Director or designee is responsible for notifying the medical facility and providing qualified health physics personnel to assist. Communications with medical response agencies is coordinated through the radio network described in Section 6.5.1 of this Plan. The fixed medical facilities (i.e., hospitals) can also be reached by telephone using the numbers provided in the Emergency Phone Directory.

3.2.2.1 Local Hospitals

Kennewick General Hospital in Kennewick, Washington; Our Lady of Lourdes Hospital in Pasco, Washington; and Kadlec Medical Center in Richland, Washington, provide hospital and medical services. Any combinations of these three hospitals serves as the primary and backup medical facility. These hospitals have emergency room coverage twenty-four hours per day. The State of Washington also maintains agreements for handling contaminated patients with other hospitals in the State of Washington.

Energy Northwest has placed and maintains kits containing radiological monitoring equipment and decontamination supplies for use in the care of radiation accident patients at these hospitals. Energy Northwest also assists each hospital in developing procedures for the care of radiation accident patients as requested. Training and assistance on radiological decontamination procedures is offered by Energy Northwest to these hospitals when requested. Drills are periodically conducted to evaluate hospital proficiency for handling contaminated victims

3.2.2.2 Special Medical Facilities

The Emergency Decontamination Facility (EDF), located next to Kadlec Medical Center, can be used for handling highly contaminated patients.

If high levels of radioactive contamination or exposure are involved, injuries will be pre-treated at the specially equipped EDF. The EDF is a sophisticated unit specifically designed for handling and treatment of radiation/contamination accident victims. Provisions include decontamination equipment, shielded surgery tables, remote TV viewing, contaminated water retention, air filtration, radiation monitoring instrumentation, whole body counting, and communications equipment.

The EDF is operated by the Hanford Environmental Health Foundation (HEHF) for the Department of Energy in support of nuclear activities on the Hanford Reservation. The physicians responding to the EDF are prepared and qualified to make radiation exposure and uptake evaluations.

3.2.2.3 Medical Transportation

Medical emergency transportation will be provided by the Department of Energy - Richland Operations (DOE-RL). If additional assistance is required, local ambulance services may be used. An Energy Northwest employee knowledgeable in health physics will accompany contaminated patients to the hospital or meet the ambulance at the hospital to assist in the emergency. Additional health physics assistance may be requested from DOE-RL, or Washington State Department of Health.

3.2.3 Law Enforcement

The Benton County Sheriff has jurisdiction on the Hanford Reservation highways. Arrangements have been made for this organization to provide traffic control in order to limit access to the Hanford Reservation during an Energy Northwest emergency.

The Sheriff has jurisdiction at the Energy Northwest site for all civil disturbances or threats. Request for assistance to the Benton County Sheriff can be made directly to the Sheriff's office or through the 24 hour Emergency Dispatch Center (SE COMM) located in Richland. The Energy Northwest communications centers are capable of communicating with responding law enforcement agencies.

The Security Manager is the main interface with local law enforcement personnel and administers the agreement for law enforcement services. Activation of this support is under the direction of the Emergency Director.

In the event that evacuation is needed for areas off the Hanford Reservation, the Emergency Director, or designee, will notify the County Emergency Chairman or designee, at the Benton and Franklin County Emergency Operations Centers and provide available information concerning the nature of releases. Within the guidelines established by Washington State, a recommendation concerning necessary protective actions to be taken by the general public will be made by Energy Northwest. Following receipt of a protective action decision by an appropriate county authority, the Sheriffs of Benton and Franklin Counties will be responsible for implementing evacuation, traffic control, community security and search and rescue activities in their respective jurisdictions.

The Washington State Patrol provides assistance to the Sheriff concerning traffic control and area access. The local State Patrol headquarters has direct radio communications with the Benton and Franklin County sheriffs and the Emergency Dispatch Center (SE COMM).

3.2.4 Radiological

The Department of Energy (see Section 3.6.2) and Siemens Power Corporation (see Section 3.3.1) can provide a large number of trained personnel capable of assisting during a radiological emergency. Additionally, a training program for local support organizations (i.e., hospital, ambulance and fire companies) developed jointly by Energy Northwest and Benton and Franklin Counties, provides information on proper actions to take during a radiological emergency. Supporting emergency plans for this service are listed in Appendix 1.

3.3 PRIVATE RESPONSE ORGANIZATIONS

3.3.1 Framatome ANP

The Framatome ANP facility located just outside the Southern boundary of the Hanford Reservation, approximately 8 miles south of Columbia Generating Station, maintains 24-hour health physics coverage of operations. As provided for in their Emergency Plan, listed in Appendix 1, assistance can be quickly provided during an Energy Northwest emergency to monitor radiological conditions along the southern Hanford Site boundary. Assistance will be provided upon request of the Emergency Operations Facility Manager and will be coordinated from the Emergency Operations Facility.

3.3.2 Environmental Sample Analysis

Service contracts are currently maintained with appropriate vendors by Energy Northwest's Radiological Environmental Monitoring Program group for environmental sample analytical services.

3.3.3 General Electric Company

The General Electric Company, suppliers of the Columbia Generating Station nuclear steam supply system, provides a support program utilizing the resources of their Nuclear Energy Group in San Jose, California. An emergency response team can be dispatched to the Emergency Operations Facility within twenty-four hours to provide technical assistance. A technical support team with experts in appropriate technical disciplines will be activated at General Electric Headquarters and will establish telephone communications with the onsite General Electric Emergency Response Team. The response team, dispatched to Energy Northwest, will be provided work space in the Emergency Operations Facility and will coordinate efforts with the EOF Engineering Manager. General Electric personnel may be used in the plant as needed. When in the plant, the TSC Technical Manager will be the primary interface.

3.3.4 Institute of Nuclear Power Operations

The Institute of Nuclear Power Operations (INPO) will provide assistance in identifying and mobilizing the resources of the nuclear industry in the event of an emergency. INPO will be notified of any emergency at the alert or greater classification.

INPO will provide the following assistance, if requested:

a. Designated INPO representatives who can be dispatched to the utility.

b. Dedicated 24-hour emergency notification system.

c. Ability to locate personnel with specific technical expertise.

d. Obtaining industry experience regarding plant equipment through NPRDS.

3.3.5 American Nuclear Insurers

American Nuclear Insurers (ANI) provides insurance coverage for Energy Northwest's nuclear facilities. If an accident occurs which involves the general public, ANI will provide financial assistance and reimbursement of reasonable expenses to persons required to relocate. Within 24 hours of the declaration of the emergency, ANI will dispatch a representative to the local area and will coordinate with the Emergency Response Team.

3.3.6 Hanford Environmental Health Foundation

The Hanford Environmental Health Foundation provides physicians trained in the treatment of radiation accident patients and for response and consultation services to the plant and to the hospitals which have agreements with Energy Northwest. Refer to Appendix 4.

3.3.7 Dosimetry

Energy Northwest has provisions for thermoluminescent dosimeters and related services.

3.4 <u>COUNTY ORGANIZATIONS</u>

3.4.1 Benton and Franklin Counties

The Benton and Franklin County plans for responding to a nuclear emergency, referenced in Appendix 1, provides for a coordination of effort, resources, and facilities. Mitigation and preparedness responsibilities include coordinating local radiological emergency response planning, exchanging emergency preparedness information and, along with Energy Northwest assisting local agencies and officials in developing appropriate emergency capabilities, establishing a radiological emergency response program, emergency response training, and promoting the development of effective communications and other emergency resources. Local law enforcement agencies provide access control services for the Hanford reservation.

Emergency response activities of the Benton and Franklin Counties emergency organizations include implementing local emergency public information and instruction activities, establishment of emergency worker and assistance centers and the Benton and Franklin County Emergency Operations Centers, making protective action decisions, activation of the early warning system, and coordination of local protective action implementation and support. County officials are notified of an emergency through the Emergency Dispatch Centers, and also receive any recommendations provided by Energy Northwest in this manner. When activated, the county staff in the Emergency Operations Centers will communicate with the staff at the Emergency Operations Facility over Energy Northwest dedicated communications systems. Activation of the county plans is automatic for an Alert, a Site Area Emergency, or General Emergency and county representatives will be dispatched to the Emergency Operations Facility and the Joint Information Center.

Benton and Franklin Counties will also play an active role during recovery operations and will work closely with the State of Washington and Energy Northwest to ensure appropriate measures are taken for affected members of the public within their jurisdiction.

3.4.2 Counties Within the Ingestion Exposure Pathway Emergency Planning Zone

Six Washington counties (in addition to Benton and Franklin Counties) as well as two Oregon counties are located within the Ingestion Exposure Pathway Emergency Planning Zone (EPZ). A portion of the Yakama Indian Nation also falls within the Ingestion Exposure EPZ. The State of Washington will provide notification to these counties and the Yakama Indian Nation will be notified by Yakima County. This will be coordinated through the Washington State Emergency Management, or the Oregon Department of Energy, by the EOF Radiological Emergency Manager. Local governments will be kept informed regarding the status of the plant and recommended protective actions by the state(s).

3.5 STATE ORGANIZATIONS

3.5.1 State of Washington

The Washington State Plan referenced in Appendix 1 describes the detailed response which will be given during an emergency. Responsibilities are outlined for all state agencies which have a response role. The following list outlines the response actions of several of the state agencies which would respond during an Energy Northwest emergency. A Washington State Representative will proceed to the Emergency Operations Facility during a Site Area or General Emergency, and if conditions warrant during an Alert, to coordinate State resources. The Offsite Agency Coordinator will provide support and function as a working liaison with the State Representative when in the Emergency Operations Facility. Response time is estimated to be less than 6 hours.

3.5.1.1 Washington Emergency Management

Washington Emergency Management is the State agency responsible for radiological response planning and coordination of operations. The responsibility of this agency includes the following items:

a. Develop and maintain the Washington State Fixed Nuclear Facility Emergency Response Plan and assist the counties in developing their individual emergency response plans.

b. Arrange training programs for state and local agencies designed to promote effective response to radiological incidents.

c. Provide affected communities with warning confirmation, upon request.

d. Coordinate communications and other available support to affected local governments.

e. Coordinate the support of other state agencies and political subdivisions near the affected area and obtain assistance of federal agencies as required.

Dedicated communications with the State Emergency Operation Center are available. Representatives from Washington Emergency Management will have access to the Emergency Operations Facility (EOF) and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.5.1.2 Department of Health

The Department of Health (DOH) is responsible for administering and directing radiation control program activities within the State. DOH provides local authorities with technical guidance, assistance in establishing monitoring and decontamination programs, and recommending appropriate emergency countermeasures and recovery actions offsite. Responding at an Alert or higher classification, DOH provides representatives to support the emergency response as follows:

a. To the Meteorology and Unified Dose Assessment Center (MUDAC) for joint control of environmental field monitoring teams, assessment of dose projection information, preparation of protective action recommendations for the plume exposure pathway and ingestion zones, and estimation of total dose exposure. Also, DOH provides Radiation Control (Radcon) monitoring teams that perform radiological monitoring, collect samples and provide limited field analysis and monitoring and decontamination support to the counties at emergency worker and assistance centers.

b. Outside of the EOF, DOH normally furnishes a representative to the Joint Information Center (JIC) for the coordination of public information. At the State Emergency Operations Center (EOC), DOH representatives furnish guidance on implementation of protective actions and assist local health officials with the implementation of protective actions. Agency response times to the Richland area are expected to be less than six hours.

3.5.1.3 Washington State Patrol

The Washington State Patrol (WSP) will assist each affected county and provide, upon request from either state or county officials law enforcement functions, communications support, and transportation assistance to other agencies when the WSP's law enforcement commitment is not jeopardized. Energy Northwest has space available in the Emergency Operations Facility for a representative from the WSP to coordinate their activities with Energy Northwest Security Manager as needed.

3.5.1.4 Energy Facility Site Evaluation Council

The Energy Facility Site Evaluation Council (EFSEC) is the lead state organization for siting of power generating facilities in the State of Washington. EFSEC is responsible for assessing compliance with the Site Certification Agreement and administering contracts with state agencies and local governments for emergency preparedness services in support of the Columbia Generating Station Emergency Plan.

The council is periodically apprised of Energy Northwest's emergency preparedness per section V.A.2 of the Columbia Generating Station Site Certification Agreement.

3.5.1.5 Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for the control and protection of agricultural products within the boundaries of Washington State. This is accomplished by implementing agricultural protection measures in coordination with other participating agencies and local jurisdictions. These measures include preparing and issuing agricultural advisories to protect the public; preparing and implementing plans in coordination with affected agencies and jurisdictions to reduce the Food Control Area, release food, dispose of contaminated food and conduct embargoes. They will also provide input, as requested by other agencies, in the areas of soil, water and crop decontamination; claims procedures; reduction of Food Control Area and public information.

3.5.2 State of Oregon

The State of Oregon has the responsibility to protect the health and safety of Oregon residents during a radiological emergency at Columbia Generating Station. The Oregon Office of Energy has prepared a Columbia Generating Station Emergency Response Program for that purpose.

A major emergency at Columbia Generating Station is not expected to have immediate, life-threatening radiological impacts on Oregon. During the emergency phase, Oregon's involvement will be limited to maintaining communications and monitoring the emergency. If the emergency involves ingestion exposure considerations, however, Oregon will be involved in a cooperative effort with Energy Northwest, Washington State, and federal response agencies to assess conditions within the state boundaries, initiate necessary public protective measures, and provide public information (e.g., news releases) as may be required. Upon declaration of a Site Area Emergency, Oregon will begin a limited activation of the Oregon EOC in Salem. They will also send representatives to Energy Northwest EOF, JIC, and the Washington EOC. In addition, they will send one or more field teams to Morrow and Umatilla Counties and will provide field team assistance to Washington State as requested.

The Governor or designee will make protective action decisions for Oregon. During ingestion pathway events, Oregon will coordinate protective actions with other members of the protective action recommendation/decision group at the EOF and the Washington EOC.

Communications with the State Emergency Operations Center in Salem are available. Representatives from Oregon Office of Energy will have access to the EOF and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.6 FEDERAL ORGANIZATIONS

3.6.1 Nuclear Regulatory Commission

Personnel from the Nuclear Regulatory Commission (NRC), including Resident Inspectors, may elect to respond to any emergency. The NRC Resident Inspectors assigned to Energy Northwest facilities will be notified of any emergency condition on-site by pager and/or by phone contact and may proceed to the control room or any other areas. Facilities are available for NRC personnel in the Technical Support Center, Joint Information Center, and the Emergency Operations Facility. Dedicated communications are available between these facilities and the NRC. Additionally, the NRC duty officer in White Flint, Maryland is notified of the emergency by the Emergency Notification System (a dedicated phone circuit provided by NRC) of every emergency condition and will adapt their response to the situation as it evolves. If the dedicated phone circuit fails, the NRC duty officer can be reached by commercial phone lines using the numbers provided in the Emergency Phone Directory.

The role of NRC personnel during incidents at nuclear power plants is to monitor actions by the licensee to ensure that people in the vicinity of the plant are adequately protected and to provide any assistance requested by the licensee or offsite officials. NRC's principal role in the event of a power plant emergency is to ensure that appropriate protective actions are being taken. If it appears that warranted protective actions are not being recommended by the licensee or are not being taken by offsite officials, NRC representatives will contact the licensee or offsite officials and present their concerns.

NRC is the lead federal agency concerned with technical aspects of an accident at one of its licensed facilities (e.g., nuclear power plants). The specific NRC response roles are to:

a. monitor the licensee to ensure that appropriate protective action recommendations are being made off site:

b. support offsite authorities, including confirming the licensee's recommendation to offsite authorities, if requested;

c. support the licensee;

d. keep other federal agencies and entities (e.g., Congress and the White House) informed of the status of the incident;

e. keep the media informed of NRC's knowledge of the status of the incident, including coordination with other public affairs groups; and

f. intervene in a limited fashion to direct the licensee's on-site response in some unusual and very rare situations.

3.6.2 Department of Energy

Assistance from of the Department of Energy can be requested by the Emergency Director. The Department of Energy-Richland Operations office located in Richland, Washington, is capable of providing radiological response, such as field monitoring teams, within two hours. The Department of Energy will provide additional federal field monitoring and dose assessment capability when requested. Coordination with Energy Northwest will be through the Offsite Agency Coordinator or the Radiological Emergency Manager. A representative from the Department of Energy may proceed to the Emergency Operations Facility to coordinate the effort.

The Department of Energy-Richland Operations (RL) has large resources of equipment and manpower available. Technical personnel and laboratory facilities can quickly be made available. RL will provide support for the alerting of personnel, and establishment of a safety zone on the portion of the Columbia River within the Columbia Generating Station Ten-Mile Emergency Planning Zone. Also, RL will coordinate and implement protective actions for portions of the 10-mile Emergency Planning Zone on Hanford outside of the Columbia Generating Station Exclusion Area.

Assistance which can be requested via the Department of Energy includes:

a. Emergency Decontamination Facility staffed by qualified radiological emergency personnel able to treat contaminated patients.

b. Hanford contractor ambulances with qualified EMT support personnel.

c. Hanford contractor Fire Department resources to respond to fires on the Hanford Reservation.

d. Hanford contractors with additional respirators, protective clothing and equipment for personnel decontamination.

e. Hanford contractors that can assist with field monitoring, dose assessment, meteorological data and laboratory analysis.

Eight DOE Regional Coordinating Offices for Radiological Assistance provide radiological assistance on request in any region of the country. The radiological assistance teams are the front lines of Federal assistance under the Federal Radiological Emergency Response Plan (FRERP). RAP teams will generally be requested quite early in an event by the State and/or the NRC. RAP teams typically are composed of four to six people. They are capable of conducting gross gamma, alpha, and beta monitoring. They will require only one half to two hours to prepare for a response. Response time will depend on travel time to the location of the accident. The RAP team will also act as an advance team for coordination of further DOE assistance such as the Federal Radiological Monitoring and Assessment Center (FRMAC) or the Aerial Measuring System (AMS).

When assistance is requested, DOE coordinates the monitoring and assessment efforts of all Federal agencies. The FRMAC is usually established near the site of the accident as part of or in conjunction with the Federal Response Center established by the Federal Emergency Management Agency (refer to Section 3.6.3). The size and complexity of the assistance effort will depend on the incident. DOE can provide the most extensive monitoring and assessment capabilities available in the United States. It will require about 24 hours for a fully operational unit to be established. DOE has delegated the responsibility for establishing this service to the DOE Nevada Operations Office.

The AMS is an airborne radiological detection system that can respond to radiological incidents and perform plume tracking, radiation surveys, and radiation mapping over large areas around the site of an incident. Most of the aerial monitoring assets are located in Las Vegas, Nevada, but there are also some capabilities based at Andrews Air Force Base, near Washington, D.C. The AMS will be integrated into the assistance effort once it is established.

3.6.3 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) coordinates federal responses to nuclear facilities for both radiological and non-radiological emergencies. In the event of a radiological emergency a number of federal agencies can be activated through FEMA to support State and County activities. FEMA would coordinate these activities through provisions of the Federal Radiological Emergency Response Plan (FRERP). For a Site Area or General Emergency, FEMA would normally establish a Federal Response Center (FRC) in the Tri-Cities area. Space would also be made available at the Energy Northwest Emergency Operations Facility (EOF) for representatives of responding federal agencies. If resources are needed from FEMA to support offsite emergency activities, the State has the authority to request offsite assistance. Energy Northwest will coordinate with the FEMA representative concerning field response activities.

3.6.4 U.S. Coast Guard

The U.S. Coast Guard, through the Thirteenth District Commander in Seattle, Washington, and the Captain of the Port in Portland, Oregon, regulates activities on navigable waters. For Site Area or General Emergencies, the Coast Guard may establish a safety zone on the Columbia River and broadcast a river closure notice to mariners.

U.S. Coast Guard assistance is a special case which, by virtue of pre-coordination with Benton and Franklin Counties, is automatically provided or may be made directly. Coast Guard Officers of authority may establish the "Safety Zone" within the 10-Mile Emergency Planning Zone (EPZ) for the Columbia River when notified of a Site Area or General Emergency. This Safety Zone provides authority for DOE and Sheriff's Office patrol craft to control river access within the EPZ. This service is provided for by the plan and procedures maintained by Benton and Franklin Counties, via the Fixed Nuclear Facility Response Plans referenced in Appendix 1.

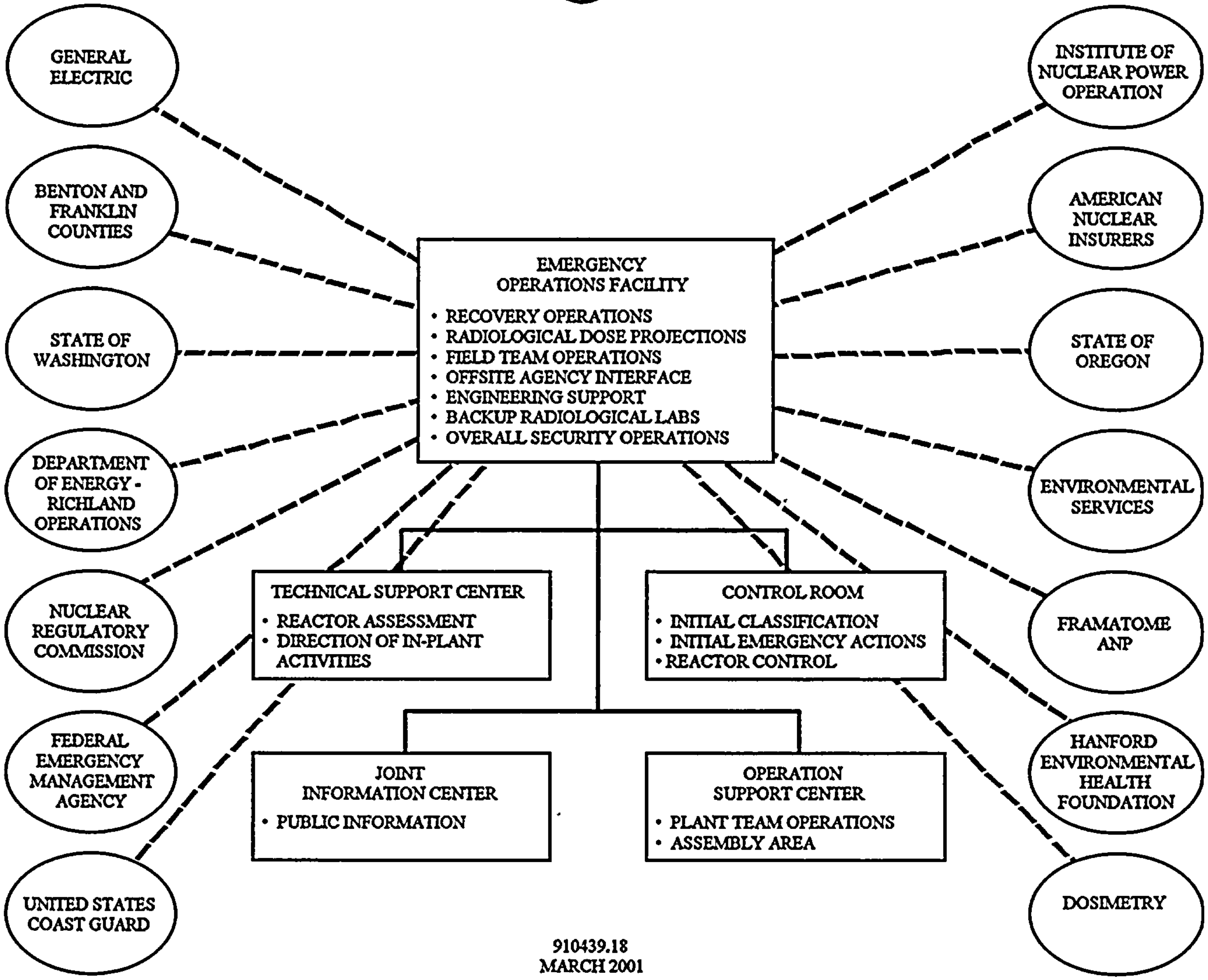

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Figure 3-1, Outside Response Agency Resources

SECTION 4
EMERGENCY CLASSIFICATION AND NOTIFICATION

4.1 EMERGENCY CLASSIFICATION

The Emergency Plan provides for four classes of emergency to cover a spectrum of plant events that could lead to a loss of control over radioactive materials which could result in the need to initiate protective measures for the public. These four classes, in order of increasing severity of plant conditions, are Unusual Event, Alert, Site Area Emergency, and General Emergency. The basic regulatory premise for these classifications is found in 10 CFR 50 Part 47, with further guidance in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1, where example initiating conditions are provided for each emergency classification.

The initiating conditions (ICs) form the basis for establishing specific indications, i.e., plant instrument readings or personal observations, which would indicate that a given initiating condition had been met and thus an emergency classification must be declared. These instrument readings and personal observations are known as Emergency Action Levels (EALs).

Classifying an event based on plant abnormal conditions is the responsibility of the Emergency Director. Initiating events or conditions are included in this section, and implemented by Emergency Plan Implementing Procedure EPIP 13.1.1, Classifying the Emergency.

A conservative philosophy for emergency classification is used to declare the highest category for which an EAL has been met. For example, a Site Area Emergency would be declared directly if a Site Area Emergency EAL is met. This would be done without having first declared the Unusual Event or Alert emergency classifications. Also, if two or more EALs have been met, the EAL representing the highest emergency classification would be used to declare the emergency to ensure that appropriate notifications and actions are taken.

The initiating conditions presented in Table 4-1 are all inclusive of EALs and demonstrate how the EPIP 13.1.1 EALs are arranged. Due to the comprehensive nature of the initiating conditions, however, all postulated accidents in the Final Safety Analysis Report (FSAR) for Columbia Generating Station are fully covered and could be classified, when necessary, by using this scheme. Since some FSAR accidents are not representative of a significant plant event and do not pose a challenge to the fission product barriers, not all FSAR accidents would require declaration of an emergency classification.

Events occurring offsite at nearby nuclear facilities or transportation accidents involving hazardous materials, such as chemicals or nuclear fuel, will only be classified under the Columbia Generating Station EALs when conditions onsite are changed by the event to where they meet the criteria in EPIP 13.1.1. Columbia Generating Station actions will be based on the significance of these events. A transportation accident that does not directly impact the Plant site will be categorized as a Transportation Emergency.

4.2 EMERGENCY ACTION LEVEL CRITERIA

The Columbia Generating Station EAL criteria is based on a combination of methods. The combination ranges from primarily event-based EALs for Unusual Events, to primarily symptom-based or barrier-based EALs for General Emergencies. This type of an approach to EAL development ensures that timely recognition and notification occurs, that events occurring during refueling and cold shutdown are appropriately covered, and that multiple events can be effectively classified.

The symptom-based and barrier-based parameters used in the EALs are consistent with the parameters used in the Plant Emergency Operating Procedures, which are derived from accident analysis done by General Electric and the Boiling Water Reactor (BWR) Owner's Group after the Three Mile Island-2 accident. Symptom-based parameter examples are provided in EPIP 13.1.1, and represent conditions of plant system malfunctions or failures. Some of the parameters are linked to an electronic system which displays an alarm on the Computerized Graphic Display System (GDS) in the Control Room whenever certain abnormal conditions are met.

Situation-based parameters used in the EALs define other abnormal conditions which cannot be easily computerized or quantitatively defined and for which classification may require some judgement. In these cases, personnel are instructed to make decisions based on conservative principles and the definitions and purposes for event classification. Further guidance and justification for the Columbia Generating Station EALs is provided in a technical bases document, EPIP 13.1.1.A, Classifying the Emergency Technical Bases.

4.3 OFFSITE AGENCY REVIEW OF EMERGENCY ACTION LEVELS

EPIP 13.1.1 is the document provided to the NRC, the states, the US Department of Energy, Richland Operations, and the local government agencies to use for review and comment on emergency classification criteria.

A major revision of EPIP 13.1.1 EALs were discussed and agreed upon with state and local governments, and approved by the NRC on December 9, 1994. On at least an annual basis, the most recent revision to EPIP 13.1.1 is reviewed with state and local government representatives.

4.4 CLASSIFICATION DEFINITIONS AND PURPOSES

The conditions for event classification presented here are not intended to cover all situations. Other events and combinations of situations can warrant conservative action and emergency classifications. Classifications shall be made utilizing conservative principles and in situations not covered by examples. The Emergency Director shall declare an appropriate emergency classification where, in his judgement, plant status warrants such a declaration.

4.4.1 Unusual Event

a. Definition

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Purpose

To bring the plant operating staff to a heightened state of readiness, provide for a more systematic handling of information and decision making, and to ensure that notification is made to the emergency response organization, including all offsite emergency authorities.

c. Rationale

The rationale for the Unusual Event classification is to provide early notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. Emergency response organizations are typically not activated for an Unusual Event declaration.

d. Actions:

(1) Promptly inform states and/or local offsite authorities of the nature of the unusual condition as soon as discovered.

(2) Augment on shift resources as needed.

(3) Assess and respond.

(4) Escalate to a higher classification, if appropriate, or

(5) Close out with verbal summary to offsite authorities, followed by written summary within 24 hours.

4.4.2 Alert

a. Definition

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

b. Purpose

To provide additional help in responding to the situation and provide systematic handling of information and decision making. Declaring an Alert will provide additional manpower in the Technical Support Center to help the normal operating crew in those duties not directly related to plant control, such as offsite dose assessment, technical problem evaluation, and communications with outside organizations. It will also activate the Operations Support Center, which will provide additional manpower to respond to plant conditions, and the Emergency Operations Facility and Joint Information Center to improve offsite communications and the ability to relay information to the news media and the public.

c. Rationale

The rationale for the Alert classification is to provide prompt notification of minor events of more significance than the Unusual Event category and to ensure fuller response preparations are performed. The Columbia Generating Station emergency response organization is activated for an Alert declaration.

d. Actions:

(1) Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered.

(2) Augment resources and activate on-site Technical Support Center, on-site Operations Support Center near site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site monitoring teams and associated communications.

(5) Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

(6) Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases, from the appropriate emergency center.

(7) Escalate to a more severe class, if appropriate.

(8) Close out or recommend reduction in emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction.

4.4.3 Site Area Emergency

a. Definition

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

b. Purpose

To assure that all emergency response centers are activated, field monitoring teams dispatched, evacuation coordinators readied, predetermined protective actions issued for the public, and to keep the public informed.

c. Rationale

The rationale for the Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring but where a fuel failure situation is not indicated based on current information. In this situation full mobilization of emergency personnel, and the assembly, accountability and evacuation of non-essential personnel in the near site environs is indicated, as well as associated offsite communications, and the dispatch of radiation monitoring personnel.

d. Actions:

(1) Promptly inform State and/or local offsite authorities of site area emergency status and reason for emergency as soon as discovered.

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provided meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Escalate to general emergency class, if appropriate

or

(10) Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.4 General Emergency

a. Definition

Events are in progress or have occurred which involve actual or imminent substantial fuel degradation or failure with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite at distances more than the immediate site area.

b. Purpose

To initiate predetermined actions for the public, provide for continuous offsite assessment, initiate additional measures, as indicated by radiological releases or plant conditions, and to provide for consultation and flow of information to and from the various offsite authorities.

c. Rationale

The rationale for the General Emergency classification reflects conditions where actual or imminent substantial fuel degradation or failure with the potential for loss of containment are occurring. In this situation, evacuation becomes the preferred immediate action.

d. Actions:

(1) Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local).

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF), and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Close out or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.5 One-Hour Reportability

Events are evaluated against the criteria of 10CFR50.72(b)(1). PPM 1.10.1, Notifications and Reportable Events, implements this criteria. NUREG 1022 contains clarifying NRC guidance.

4.5 STATE AND COUNTY CLASSIFICATION SYSTEM

The States of Washington and Oregon have adopted a fixed nuclear facility emergency classification scheme with classification levels. Each State maintains individual emergency response plans with these classification levels and specific guidelines for responding to emergencies at Columbia Generating Station.

The Columbia Generating Station 10-Mile Emergency Planning Zone lies within two counties. These counties, Benton and Franklin, have agreed to use the emergency classification scheme used by Columbia Generating Station and the States.

As part of the annual EAL review process, Energy Northwest ensures that both the counties' emergency response plans and the State emergency response plan continue to use a classification scheme consistent with the Columbia Generating Station scheme.

4.6 NOTIFICATION METHODS AND PROCEDURES

The Energy Northwest notification process for activating the emergency organizations includes notification of emergency response personnel and assistance organizations, who are notified when an emergency is declared. Initial communication links between the Energy Northwest Emergency Director and the duty officers of Benton and Franklin Counties, and the State of Washington are available on a 24 hour per day basis. The extent of notification will depend upon the emergency classification. A means for verifying the authenticity of all initial offsite notifications is established.

Communication links are established among the various on-site and offsite emergency centers. Descriptions of the emergency response positions at each center include responsibilities for communications with specific positions or other emergency response facilities. Those communication responsibilities are further specified in the EPIPs.

4.6.1 Energy Northwest Emergency Organization Notification

The in-plant paging system, high noise area paging devices, a radio paging system, and an Automated Notification System will be used to notify Energy Northwest ERO personnel. Instructions will be provided if protective measures are required.

Activation of response teams during normal working hours will be via the telephone system, the inplant public address system, or the paging system. Activation during hours other than normal working hours will be accomplished by the paging system, public address and automatic notification system. The automatic notification system will be initiated by the Security Communication Center Duty Officer. The Duty Officer will be directed to make the notifications by the Emergency Director. The Duty Officer is able to manually activate the radio paging system, and this system will serve as a backup notification method.

On-duty Energy Northwest personnel will notify Washington Emergency Management, Benton County Emergency Management, Franklin County Emergency Management, and the Department of Energy.

The extent of the notification will depend upon the emergency classification. However, the Emergency Director may call anyone deemed necessary to support the emergency effort. Table 4-2 outlines the response organizations that will be notified by Energy Northwest for each emergency class. The above scheme is established in procedures.

4.6.2 Nearby Facilities Notification

Initial emergency notification to nearby facilities will be made. Instructions will be provided if protective measures are required.

The Department of Energy is responsible for notifying facilities on the Hanford Reservation during an Energy Northwest emergency; however, Energy Northwest will notify the Fast Flux Test Facility (FFTF) control room when an Exclusion Area evacuation is implemented. DOE notifies Energy Northwest in the event of a sodium oxide release from FFTF.

4.6.3 Support Organizations Notification

Initial notification to Benton County Emergency Management, Franklin County Emergency Management, Department of Energy, and Washington Emergency Management will be made from the Control Room, the Technical Support Center or the Emergency Operations Facility. The Nuclear Regulatory Commission Emergency Response Center will be notified. The Nuclear Regulatory Commission offices will patch the call through to the Nuclear Regulatory Commission offices in Region IV, Arlington, Texas. A means for verifying the authenticity of the notification is established.

4.6.4 General Public Notification

Emergency notification to both transients and residents is the responsibility of the County Emergency Chairman. Notification will be based on information received from Energy Northwest and, if time permits, consultation with the staffs of the Benton County Emergency Operations Center, Franklin County Emergency Operations Center, and Washington State Emergency Operations Center.

Transient and resident populations are advised in public information material to monitor the Emergency Alerting System (EAS) for emergency announcements and protective action instructions. The initial instructions will consist of prescribed emergency messages consistent with the Emergency Classification and will contain information such as:

a. Identification of agency/organization issuing information.

b. A statement that a facility has had an accident.

c. Identification of the communities or geographical areas affected by the emergency.

d. A brief description of the type of emergency and the nature of the hazard.

e. Specific protective measures such as sheltering or evacuation to be taken by residents of the affected areas.

f. A statement that further information will be given over the Emergency Alerting System (EAS).

Copies of the text of prerecorded EAS messages and the messages to be read over the siren system are provided in the Benton and Franklin Counties Emergency Response Plans.

Initial and follow-up notifications of an emergency at the plant are made to the County Emergency Dispatch Center, to the Department of Energy-Richland Operations, and to the State of Washington from the control room, the TSC or the EOF. Washington State is responsible for notifying Oregon DOE. The Benton County Emergency Operations Center is responsible for notifying the public in Benton County. The Franklin County Emergency Operations Center is responsible for notifying the public in Franklin County. Benton County is responsible for making Protective Action Decisions (PADs) in Benton County during the Plume phase of an emergency. Franklin County is responsible for making PADs in Franklin County during the Plume phase of an emergency. They will notify the public within fifteen minutes after a Protective Action Decision is made. The State of Washington is responsible for making PADs during the ingestion phase of an emergency. The Department of Energy has the responsibility to alert and provide information to its employees and contractors on the Hanford Reservation. The Joint Information Center will coordinate public news releases with responding agencies.

The Early Warning System is designed to alert and provide information to the population in the Ten-Mile Emergency Planning Zone.

Tone activated radios provide the primary means of notification. These radios are activated by the Emergency Alerting System signal and provide instructions for protective actions. Transient population along the Columbia River is notified by sirens within the 10-mile EPZ, a Coast Guard marine band broadcast and, if necessary, by Sheriffs Department. Transient population along the Yakima River and in the Horn Rapids area within the 10-mile EPZ are notified by sirens. In addition, Washington State Department of Fish and Wildlife may inform members of the public of protective response actions required.

4.6.5 Initial Messages to Offsite Response Organizations

Initial messages to response organizations will contain such information as:

a. Type of notification
b. Facility experiencing emergency
c. Time of incident
d. Emergency classification
e. Protective action recommendation

4.6.6 Follow-up Messages

Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as:

a. Name and telephone number of caller
b. Location of incident
c. Date/Time of incident
d. Classification of Emergency
e. Type of actual or projected release and estimated duration/impact times
f. Estimate of quantity of radioactive material released or being released, and the points of release
g. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
h. Meteorological conditions
i. Actual or projected dose rates at site boundary; projected integrated dose at site boundary
j. Projected dose rates and integrated dose at the projected peak and at 2 and 10 miles, including sector(s) affected
k. Estimate of any surface radioactive contamination; in-plant, onsite or offsite
l. Emergency response actions underway
m. Recommended emergency actions, including protective action recommendations
n. Request for offsite organization support needed onsite
o. Prognosis for worsening or termination of event based on plant information

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.1 Coolant Activity	Fuel Clad Degradation 1.1.U.1 1 2 3 4 RCS sample activity GT Technical Specification 3.4.8 for GT LCO Action Statement time.	Loss OR potential loss of fuel clad 1.1.A.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine.	Loss or potential loss of any two fission product barriers 1.1.S.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND ANY of the following: • Any RCS Loss Indicators, Table 1 • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Any PC Loss Indicators, Table 2 • Cannot maintain plant parameters within SRVTPLL, or PSP	A loss of any two fission product barriers and loss or potential loss of the third 1.1.G.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Drywell pressure response not consistent with LOCA conditions 1.1.G.2 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2, upscale high AND Any PC Loss Indicators, Table 2 1.1.G.3 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Any RCS Loss Indicators, Table 1 AND either of the following: Any PC Loss Indicators, Table 2 OR Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.2 Radiation Monitors	Fuel Clad Degradation 1.2.U.1 1 2 3 SJAE CONDSR OUTLET RAD HI-HI alarm (P602)	Loss OR potential loss of RCS 1.2.A.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Loss or potential loss of any two fission product barriers 1.2.S.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr	A loss of any two fission product barriers and loss or potential loss of the third 1.2.G.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr 1.2.G.2 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr AND ANY of following: • Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP. • Drywell pressure response not consistent with LOCA conditions. • Any PC Loss Indicators, Table 2

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.3 Refueling Incidents	Unexpected decrease in water covering irradiated fuel assemblies 1.3.U.1 1 | 2 | 3 | 4 | 5 | def Uncontrolled water level decrease in the reactor cavity or SFP below the level of the weirs with all irradiated fuel assemblies remaining covered by water	Major damage to irradiated fuel OR loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the RPV 1.3.A.1 1 | 2 | 3 | 4 | 5 | def HIGH alarm on ARM-RIS-1 (Fuel Pool ARM) resulting from an uncontrolled irradiated fuel handling process		
		Loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel 1.3.A.2 1 | 2 | 3 | 4 | 5 | def Water level, when not intentionally lowered, observed to be below the top of the gate sill separating the reactor cavity and the SFP 1.3.A.3 1 | 2 | 3 | 4 | 5 | def Report of visual observation of irradiated fuel uncovered or uncovering imminent.		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.1 RPV Water Level	RCS Leakage 2.1.U.1 1 2 3 Valid unidentified leakage GE 10 gpm or upscale high indicated on recorder EDR-FRS-623, Pen 1 (P632) (Non RCC) OR Valid identified leakage GE 25 gpm indicated on recorder EDR-FRS-623, Pen 2 (P632)	Loss OR potential loss of RCS 2.1.A.1 1 2 3 Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Loss or potential loss of any two fission product barriers 2.1.S.1 1 2 3 4 5 RPV level LT -161 inches (for ATWS conditions, RPV level LT -192") or cannot be determined	A loss of any two fission product barriers and loss of potential loss of the third 2.1.G.1 1 2 3 Entry into Severe Accident Guidelines 2.1.G.2 1 2 3 RPV level LT -161 inches, (for ATWS conditions, RPV level LT -192") or cannot be determined AND ANY of following: • Rapid unexplained decrease of PC pressure following an initial increase. • Drywell pressure response not consistent with LOCA conditions • Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.2 Reactivity Control	Inadvertent Criticality 2.2.U.1 2 3 4 5 An extended and unplanned sustained positive period observed on NIs, while NOT performing a reactor startup.	Failure of Reactor Protection System (RPS) instrumentation to complete or initiate a reactor scram AND manual scram was successful. 2.2.A.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Manual Actions (mode switch in shutdown, manual push buttons and ARI) result in reactor power LE 5%.	Failure of RPS instrumentation to complete or initiate an automatic reactor scram once a RPS setpoint has been exceeded AND manual scram was NOT successful 2.2.S.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND either: Reactor power GT 5% or unknown OR Wetwell temperature GT 110°F	Failure of the RPS to complete an automatic scram AND manual scram was NOT successful AND there is indication of an extreme challenge to the ability to cool the core. 2.2.G.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Wetwell temperature cannot be maintained LT the HCTL

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.1 Primary Containment Pressure	Loss or potential loss of primary containment 3.1.U.1 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase	Loss or potential loss of either fuel clad or RCS 3.1.A.1 1 2 3 Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	Loss or potential loss of any two fission product barriers 3.1.S.1 1 2 3 Drywell pressure response not consistent with LOCA conditions 3.1.S.2 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	A loss of any two fission product barriers and loss or potential loss of the third 3.1.G.1 1 2 3 PC pressure exceeds PCPL
3.2 Wetwell Temperature/ Level	Loss or potential loss of primary containment 3.2.U.1 1 2 3 Cannot maintain plant parameters within SRVTPLL		Loss or potential loss of any two fission product barriers 3.2.S.1 1 2 3 RPV pressure and wetwell temperature cannot be maintained below HCTL	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.2 Wetwell Temperature/Pressure			Loss or potential loss of any two fission product barriers 3.2.S.2 1 | 2 | 3 | | | Cannot maintain plant parameters within SRVTPLL or PSP AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.3 Combustible Gas Concentration				A loss of any two fission product barriers and loss or potential loss of the third 3.3.G.1 1 2 3 PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
3.4 Containment Isolation Status	Loss or potential loss of primary containment 3.4.U.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists	Main steam line break outside containment with isolation 3.4.A.1 1 2 3 Indications of a MSL break AND MSIV closure <u>has isolated</u> the break	Loss or potential loss of any two fission product barriers 3.4.S.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists. AND ANY of following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell 3.4.S.2 1 2 3 Indications of a MSL break AND MSIV closure <u>has not isolated</u> the break	A loss of any two fission product barriers and loss or potential loss of the third 3.4.G.1 1 2 3 Intentional venting of Primary Containment to prevent failure.

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4 Secondary Containment 4.1 Reactor Building Temperature/ Radiation Levels			Loss or potential loss of any two fission product barriers 4.1.S.1 1 2 3 Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures).	A loss of any two fission product barriers and loss of potential loss of the third 4.1.G.1 1 2 3 Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures). AND ANY of the following: • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr • RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches) or cannot be determined • Coolant activity GT 300 μCi/gm dose equivalent iodine

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EMERGENCY CLASSIFICA[illegible] INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.1 Offsite Release	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times ODCM limits for 60 minutes or longer 5.1.U.1 1 2 3 4 5 def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "UE" for GT 60 minutes 5.1.U.2 1 2 3 4 5 def Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" OR Sample analysis indicates release GT 2 times ODCM 6.2.1.1 limits for GT 60 minutes	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological specifications for 15 minutes or longer 5.1.A.1 1 2 3 4 5 def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Alert" for GT 15 minutes 5.1.A.2 1 2 3 4 5 def Offsite dose calculations indicate dose rates GT Table 4 column "Alert" OR Sample analysis indicates release GT 200 times ODCM 6.2.1.1 limits for GT 15 minutes	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release 5.1.S.1 1 2 3 4 5 def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Site Area" for GT 15 minutes 5.1.S.2 1 2 3 4 5 def Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area"	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the release using actual meteorology 5.1.G.1 1 2 3 4 5 def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "General" for GT 15 minutes 5.1.G.2 1 2 3 4 5 def Offsite dose calculations indicate doses or dose rates GT Table 4 column "General" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "General".

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EMERGENCY CLASSIFICA[illegible]N INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.2 Area Radiation	Unexpected increase in plant radiation levels 5.2.U.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 5E3 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-20 thru ARM-RIS-30 • ARM-RIS-32 thru ARM-RIS-34 (High Range)	Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown 5.2.A.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 15 mR/hr on ARM-RIS-19 (CR) OR Valid reading GT 1E4 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-23 • ARM-RIS-24 • ARM-RIS-32 thru ARM-RIS-34 (High Range)		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
6 Electrical Failures 6.1 AC Power Loss	Loss of all offsite power to critical AC busses for greater than 15 minutes 6.1.U.1 1 2 3 4 5 def Power is unavailable to SM-7 and SM-8 from offsite AC sources GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.A.1 4 5 def Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes Power capability to critical AC busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout. 6.1.A.2 1 2 3 Available emergency bus AC power has been reduced to only one of the following sources for GT 15 min • TR-N1 (SM-7 and/or SM-8) • TR-S (SM-7 and/or SM-8) • TR-B (SM-7 and/or SM-8) • DG-1 (SM-7) • DG-2 (SM-8)	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.S.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Prolonged loss of all offsite power and prolonged loss of all onsite power to critical AC busses 6.1.G.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 AND either of the following: In the judgement of the Emergency Director, AC power to either SM-7 or SM-8 is not likely to be restored within 4 hours OR RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
6.2 DC Power Loss	Degradation of all critical DC power for greater than 15 minutes. 6.2.U.1 4 5 def Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicated by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes		Degradation of all critical DC power for greater than 15 minutes 6.2.S.1 1 2 3 Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicted by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.1 System Failures	Inability to reach required shutdown within technical specification limits 7.1.U.1 [1 | 2 | 3 | | |] Plant is not brought to required operating mode within T.S. LCO action statement time 7.1.U.2 [1 | 2 | 3 | 4 | 5 | def] Uncontrolled flooding in a safe shutdown building, Table 5, that has the potential to affect safety related equipment needed for the current operating mode	Inability to maintain plant in cold shutdown 7.1.A.1 [| | | 4 | 5 |] Inability to restore and maintain reactor coolant temp LT 200°F 7.1.A.2 [1 | 2 | 3 | 4 | 5 | def] Report by plant personnel confirming the occurrence of plant uncontrolled internal flooding in a safe shutdown building, Table 5 AND Affected safe shutdown system parameters indicate degraded performance		
7.2 Control Room Evacuation		Control room evacuation has been initiated 7.2.A.1 [1 | 2 | 3 | 4 | 5 |] The decision to evacuate the Control Room has been made.	Control room evacuation has been initiated, but plant control CANNOT be established 7.2.S.1 [1 | 2 | 3 | 4 | 5 |] CR evacuation initiated AND Control of plant equipment needed to maintain adequate core cooling cannot be established at either the Remote Shutdown Panel or Alternate Remote Shutdown panel within 15 minutes of the SRO in charge of the CR physically leaving the CR	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Unplanned loss of most or all safety system annunciators or indication in the control room for greater than 15 minutes 7.3.U.1 1 | 2 | 3 Unplanned loss of most or all annunciators on P601, P602, P603, and Bd. C associated with safety related equipment GT 15 minutes	Unplanned loss of most or all safety system annunciators or indications in the control room with EITHER: 1) a significant transient in progress; OR 2) Compensatory non-alarming indicators are unavailable 7.3.A.1 1 | 2 | 3 Unplanned loss of most or all annunciators on P601, P602, P603, and Bd C associated with safety related equipment GT 15 minutes AND either of the following: A significant plant transient is in progress OR Compensatory non-alarming indications are not available (plant computer system and GDS)	Inability to monitor a significant transient in progress. 7.3.S.1 1 | 2 | 3 Loss of most or all annunciators on P601, P602, P603 and Bd. C associated with safety related equipment AND Compensatory nonalarming indications are unavailable (process computer system and GDS) AND Significant transient in progress AND Loss of indications needed to monitor ANY of the following plant critical safety parameters: • Reactor power • RPV level • RPV pressure • Drywell pressure • Drywell temperature • Wetwell pressure • Wetwell/Drywell H2/O2 Concentrations • Wetwell level • Wetwell temperature • Radioactive Gaseous Effluents	
	Significant loss of onsite OR offsite communications capabilities 7.3.U.2 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following onsite communications capability: • Plant Public Address (PA) System • Plant Telephone System • Plant Radio System Operations and Security Channels			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Significant loss of onsite or offsite communications capabilities 7.3.U.3 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following offsite communications capability: • State/County Notification (CRASH) System • Offsite calling capability from the Control Room via direct telephone and fax lines • Long distance calling capability on the Plant ("2000") Switch and Kootenai (Plant Support Facility)/Deschutes (Plant Engineering Center) ("8000") Switch			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.1 Security Threats	Confirmed security event which indicates a potential degradation in the level of safety of the plant 8.1.U.1 [1 | 2 | 3 | 4 | 5 | def] Bomb device discovered within plant protected area <u>but</u> outside a Safe Shutdown Building, Table 5 OR Confirmed report of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes	Security event in a Plant Protected Area 8.1.A.1 [1 | 2 | 3 | 4 | 5 | def] Confirmed report of an intrusion by a hostile force into the Plant Protected Area	Security event in a Plant Vital Area 8.1.S.1 [1 | 2 | 3 | 4 | 5 | def] Bomb device discovered or detonated within a Safe Shutdown Building, Table 5 OR Confirmed report of intrusion by a hostile force into a Safe Shutdown Building, Table 5	Security event resulting in loss of ability to reach and maintain cold shutdown 8.1.G.1 [1 | 2 | 3 | 4 | 5 | def] Loss of physical control of the CR due to security event OR Loss of physical control of the remote shutdown capability due to security event
8.2 Fire/Explosion Caused by Equipment Failure	Fire within the Protected Area Boundary not extinguished within 15 minutes of detection OR an explosion within Protected Area Boundary 8.2.U.1 [1 | 2 | 3 | 4 | 5 | def] Fire within or adjacent to any Safe Shutdown Building, Table 5, which is <u>not</u> extinguished within 15 minutes of either CR notification by plant personnel or receipt of an alarm OR Report by plant personnel of an unplanned explosion within the Protected Area boundary resulting in visible damage to permanent structures or equipment	Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown 8.2.A.1 [1 | 2 | 3 | 4 | 5 | def] Confirmed fire or explosion in a safe shutdown building, Table 5 AND either of the following: Affected safe shutdown system parameters indicate degraded performance OR Report by plant personnel of visible damage to the affected safe shutdown building or equipment contained within the affected safe shutdown building		

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.3 Man-Made Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.3.U.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash into or projectile which impacts a Safe Shutdown Building, Table 5 8.3.U.2 1 | 2 | 3 Turbine failure resulting in casing penetration or damage to turbine or generator seals	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.3.A.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash or projectile impact which impedes access to or damages equipment in a Safe Shutdown Building, Table 5 8.3.A.2 1 | 2 | 3 Missiles generated from a turbine failure have resulted in visible structural damage to or penetration of a safe shutdown building, Table 5		
	Release of toxic or flammable gases affecting the Protected Area Boundary deemed detrimental to safe operation of the plant. 8.3.U.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for evacuation or shelter of site personnel based on offsite event	Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. 8.3.A.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases within a safe shutdown building, Table 5, in concentrations that will be life threatening to plant personnel or impede access to equipment needed for safe plant operation.		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.1 1 | 2 | 3 | 4 | 5 | def MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake 8.4.U.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 80 mph OR CR measured winds GT 66 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary 8.4.U.3 1 | 2 | 3 | 4 | 5 | def Range fires near the plant which threaten to reduce the level of safety	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.1 1 | 2 | 3 | 4 | 5 | def OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake 8.4.A.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 100 mph OR CR measured winds GT 76 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5 8.4.A.3 1 | 2 | 3 | 4 | 5 | def Ash fallout from volcanic activity is severe enough to warrant plant shutdown		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.4 1 | 2 | 3 | 4 | 5 | def Visible ash fallout from volcanic activity 8.4.U.5 1 | 2 | 3 | 4 | 5 | def River level increase which threatens to flood the river pumphouse	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.4 1 | 2 | 3 | 4 | 5 | def Report by plant personnel of an event causing visible structural damage to a safe shutdown building, Table 5		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Other 9.1 Other	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Unusual Event. 9.1.U.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Alert. 9.1.A.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred which indicate actual or potential substantial degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a Site Area Emergency 9.1.S.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a General Emergency 9.1.G.1 1 2 3 4 5 def In the judgement of the Emergency Director, other conditions exist which indicate either of the following: Actual or imminent substantial core degradation or melting with the potential for loss of containment integrity OR Potential for uncontrolled radionuclide releases which can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary
	Loss OR potential loss of Primary Containment 9.1.U.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment as indicted by Fission Product Barrier Degradation Table, Table 6	Loss OR potential loss of fuel clad or RCS 9.1.A.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier as indicted by Fission Product Barrier Degradation Table, Table 6	Loss or potential loss of any two fission product barriers 9.1.S.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of any two fission product barriers as indicted by Fission Product Barrier Degradation Table, Table 6	A loss of any two fission product barriers and loss or potential loss of the third 9.1.G.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third as indicated by Fission Product Barrier Degradation Table, Table 6

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines
					Loss of pressure suppression function
					Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP
					PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

Table 1 RCS Barrier Loss Indicators
• Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr
• RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
• Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell

Table 2 PC Barrier Loss Indicators
• Rapid unexplained decrease of PC pressure following an initial increase
• Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND
downstream pathway outside primary containment

TABLE 3

Table 3 Effluent Monitor Classification Thresholds				
Monitor	UE	Alert	Site Area	General
NOTE: If a dose projection cannot be performed, and the monitor reading is sustained for longer than the specified time then the declaration must be made based on the valid reading.				
	60 minutes	15 minutes	15 minutes	15 minutes
PRM-RE-1B Reactor Bldg. Exhaust Inter.	1.35E4 cps	N/A	N/A	N/A
PRM-RE-1C Reactor Bldg. Exhaust Hi	N/A	1.14E3 cps	9.65E3 cps	9.35E4 cps
TEA-RIS-13 Turbine Bldg. Exhaust. Low	1.7E4 cpm	4.4E4 cpm	4.4E5 cpm	N/A
TEA-RIS-13A Turbine Bldg. Exhaust, Int.	N/A	N/A	N/A	11 PMU
WEA-RIS-14 Rad Waste Bldg. Exhaust	1.2E5 cpm	1.7E5 cpm	1.7E6 cpm	N/A
WEA-RIS-14A Rad Waste Bldg. Int.	N/A	N/A	N/A	29 PMU
TSW-RIS-5 TSW Effluent	3.9E3 cpm	3.9E5 cpm	N/A	N/A
FDR-RIS-606 Rad. Waste Effluent	2 x Hi-Hi alarm	200 x Hi-Hi alarm	N/A	N/A
SW-RIS-604 SW 'A' Process	2.0E2 cps	2.0E4 cps	N/A	N/A
SW-RIS-605 SW 'B' Process	2.0E2 cps	2.0E4 cps	N/A	N/A

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

TABLES 4 & 5

cps = counts per second cpm = counts per minute PMU = panel meter units N/A = not applicable (outside of meter range)

Table 4 Offsite Dose Calculation/Field Survey Sample Analysis Classification Thresholds at 1.2 miles

	UE	Alert	Site Area	General
TEDE	N/A	N/A	100 mrem	1000 mrem
CDE Thyroid	N/A	N/A	500 mrem	5000 mrem
TEDE rate	0.1 mrem/hr	10 mrem/hr	100 mrem/hr (projected GT 60 min)	1000 mrem/hr (projected GT 60 min)
CDE Thyroid rate	0.3 mrem/hr	50 mrem/hr	500 mrem (for GT 1 hr inhalation)	5000 mrem (for GT 1 hr inhalation)

Table 5 Safe Shutdown Buildings
• Vital portions of the RadWaste/Control Building • Reactor Building • Vital portions of the Turbine Building • Standby Service Water Pump Houses • Diesel Generator Building • Diesel Generator Fuel Oil Storage Area

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL Wetwell pressure exceeds PSP
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

TABLE 4-2
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Energy Northwest:				
Technical Support Center	N,R	A	A	A
Operations Support Center	N,R	A	A	A
Security Communications Center	A	A	A	A
Emergency Operations Facility	N,R	A	A	A
Joint Information Center (Energy Northwest Richland Office Complex)	N,R	A	A	A
County:				
Benton Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
Benton and Franklin County Sheriffs[1]	N,R	A	A	A
County:				
Franklin Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
State:				
Washington State Emergency Management	N	A	A	A
Oregon State[2] Department of Energy	N	N	A	A

A = Activate N = Notify for information only R = Respond if requested

[1] Notified by Benton County or Franklin County, as appropriate, Emergency Dispatch
[2] Notified by Washington State

TABLE 4-2 (Cont'd.)
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Federal:				
Nuclear Regulatory Commission	N	N	A	A
U.S. Coast Guard		R	N,A	A
Federal Emergency Management Agency	N	N,R	A	A
Department of Energy Richland (will notify and activate DOE contractors)	N	N,R	A	A
Support Services:				
Siemens Corporation	R	R	N,R	N,R
General Electric	R	R	N,R	N,R
Institute of Nuclear Power Operations		N	N,R	N,R
American Nuclear Insurers		N	N,R	A
Northwest Health Services	R	R	N,R	N,R
Hospitals	R	R	R	R
BPA Substation	N	N	N	N

A = Activate N = Notify for information only R = Respond if requested

SECTION 5
ACCIDENT ASSESSMENT AND PROTECTIVE RESPONSE

5.1 ASSESSMENT ACTIONS, PLANT INSTRUMENTATION, AND RADIOLOGICAL MONITORING

Effective coordination and direction of all elements of the emergency response organization requires that accident assessment be continued throughout the emergency. Using plant instrumentation and radiological monitoring, each emergency class invokes similar assessment methods. The magnitude of the assessment actions posed by each classification varies. An important focus of assessment actions is to track the ability of plant systems to contain the core inventory of radioactive material (i.e., radionuclides) and to monitor whether the potential exists for accidental release of this material into the environment. Assessment actions also include determining the consequences of a radioactive material release on both a projected and actual basis.

For the Unusual Event classification level, assessment actions will generally involve situations that do not pose a threat to containment of the reactor core's radioactive material. Usually, declaration of an emergency classification will result from alarms, instrument readings, severe weather warnings, operating experience, or any combination thereof. Continuing assessment for an Unusual Event category of emergency will consist of the normal monitoring of Control Room and plant instrumentation and status. Tornado and severe weather assessment actions consist of keeping in contact with the load dispatcher and appropriate public authorities. If a fire prompted the declaration of an Unusual Event, the Fire Brigade Leader will go to the fire location, make continuing assessments, and report to the Shift Manager on whether offsite fire fighting support is required.

Once an incident has been classified as an Alert, assessment actions will include:

a. Increased surveillance of in-plant instrumentation.

b. If possible, the dispatching of shift personnel to the identified problem area to confirm and visually assess the problem.

c. The dispatching of personnel to monitor for possible releases, and to confirm the correct classification.

d. If a radiological incident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected offsite doses will occur. Dose assessment activity will continue until termination of the emergency so that assessment updates may be provided to all concerned offsite agencies and to the Emergency Director. Emergency Plan Implementing Procedures are provided to allow a rapid, consistent projection of offsite doses.

Assessment actions for the Site Area Emergency and General Emergency category are similar to the actions for an Alert. However, due to the increased magnitude of the possible release, assessment activity of greater scope will occur. The personnel necessary for this assessment effort will be provided by full mobilization of the onsite and offsite emergency response organizations. The assessment actions at these levels will include:

a. An increased amount of plant instrumentation will be monitored. (In particular, indications of core status, e.g., saturation temperature, core covery/uncovery indications etc.)

b. Radiation monitoring efforts will be greatly increased. Field Monitoring Teams will be available for dispatch. Beta-gamma field measurements will be performed; air sampling, environmental thermoluminescent dosimeter (TLD) change out, and collection of environmental media for assessment of material transport and deposition will be performed as necessary.

c. Dose assessment activities will be performed more frequently, with an increased emphasis on dose projection for use as a factor in determining necessary protective actions. Radiological and meteorological instrumentation readings will be used to project the dose rate at predetermined distances from the plant, and to project the potential integrated dose.

   In reporting the dose projections to the Emergency Director, the dose rate, dose, and basis for the time used for the dose estimate should be provided. Confirmation of dose rates by Field Monitoring Teams will be reflected in reports or revised dose estimate information provided to offsite agencies.

   All dose projections will be performed in accordance with the Emergency Plan Implementing Procedures which incorporate recommendations found in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." Reports to offsite authorities will include the relationship of dose to these guidelines. Emergency Plan Implementing Procedures provide for the recording of pertinent information.

Detailed plant operating procedures are available for use during emergencies, as well as during normal operations. Specific Emergency Operating Procedures and Abnormal Condition Procedures are provided to assist the Control Room operators in placing the plant in a safe condition and taking corrective actions.

5.1.1 Plant Instrumentation

Plant instrumentation measures appropriate parameters that are indicative of the status of various plant systems and the reactor. Instrumentation used to ensure safe reactor operation is deemed safety related. An important group of safety related parameters is commonly referred to as the Safety Parameter Display System (SPDS). The purpose of this system as outlined in NUREG-0696, is to help Control Room personnel make quick assessments of plant safety status. At Columbia Generating Station, the SPDS is made up of hard wired Control Room instrumentation. This instrumentation is sufficiently concentrated in the Main Control Room to allow rapid assessment of plant conditions. Additional information that is useful for emergency response is supplied by the Graphic Display System (GDS) which is part of SPDS. The SPDS provides information related to assessment of the following plant functions:

- Reactivity control,
- Reactor core cooling and heat removal,
- Reactor coolant system integrity,
- Radioactivity control, and
- Containment integrity.

The SPDS and other post-accident monitoring instrumentation provide the means to assess plant status during and following an accident. For more detailed information on plant instrumentation, refer to the Final Safety Analysis Report, Chapter 7.

The structures, systems, components and instrumentation important to safety at Columbia Generating Station are designed and located to minimize the probability and effect of fires and explosions, as well as to withstand the effects of natural phenomena such as earthquakes, tornadoes, and floods without the loss of capability to perform their safety functions.

Facilities and equipment for detecting, annunciating, and extinguishing fires are provided to protect both plant and personnel. These include fire detection and alarm systems, deluge water spray systems, dry and wet pipe sprinkler systems, carbon dioxide systems, hose stations, portable fire extinguishers, and halon flooding systems. In addition, noncombustible and heat resistant materials are used wherever practical throughout the Plant, particularly in locations such as the containment and Control Room. For more detailed information on the fire protection systems, refer to the Columbia Generating Station Fire Protection Evaluation.

The Plant site is near the Columbia River, which is the predominant hydrologic feature of the area. The elevations of safety related systems and components, however, are sufficient to protect the Plant against design basis flood conditions. All safety related structures, systems and components are also designed to withstand the effects of an earthquake, estimated as the maximum earthquake potential for this area. Instrumentation used to monitor earthquake seismic motion at Columbia Generating Station complies with Regulatory Guide 1.12 requirements and provides both a printout and an alarm annunciation if certain levels of seismic motion are detected. For more detailed information on tornado, flood and earthquake protection, refer to the Final Safety Analysis Report, Chapter 3. If needed as backup, flood information can be obtained from the U.S. Coast Guard and seismic information can be

obtained from the Department of Energy, Richland Operations. Both agencies are listed in the Emergency Phone Directory.

5.1.2 Radiological Monitoring Instrumentation

The plant radiation monitoring instrumentation is used to provide information in regard to general area radiation levels as well as the radiation levels in process and effluent streams, i.e., fluids in piping systems or air in ventilation systems. The area radiation and airborne radioactivity monitoring systems are comprised of area monitoring components located throughout the plant. Under normal operating conditions, the area monitors warn personnel both locally and remotely of increasing radiation levels. These monitors provide information to assessment personnel so that decisions can be made with respect to deployment of personnel or initiation of protective actions in the event of a radiation accident. For more detailed information on the area radiation and airborne radioactivity monitoring systems, refer to the Final Safety Analysis Report, Chapter 12.

The process and effluent radiological monitoring and sampling systems provide the means for sampling and continuously monitoring paths by which significant amounts of radioactivity could be released to the environment during normal operation and anticipated operational occurrences. As part of the plant radiological monitoring program, the process and effluent radiological monitoring and sampling systems assist in limiting effluent radioactivity to within the limits of 10CFR 20 and 10CFR 50, Appendix I and provide measurement for reporting radioactivity released to the environs in compliance with Regulatory Guide 1.21. These systems also provide the accident radiation monitoring required for compliance with NUREG-0737. Portions of these systems are also employed during postulated accident conditions for monitoring effluent discharge paths, and initiating automatic control features. A detailed description of the process and effluent monitoring and sampling systems is included in the Final Safety Analysis Report, Chapter 11.

5.2 METEOROLOGICAL AND ENVIRONMENTAL MONITORING

5.2.1 Meteorological Monitoring System

The primary onsite meteorological equipment includes a 240-foot tower with a 5 ft. wind mast located approximately 1700 feet west of Columbia Generating Station and provides data to Columbia Generating Station. System measurements include wind speed, wind direction, sigma theta, temperature, dew point, barometric pressure, precipitation, and temperature differential. The Operational Meteorological Program is described in Chapter 2 of the Final Safety Analysis Report.

Wind speed, wind direction, and temperatures, except the temperature at 245 feet, are available in the control room as near real-time digital displays, (five-minute averages). The averaged data is sent via the supervisory system to the Control Room. The data is then sent to chart recorders and the PPCRS computer. The data is also accessible at the Emergency Operations Facility, the Technical Support Center, and the control room via the plant computer system.

Backup meteorological information is available. Wind speed and direction, temperature, dew points, and sigma theta parameters are available. This and other information is available from Pacific Northwest National Laboratory (PNNL) or the National Weather Service, for 15-minute averaging (manual) and input to the computer systems.

The outputs of the primary tower sensors are fed to the plant process computer for 15 minute averaging for input to the Emergency Dose Projection System (EDPS). Error diagnostics, simulated data entry, and archiving are performed concurrently. Near real time access for both emergency and routine operations is thus provided.

A procedure shall be available for the use of normal and backup meteorological data.

5.2.2 Radiological Environmental Monitoring Program

A routine radiological environmental monitoring program is established in accordance with the Offsite Dose Calculation Manual (ODCM) requirement. Energy Northwest activities include air, milk, water, garden produce, fish, soil and sediment sampling, and thermoluminescent dosimeter (TLD) placement. Energy Northwest environmental monitoring locations are similar to Figure 5-1 and are fully listed in Section 5.0 of Energy Northwest ODCM.

In case of an emergency at Columbia Generating Station, TLDs will provide a time integrated exposure record. Permanent TLD stations are located within the Ten-Mile Emergency Planning Zone, around the Exclusion Area Boundary, and at various points of interest around the Hanford Reservation and across the Columbia River in Franklin County. A control station is located near Grandview, approximately 30 miles southwest of the site. Exchange frequency during normal operations is quarterly; however, during an emergency the TLDs may be exchanged more frequently based on release conditions. In addition, continuous air samplers are located within the Ten-Mile Emergency Planning Zone. The air samplers collect airborne radioiodines and particulates on filters which are analyzed either in the field or at the radiological laboratory in the Emergency Operations Facility.

5.3 OFFSITE DOSE PROJECTIONS

5.3.1 Source Term Determinations

Release data, such as volumetric flow rates and gross radiation levels, in conjunction with calibration factors and time dependent nuclide ratios, will be utilized during an accident to assess the radiological source term. Capability exists on shift to perform dose assessment projections using real time meteorological and effluent monitor data at all times. Data from instrumentation in the airborne effluent release pathways are available to be entered into the Emergency Dose Projection System (EDPS) to calculate the source term. A more detailed assessment of the isotopic composition of the release will be determined by laboratory analysis of effluent and field sampling media. Methods for determining release rate in the event the instrumentation is offscale or inoperative are contained in the Emergency Plan Implementing Procedures.

5.3.2 Emergency Dose Projection System

The Emergency Dose Projection System (EDPS) consists of 2 programs, QEPDS and EDPS Main. Both programs are accessed via personal computer. Both programs rely on a precalculated, real time, site-specific relationship between effluent monitor readings and on-site and offsite dose rates.

QEDPS is designed for rapid evaluation of a release with restricted data input and a straight-line dispersion model. QEDPS provides incremental dose projections from the site boundary out to 10 miles. QEDPS is available in the Control Room, TSC, EOF, and Alternate EOF, and provides text and map output. Field Team data may be used to calculate dose projections or validate previous projections.

Having the QEDPS software loaded on multiple, stand-alone computers located in the Control Room and EOF ensures backup dose projection capability.

EDPS Main is designed to accept much more detailed inputs for a more thorough release evaluation with more extensive text and graphical output. EDPS Main has the choice of puff or straight-line dispersion models and incremental dose projections from the site boundary out to 10 or 50 miles. EDPS Main has a graphical map output as well as a text output of the dose projection. EDPS Main is available in the TSC and EOF.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

5.3.3 Total Population Exposure

The Columbia Generating Station plant data systems collect and maintain files of effluent flow, radiation monitor readings, and five minute average meteorology data. These data are manually input into a joint frequency program, into the XOQDOQ program, and then to the GASPAR II computer code to calculate total population dose for occupied areas. The GASPAR II code can be adapted to emergency operations by input of short term atmospheric dispersion factors and appropriate exposure pathway parameters out to 50 miles.

5.4 FIELD MONITORING

5.4.1 Environmental Field Teams

Field monitoring capabilities will be activated whenever an Alert classification occurs. Field monitoring will be performed by environmental field teams that have been selected and trained to perform these duties.

Sufficient personnel are identified within Energy Northwest and outside assistance agencies to maintain 24-hour shift coverage if needed for an extended period. Energy Northwest maintains sufficient dedicated equipment to adequately equip four Energy Northwest environmental field teams.

Field team members responding during offshift hours will report to their emergency duty station within 60 minutes. Field team deployment time from their emergency duty station will be as needed, and can be achieved in less than 30 minutes. This is based on the time necessary to brief the team, load equipment, and depart the staging area. This deployment time could be shorter during normal work hours when field team personnel are more available and could respond sooner than the 60 minute required response time.

Field monitoring will concentrate in the downwind area from the plant. Locations used during the normal environmental monitoring program will be used as preselected monitoring points when applicable (Figure 5-1).

5.4.2 Aerial Monitoring

Aerial monitoring may be used to locate a plume in a delayed or extended release, or to identify areas of radioactive deposition following a release. Aerial monitoring capability is available through federal emergency resources. The decision to employ aerial monitoring will be made by representatives of the Washington Department of Health, Oregon Department of Health, US Department of Energy, and Energy Northwest. Any request for federal resources to conduct aerial monitoring will be directed through the Washington State Emergency Operations Center (EOC).

5.4.3 Environmental Field Team Kits

Environmental field team monitoring kits are maintained in a state of readiness. Additional supplies and equipment are available to replace equipment out of service for repair and recalibration. Equipment in the calibration laboratory provides an additional resource. Appendix 3 provides lists of equipment and their location.

5.4.4 Radioiodine Determinations

Environmental air samples are analyzed for particulate and radioiodine concentrations. Analysis of particulate filters and iodine sampling cartridges are performed using a portable count rate meter. Procedures concerning sampling time and field analysis techniques are established to measure airborne radioiodine concentrations as low as 10^{-7} microcuries per cubic centimeter under field conditions.

5.4.5 Laboratory Capability

Laboratory analysis of environmental field samples can be conducted at Energy Northwest facilities as described in Section 6.2.8 of this Plan. In addition, the States of Oregon and Washington both maintain laboratories under the direction of their respective Departments of Health. These laboratories have the capability to identify, both qualitatively and quantitatively, the constituent elements that might be contained in radiological releases from Columbia Generating Station during a nuclear incident. Following such an event, samples of air, drinking water, milk, pasture and other agricultural products would be obtained by field teams and brought to the labs for analysis. The results of this analysis would then be used to

determine the existence of radiological hazards in food products. The specific capabilities of the state laboratories are evaluated by FEMA.

5.5 PROTECTIVE ACTION AND RESPONSIBILITIES

The appropriate protective actions for an airborne release of radioactive material are evacuation and sheltering. The decision to evacuate or shelter is based on the dose to be avoided by the protective action relative to the risk associated with implementing a protective action. Dose to be avoided by a protective action can be affected by duration and quantity of radioactive release as well as time of release relative to time of implementation of the protective action. Protective Action Guides, discussed in Section 5.5.1, provide pre-planned guidance for making response decisions. When applied with professional judgement, they help to ensure rapid action to protect members of the public. Specifically:

a. Evacuation - Evacuation and control of access to an affected area can be the most effective protective action for reducing the dose to the public. However, constraints such as severe weather conditions, obstruction of roads, and limited time may impact the benefits of evacuation.

b. Sheltering - Sheltering in buildings with windows and doors closed and ventilation turned off can provide partial protection from a passing radioactive plume. The extent of the protection depends on the duration and isotopic mixture of the release and the type of building.

The provisions for relating measured parameters to dose rates for key isotopes and for estimating integrated dose from projected and actual dose rates shall be described in procedures.

5.5.1 Recommendations to Counties, States and Department of Energy-Richland Operations (RL)

Energy Northwest will make prompt recommendations for protective actions to state, county and DOE-RL officials. These officials will make decisions on the specific actions to be implemented in their jurisdiction.

Protective Action Recommendations (PARs) will be made based on plant or radiological conditions. Recommendations for evacuation and sheltering of certain areas are required upon classification of a General Emergency without regard to whether a radiological release is occurring. If plant conditions and a radiological release both warrant PARs, the most conservative recommendation will be made.

Shelter, evacuation or access control guidelines are based on the EPA Protective Action Guidelines and NUREG-0654 Supplement 3 recommendations.

The preferred initial action to protect the public from a severe reactor accident is to evacuate immediately about two miles around the plant and 10 miles downwind unless other conditions

make evacuation dangerous. Persons in the remainder of the plume zone should be directed to stay indoors and listen to EBS/EAS broadcasts while the situation is evaluated further.

Travel conditions that may present extreme hazard may prompt offsite officials to recommend shelter until conditions improve. Shelter may also be appropriate for special, transit-dependent populations, or during controlled, short duration releases of radioactivity.

Plant and offsite officials will continue to assess plant conditions to determine additional protective actions. These protective actions should be based on field monitoring data and dose projections that indicate EPA PAGs may be exceeded in areas beyond those that have been evacuated.

5.5.2 Energy Northwest Responsibilities

Primary responsibilities of Energy Northwest associated with offsite area protective actions are to:

a. Provide the best possible effort to resolve the emergency onsite, thus alleviating the offsite condition.

b. Notify the affected county, DOE, and state officials responsible for Protective Action Decisions of the emergency condition and provide the best possible information, recommendations, and support services.

c. Coordinate Energy Northwest actions with those of federal, state, and local agencies involved in implementing protective actions.

d. Ensure that all required agencies are advised of the protective actions recommended and provided periodic updates.

5.6 POPULATION DISTRIBUTION

Figures 5-3 and 5-4 present the compass sector population estimates for the Columbia Generating Station site. Estimates for the Ten-Mile Emergency Planning Zone were acquired from population surveys conducted by the Benton and Franklin County Offices of Emergency Management. The transient industrial worker populations on the Hanford Site have been updated by the appropriate facilities. Transient recreationist figures for the Columbia River and Horn Rapids areas were updated through contacts with local representatives of the Washington Department of Fisheries and the Washington Department of Wildlife.

5.6.1 Permanent Residents

Permanent residents include all persons residing in the area. In 1996 an estimated 3,044 people were living within the Ten-Mile Emergency Planning Zone. The nearest inhabitants occupy farms which are located east of the Columbia River and are thinly spread over five compass sectors. There are no permanent residents located within three miles of the site. About 274 persons reside between the three-mile and the five-mile radii; these are all located east of the Columbia River. Of the 3,044 people residing in the Ten-Mile Emergency Planning Zone, about 2,186 live in Franklin County and about 858 in Benton County.

There are no significant changes in land use expected in Franklin County over the next several years. As it is currently irrigated to about the maximum amount practicable, little population increase is foreseen. No significant change in land use on the Hanford Reservation is expected, and no foreseeable population will reside there. The unincorporated area near the Horn Rapids Dam on the Yakima River in the SSW sector is expected to be the primary growth area within the Ten-Mile Emergency Planning Zone. Population growth within the Ten-Mile Emergency Planning Zone is projected to be about 6% per annum.

5.6.2 Transient Population

The transient population is divided into three main subgroups: 1) industrial employees, 2) migratory agricultural workers, and 3) recreationists. Figure 5-4 illustrates this population location graphically.

Industrial employees in the Ten-Mile EPZ total 7,926. Most will be located in Benton County and form the main population to be evacuated. About 1200 industrial employees work at Columbia Generating Station and at the Kootenai Building.

Industrial employment in the Ten-Mile Emergency Planning Zone includes:

WNP-1 (Energy Northwest & Non-Energy Northwest personnel) (5/96)	27
Ashe Substation (5/96)	10
Columbia Generating Station (5/96 Operational dayshift value)	728
Deschutes Building (5/96)	246
Kootenai Building (5/96)	122
DOE 400 Area (FFTF, Fast Flux Test Facility) (5/96)	454
Siemens Nuclear Power Corporation (5/96)	800
DOE 300 Area (5/96)	1,671
DOE 3000 Area, (Battelle and other contractors in POB area) (5/96)	2,896
Battelle (Private) (5/96)	972
TOTAL	7,926

The majority of these employees work days, but there may be some shift workers in the DOE figures. Credit is not deducted from the population values due to emergency personnel remaining in place. Therefore, the planning figure of 7,926 to be evacuated is conservatively high.

There are up to approximately 4,244 migrant farm workers in the Ten-Mile Emergency Planning Zone. This figure may be high due to the possibility of double counting during the different harvest periods. The peak season for these workers is May and June; the next highest employment season is during the fall harvest. These workers consist of both permanent and temporary residents of the Tri-Cities area, some living within the Ten-Mile Emergency Planning Zone. The numbers shown on Figure 5-4 and Table 5-1 reflect their work locations in Franklin County within the Ten-Mile Emergency Planning Zone, not their residences.

Recreationists, consisting of hunters, fishermen and boaters, enjoy activities mainly along the east bank of the Columbia river. The primary fishing season is from June through November; the main hunting season being October through January. The heaviest use of the area by recreationists is on weekends and holidays in the early morning hours. On the average, 52 fishermen and 80 hunters are present in Franklin County during the weekdays. This increases to about 155 fishermen and 200 hunters on weekends and holidays. Recreationists also use the Yakima River with an estimated maximum of 42 at any time in this area. During peak fishing or hunting times, up to 1,275 fishing and hunting recreationists may be located

within the Ten-Mile Emergency Planning Zone. Of these, 1,233 are assigned to Franklin County and 42 to Benton County.

The main concentration of recreationists consists of fishermen located just south of the Ringold Fish Hatchery spillway on the Franklin County side of the Columbia River. Hunting consists of both water fowl, hunted at the Wahluke Hunting Area on the Franklin County side of the Columbia River, and upland game birds, hunted inland on the farm land of Franklin County. Up to 600 recreationists may be located around the Ringold Fish Hatchery and the Wahluke Hunting Area and the rest distributed inland.

An additional recreation attraction is in the south section of the Ten-Mile Emergency Planning Zone in Benton County as an Off-Road Vehicle Park (ORV). As many as 1,500 participants and spectators may be present during an event. Thus, a maximum total of 2,775 recreationists may be located within the Ten-Mile Emergency Planning Zone. Additional provisions have been made for the Horn Rapids housing development and golf course.

5.6.3 Special Facility Population

There are no individuals within the Ten-Mile Emergency Planning Zone confined to facilities such as hospitals, nursing homes, or penal institutions. There are four schools, the Edwin Markham Elementary School, the Country Haven Academy, the Country Christian Center, and the Big River Country School, with a total enrollment of approximately 580 (students and faculty). Most of the students live within the Ten-Mile Emergency Planning Zone.

5.7 EVACUATION ROUTES AND ASSISTANCE CENTERS

5.7.1 Public Evacuation Routes

The Benton County Fixed Nuclear Facility Response Plan and the Franklin County Radiological Columbia Generating Station Response Plan (referred to in Appendix 1) contain information concerning evacuation routes and assistance centers for personnel who would be evacuated from the Ten-Mile Emergency Planning Zone. See Figure 5-5 for Assistance Center locations.

5.7.2 Site Evacuation Routes

Several evacuation routes are available to site personnel. These are shown in Figure 5-5 and include:

a. Route 4 South - This four-lane road leads southeast from the site to Richland and is the main route from the plants.

b. Route 10 South - A two-lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads on into Richland.

c. Route 4 South - A two-lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.

d. Route 2 South - A two-lane road leading north from the plants, intersecting with Highway 240 and Highway 24 to Yakima.

All of these roads have an expected vehicle capacity of between 1200 and 1800 vehicles per lane per hour.

5.7.3 Plant and Nearby Facilities Evacuation

Radiological conditions may dictate evacuation of the plant and nearby facilities. If an evacuation of the plant is ordered by the Emergency Director, plant personnel, visitors, and contract personnel other than those with emergency functions will evacuate plant areas. Procedures and equipment are provided to immediately determine the habitability of the area. Preliminary surveys will also be made to determine the contamination or exposure status of personnel and identify those individuals needing decontamination.

For a Site Area Emergency or General Emergency, personnel within the Protected Area may be evacuated to the Kootenai Building (PSF) or the Energy Northwest Office Complex, for monitoring or decontamination as necessary. Procedures provide for personnel accountability and assessment of contamination/exposure status. Personnel that do have assigned emergency functions will proceed to their emergency center.

Non-essential personnel in the Exclusion Area will be evacuated as needed at a Site Area Emergency or General Emergency. They will be directed to go home if radiological contamination concerns do not exist, otherwise they will be directed to the Energy Northwest Office Complex (or other area as appropriate and designated by procedure). Personnel assigned emergency functions will proceed to their emergency center.

5.7.4 Radiological Monitoring and Decontamination of Personnel

Personnel will be monitored for contamination prior to leaving the plant if conditions permit. Whole body friskers and portable detectors are available at the plant exit. Personnel decontamination facilities in the plant include showers, sinks, and cleaning agents. Decontamination capabilities for emergency purposes are also available at the Kootenai Building, at remote decontamination locations, and for injured personnel at the Hanford Environmental Health Foundation Emergency Decontamination Facility in Richland.

For the general population, monitoring will be conducted under provisions of the Benton County Fixed Nuclear Facility Response Emergency Plan and the Franklin County Radiological Response: Energy Northwest plan. Emergency Worker/Assistance Centers (EWAC) are identified for the monitoring of personnel leaving the affected sectors of the 10 mile EPZ. Personnel evacuated from affected segments of the Columbia River will be monitored when necessary at a location along the river. The Washington State Department of Health will be in charge of the monitoring and decontamination effort.

5.7.5 Personnel Accountability

Personnel accountability will be conducted at predetermined locations. The Operations Support Center Manager is responsible for ensuring performance of accountability within the Protected Area and reporting the results to the TSC Manager or Shift Manager if the TSC is not activated. Non-essential personnel will be logged offsite utilizing the electronic access control system or personnel logs. The goal is to complete personnel accountability inside the Protected Area within 30 minutes. The last known location of unaccounted individuals will be obtained and search and rescue procedures initiated to locate the missing individuals.

For the Exclusion Area, personnel are alerted by the evacuation siren, public address announcement or telephones and will follow evacuation procedures. Energy Northwest personnel will be available to initiate the search and rescue procedures as needed.

5.8 EVACUATION TIME ESTIMATES

Evacuation time estimates for the Columbia Generating Station site have been developed in the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study, Revision 3, June 1996. Table 5-1 of this section summarizes the results.

5.8.1 Emergency Planning Zone Sub-Areas

The Ten-Mile Emergency Planning Zone was divided into several sub-areas as follows:

0-2 miles	entire circumference
0-5 miles	four approximate 90° sections
2-10 miles	four approximate 90° sections
0-10 miles	entire EPZ

The two-mile radius was not subdivided because it contains no residential population and the only institution populations are transients all working on contiguous Energy Northwest properties. Only three of the four 5 and 10 mile sectors (about 90°) were examined because the fourth, entirely on the Hanford Reservation, contains no residential, transient or special population. These sectors are graphically shown on Figure 5-5. The Columbia River forms a natural border between Benton and Franklin Counties and was used to form the division between Sector 2 and Sector 3. Franklin County was divided, approximately in half, since it was assumed that those persons north of the plant location would evacuate north toward Mesa and Connell and those persons south of the plant would evacuate south towards Pasco. When making estimates for outer portions of the sectors it was assumed that the inner adjacent portions were being simultaneously evacuated.

5.8.2 Notification, Preparation, Response and Confirmation Times

The evacuation time estimates shown in Table 5-1 include preparation time and response time. Notification times and confirmation times are shown as separate items.

Energy Northwest has established procedures to notify officials of Washington State, Benton and Franklin Counties and the Department of Energy-Richland Operations within 15 minutes of a declaration of any emergency classification. The Energy Northwest early warning system was designed to enable the county to notify the permanent 10-mile population within 15 minutes from the time the decision to take a protective action is made by county officials. Therefore, a maximum of 30 minutes notification time is assumed.

In the event of an evacuation, residents needing transportation are instructed to call the respective county emergency management office to request transportation. The respective emergency management office will dispatch emergency workers to collect these residents. Energy Northwest will be responsible for personnel accountability at Energy Northwest facilities (estimated to take a maximum of 30 minutes). The calculated evacuation time estimates start at the time of the announcement over the Emergency Broadcast System (EBS) or Emergency Alerting System (EAS) station to begin evacuation and end when the evacuation is complete.

The Figure 5-6 series illustrates "S-curves" for various populations and conditions. In the congested traffic environment which is characteristic of an evacuation process, travel time on a roadway section is, to a large extent, determined by the capacity of that section. Roadway capacities were based upon the type of roadway considered and the presence of traffic control. The following table presents the per-lane capacities utilized:

Roadway Type	Per-lane Capacity (Veh/hr)
Freeway	1800
Arterial/Rural Road	1500
Local Street	1200

A vehicle occupancy of three persons per vehicle was generally used for residents and transients. Exceptions are the industrial plants for which 1.5 persons per vehicle was used, the schools for which 35 persons per school bus was used, and the Off-Road Vehicle Park for which 2 persons per vehicle was used.

5.8.3 Adverse Weather

Severe weather conditions such as blizzards, heavy rain storms, flooding, fog, or high winds could seriously hamper evacuation. However, historical records indicate that severe conditions of this nature have occurred rarely in the past. Because of the effect of weather on the capacity of roadway and the fact that capacity is a controlling factor in deriving evacuation times, it is necessary to adjust capacity figures to represent estimated road conditions during adverse weather. Based on limited empirical data, weather conditions such as heavy rain reduce the values of capacity for the highways utilized as evacuation routes by approximately 20 percent. For adverse conditions during the winter months, estimated capacity reductions and free-flow speed reductions of 30 percent each, relative to normal weather conditions are assumed.

5.8.4 Special Facilities

The only special facilities within the Ten-Mile Emergency Planning Zone are Edwin Markham Elementary School, Country Haven Academy, the Big River Country School, and the Country Christian Center, with a total enrollment of approximately 580 students and faculty. Because of the small size of this population, it was considered counted as part of the permanent population in making evacuation time estimates. Buses which could be used in the evacuation are located at the district bus lot in north Pasco during the day. The buses can be dispatched to the schools within the one hour preparation time assumed for this section.

Public transportation, although not specifically identified as being needed, is available to the public in a portion of the Ten-Mile Emergency Planning Zone and is not relied upon for evacuation. The sheriffs' departments will be patrolling the area during an emergency and could make transportation arrangements for anyone not already evacuated.

5.9 RADIOLOGICAL EXPOSURE CONTROL

Radiation exposure limits and guidelines have been established for the control of radiation exposure to workers during an emergency. Facilities are available and arrangements can be made for internal and external personnel dose assessment. The individual functioning as Emergency Director has the responsibility to authorize exposures in excess of 10CFR20 limits or EPA-400 guidance, but can delegate this responsibility if necessary to improve command and control operations. .

5.9.1 ALARA Policy

ALARA is an acronym meaning As Low As Reasonably Achievable. Energy Northwest's ALARA policy states:

> "Energy Northwest shall conduct all operations involving radiation and radioactive material such that radiation exposures to employees, contractors and the general public are maintained as low as is reasonably achievable. "Reasonably achievable" takes into account the state of technology and the economics of exposure reduction in relationship to the benefits to health and safety."

The principles of ALARA will be considered during all phases of the emergency and applied where practical. Refer to Section 5.9.3.

5.9.2 Administrative Exposure Hold Points

Administrative exposure hold points are used during normal operations to bring exposures which are or could be significant to the attention of Plant Management. Energy Northwest administrative exposure hold points will be automatically waived upon declaration of an Alert or higher emergency classification. The Radiation Protection Manager (RPM), for onsite, and the Radiological Emergency Manager (REM), for offsite, are still responsible for limiting personnel exposures in keeping with the ALARA philosophy.

Whenever the administrative exposure hold points are waived, efforts shall be made to keep all exposures below 10 CFR 20 limits.

5.9.3 Protective Action Guides (PAGs)

The Environmental Protection Agency (EPA) has established Emergency Worker and Lifesaving Activity Protective Action Guides as follows:

PROTECTIVE ACTION GUIDES FOR EMERGENCY WORKERS		
DOSE LIMIT	ACTIVITY	PROTECTIVE ACTIONS
5 rem TEDE[1]	ALL	Emergency Workers continuously monitor and limit exposure.
10 rem TEDE	PROTECTING VALUABLE PROPERTY	Evaluate alternatives prior to granting authorization to exceed limits. Exposures above 5 rem require approval of the Emergency Director or designee.
25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Lower doses not practicable.
>25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Provide specific review and decision for each VOLUNTARY life-saving mission. Only volunteers fully aware of the risks should request exceeding this limit.

Energy Northwest will at all times attempt to keep exposures below EPA 400 Guidelines. However, situations such as the following may arise which could necessitate application of the above Protective Action Guides:

a. lifesaving activities
b. removal of injured persons
c. undertaking corrective actions
d. performing assessment actions
e. providing first aid
f. performing personnel decontamination
g. providing ambulance services
h. providing medical treatment services

Permission for emergency workers to receive additional radiation exposure is contained in procedures which includes expeditious decisions and comparison of relative risk.

[1]The total effective dose equivalent (TEDE) is the sum of the deep dose equivalent (DDE) resulting from exposure to external sources and the committed effective dose equivalent (CEDE) projected over 50 years for internal exposures. CEDE is the risk weighted sum of committed dose equivalents (CDE) to organs. CDE is the total dose from an internally deposited radionuclide over the subsequent 50 year period.

5.9.4 Contamination Control

5.9.4.1 Area Access

Controls have been established at Columbia Generating Station to ensure there is no detectable fixed or loose contamination (beta-gamma or alpha) outside of the Radiologically Controlled Area (RCA) under normal or emergency conditions. Energy Northwest policy is to minimize the potential for personnel contamination and to prevent the spread of contamination to uncontrolled areas at all times. Normally all personnel and equipment leaving the RCA are monitored to ensure the limits for contamination levels are met. However, normal in-plant contamination control procedures may be suspended during an emergency by the plant Radiation Protection Manager to allow for prompt emergency response and to minimize personnel exposure to other hazards. Contamination control measures intended to prevent transport of radioactive materials out of the plant or into continuously occupied areas such as the control room shall retain high priority.

5.9.4.2 Personnel

Personnel work practices within the RCA are controlled by Health Physics procedures. Upon leaving a radiologically contaminated area, each worker will normally proceed to the nearest personnel monitoring station which has a background count rate of less than 300 cpm and perform a personal survey. Individuals leaving the RCA are normally monitored for contamination before entering an uncontrolled area.

If survey of an individual indicates contamination levels in excess of established contamination limits, decontamination will be performed. Records will be maintained in accordance with established Health Physics procedures. Potassium Iodide, respirators and protective clothing can be distributed to plant personnel if needed.

5.9.4.3 Decontamination

Decontamination limits apply to personnel and equipment during routine and emergency operations. Only the Radiation Protection Manager or his delegate can waive these limits and then only on a case by case basis.

Normal personnel decontamination is accomplished in the 487′ elevation Radwaste Building decontamination facility. All drains lead to the Radwaste system where the liquid is processed and monitored prior to discharge. During site emergency evacuation conditions, personnel decontaminations can be accomplished at the Kootenai Building where a decontamination shower and supplies are maintained.

Energy Northwest policy requires decontamination of personnel, equipment, and material prior to release from a radiologically controlled area according to the criteria found in Chapter 12.5 of the FSAR.

If the contamination cannot be reduced to these limits by reasonable methods, such as with radioiodine skin contamination, the Radiation Protection Manager (for inside the Protected Area) and the Radiological Emergency Manager (for outside of that area) shall determine a further course of action. This may include referral to a local medical facility or placing the individual in an on-going exposure tracking program.

5.9.4.4 Drinking Water and Food Supplies

Radiological surveys will periodically be made in areas where food is stored onsite and isotopic analyses will periodically be made of the Columbia Generating Station drinking water supply. The primary source of potable water for Columbia Generating Station is the Columbia River. It is unlikely that an airborne release of radioactive material could affect this supply.

Offsite vegetation and milk samples are also analyzed routinely as part of the Radiological Environmental Monitoring Program (REMP). In the event of an airborne release of radioactive materials, environmental samples are collected and analyzed.

5.9.5 Personnel Dose Assessment

Routine and emergency personnel exposure monitoring and dose assessments are accomplished by issuing thermoluminescent dosimeters (TLDs), electronic or direct reading dosimeters and monitoring for airborne radioactivity. A twenty-four hour per day capability to analyze Energy Northwest issued dosimetry is available. Energy Northwest maintains a personnel monitoring program through the use of appropriate dosimetry and whole body counters.

5.9.5.1 Thermoluminescent Dosimeters

Issuance of personnel TLDs will be in accordance with established Health Physics procedures. Special provisions are included to increase the frequency of TLD processing, as necessary, during emergencies.

The measured dose as determined by TLDs shall serve as the permanent and official record of the individual's deep dose equivalent (DDE) and skin dose. Radiation dose to the hands, forearms, feet and ankles shall be obtained by placing additional TLDs in those locations when extremity exposure may be the controlling factor.

5.9.5.2 Direct Reading Dosimeters

Electronic or direct reading pocket dosimeters are issued to personnel entering radiologically controlled areas. Personnel shall be instructed to read these dosimeters frequently. Dosimeter readings provide an estimated record of external exposure received on a daily basis.

5.9.5.3 Issuance of Dosimetry to Offsite Emergency Personnel Responding Onsite

Offsite emergency personnel who respond onsite and do not have preassigned dosimetry will be issued the appropriate personnel dosimetry upon arrival at the site access point.

Emergencies requiring immediate response are characterized by the necessity for access by emergency response personnel with minimal or no delay. Examples include fire fighting teams, emergency medical personnel or bomb squads. In this situation, dosimetry will be dispensed by Security personnel at the access point. Procedures are established to ensure dosimeters are read at appropriate frequencies. Dosimetry and necessary personal and exposure information will be collected upon leaving the site. Energy Northwest Security will be provided with sufficient dosimetry devices, procedures, and data forms for this type of occurrence.

Offsite (State and County) personnel responding to the EOF will respond with their own dosimetry or will be provided dosimetry by Energy Northwest if necessary.

5.9.5.4 Airborne Radioactivity Monitoring

The primary method utilized to determine potential internal exposure of plant personnel is the measurement of airborne radioactivity. Standard Health Physics procedures describe the collection and analysis of air samples.

5.9.5.5 Whole Body Counting and In-Vitro Bioassays

Whole body counting and in-vitro bioassay will be available during and after an emergency to aid in determining the extent of an individual's internal exposure to radioactive materials. Measurements of radioactivity in the body (in-vivo), and/or radioactivity excreted from the body (in-vitro), will be performed as necessary. This will enable timely evaluation of uptakes of radioactive material whenever it is suspected that the individual has been exposed to airborne radioactivity above predetermined levels specified in established procedures.

5.9.5.6 Radiation Exposure Records

Exposure records are maintained by the Total Exposure System for external and internal radiation exposure for each person entering a radiologically controlled area at an Energy Northwest nuclear facility. These records include external dose [Deep Dose Equivalent (DDE)], skin and extremities dose [Skin Dose Equivalent (SDE)] and internal dose [Committed Dose Equivalents (CDE)] determined by dosimetry, whole body counting and/or in-vitro bioassay.

5.9.6 Respiratory Protection

Selected personnel assigned in-plant emergency response duties are trained in the use of respiratory protective equipment and qualified through quantitative respiratory fit testing. Respiratory protective equipment is maintained at strategic locations in the plant with backup supplies available. Respiratory protection under emergency conditions is administered in

accordance with normal operating procedures with special provisions for prompt emergency action requirements.

Facilities and equipment are available to qualify outside response personnel on the use of respiratory protective equipment.

5.9.7 Thyroid Blocking Agent

Potassium Iodide (KI) is maintained for use by emergency workers at strategic locations.

In the event of a release involving radioiodine, the TSC Manager, in consultation with the Radiation Protection Manager, will issue instructions concerning the use of potassium iodide by in-plant emergency workers. The EOF Manager, in consultation with the Radiological Emergency Manager, will issue instructions to Energy Northwest environmental field teams and emergency workers in the Exclusion Area concerning the use of potassium iodide and will recommend that other offsite (State, County, etc.) emergency workers be issued instructions concerning use of potassium iodide. The EOF Manager will forward his recommendations to the appropriate offsite authorities. The thyroid blocking capability of KI is most effective when taken prior to or immediately after exposure to radioiodine. Therefore, a timely decision is necessary concerning this action.

Whenever offsite resources are expended, Energy Northwest will provide KI, along with personnel monitoring, dosimetry and decontamination services, when needed by offsite emergency workers.

Description	Total Within 2 Miles	Areas Within 5 Miles				Areas Within 10 Miles			
		I	II	III	Total	I	II	III	Total
Permanent Population	-	124	40	-	164	1050	1136	858	3044
Permanent Population Vehicles	-	41	13	-	54	347	380	286	1013
Transient Population	1133	1744	141	1560	3445	1571	7154	3931	12,656
Transient Population Vehicles	971	581	64	964	2580	5763	2636	2944	6102
General Population	1133	1868	181	1560	3609	2621	8290	4789	15,700
Total Vehicles	971	622	77	964	2634	670	3016	3230	7115
Notification Time Minutes	15	30	30	30	30	30	30	30	30
Permanent Population Evac. Time Normal Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Normal Conditions Hours Minutes	1:00	1:00	1:00	1:30	1:30	1:30	1:20	2:15	2:15
Permanent Population Evac. Time Adverse Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Adverse Conditions Hours Minutes	1:30	1:00	1:00	2:00	2:00	1:30	1:30	2:30	2:30
Confirmation Time Minutes	30	60	60	60	60	60	60	60	60

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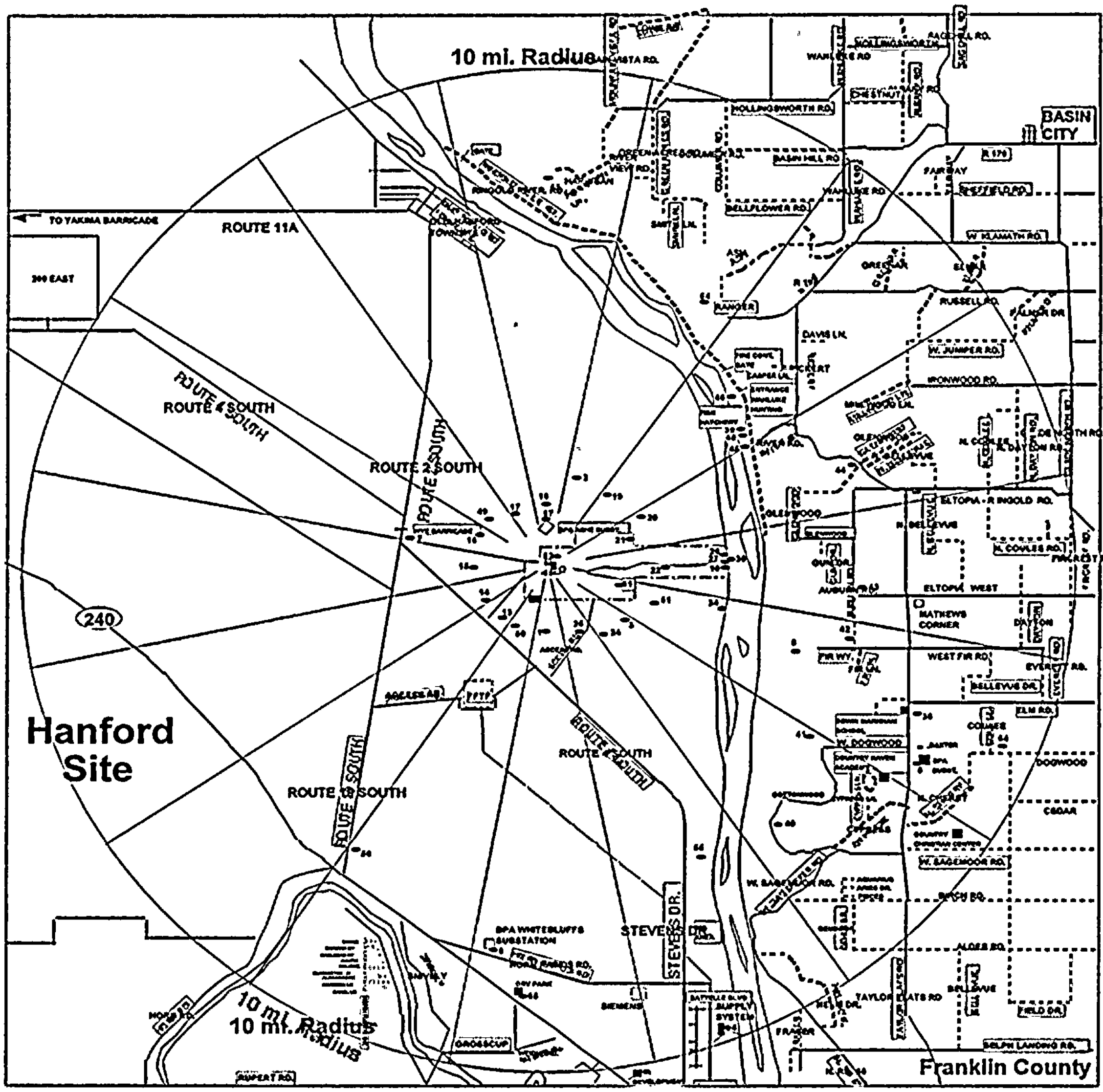
Table 5-1, Summary of Results of Evacuation Times Analysis



Station	Reactor Radial	Miles*	TLD	AP/AI
1	S	1.3	O	X
2	NNE	1.8	O	
3	SE	2.0	X	
4	ESE	9.3	O	O
5	ESE	7.7	O	X
6	S	7.7	O	X
7	WNW	2.7	O	X
8	ESE	4.7	O	O
9A*	WSW	30.0	O	O
9B*	WSW	35.0		
9C*	WSW	33.0	O	
10	E	3.1	X	
11	ENE	3.1	X	
12	NNW	6.1	O	
13	SW	1.4	O	
14	WSW	1.4	O	
15	W	1.4	O	
16	WNW	1.4	O	
17	NNW	1.2	O	
18	N	1.1	O	

Station	Reactor Radial	Miles*	TLD	AP/AI
19	NE	1.8	O	
20	ENE	1.3	O	
21	ENE	1.6	X	X
22	S	2.1	O	
23	ESE	3.0	X	X
24	SE	1.9	O	
25	SSE	1.6	O	
26*	E	3.2		
27	E	3.2		
29	SSE	11.0		
30	E	3.5		
31	E	1.1		
32	E	1.2		
33	ENE	3.3		
34	ESE	3.3		
35	ENE	10.5		
36	ESE	7.2		
37A	SSE	17.0		
37B	SSE	16.0		
38*	E	26.6 (35.0)		

Station	Reactor Radial	Miles*	TLD	AP/AI
40	SE	6.4	O	O
41	SE	6.8	O	
42	ESE	6.6	O	
43	E	6.7	O	
44	ENE	6.7	O	
45	ENE	4.2	O	
46	NE	4.7	X	
47	N	0.5		O
48	NE	4.3	O	
49	NW	1.2	O	
50	SSW	1.2	O	
51	ESE	2.1	O	
52	N	0.1		
53	N	7.5	O	
54	NNE	6.5	O	
55	SSE	7.0	O	
56	SSW	7.0	O	
57	N	0.7		O
65	S	8.7		X

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June 1999

LEGEND
PAVED ROAD
IMPRVD RD OR GRVL ROAD
BOUNDRY LINES
SCALE
0 1 2 MI.

- \- Control location.
- X Sample collected at station (non-ODCM)
- O Offsite Dose Calculation Manual (ODCM) sample collected at station.
- * Estimated from center at WNP-2 Containment from map position.
- AP/AI Air Particulate and Iodine

Figure 5-1, Environmental Sampling Points

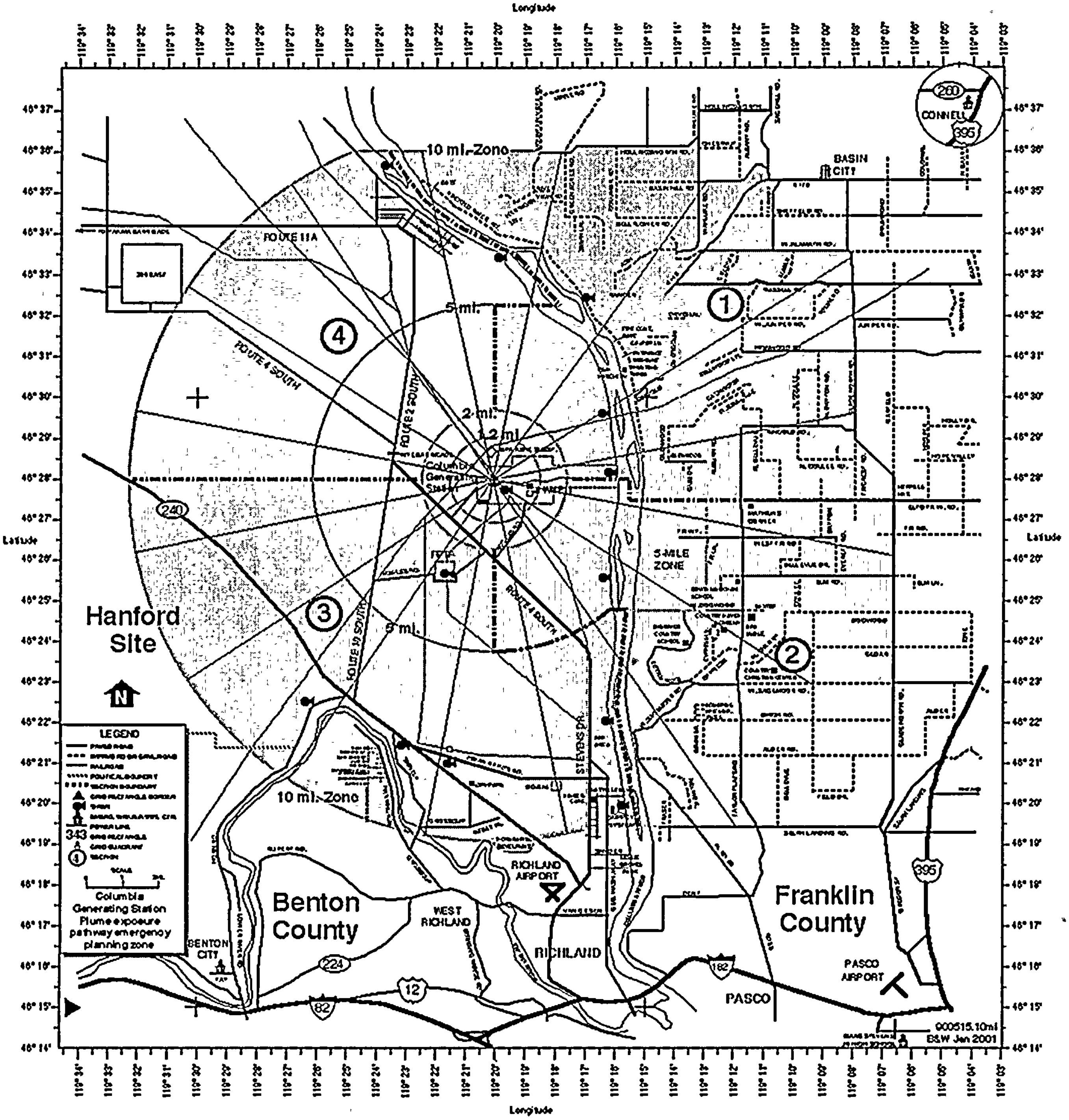
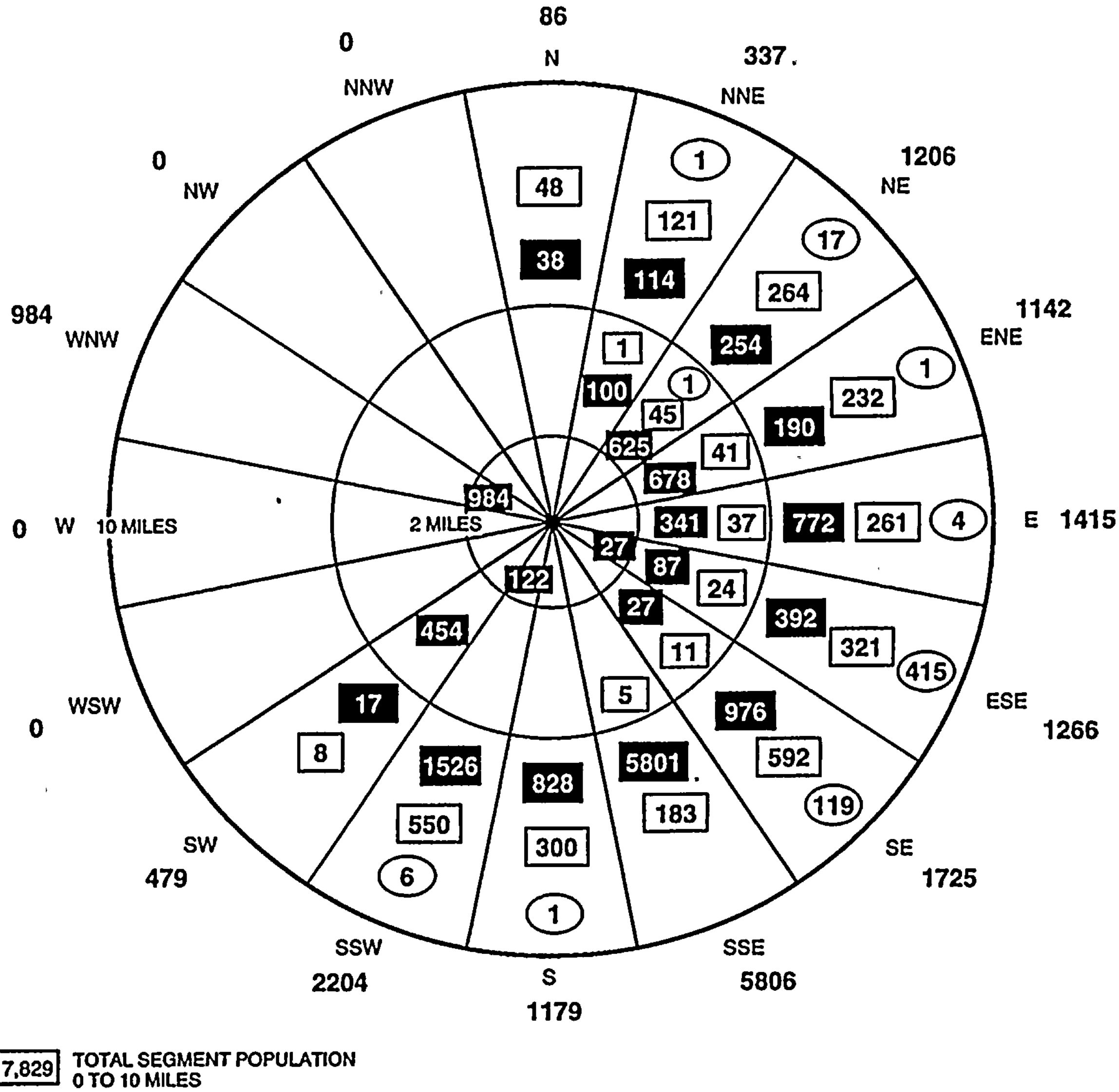


Figure 5-2, Ten Mile Grid Map



POPULATION TOTALS - PERMANENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	164	0-5	164
5-10	2880	0-10	3044

POPULATION TOTALS - TRANSIENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2312	0-5	3445
5-10	10,775	0-10	14,220

POPULATION TOTALS - SPECIAL			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	1	0-5	1
5-10	564	0-10	565

POPULATION TOTALS			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2477	0-5	3610
5-10	14,219	0-10	17,829

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Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down Into Classifications

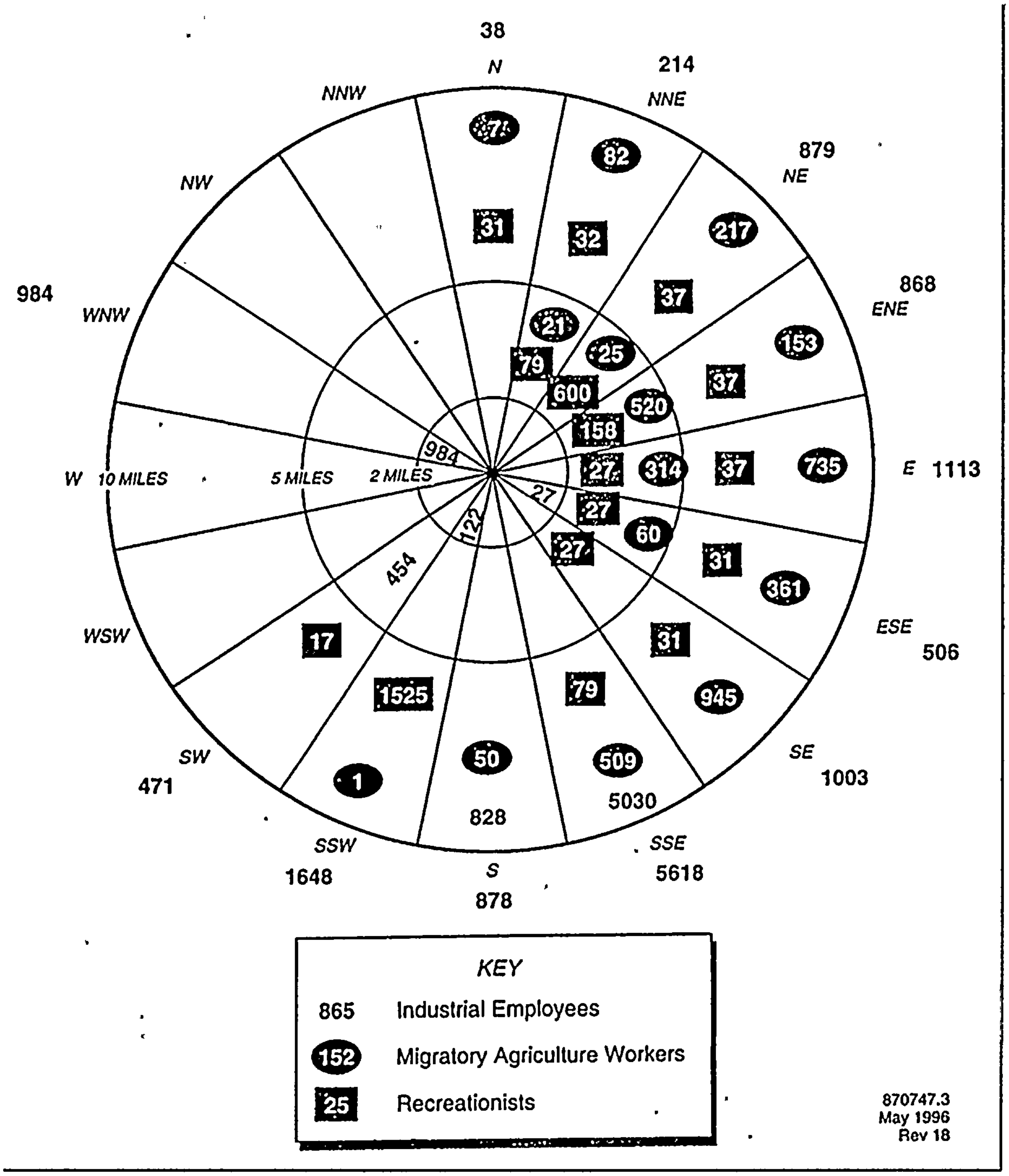

Figure 5-4, Distribution of Transient Population Within 10-Mile EPZ

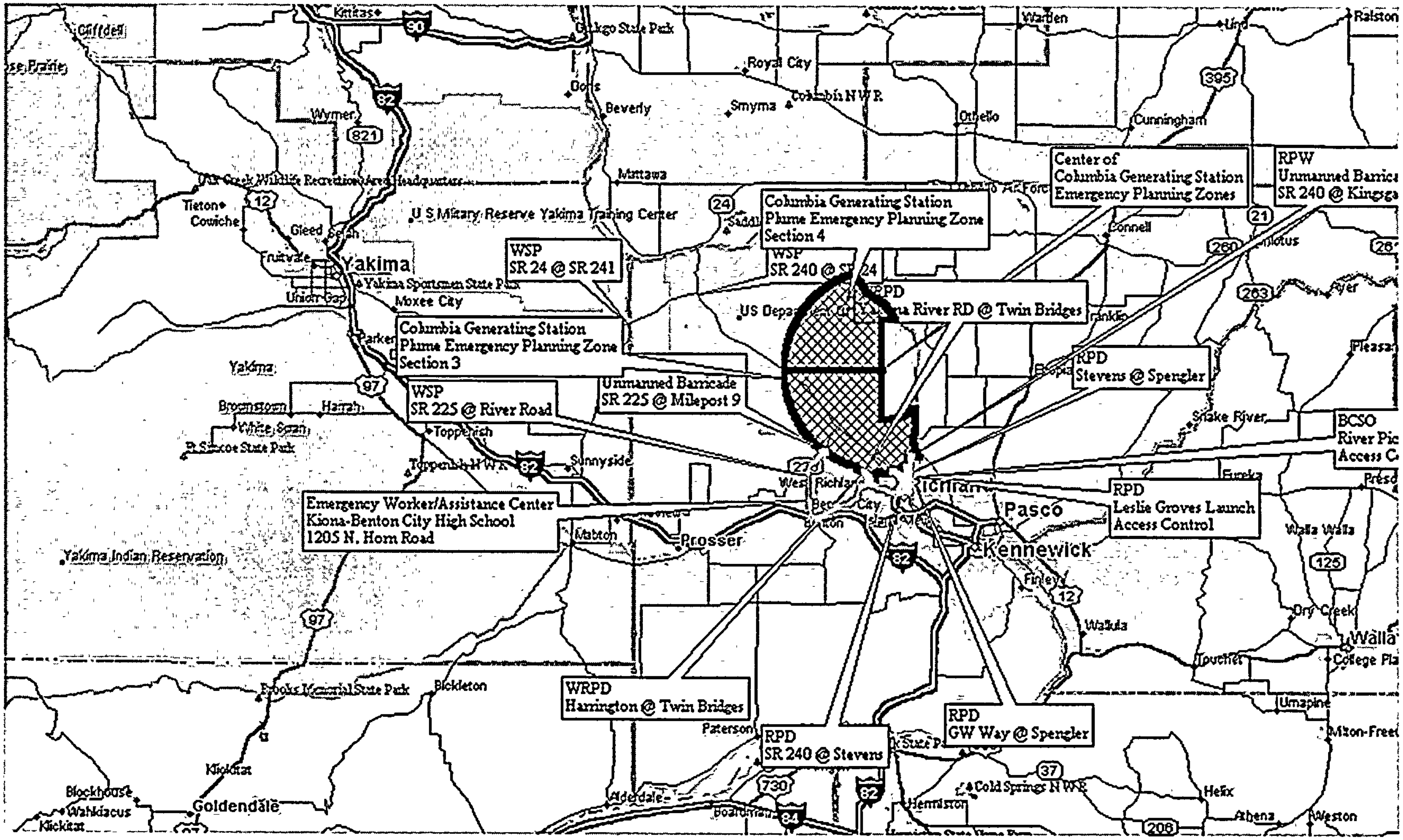

Figure 5-5, Benton County Evacuation Routes

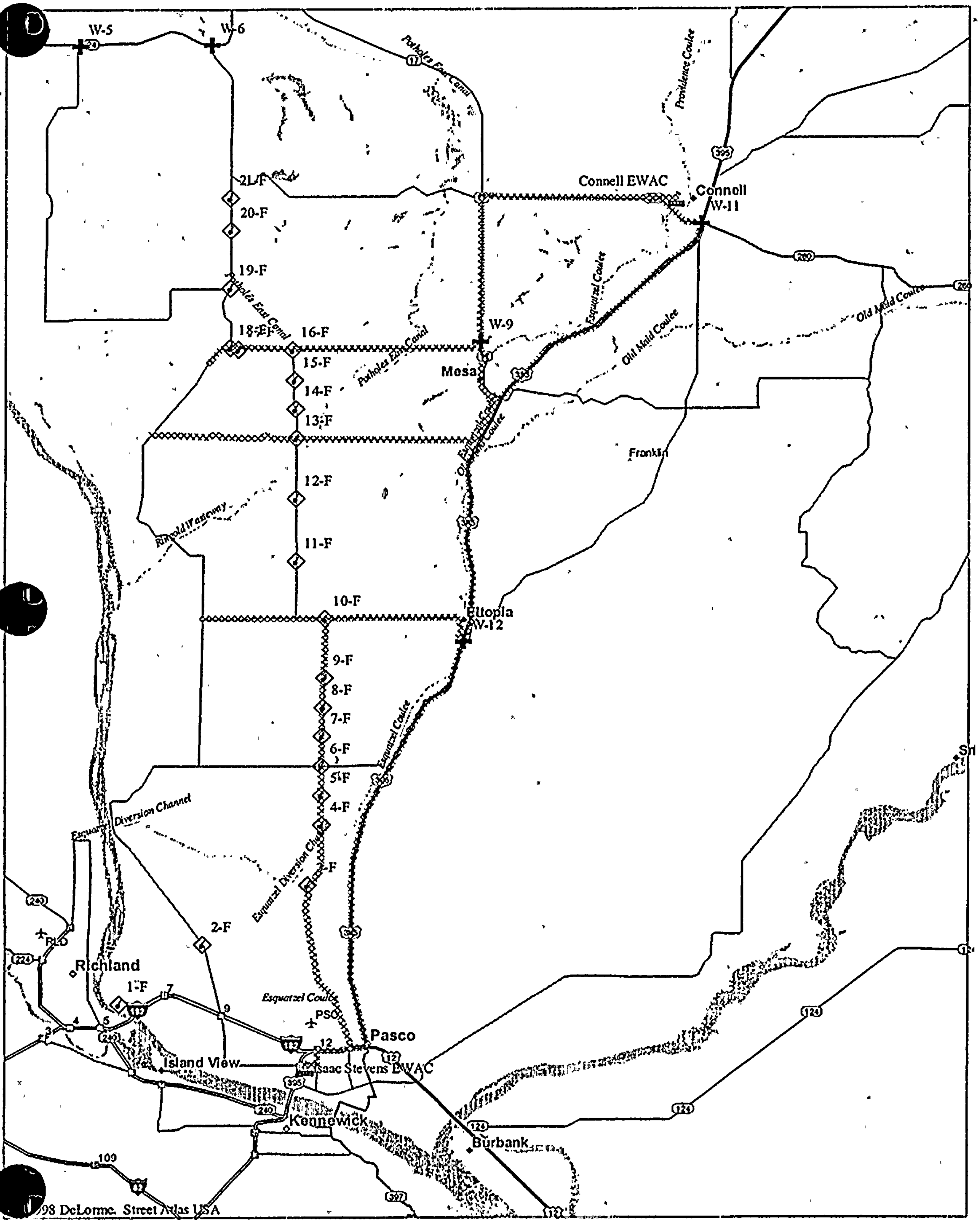

Figure 5-6, Franklin County Evacuation Routes

FRANKLIN COUNTY ACCESS CONTROL POINTS

ID #	LOCATION	RESPONSIBLE AGENCY
1-F	Road 68 @ Dent	Pasco PD
2-F	Dent Rd @ Court St	Pasco PD
3-F	Selph Landing @ Glade North	FC Sheriffs Office
4-F	Alder @ Glade North	FC Public Works *
5-F	Birch @ Glade North	FC Public Works *
6-F	West Sagemoor @ Glade North	FC Sheriffs Office
7-F	Cedar @ Glade North	FC Public Works *
8-F	Dogwood @ Glade North	FC Public Works *
9-F	Fir @ Glade North	FC Public Works *
10-F	Eltopia West @ Glade North	FC Sheriffs Office
11-F	Ringold @ Glade North	FC Public Works *
12-F	Ironwood @ Glade North	FC Public Works *
13-F	Russell @ Glade North	FC Public Works *
14-F	Klamath @ Glade North	FC Public Works *
15-F	Sheffield @ Glade North	FC Public Works *
16-F	SR 170 @ Glade North	FC Sheriffs Office
17-F	Fairway @ SR 170	FC Public Works *
18-F	SR 170 @ Sagehill	FC Sheriffs Office
19-F	Hollingsworth @ Sagehill	FC Public Works *
20-F	Fern @ Sagehill	FC Public Works *
21-F	North Wahluke @ Sagehill	FC Public Works *
W-5	Hwy 24 @ Mountain Vista	Washington State Patrol
W-6	Hwy 24 @ Sagehill	WSP
W-9	Hwy 17 @ Road 170	WSP
W-11	Hwy 395 @ Connell	WSP
W-12	Hwy 395 @ Eltopia West	WSP

Figure 5-7

NOTE: Asterisk (*) indicates Access Control Point is an unmanned barricade.

LEGEND:

= EWAC

= Evacuation Route

= Franklin Co. ACP

= WA State Patrol ACP

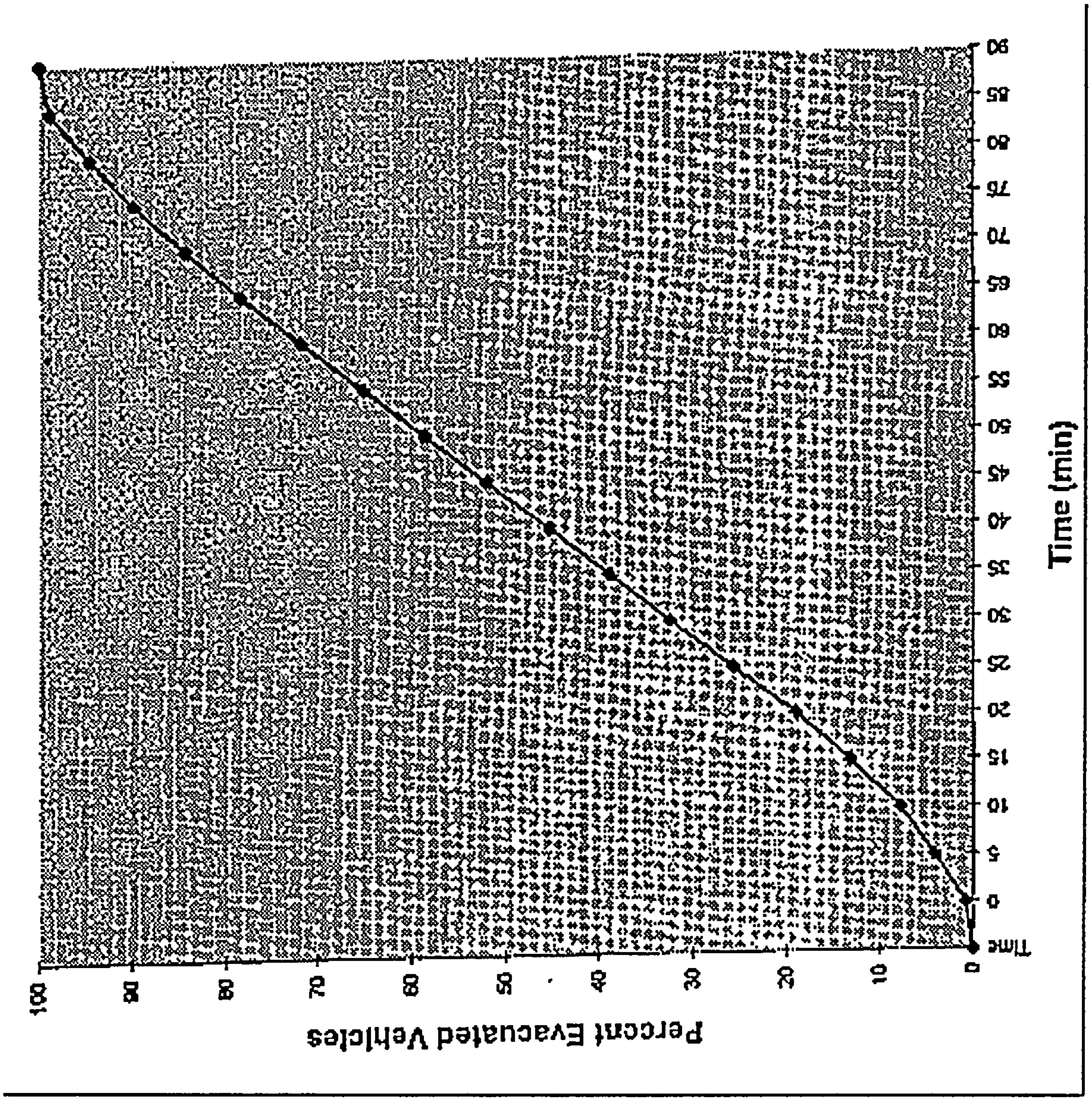

Figure 5-8.A Permanent Population-Normal Conditions

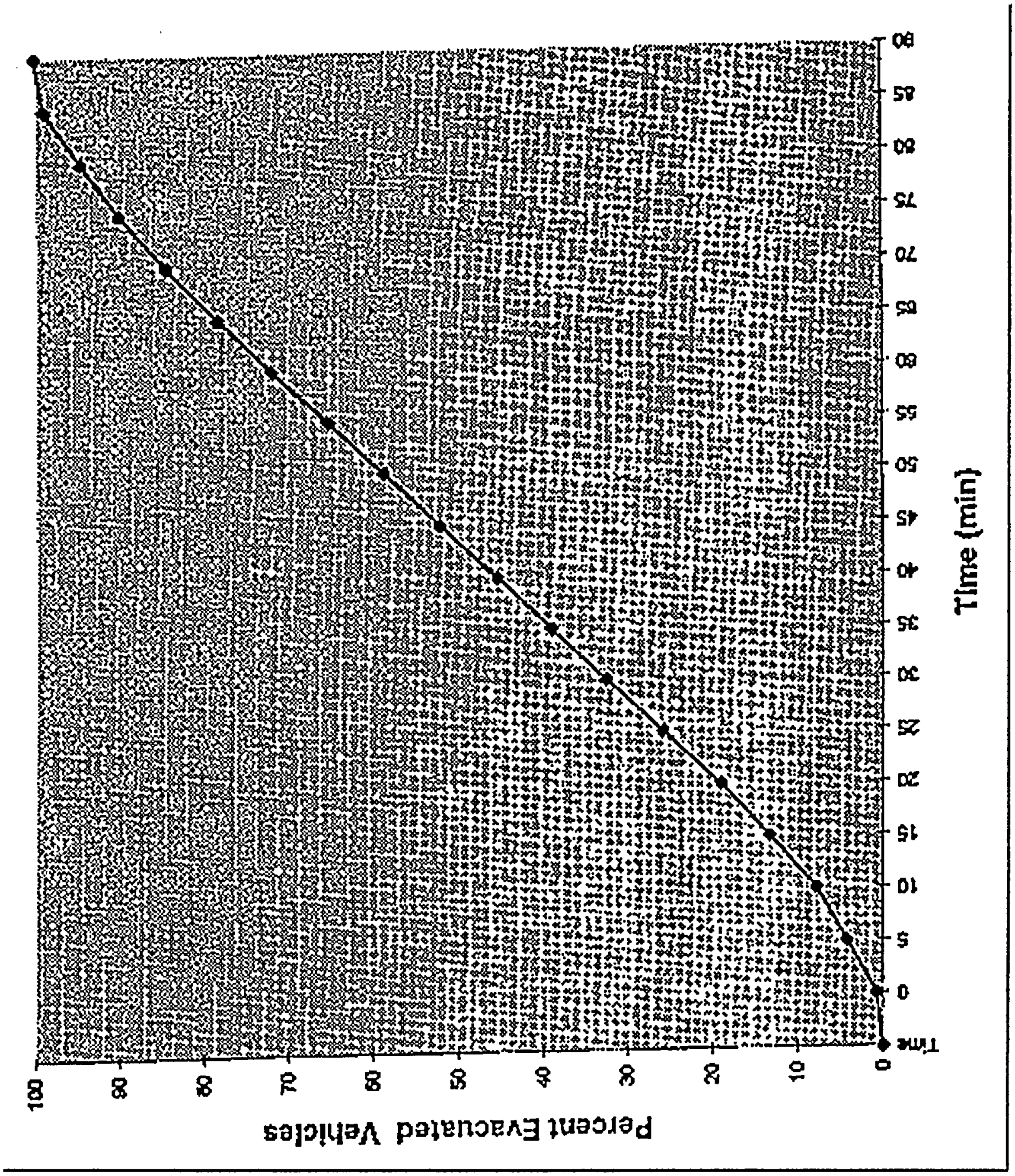

Figure 5-8.B Permanent Population-Adverse Conditions

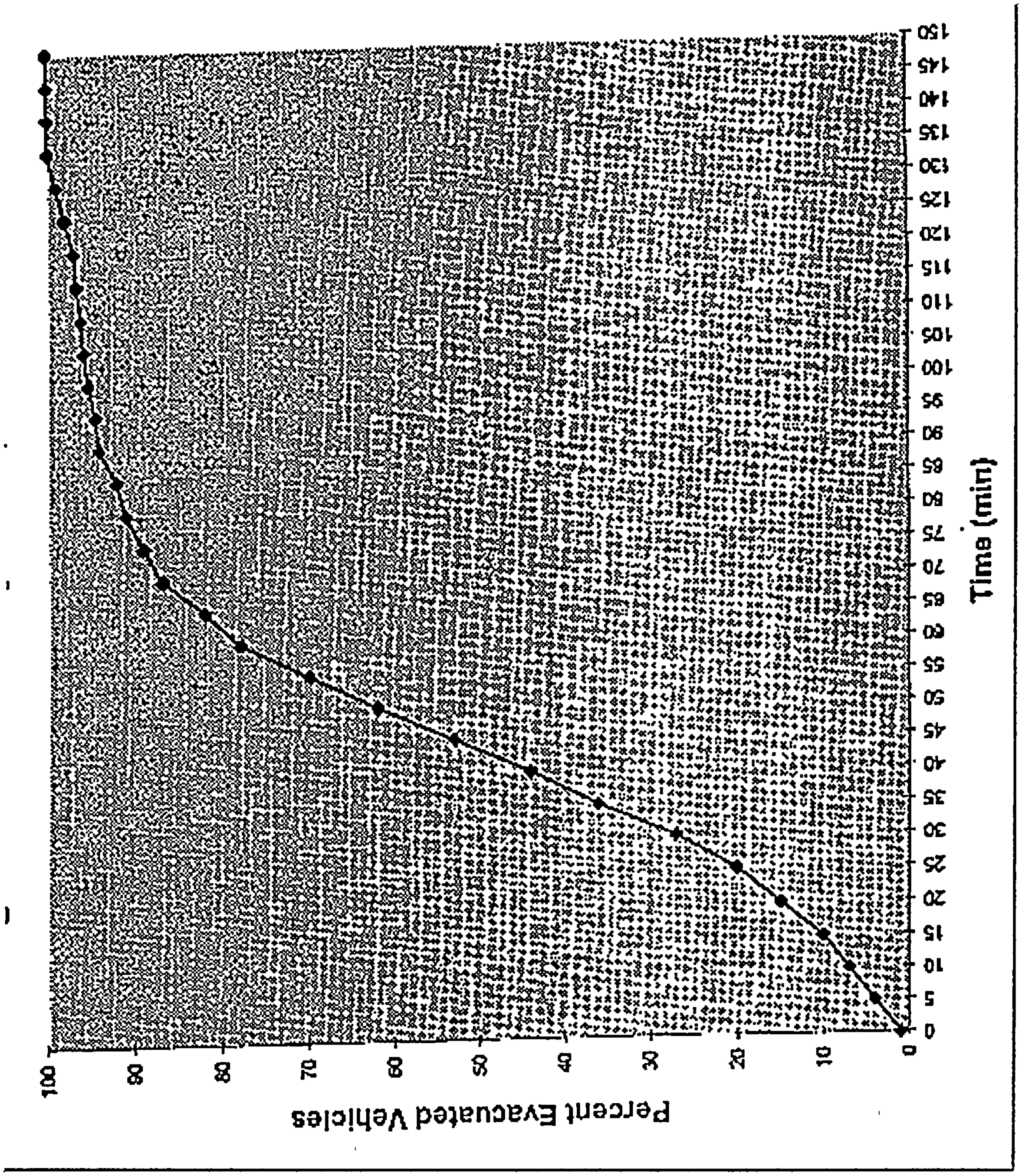

Figure 5-8.C General Population-Normal Conditions

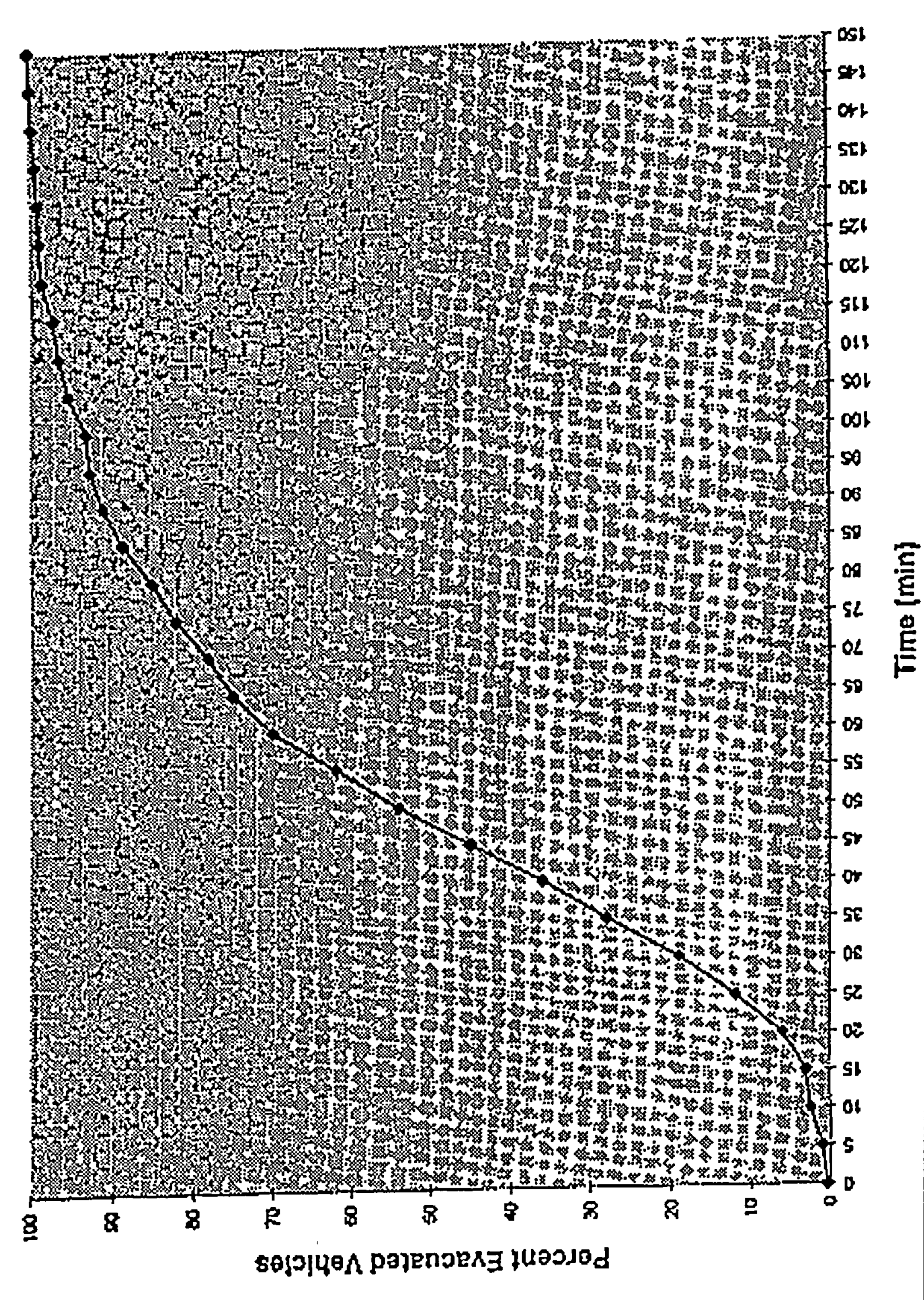

Figure 5-8.D General Population-Adverse Conditions

SECTION 6
EMERGENCY FACILITIES AND EQUIPMENT

6.1 PLANT FACILITIES

Located within the Columbia Generating Station facilities are several areas which will be used for evaluation and initiation of emergency actions. These facilities have the capability to manage the short term response and maintain plant control through sustained emergency and recovery operations.

6.1.1 Control Room

The Columbia Generating Station Control Room is located in the Radwaste Building, adjacent to the Reactor Building, as shown in Figure 6-1. Several entrance/exit points, each with airlocks, are provided. The Control Room contains instrumentation, controls and displays for the nuclear, reactor coolant, electrical, safety and accident monitoring systems and is where an emergency would be initially classified and declared.

The Control Room is staffed by licensed reactor operators and senior reactor operators and is under the direction of the plant Shift Manager twenty-four hours per day. Control Room personnel are responsible for coordinating all emergency response activities until other emergency facilities are activated. Control Room personnel are responsible to diagnose any abnormal plant conditions, perform corrective actions to mitigate the abnormal conditions, manage plant operations and perform initial emergency response activities.

Access to the Control Room during an emergency will be limited to essential personnel such as operators on duty or persons given specific permission for entry by the Technical Support Center Manager or the Shift Manager.

The Control Room has been designed for accessibility and habitability during the occurrences of postulated accidents that could result in the release of fission products and/or hazardous chemicals. To limit inward migration of hazardous materials the Control Room is maintained at a positive pressure with respect to adjacent areas using the pressurization mode of the control room ventilation system. The Control Room will be informed of a sodium oxide release from FFTF. Refer to FSAR section 6.4.4.2.2.

The system has been designed with both normal and remote sources of air to ensure the availability of uncontaminated air at all times. Both HEPA and charcoal filters are included. Shielding is provided to ensure that the combined radiation exposure of Control Room personnel during a postulated design-basis accident would remain within regulatory guidelines.

The Control Room communication system permits contact with the onsite Technical Support Center (TSC), the onsite Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the federal, state and local emergency response organizations on a twenty-four hour per day basis.

6.1.2 Technical Support Center

The Columbia Generating Station Technical Support Center (TSC) is a structure attached to the Radwaste Building on the west side of the plant (refer to Figure 6-1). A typical floor diagram is shown in Figure 6-2. The TSC is as habitable as the Control Room during accidents. The TSC ventilation HEPA filters and charcoal absorbers are the same type as those used for the Control Room System. The ventilation system normal air intake will automatically switch to the Control Room remote air intake upon receipt of an isolation signal. Should the TSC become uninhabitable, the TSC Manager in consultation with radiation protection personnel, will decide on an alternate TSC location and setup where the TSC functions can continue to be performed.

The TSC is activated during an Alert or higher emergency classification and is under the direction of the TSC Manager. The TSC Manager may assume the duties of Emergency Director from the Shift Manager if not transferred directly to the EOF Manager. Staffing includes designated technical, engineering and senior management personnel. Space is available for a small staff of Nuclear Regulatory Commission personnel during emergency conditions.

Functions of the TSC are to provide management and technical support to plant operations personnel during emergencies. This relieves the reactor operators of peripheral duties not directly related to reactor systems manipulation and prevents congestion in the Control Room. The TSC will perform Emergency Operations Facility functions during Alert, Site Area Emergency and General Emergency classifications until the Emergency Operations Facility becomes functional. TSC personnel have ready access to up-to-date plant documents needed to perform emergency functions.

The TSC is the primary onsite communications center for the plant during an emergency. It has reliable voice communications with the onsite Operations Support Center, Emergency Operation Facility, Energy Northwest Office Complex (ENOC), Control Room, NRC, and state and local Emergency Operations Centers.

Plant status, meteorological instrumentation, Plant Display and Information System (PDIS), display equipment and power supplies are provided in the TSC to support a comprehensive analysis of emergency conditions. A power circuit supplies the TSC from a Class 1E source located in the plant. This power source is backed by a diesel generator. Radiological monitoring equipment is available to continuously monitor dose rates and airborne radioactivity concentrations in the TSC. The TSC also assesses plant radiological conditions. In addition, protective equipment such as anti-contamination clothing, respirators and potassium iodide are provided in the TSC should conditions warrant their use.

6.1.3 Operations Support Center

A designated portion of the Yakima Building will serve as the Operations Support Center (OSC) for Columbia Generating Station and will be activated for an Alert or higher emergency classification. The location of this center is shown in Figure 6-1. If the primary OSC location becomes uninhabitable, the OSC Manager, in consultation with radiation protection personnel, will decide on an alternative OSC setup, and OSC personnel will be evacuated to an alternate location where OSC functions can continue to be performed.

The OSC will be under the control of the OSC Manager who is responsible for dispatching and coordinating in-plant team activities during emergencies. The OSC is activated during an Alert or higher emergency classification and provides a location for coordinated logistic support outside the Control Room.

The OSC Manager has communications necessary to dispatch and coordinate emergency team activities with the Shift Manager and TSC Manager, for other necessary onsite and offsite communication, and for emergency team communications (see Section 6.5). Equipment and supplies are available in the OSC for emergency team use. A list of emergency equipment kits is provided in Appendix 3.

6.1.4 Security Alarm Stations

Two security alarm stations are maintained at Columbia Generating Station. The Central Alarm Station (CAS) is the primary security center and is located in a separate building near the Yakima Building. The Secondary Alarm Station (SAS) is the backup security center located in the Control Room.

6.1.5 Protected Area Access Point

Persons requesting entrance to the plant will report to the Protected Area Access Point. Security will issue dosimeters as needed, maintain personnel accountability, and notify the onsite Operations Support Center of the arrival of persons and receive permission to allow entry. In situations which require immediate access by personnel and equipment, such as fire or medical emergencies, Security will be notified to permit immediate entry. The Security Shift Lieutenant will coordinate with the Technical Support Center Manager for implementation of the Safeguards Contingency Plan.

6.1.6 Personnel Decontamination and First Aid Facilities

First aid equipment kits required by the Washington Industrial Safety and Health Act are located as close as feasible to areas which have the heaviest concentration of workers. Designated locations are similar to those shown in Appendix 3.

Initial first aid for employees is provided by the Fire Brigade Team (FB) which is composed of first aid trained personnel who are designated FB members during each work shift.

Medical emergencies are reported via a special phone number that is posted throughout the plant. The special number rings into the Control Room where personnel can then dispatch FB members to an emergency by radio, telephone, or by the plant public address system.

Fire Brigade members receive initial and annual continuing education training in first aid from an in-house program that is certified as meeting "First Responder" requirements by the State of Washington.

A decontamination facility is provided on the 487′ elevation of the Radwaste Building (refer to Figure 6-3). The facility consists of a large shower area with drains connected to the radwaste effluent treatment system. First aid equipment and decontamination supplies are located nearby and will be used whenever a contamination incident is involved. Decontamination will also be implemented as necessary at the Energy Northwest Office Complex and Emergency Worker Assistance Centers (EWACs)

6.2 EMERGENCY OPERATIONS FACILITY (KOOTENAI BUILDING)

The Kootenai Building is located 0.75 miles southwest of Columbia Generating Station. This facility is used to support normal plant operations and includes a 20,000 square foot shielded area in the lower level which includes the 4,500 square foot Emergency Operations Facility (EOF).

A typical floor plan of the Kootenai Building is shown in Figure 6-4. The EOF contains several functional areas which are provided for various groups and will be activated as necessary for an Unusual Event and fully for an Alert, Site Area Emergency or General Emergency.

The EOF is under the direction of the Emergency Operations Facility (EOF) Manager and assists the plant by handling those functions associated with evaluating and minimizing the offsite effects of the accident, as well as supporting the TSC and Control Room with technical data analysis. This assistance includes such functions as field monitoring, dose projections, area security, interfacing with outside organizations, recommendation of protective actions for the public, assisting the plant technical staff, public information, administrative services, scheduling of personnel, and establishing a recovery program. If response to the primary EOF is hampered by radiological or other conditions, personnel unable to respond to the primary EOF will be directed to respond to the alternate EOF located at the Energy Northwest Richland Office Complex. Sufficient telephone links are available at the alternate EOF to communicate with the primary EOF and TSC. If the primary EOF location becomes uninhabitable, the EOF Manager in consultation with radiation protection personnel, will determine whether to evacuate the primary EOF, what equipment to take, and where to relocate. Select EOF staff will then evacuate and continue to perform the EOF functions.

The EOF will be used by representatives of the various offsite agencies to coordinate activities, resolve problems, maintain duty rosters, and make periodic status reports to their respective agencies. A close working relationship between these agencies and Energy Northwest is essential to the success of operations involving the general public. The personnel in the EOF receive information from all functional areas and provide clarifications to their respective agencies. Periodic briefings will be provided by Energy Northwest personnel to keep Energy Northwest and offsite agency personnel up-to-date on plant conditions and emergency measures underway.

The EOF is not used as a normal work location outside of drill and emergency use. It is subjected to periodic walkdowns by emergency preparedness personnel, as well as regularly scheduled inspections to ensure its readiness.

6.2.1 Emergency/Recovery Operations Area

The EOF Manager and his immediate staff will coordinate activities from the Emergency/ Recovery Operations Area of the EOF. The EOF Manager is responsible for the overall emergency effort and provides the necessary support to the TSC Manager. The Emergency/ Recovery Operations Area will maintain up-to-date information on plant and offsite status, recovery planning and scheduling, and will function as the designated area for periodic update briefings with selected personnel assigned to the EOF, including outside agency personnel.

6.2.2 Engineering Support Area

A segment of the EOF is designated as an Engineering Support Area which is established for use by Energy Northwest's engineering personnel, and architect/engineers, vendors, and contractors requested to assist Energy Northwest. A technical data information system including meteorological, radiological, and plant system status is available. Essential plant technical information is available in this area.

Using this area in the EOF, personnel from organizations outside the plant staff can provide needed technical assistance without responding directly to the plant. This provides technical personnel readily available to the plant if needed. The Engineering Support Area also provides a secondary location to track plant conditions and provides current and projected plant status reports to MUDAC and to the EOF Manager for inclusion in the formulation of Protective Action Recommendations.

6.2.3 Logistics Support Area

A designated portion of the EOF is established for logistics support functions which are provided by the Site Support Manager and staff. The Site Support Manager and his staff will provide general administrative support and logistical support to the EOF staff and as directed for other emergency centers.

6.2.4 Meteorology and Unified Dose Assessment Center

The Meteorology and Unified Dose Assessment Center (MUDAC) is utilized as a joint center by Energy Northwest, DOE-RL, and States of Washington and Oregon Departments of Health to coordinate field team operations, project dose rates, record actual measured dose rates during an emergency, and determine protective action recommendations. The computerized Emergency Dose Projection System as described in Section 5 is located in this center. Actual and projected doses obtained will be available for use in determining protective action recommendations for the general populations. From the MUDAC information can be sent by facsimile to the Benton and Franklin County Emergency Operations Centers, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and other Energy Northwest emergency centers. Communications with the field monitoring teams is provided in MUDAC. This capability allows for relaying instructions and receiving survey results.

6.2.5 Security Communications Center

The Security Communications Center is utilized in the notification process and has voice and hard copy transmission capabilities as detailed in Section 4.6. Any information received here will be delivered to the appropriate personnel.

6.2.6 News Release Preparation and Media Briefing

A news release preparation area is provided in the EOF for Energy Northwest's public relations personnel to develop public information status reports. These status reports will be updated and distributed to the Joint Information Center (JIC) located at the ENOC. Groups of media personnel may be escorted to the EOF, as conditions permit, for briefings and tours. This action will be taken under the direction of the EOF Public Information Officer (PIO), and with approval of the EOF Manager.

6.2.7 Work Areas

Several work areas are identified for Energy Northwest personnel as well as for Government agencies (DOE, FEMA, NRC, Washington and Oregon States, etc.), outside consultants, architect/engineers, contractors, and vendors in the EOF. Other general office or classrooms are available as needed.

6.2.8 Health Physics Center

The Health Physics Center consists of several areas in the protected Emergency Operations Facility and the non-protected Kootenai Building, a radiological laboratory, and counting lab. Energy Northwest contracts with a vendor to process thermoluminescent dosimeters and provide results to Energy Northwest in a timely manner. This vendor is certified to the standards of the National Voluntary Laboratory Accreditation Program (NVLAP). Results are recorded into a computerized Total Exposure System (TES) which can be accessed for information from the plant health physics areas as well as the Operations Support Center and Emergency Operations Facility.

A whole body counting, respiratory testing, and computerized internal dose assessment system is in use at Energy Northwest. The respiratory testing area consists of fitting and testing equipment. A large supply of respirators is available if required for emergency response or recovery operations.

The radiological laboratory and adjoining counting lab provide for radiological analysis of environmental samples as well as partial backup capability for plant laboratories. If plant analytical capabilities become unusable, plant samples can be transported to the Emergency Operations Facility or a support agency laboratory for chemical and/or radiological analysis. Energy Northwest contracts with outside laboratories for backup environmental sample analysis.

6.2.9 First Aid and Decontamination Area

A first aid facility is located near the Protected Area of the plant, and a decontamination facility is located in the unprotected portion of the Kootenai Building. The relative locations of these facilities provide for treatment and decontamination of injured personnel as well as independent operation of both facilities. Drains from the decontamination area are connected to an isolable tank. Energy Northwest contracts with HEHF for treatment of severely contaminated injured personnel. This first aid facility is staffed by qualified personnel and first aid equipment is available for normal first aid treatment.

6.2.10 Environmental Programs Area

The environmental programs area includes an environmental equipment area and biology lab. The environmental equipment area will be used to store any backlog of environmental samples. Additional storage is available in the biology lab. Provisions have been made for cataloging stored samples.

6.2.11 Habitability

The Emergency Operations Facility is a protected area in the Kootenai Building which has special shielding and ventilation to maintain habitability requirements. The ventilation system is designed to provide maximum habitability during an accidental radiological release. HEPA filters condition entering air during emergency conditions. Ion chambers are strategically located in the ventilation system to detect potential infiltration of contaminated air thus automatically allowing reconfiguration of airflows from replenishment to recirculation modes.

The EOF is designed to ensure that the total dose to occupying personnel is less than the Environmental Protection Agency Protective Action Guide limit of 5 rem TEDE for the duration of the postulated accident. Shielding requirements were determined using source terms from BWR/PWR accident scenarios described in the WASH 1400 Reactor Safety Study. Calculations considered worst case meteorology and assumed a 0.75 miles distance from the plant to the Emergency Operations Facility.

6.2.12 Emergency Power

A 365 kilowatt emergency power generator provides power to the Emergency Operations Facility during power loss. Vital equipment such as communication systems, counting equipment, dose assessment equipment, and lights are connected to the emergency power generator.

6.3 ALTERNATE EMERGENCY OPERATIONS FACILITY

The Alternate Emergency Operations Facility (EOF) is located approximately 10 miles south of the plant. This facility may be activated in the event of the primary EOF becoming uninhabitable, or inaccessible to offsite responders. The EOF Manager, in consultation with radiation protection personnel, will determine when to activate this facility, and appropriate staffing levels.

A Crash phone, dedicated facsimile machines, and a NRC Emergency Notification System phone are available to provide notifications to offsite agencies. The emergency functions for direction and control, emergency classification, notifications, protective action recommendations, dose projection operations, and field team dispatch and control may be provided from this facility. The Alternate EOF has sufficient communications capability to continue to communicate with the control room, TSC, primary EOF, field teams, and offsite agencies.

6.4 JOINT INFORMATION CENTER

The Energy Northwest Joint Information Center, (JIC), located approximately 10 miles south of the plant, integrates emergency response/recovery public information functions with the resources normally available to upper management personnel. Figure 6-5 shows the typical floor plan for the JIC.

Designated staff may support the EOF Manager and the emergency effort from the JIC.

Dedicated phones provide continuous contact with the plant and Emergency Operations Facility. Facsimile is available for the exchange of the latest data with other emergency centers. Access to certain areas are controlled when emergency centers are activated. The JIC will function as a joint news release center for Energy Northwest, county, state, DOE-RL and other federal agencies to facilitate consistent media releases. Areas will be set up to provide work space for the various media personnel.

Emergency power is provided for the JIC and telephone system.

6.5 EMERGENCY EQUIPMENT AND SUPPLIES

Appendix 3 identifies the emergency equipment staged for Fire Brigade Response at Columbia Generating Station. In addition to the Fire Brigade turnout stations, other equipment is staged throughout the plant for use by the Fire Brigade. This includes fire fighting hose stations, foam kits for Class B fires, and smoke removal.

Equipment is stored for field team use at the Emergency Operation Facility and at an offsite location. Vehicles and survey equipment kits are available for use by the field teams.

An inspection, inventory, and operational check of emergency equipment/instruments in each emergency cabinet or kit is conducted at least quarterly and after each drill which utilized that

particular cabinet and kit. The equipment designated for emergency use will be calibrated at the intervals recommended by the manufacturer. Sufficient reserves of instruments and equipment are maintained to replace instruments removed from kits for repair or calibration. Emergency respiratory equipment will be inspected monthly. Required quantities in each cabinet or kit are established by procedure.

6.6 COMMUNICATION SYSTEMS

The Rolm phone system and the 300 dial-up system may be used as a backup to the Crash system for notification of offsite agencies. The Emergency Director will notify the SCC Duty Officer and offsite agency representatives using one or more of the following systems:

6.6.1 Radio Network

The radio system consists of radio channels covering several different radio bands. The Emergency Operations Facility is the primary facility for communication with emergency responders and offsite response organizations.

Limited radio capability is available in the Central Alarm Station, the Secondary Alarm Station (in the Control Room), the Technical Support Center, and the Operations Support Center. Mobile and portable radios are provided for selected vehicles and plant personnel.

Field monitoring teams will utilize the state sanctioned common emergency radio channel of 46.00 MHz. This system has a mountaintop base station that provides communications with field monitoring teams.

The mountaintop radio repeaters and 46.00 MHz base station are powered by a battery and charger system to provide communications capability during a loss of power.

Radio communication with the Department of Energy and the Benton and Franklin County Emergency Operations Centers is also available. The Department of Energy Communications Center and the Benton County Emergency Dispatch Center provide 24-hour monitoring of these radio links. See Table 6-1 for a listing of available radio channels.

6.6.2 Company Telephone System

Energy Northwest's Richland phone system is a computer based, software controlled telephone exchange (Computerized Branch Exchange). It is equipped with redundant computerized processor units and is served by an uninterruptible power supply.

The direct-dial private telephone system provides communication between the Hanford Energy Northwest facilities. The phone system is arranged such that plant telephones can reach other Energy Northwest facilities by direct-dialing and without the need of an operator. Telephones are at various strategic locations throughout the plants, including the Control Room, the remote shutdown panel, the Technical Support Center and Operations Support Center.

There are multiple direct inward dialing trunks to the Computerized Branch Exchange. Columbia Generating Station is connected to this exchange via company owned tie trunk lines. The Emergency Operations Facility has tie trunk lines connected to the Energy Northwest Office Complex (ENOC) Computerized Branch Exchange. The Computerized Branch Exchange in the plant is connected to the outside public telephone system via a minimum of 15 central office trunks. Each plant also has access to a number of long distance State Controlled Automatic Network Circuit (SCAN) trunks. Energy Northwest headquarters also has access to long distance SCAN lines. These SCAN lines are wired direct to Spokane and bypass the local toll centers. This allows bypassing of the local central office in the event of congestion.

6.6.3 Dedicated Telephone Circuits

The following dedicated phone networks are available for emergency communications in addition to the normal Energy Northwest phone network:

a. Energy Northwest Emergency Center Network,
b. Response Agency Network, and
c. NRC Emergency Notification System.

The Energy Northwest Emergency Center Network interconnects the plant and emergency centers. The network uses a push button system in which the caller selects the area to be called, pushes the appropriate button which in turn automatically rings into the selected area.

The Response Agency Network connects the Energy Northwest emergency centers with State and local emergency centers. Lines to the Washington State Emergency Operations Center are routed through the local State Patrol Office switchgear and transmitted via the state microwave system to Camp Murray. By dialing a unique series of numbers the user is able to reach a specific agency. Facilities serviced by these dedicated lines are Columbia Generating Station, the Benton and Franklin County Emergency Operations Centers in Richland and Pasco, the Department of Energy Patrol Occurrence Notification Center on the Hanford site, and the Washington State Emergency Operations Center in Camp Murray. In addition, the network has a crash function, which is why it is referred to as the Crash line or Crash Notification System. This feature of the system operates by dialing a unique activator number that automatically rings all the phones on the system. The Crash line is available in the Alternate EOF.

A federal telephone system (FTS 2000) connects Energy Northwest emergency centers to the Nuclear Regulatory Commission. The Emergency Notification Network (ENS) and the Health Physics Network (HPN) are included in this system. ENS is available in the Control Room, the Technical Support Center and the Emergency Operations Facility. The HPN, ENS, and Crash are available in the Technical Support Center, the Emergency Operations Facility, and the Alternate EOF.

Call list telephone numbers associated with activation of the Emergency Plan are updated at least quarterly by the Emergency Preparedness section.

6.6.4 Sound Powered Phone System

The plant Sound Powered System, designed to provide communications without the use of batteries or other outside power sources, is powered by voice sound energy. This system is completely separate and distinct from the computerized Branch Exchange telephone system.

The Sound Powered System has separate communications loops which are arranged by building and elevation. All sound powered jacks in each loop are wired in parallel and terminated on a switching device. This device provides the capability to merge and isolate various combinations of loops for maintenance and testing activities. Extension cords, handsets, and sound powered head or head-chest sets are provided for use with the jack stations.

6.6.5 In-Plant Public Address System

The Public Address System (PA) is composed of separate public address zones, each accessible through the Plant Computerized Branch Exchange telephone system. An additional phone number accesses all zones for group paging. Paging microphones located in the Control Room, Central Alarm Station, Secondary Alarm Station, Technical Support Center (TSC) and other areas override telephonic paging and transmit to all zones simultaneously. Tone generators operated from the Control Room or the TSC allow an alerting tone to be broadcast over the PA system. The paging microphones have priority over all other functions of the Public Address System.

Portable high noise evacuation devices, each composed of a radio-controlled siren and strobe light, are located in selected areas throughout the plant. These devices are activated by the PA alerting tone.

6.6.6 Area Wide Radio Paging

A Radio Paging System is used to alert on-call members of Energy Northwest's emergency response organization of an emergency.

6.6.7 Facsimile System

Various locations such as the Control Room, Technical Support Center, Emergency Operations Facility, Joint Information Center, Department of Energy-RL, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and the Benton and Franklin County Emergency Operations Centers have facsimile transceivers. The facsimile transceivers enable the transmission and receipt of printed material. The facsimile system which connects the Energy Northwest emergency centers with the county and state emergency centers uses dedicated phone lines.

6.6.8 Early Warning System

Tone activated radios are made available to all households within the Ten-Mile Emergency Planning Zone. These radios monitor the local Emergency Alerting System. If an Emergency Alerting System signal is received, a light is activated and an audible tone is heard. The radio then broadcasts the message. The radios contain a battery backup.

In addition to the tone activated radios, sirens located on the Columbia and Yakima Rivers, and in the Horn Rapids area are provided to assist in notifying sportsmen, boaters, and other recreationists that may be present. The Department of Energy also maintains a system for alerting its employees and its contractor's employees.

6.6.9 Automatic Dialer

An automatic dialing system is used similarly to and at times in conjunction with the area wide radio paging system as a means to notify Energy Northwest emergency personnel.

6.6.10 Emergency Response Data System

The Emergency Response Data System (ERDS) has been established to transmit raw reactor parametric data to the NRC when an Alert or higher emergency is declared. The data is conveyed over an FTS 2000 phone circuit.

6.7 COMMUNICATION SYSTEMS TESTS

The following test schedule of the communication system is established to ensure operability. This test schedule includes:

a. Communications with Emergency Dispatch Center and Department of Energy-RL

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

b. Communications with Washington State Emergency Operation Center

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

c. Communications with Nuclear Regulatory Commission Headquarters

   1. Dedicated telephone lines -- tested monthly.
   2. ERDS - tested quarterly.

d. Communications among Energy Northwest Emergency Facilities

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.
3. Data circuits -- tested monthly.
4. Installed Radio links -- tested monthly.
5. Environmental Field Team radios -- tested quarterly.

e. Notification System

1. Siren system

   a) status test -- monthly documentation of status tests conducted at least bi-weekly.
   b) complete system test -- annually.

2. EAS Radio receivers test

   a) operability -- weekly (performed by the Emergency Alerting System).
   b) coverage -- annually (performed by Energy Northwest and Benton and Franklin counties).

3. Automatic Dialer

   Perform activation tests -- quarterly.

f. Emergency communications equipment (not covered above)

1. Area Wide Radio Paging -- operational test quarterly.

g. Fire Brigade Equipment

1. Replace batteries and perform operational tests monthly on portable radios (OSC).
2. Perform annual FCC checks on portable radios.

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

I. Emergency Facility Radio Channel Availability

A. Control Room

- In-Plant Operations Channel
- Area Wide Security Channel (Secondary Alarm Station)

B. Technical Support Center (TSC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Field Team - 46.00 MHz

C. Operations Support Center (OSC)

- In-Plant Operations Channel

D. Central Alarm Station (CAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

E. Secondary Alarm Station (SAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

F. Security Communications Center (SCC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel
- LERN (Law Enforcement Radio Network)

G. Emergency Operations Facility

- Area Wide Security Channel Link
    1. Franklin County Sheriff

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

2. Emergency Dispatch Center

3. Department of Energy Patrol Emergency Office

- Field Team - 46.00 MHz Channel
- Department of Energy Emergency Response Channel
- LERN Channel (Law Enforcement Radio Network)

H. Department of Energy

- Area Wide plant Security Channel

I. Benton County Emergency Dispatch Center

- Area Wide Security Channel

K. Franklin County Emergency Dispatch Center

- Area Wide Security Channel

J. Benton and Franklin Counties Emergency Operations Centers

- Area Wide Security Channel

II. Energy Northwest Emergency Center Telephone Capability

A. Technical Support Center (TSC) dedicated phone system interconnects with:

- Control Room
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Emergency Operations Facility
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System

B. Operations Support Center (OSC) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Emergency Operations Facility
- Central Alarm Station/Secondary Alarm Station
- Facsimile System

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

C. Control Room dedicated phone system interconnects with:

- Technical Support Center
- Operations Support Center
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System
- Emergency Operations Facility

D. Emergency Operations Facility (EOF) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

E. Alternate Emergency Operations Facility (EOF) phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

F. Joint Information Center (JIC) dedicated phone system interconnects with:

- Crash Notification System
- EOF
- Facsimile System

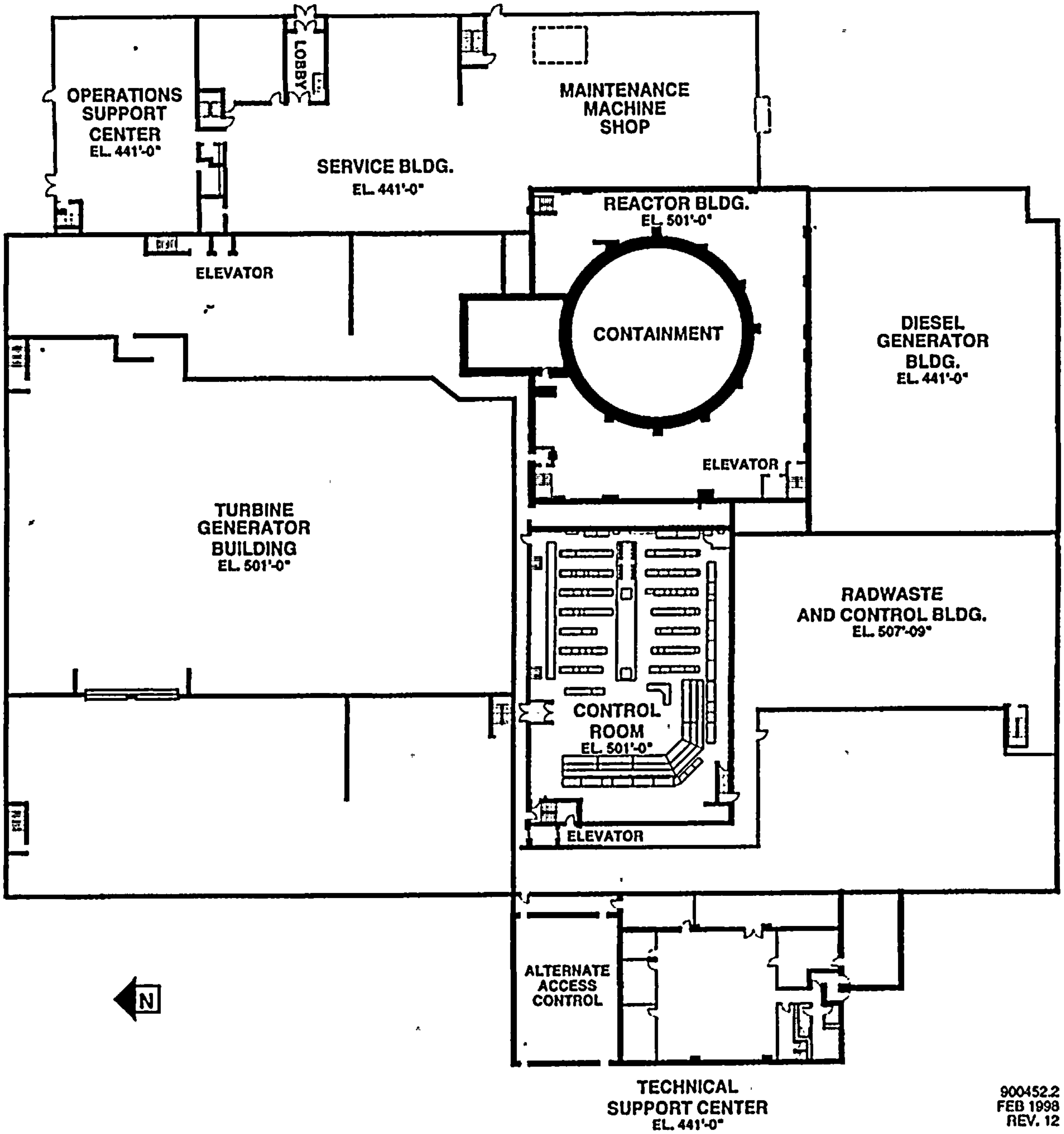

Figure 6-1, Columbia Generating Station Control Room, Technical Support Center and Operations Support Center Locations (Typical Arrangement)

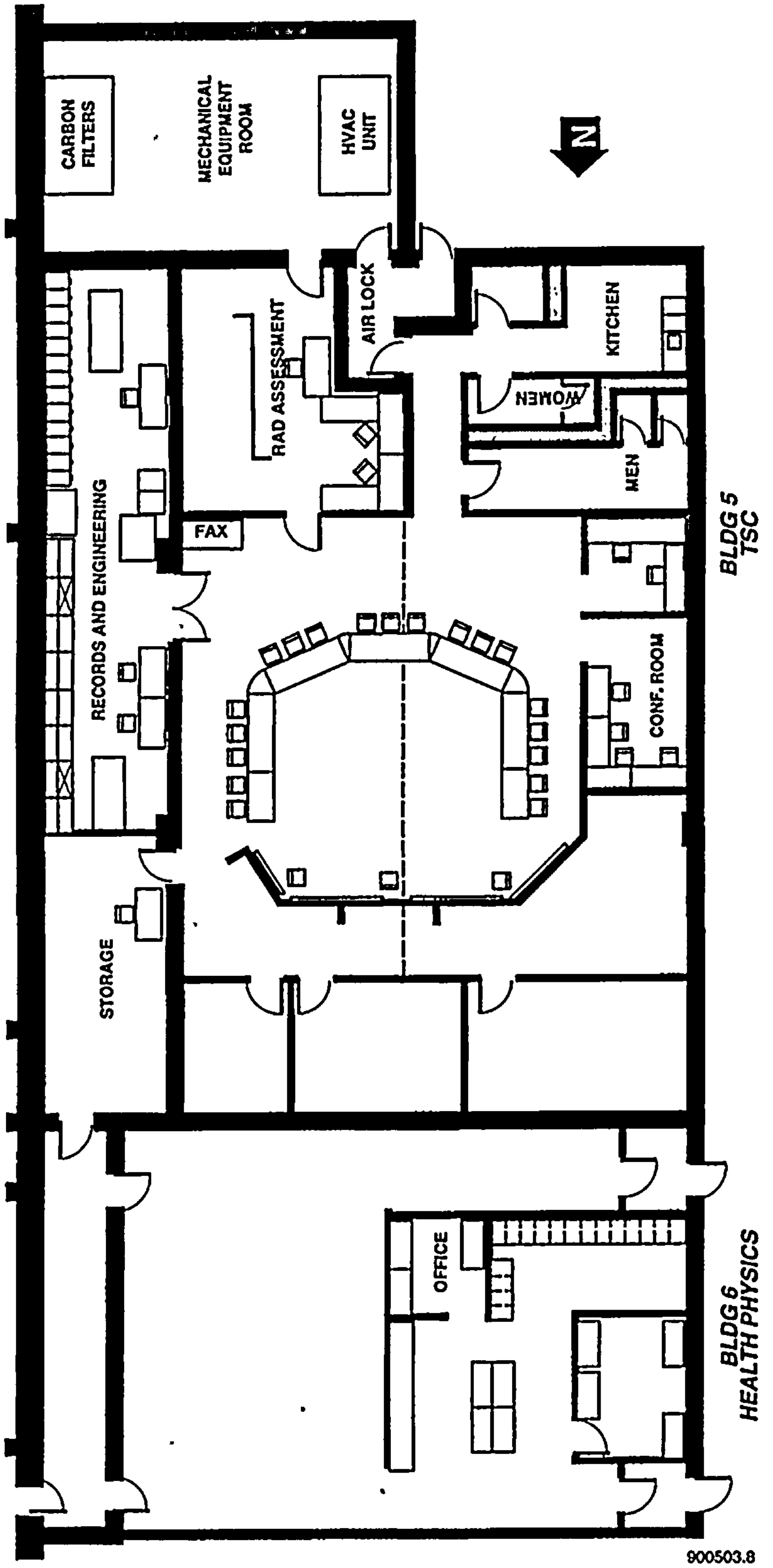

Figure 6-2, Columbia Generating Station Technical Support Center
(Typical Arrangement)

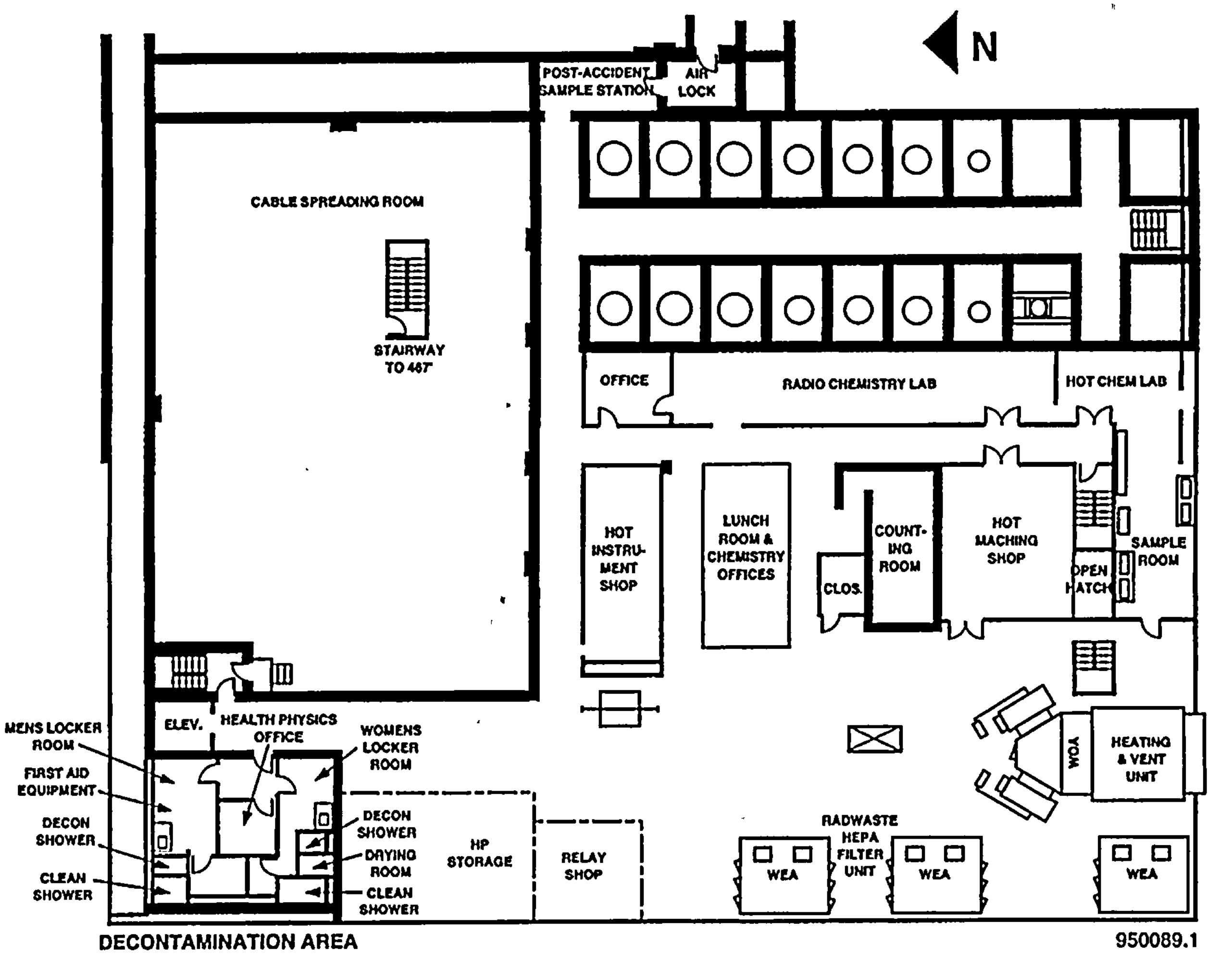

Figure 6-3, Columbia Generating Station Decontamination Area
(Typical Arrangement)

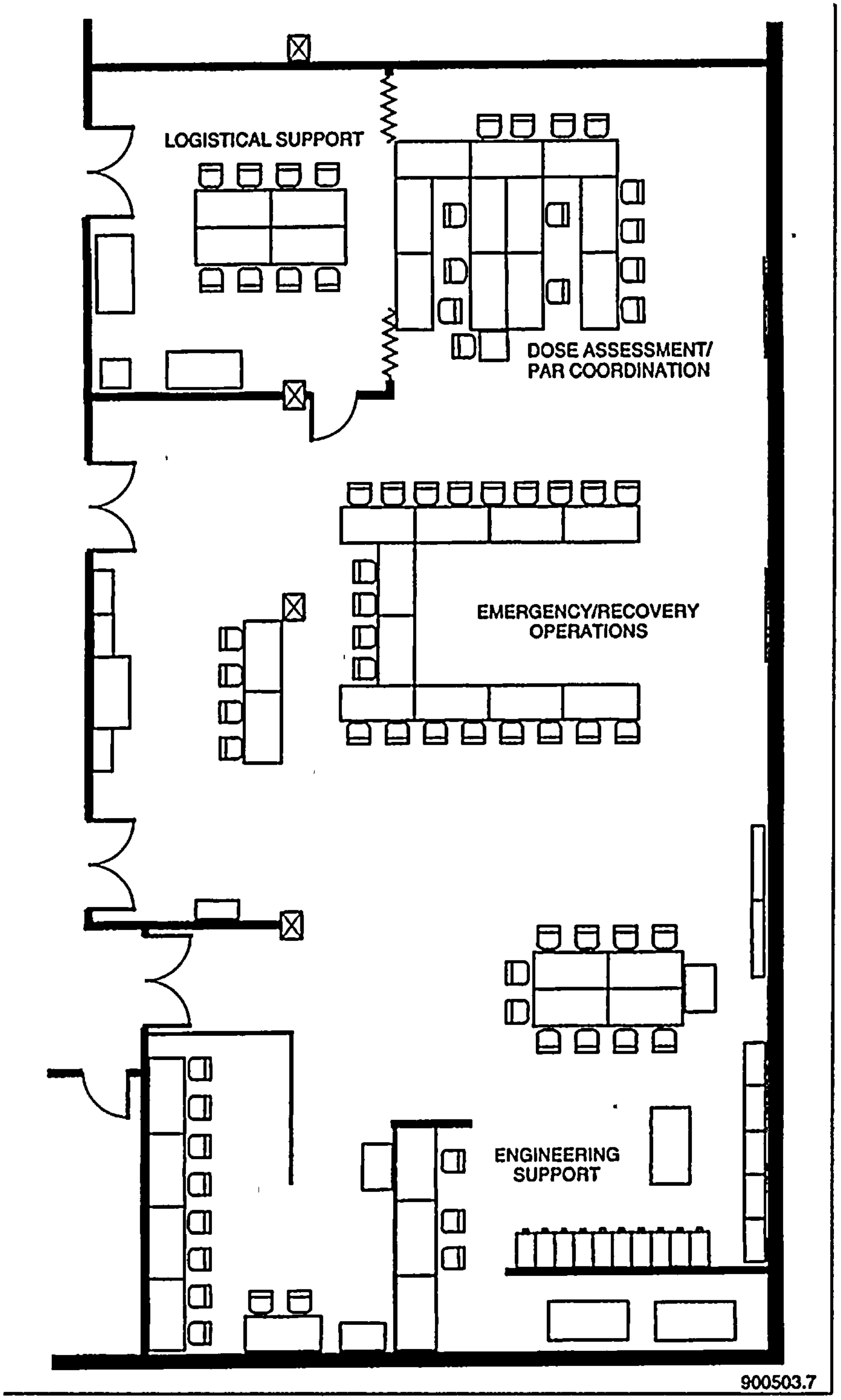

Figure 6-4, Kootenai Building
Emergency Operations Facility (EOF)
(Typical Arrangement)

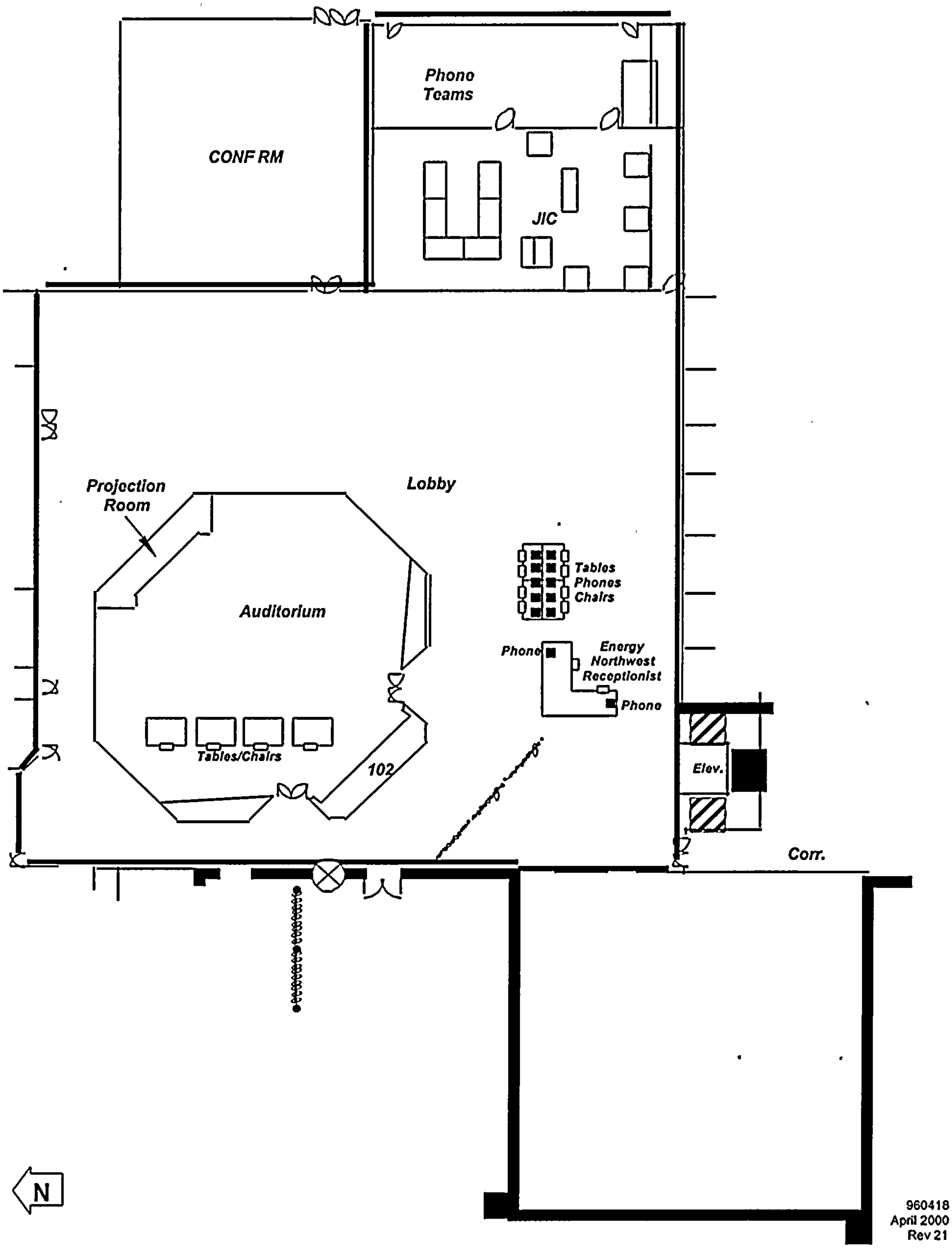

Figure 6-5, Joint Information Center - Typical Arrangement

SECTION 7
REENTRY AND RECOVERY OPERATIONS

7.1 REENTRY AND RECOVERY OPERATIONS

Emergency actions will shift to the recovery phase once the immediate corrective and protective actions have established effective control over the incident. Onsite reentry and recovery operations are addressed in 7.2 and 7.3. Offsite reentry and recovery operations are discussed in 7.4.

7.2 REENTRY INTO ONSITE AREAS

Reentry into evacuated onsite areas may be required during and after an emergency. This could include search and rescue, actions to minimize further accident consequence, or assessment of plant conditions to determine the scope of recovery operations. Exposure guidelines, as outlined in Section 5 of this plan, should not be relaxed without sufficient justification.

Prior to reentry, the Radiation Protection Manager or his representative shall:

a. Review all available radiation survey data and determine plant areas with high radiation exposure and/or contamination potential,

b. Review the radiation exposure records of personnel participating in the reentry operation and determine the need for additional personnel,

c. Review the adequacy of the radiological sampling and survey instrumentation to be used by the team (type, ranges, number, calibration etc.),

d. Review protective clothing, dosimetry, and respiratory protection requirements,

e. Ensure that appropriate communications are available, and

f. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry.

The initial recovery efforts should encompass the following actions:

a. Conduct comprehensive radiation surveys of the plant facilities and define all radiological problem areas;

b. Isolate and post all radiation and contamination areas with appropriate warning signs as conditions and available time allow, and

c. Identify potential hazards that may impact recovery operations.

During the reentry activities immediately following an accident, initial radiation monitoring functions involve only gross hazard evaluations, isolation of the hazard, and the definition of radiological problem areas. This immediate radiation surveillance activity is used to provide the basic information for the development of recovery operations.

7.3 ONSITE RECOVERY OPERATIONS

The EOF Manager and TSC Manager have the joint responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. A Recovery Manager will be appointed and a Recovery Organization will be established to develop and coordinate plans and schedules for the recovery operations. Following a Site Area Emergency or General Emergency, the Corporate Nuclear Safety Review Board (CNSRB) will review and comment on the recovery planning effort to assure that all nuclear safety aspects of the recovery are satisfied. (The CNSRB will report their findings to the Recovery Manager, who shall take the actions deemed appropriate for safe recovery operations.) Refer to Figure 7-1 for key positions and responsibilities of the recovery organization.

7.3.1 Initiating the Recovery Phase

Prior to terminating an emergency and entering the recovery phase, the EOF Manager will coordinate with the TSC Manager to ensure that the following criteria have been considered:

a. The conditions which caused the emergency have stabilized, are under control, and are unlikely to deteriorate further.

b. Plume tracking is no longer required. The only environmental assessment activities in progress may be those necessary to assess the extent of deposition resulting from passage of the plume.

c. In-plant radiation levels are stable or decreasing.

d. Radioactive releases are under control.

e. The potential for an uncontrolled radioactive release is acceptably low.

f. Containment pressure is within technical specifications.

g. The reactor is in a stable safe shutdown condition and long-term core cooling is available as required.

h. Any fire, flood, earthquake or similar emergency conditions no longer exist.

i. Offsite conditions will not limit access of personnel and support resources to the site.

j. Discussions have been held with DOE-RL, Washington, Oregon, affected counties and select regulatory agencies, and agreement has been reached to begin the recovery phase.

The extent of recovery activities will dictate the precise framework of the Recovery Organization:

a. For events of a minor nature, the normal onshift organization should be adequate to perform necessary close-out actions (e.g., for UNUSUAL EVENT classifications).

b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization, or portions thereof, should be adequate to coordinate the necessary recovery actions (e.g., for ALERT classifications).

c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, a formal Recovery Organization will be established to manage the recovery actions. Specific members of the Recovery Organization will be selected based upon the sequence of events that preceded the recovery activities.

7.3.2 Conducting Recovery Operations

Recovery operations will be performed in accordance with written procedures developed by the Recovery Manager and staff prior to implementation of any recovery action. These procedures shall be based upon information collected by the initial reentry team(s) and any subsequent updates. Special precautions will be identified for any potentially hazardous conditions. If radiological hazards exceed the boundaries of the radiation access controlled areas, the security access lists should be reviewed and revised to prevent unauthorized or unintentional entry into hazardous areas.

The Recovery Manager is responsible for directing the activities of the Recovery Organization and should:

a. Ensure that sufficient personnel from Columbia Generating Station and other organizations are available to support recovery.

b. Direct the development of a recovery plan and implementing procedures, as required.

c. Coordinate with the CNSRB to ensure adequate review of engineering activities and proper review and approval of the recovery plan and implementing procedures.

d. Coordinate the deactivations of emergency response facilities and personnel as appropriate.

e. Coordinate the integration of available state and federal assistance into recovery activities.

f. Coordinate with offsite authorities, and provide support as required for offsite recovery activities.

g. Approve all technically oriented recovery information released by the Public Information Organization.

h. Periodically estimate total population exposure.

When criteria to enter the recovery phase are met, the Recovery Manager will inform emergency centers and offsite agencies by crash call of the transition to recovery. The Recovery Manager then initiates a discussion of recovery items with the Recovery Task Force members to develop a shutdown safety plan focusing on procedurally defined priorities.

The Recovery Task Force will produce initial plans to cope with near and long term activities, provide direct input to the maintenance organization for an integrated outage plan, and provide assistance to the Recovery Manager to transition from a recovery phase to an outage, as appropriate.

During the recovery operations, particular attention should be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine the extent of any equipment damage and to determine the sequence of events that led up to the accident for event reporting and lessons learned findings.

The Recovery Manager will ensure that onsite ERO and appropriate offsite agencies are notified prior to initiating any recovery operation with a potential for a radiological release. The ERO and offsite agencies will also be notified of any changes in the key positions of the recovery organizational structure.

All recovery operations are considered to be terminated when the plant has returned to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.4 OFFSITE REENTRY AND RECOVERY OPERATIONS

A Reentry and Recovery Task Force is established by the State and County emergency response plans and is responsible for coordinating offsite recovery following radiological incidents including the requirements for reentry conditions for any offsite evacuated areas. Energy Northwest will provide a representative and additional assistance to this Task Force, as requested. Specific details of offsite reentry and recovery operations can be found in the State and County emergency response plans and implementing procedures.

Recovery Manager

Recovery Phase Task Force Manager

Recovery Plan Operations Manager

Recovery Plan Radiological Manager

Recovery Plan Technical Manager

Recovery Plan Quality Assurance Manager

Recovery Plan Support Manager

Areas of Oversight Responsibilities:

Production Scheduling	Environmental	Fuels	Commitments	Procedures
Safety	Decon	Licensing	Reviews	Scheduling
Maintenance	Restoration HP	Vendors	Oversight	Finance
Security (Plant)	Radwaste	Analysis	Qualifications	Public Relations
OPS	Surveys	Plant Support		Legal
Shutdown Safety				Site Support
				Procurement
				Add'l Staffing

NOTE: The NRC will be invited to participate in this task force as deemed appropriate.

Figure 7-1

SECTION 8
MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES FOR THE PLANNING EFFORT

Overall responsibility and authority for emergency planning lies with the Vice President, Operations Support/Public Information Officer. The Manager, Resource Protection, reports directly to this Vice President, and has emergency preparedness as one of his general areas of responsibility. Reporting to the Manager, Resource Protection, is the Corporate Emergency Preparedness, Safety and Health Officer, who has specific responsibility for the Emergency Preparedness organization, and implementation of the program itself. Formal position descriptions specify minimum qualifications for the emergency planning personnel. Professional qualifications are maintained by periodic attendance at industry seminars and short courses, through observation of and participation in radiological emergency exercises conducted at other nuclear facilities, and through job-related in-house topical training sessions.

Specific responsibilities for the Corporate Emergency Preparedness, Safety and Health Officer include, but are not necessarily limited to, the following:

a. Ensure that the information, data, and procedures detailed in the Emergency Plan Implementing Procedures are consistent with the Columbia Generating Station Emergency Plan.

b. Ensure that the Emergency Plan Implementing Procedures and other procedures are coordinated and interface properly (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

c. Ensure the coordination of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures with the State, County and DOE-RL Plans.

d. Ensure an adequate staffing of the ERO.

e. Ensure emergency preparedness related training documentation is sent to Records Management.

f. Ensure emergency preparedness related drills and exercises are coordinated as described in this Plan.

g. Ensure periodic review and update of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures occurs as described in this Plan.

h. Ensure the maintenance and inventory of emergency facilities, equipment and supplies as described in this Plan.

i. Maintain knowledge current with respect to changes in the federal regulations and guidance that impact emergency preparedness activities.

j. Public information and education on emergency preparedness issues.

8.2 EMERGENCY PREPAREDNESS PLAN REVIEW

The Emergency Plan and the Agreements which support the plan are reviewed annually and updated as necessary. Critiques of past exercises, changes in company organizational structure, and issuance of new regulations provide the primary input to plan review. The Corporate Emergency Preparedness, Safety and Health Officer is responsible for developing and updating the Emergency Plan and coordinating the plan with other response organizations. The Plant Operations Committee is responsible for reviewing any proposed changes and submittal of the proposed revision to the Corporate Nuclear Safety Review Board.

The Corporate Emergency Preparedness, Safety and Health Officer provides a distribution list of all organizations and individuals with responsibility for implementation of the Emergency Plan. The Emergency Plan and all subsequent revisions are then distributed through a manuals control system which verifies receipt of the revisions by the implementing organization or individual. Revised pages are dated and marked to indicate where changes have occurred. If no revisions have occurred, the Corporate Emergency Preparedness, Safety and Health Officer will certify by letter to all Emergency Plan manual holders that the plan and supporting agreements have been reviewed and are current.

8.3 INDEPENDENT AUDIT OF THE EMERGENCY PREPAREDNESS PROGRAM

Either of two types of audit groups may be employed to ensure an adequate Emergency Preparedness Program. Audits may be performed by an outside organization with technical expertise in emergency planning or by an organization within Energy Northwest which is independent of the emergency preparedness program.

An audit will be conducted in accordance with 10 CFR 50.54(t) and the OQAPD. The review shall include the Emergency Plan, the Emergency Plan Implementing Procedures, training, readiness testing, equipment, and interfaces with state and local governments. The results of the audit, along with recommendations for improvement, shall be documented and reported to the Chief Executive Officer, the Plant General Manager, Vice President, Operations Support/PIO, and appropriate corporate and plant management. In addition, involved federal, state, and local organizations will receive results of the audit. The report and recommendations will be retained for a minimum period of five years.

The Corporate Nuclear Safety Review Board has the responsibility to review the Emergency Preparedness Program audit findings to determine if the conduct is adequate, and if the audit responses are appropriate and timely. The Board may expand these audit activities if necessary.

8.4 FACILITIES AND EQUIPMENT MAINTENANCE

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for ensuring that the facilities and equipment specified in Section 6 of this Plan are maintained in operational readiness. In addition to the routine tests and scheduled maintenance evolutions, the Emergency Preparedness staff members conduct periodic facility walk-downs of the on-site emergency response facilities. Various departments within Energy Northwest share the responsibility for performing maintenance and calibration on the equipment necessary to implement the provisions of the Emergency Plan, including survey meter calibration and testing, backup power source maintenance and testing (e.g., uninterruptible power supply batteries, diesel generators, etc.), emergency ventilation system maintenance and operational checks, field team vehicle maintenance, communications systems maintenance and testing, and tone alert radio and siren maintenance and periodic testing.

8.5 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The radiological emergency response training program is one of the most important aspects of the emergency preparedness effort. This training is intended to keep an adequate number of emergency personnel sufficiently familiar with the Emergency Plan and procedures to perform effectively in an emergency. Fire Brigade personnel are trained per FSAR 13.2. Security personnel are trained per the Physical Security Plan.

8.5.1 Emergency Training Program Description

Initial training for emergency responders is provided to all new Energy Northwest emergency response organization candidates. Refresher training is provided to the emergency response organization on an annual basis.

Personnel from local, state, and federal organizations who may be requested to assist during an emergency will be invited to participate in the site specific training program which may include tours to gain familiarization with the facilities. Support organization personnel will be provided qualified escorts if they enter the Plant Site during an emergency.

a. The Emergency Preparedness Training Program will include, but is not limited to the following:

- Applicable Emergency Plan Implementing Procedures
- Location of emergency equipment and supplies
- Names, locations, and functions of the emergency response facilities
- Use of plant communication systems
- Personnel accountability, assembly, and evacuation

b. As a minimum, all Emergency Response Organization personnel shall receive Emergency Preparedness Initial training. Emergency Plan training program lesson plans are developed using applicable guidance from the systematic approach to training process.

c. Initial training for Emergency Response Organization personnel shall include formalized classroom training, and examinations. Additionally, "hands on" training with completion of performance evaluation sign off forms may be used, as appropriate. It is the intent of this training program to qualify Emergency Response Organization personnel in the requirements of the Emergency Plan Implementing Procedures applicable to their emergency positions.

The training courses will provide the necessary information to enable each member of the emergency organization to perform assigned emergency tasks. Selected emergency personnel will attend specialized classes related to particular emergency assignments. Specific training course assignments for members of the emergency organization, and overall training responsibilities, may be found in the Qualification Directory. Detailed training responsibilities may be found in the Site Wide Procedures. The training course descriptions are found in the specific qualification directories.

8.5.1.1 Emergency Training for Essential Personnel

The emergency organization positions which are essential to implementation of this Emergency Plan are identified in Table 2-1. The individuals identified to function in these emergency organization positions will receive appropriate specialized initial training in the duties and responsibilities of the position and the applicable procedures. This training will consist of formal classroom instruction, written examination to verify a satisfactory level of comprehension, and where appropriate will include "hands-on" training with completion of performance evaluation sign off forms.

a. In addition to Emergency Center Overview training, essential personnel receive the following training:

- Emergency Director (Shift Manager, TSC Manager, EOF Manager)
  - > Protective Action Recommendations
  - > Emergency Classification
- Control Room Staff (Shift Manager, Control Room Supervisor, Control Room Operators, STA)
  - > Protective Action Recommendations (except Control Room Operators)
  - > Emergency Classification

    - Dose Projection (except Control Room Operators)
    - Emergency Notification

- Accident Assessment and Rad Monitoring Teams (RPM, Chemistry/Effluent Manager, REM, Dose Projection HP, Field Team Members, Field Team Coordinator)
    - Protective Action Recommendations (RPM and REM only)
    - Dose Projection (Chemistry/Effluent Manager, REM and Dose Projection HP only)
    - Field Team Overview and Operations (FT members and FT Dispatcher only)
- Fire Brigade
    - Trained per the requirements of FSAR Chapter 13.2
- Repair Teams (HP, Mechanic, Electrician, I&C, Chemistry)
    - OSC Maintenance Craft Overview
- First Aid/Rescue teams
    - Equivalent to Red Cross standard First Aid

8.5.1.2 Emergency Training for Augmenting and Support Personnel

Individuals assigned to emergency organization augmenting and support positions (not identified in Table 2-1) will receive training as described in the Qualification Directory.

8.5.2 Training for Offsite Agencies

Orientation and training of state and county agencies and personnel involved in the Columbia Generating Station emergency preparedness efforts will be made available by Columbia Generating Station, as follows:

a. The offsite organizations listed below will be invited, on at least an annual basis, to participate in a training program. The invitation will provide a schedule of drills and exercises to enable offsite agencies to request participation.

- Washington Emergency Management
- Washington Department of Health
- Benton County Emergency Management
- Franklin County Emergency Management
- Oregon Office of Energy
- Oregon State Health Division
- Local media personnel (newspapers, radio, tv, etc.)

b. The program will cover the basics of emergency preparedness as it relates to regulations and public safety. The program will include a review of select Emergency Plan Implementing Procedures with particular emphasis given to:

- Classification of emergencies,
- Reporting requirements,
- Assessments,
- Corrective and protective actions, and
- Communications networks.

Training for local services personnel includes, but is not necessarily limited to, procedures for notification and, where applicable, site access procedures, onsite contact identity, basic radiation protection and emergency response functions. This training is provided to the following organizations:

- Richland, Kennewick, and Pasco Fire Departments

  Initial and annual retraining is provided to the local fire department personnel concerning response requirements for accidents involving a threat of radiological contamination.

- Richland, Kennewick, and Pasco Hospitals

  Hospital personnel who may be involved in response to an emergency involving a potential of radiological contamination receive initial and annual retraining. Training covers how to deal with radiation accident cases.

8.5.3 Frequency of Training

Training for all individuals assigned to emergency organization positions will be successfully completed prior to their initial assignment to the emergency organization. Continuing training will also be administered to insure retention and familiarity with the subjects covered in the initial training. The continuing training will be administered annually.

The annual retraining program for ERO personnel is accomplished using classroom instruction and drill performance with immediate on the spot correction. Completion of self study information or examinations may be used to maintain qualifications of personnel unable to attend classroom sessions or drills.

Classroom instruction is used to refresh ERO personnel on information such as industry events, lesson learned from the past year's experience, significant procedure changes, and a review of response requirements.

Self guided performance evaluations may be used to refresh specific skills necessary for adequate emergency response skills. Written examinations may be used to evaluate comprehension and retention for refresher training.

Drills are used to provide practical experience to enhance information gained in the classroom. During the year, as many emergency response personnel as possible participate in scheduled drills, exercises and team training drills to broaden their experience base and that of the entire emergency organization.

When used, self-study by reading and acknowledgement is used to make responsible emergency response personnel aware of important changes to procedures. This method is primarily used when such information should not be delayed until classroom training can be provided.

8.5.4 Training Records

Responsibility for maintaining documentation of the training program is described in the Site Wide Procedures. Formal lesson plans for each course, including instructor qualifications and performance objectives will be maintained. Attendance records for all courses will also be maintained.

8.6 DRILLS AND EXERCISES

Periodic drills and exercises will be conducted in order to test the overall state of emergency preparedness. The prime objective of this form of training is to determine the level of emergency preparedness of all participating personnel, organizations, and agencies. More specifically, each drill or exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their duties and responsibilities.

b. Verify the adequacy of timing of drills and exercises and content of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures.

c. Test communications networks and systems.

d. Check the availability of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

Remedial exercises will be conducted if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot determine "reasonable assurance" that adequate protective measures can be taken in the event of a radiological emergency.

8.6.1 Drill and Exercise Responsibilities

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for the planning, scheduling, and coordination of all emergency preparedness related drills and exercises. All exercises are subject to the approval of the Manager, Resource Protection, and the Plant General Manager.

When a drill or exercise is to be conducted, the Corporate Emergency Preparedness, Safety and Health Officer will:

a. Schedule a date for and assign a drill or exercise coordinator.

b. Assign personnel to prepare a scenario and to act as controllers.

c. Coordinate efforts with other participating emergency personnel, organizations, and agencies.

d. Oversee conduct of the drill or exercise.

e. Critique the results of the drill or exercise.

f. Assign personnel to correct any deficiencies.

Combined functional drills and exercises will involve onsite as well as offsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted simulating, as closely as possible, actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Whenever practical this will incorporate provisions for "free play" on the part of the participants. Drill scenarios will be prepared that involve the participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations. This may include varying degrees of participation of state, county, and federal organizations and agencies, and local service support personnel and organizations. The Corporate Emergency Preparedness, Safety and Health Officer will make every effort to notify the offsite emergency response organizations and agencies at least 180 days in advance of the scheduled date of the drill or exercise.

Drills will involve on-the-spot correction of erroneous performance and a demonstration of the proper performance for the evaluator. During the conduct of exercises, the controllers are restricted in their ability to correct erroneous performance, and may only intercede to prevent damage to equipment or assure safety of personnel.

Recommendations for revisions to the Emergency Plan, Emergency Plan Implementing Procedures, and/or the upgrading of emergency equipment and supplies as a result of a drill or exercise are forwarded to the Corporate Emergency Preparedness, Safety and Health Officer by observers or participants for appropriate disposition.

8.6.2 Drill/Exercise Package

A drill/exercise package is the controlling document for each drill or exercise. It includes, as a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s) and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
- A description of the arrangements for and advance materials to be provided to official observers.

8.7 TYPES OF DRILLS

This section gives details of some of the types of drills which will be conducted periodically. Other types of drills may be developed as needed to test various portions of the emergency support organization.

8.7.1 Communication Drills

Communication drills are conducted in the following manner:

- Operability of the various communications systems is tested by two-way communication. See Section 6 for a detailed list of the systems tested. These tests may be included as part of a scheduled drill or exercise.
- Communication drills involving the field assessment teams are conducted as a part of the radiological monitoring drills.

- Communication drills with Washington State and local governments, (Benton and Franklin Counties), and DOE-RL are conducted to evaluate the message distribution process, including the ability of participants to understand the content of example messages.

8.7.2 Fire Drills

The Fire Brigade will be activated for response to a simulated fire or may respond to a training area to actually fight a fire under the supervision of the Fire Brigade Leader.

8.7.3 Medical Emergency Drills

This drill involves a simulated injury with contamination and will include provisions for participation by ambulance personnel and offsite medical treatment facilities. This drill shall occur annually. The offsite and onsite portions may be performed out of sequence and at different times. The onsite portion of the medical emergency drill should involve evaluation, packaging, and transport of the simulated victim to the ambulance pickup point.

8.7.4 Radiological Monitoring Drills

These drills involve the Environmental Field Teams. Plant and field activities may involve conducting surveys, tracking radiological plume(s) and deposition, and collecting and analyzing various samples such as water, soil, air, and vegetation. Provisions for communications and record keeping will also be tested.

8.7.5 Health Physics Drills

- The first type of health physics drill involves response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- The second type of health physics drill requires analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system.

8.8 <u>FREQUENCY OF DRILLS AND EXERCISES</u>

Scenarios will be varied from year to year so that all major elements of the plan and preparedness organizations are tested within a six-year period. Drills and exercises will be conducted under various weather conditions and may be unannounced. Provisions will be made to demonstrate an off hours drill between 6:00 P.M. and 4:00 A.M., at least once each six years. Additional drills may be conducted to provide practical training to emergency organization members. These drills may include components that satisfy the required drill elements in Table 8-1.

8.9 DRILL/EXERCISE PREPARATIONS AND CONDUCT

The Emergency Preparedness organization is responsible for initiating and coordinating the development of the drills and exercises necessary to meet the requirements of the Emergency Plan. The drill/exercise coordinator is responsible for overall development of the drill/exercise package and to ensure all preparatory activities between departments and agencies are coordinated (see Section 8.10.1). The minimum necessary actions to be taken in preparation for a drill or exercise are as follows:

a. Develop the drill/exercise scenario including:

   1. The objectives and evaluation criteria;

   2. The desired participants (i.e., response agencies);

   3. The primary actions/plans expected to be implemented, activated; and

   4. The tentative date.

b. Distribute the scenario to the desired participants for review and concurrence.

c. For all exercises, Federal, State, and local government agencies will be invited to observe, evaluate, and critique the exercise.

The use of the Columbia Generating Station Probabilistic Safety Assessment (PSA) should be considered when constructing drill and exercise scenarios. The use of PSA allows efforts to be directed at the most likely accident scenarios. Planning efficiency may therefore be increased by allowing the available resources to be directed at the most likely events. The Columbia Generating Station PSA considers both the likelihood and consequences of severe accidents possible at Columbia Generating Station and thus can be utilized to ensure the drill and exercise scenarios are more realistic to the players.

One of the major objectives of drills and exercises is to test the ability of emergency response organization personnel to utilize the emergency response procedures and to make effective and timely decisions based on available data. To effectively accomplish this objective, the drill/exercise controllers will provide the players with any data which the player would have available to them under the conditions being simulated by the drill or exercise.

Facilitative critique session(s) will be held as soon as practicable after each drill/exercise. The comments of the evaluators, controllers, players and observers including federal and state observers or evaluators, will be discussed and the significant comments will be identified. As a part of the critique report, deficiencies (involving needed plan/procedure changes) will be identified. The Emergency Preparedness Section will be responsible for tracking Energy Northwest corrective actions to completion and maintaining sufficient records to document correction of the deficiencies.

TABLE 8-1

REQUIRED DRILL ELEMENTS

	Drill/Exercise	Frequency
a.	Communications Tests	(As described in Section 6. Can be performed as part of drills or exercises.)
b.	Communications Drills	Monthly (with WA State, DOE RL, and Benton and Franklin County Response Agencies) Quarterly (with state and federal response agencies) Annually (with Columbia Generating Station, state and local field monitoring teams)
c.	Fire Brigade Drills	As described in FSAR Section 13.2 (See Note 1)
d.	Medical Emergency Drills	Annually (See Note 2)
e.	Radiological Monitoring Drills	Annually
f.	Health Physics Drills	
	1. Analysis of simulated samples and measurements in the environment	Semi-Annually
	2. Analysis of in plant liquid samples with actual elevated radiation levels	Annually
g.	Major Exercises, including tests of Public Notification System	Biennially (See Note 3)
h.	Combined Functional Drills	Biennially (See Note 4)

NOTE 1: One of the fire drills may be conducted as a portion of the major exercise or combined functional drill.

NOTE 2: The portion of the medical emergency drill involving offsite support agencies may be performed as a portion of the radiological monitoring, major exercise or combined functional drill.

NOTE 3: Department of Energy - Richland Operations, Benton and Franklin County and Washington State Emergency Management will be afforded the opportunity to participate biennially or more frequently if they so request.

NOTE 4: Performed during the alternating years from the major exercises, and testing a major portion of the basic elements of the plans and organizations.

SECTION 9
PUBLIC EDUCATION AND INFORMATION

9.1 PUBLIC EDUCATION AND INFORMATION PROGRAM

Energy Northwest has developed a public education and information program with the purpose of educating the public concerning power plant safety, expected effects of a reactor accident, and actions which should be taken by the public in the unlikely event of a release of radioactive material. This program is targeted for the transients and residents within the Ten-Mile Emergency Planning Zone (EPZ), as well as other interested members of the general public. Special programs have also been designed to address the special needs of the news media.

9.1.1 Annual Public Information Program

In coordination with the Department of Energy - Richland Operations, State of Washington and Benton and Franklin Counties, Energy Northwest provides information to permanent and transient populations within the Ten-Mile EPZ on such topics as radiation, recommended protective measures, selected evacuation routes and assistance centers, sheltering, respiratory protection, thyroid blocking agents, special needs for the handicapped, tone activated radio operation and contacts for additional information. This program includes written material updated and distributed annually to residences within the Ten-Mile EPZ for reference during an emergency.

Brochures at designated recreational facilities are available to transient populations within the 10-Mile EPZ.

9.1.2 Media Information Program

In addition to Energy Northwest's ongoing media program, special presentations coordinated with county and state emergency management offices are made annually to acquaint the news media with emergency preparedness, radiation hazards, and points of contact for release of public information during an emergency.

9.1.3 Warning Signs

Warning signs are posted and maintained at selected areas frequented by sportsmen within the Ten-Mile EPZ.

The signs inform the transients that upon hearing a steady siren tone to leave the area immediately and tune to the local Emergency Broadcast System frequency.

9.2 PUBLIC INFORMATION DURING EMERGENCIES

9.2.1 Emergency Public Information

During an emergency the Joint Information Center (JIC) Manager is responsible for ensuring an accurate and reliable flow of information. Emergency public information procedures are activated during an emergency and will include provisions for exchange of information between Energy Northwest, the public, and outside agencies.

It is likely that the perceived threat, hence media interest and public concern, will be greater than that actually associated with the emergency. The degree to which the emergency public information program is activated by the JIC Manager will depend upon the classification of the emergency and upon the public perception of the event. Therefore, accelerated operations beyond the requirements expected for the declared class of emergency may be implemented.

9.2.2 Emergency Operations Facility Public Information Operations

The Emergency Operations Facility (EOF) Public Information Officer and news writing staff are responsible for developing media release information, and will work closely with technical personnel in the EOF to assure accurate information.

9.2.3 Public Information Operations

The Joint Information Center, located outside the 10-mile EPZ, can accommodate a large number of media personnel and is activated automatically at an alert or higher classification or at the direction of the JIC Manager.

A News Coordination Team, chaired by the JIC Manager, will be established to issue accurate, coordinated and timely information to the media by conducting media briefings and preparing news releases. This team is composed of representatives from Energy Northwest, the Nuclear Regulatory Commission, the Department of Energy-RL, the Federal Emergency Management Agency (coordinating the rest of the federal agencies), and state and local officials. The team will assure that the spokepersons designated from each group have access to all necessary information, opportunity to exchange information, and have the opportunity to participate in media briefings.

Media briefings will be held at regular intervals. The Joint Information Center has space for briefing over 150 members of the media. Areas in the center will be provided for media work space. Copies of news releases and other support materials will be made available for media use.

A media briefing area is available in the Kootenai Building outside of the EOF. The main media center is located at the Energy Northwest Richland Office Complex in Richland.

9.2.4 Media Telephone Team Operations

A Media Phone Team can be activated and remain operational twenty-four hours per day until the emergency is terminated. This team will respond to incoming media calls with the latest available information. This team may be manned jointly by Energy Northwest, federal, local, and state representatives.

9.2.5 Public Information Telephone Team Operations

Public Information Phone Team operations will begin as directed by JIC Manager. This Team will respond to calls and correct misinformation distributed by the media or other groups. This team may be manned jointly by Energy Northwest, Federal, Local and State Representatives. The Public Information Phone Team, combined with the Media Phone Team, will ensure a comprehensive rumor control effort.

APPENDIX 1

SUPPORTING PLANS AND CONTRACTS

Annually Energy Northwest will review the supporting plans and/or contracts listed below to ensure they remain accurate and applicable relative to Columbia Generating Station activities. The results of this review may be communicated informally, but some form of record will be maintained.

Plan	Source
Washington State Fixed Nuclear Facility Emergency Response Plan	Washington Emergency Management
Benton County Fixed Nuclear Facility Response Plan	Benton County Emergency Management
Franklin County Radiological Emergency Response: Energy Northwest	Franklin County Emergency Management
Oregon Columbia Generating Station Emergency Response Plan	Oregon Office of Energy
Hanford Emergency Management Plan	Department of Energy, Richland Operations
Siemens Pre Emergency Plan Manual	Siemens Power Corporation
INPO 86-032, Emergency Resources Manual	Institute of Nuclear Power Operations
Federal Radiological Emergency Response Plan (FRERP)	Federal Emergency Management Agency
NUREG-0845, Agency Procedures for NRC Incident Response Plan (and supplements)	United States Nuclear Regulatory Commission

APPENDIX 2

EMERGENCY PLAN IMPLEMENTING PROCEDURES
Index for Implementation of
Emergency Plan Sections

Procedure	Title	Section of Plan Implemented
	13.1 Emergency Classification	
13.1.1	Classifying the Emergency	4.1 thru 4.4
13.1.1A	Classifying the Emergency - Technical Bases	4.2
	13.2 Protective Measures	
13.2.1	Emergency Exposure Level/Protective Action Guides	5.9
13.2.2	Determining Protective Action Recommendations	5.5
	13.3 Natural Emergency Actions	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.1.1 and the Abnormal Condition Procedures, Section 4.12, of the Plant Procedures Manual.	
	13.4 Notifications	
13.4.1	Emergency Notifications	4.6
	13.5 Evacuation and Accountability	
13.5.1	Localized and Protected Area Evacuations	5.7.2, 5.7.3
13.5.3	Evacuation of Exclusion Area and/or Nearby Facilities	1.6.2 5.7.2, 5.7.3
13.5.5	Personnel Accountability/ Search and Rescue	5.7.5
	13.6 Emergency Security Procedures	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.10.8 and other Security Plan Implementing Procedures.	

Procedure	Title	Section of Plan Implemented
	13.7 Personnel Monitoring, Decontamination, First Aid	
13.7.5	Offsite Assembly Area Operations	5.7.3
	13.8 Offsite Dose Calculations	
13.8.1	Computerized Emergency Dose Projection System Operations	5.3
	13.9 Environmental Field Monitoring	
13.9.1	Environmental Field Monitoring Operations	2.3.3.3, 2.4.4.16, 5.4, 6.2.4
13.9.5	Environmental Sample Collection	5.2.2, 5.4
13.9.8	River Evacuation Monitoring	5.7.4
	13.10 Plant Emergency Facilities	
13.10.1	Control Room Operations and Shift Manager Duties	2.3.1.1 thru 2.3.1.3, 2.3.1.6
13.10.2	TSC Manager Duties	2.3.2.1
13.10.3	Technical Manager and Staff Duties	2.3.2.4, 2.3.2.7
13.10.4	Radiation Protection Manager Duties	2.3.2.2
13.10.5	Operations Manager Duties	2.3.2.8
13.10.6	Plant/NRC Liaison Duties	2.3.2.3
13.10.7	Plant Administrative Manager Duties	2.4.1.1
13.10.8	Security Lieutenant Duties	2.3.1.4
13.10.9	OSC Manager and Staff Duties	2.3.1.8, 2.3.1.9 2.4.1.6, 2.4.1.7 2.10, 2.5.2-11

Procedure	Title	Section of Plan Implemented
13.10.14	Maintenance Manager Duties	2.4.1.2
13.10.16	Chemistry/Effluent Manger Duties	2.14.1.4
	13.11 Emergency Operations Facility	
13.11.1	EOF Manager Duties	2.3.3.1
13.11.2	Assistant EOF Manager Duties	2.4.2.1
13.11.3	Site Support Manager and Staff Duties	2.4.2.8
13.11.7	Radiological Emergency Manager Duties	2.3.3.2
13.11.8	Licensing Manager Duties	2.4.4.18
13.11.10	Security Manager Duties	2.4.2.7
13.11.12	EOF Engineering Manager and Staff Duties	2.4.2.4, 2.4.2.6
13.11.18	Information Coordinator Duties	2.4.1.3
	13.12 Headquarters Emergency Centers	
13.12.19	JIC Management	2.3.4.1
13.12.20	Media and Information Management	6.3
13.12.21	JIC Support Services	6.3
	13.13 Reentry/Recovery	
13.13.1	Reentry	7.2
13.13.2	Recovery Operations	7.3
13.13.3	Intermediate Phase MUDAC Operations	7.3.2
13.13.4	After Action Reporting	4.4

Procedure	Title	Section of Plan Implemented
	13.14 Supporting Information Procedures	
13.14.1	Nearby Nuclear Facility Emergencies/ Requests for Assistance	4.1
13.14.4	Emergency Equipment	6.4, 8.4
13.14.8	Drills and Exercises Program	8.6
13.14.9	Emergency Program Maintenance	8.1 thru 8.4
SWP-EPP-01	Emergency Response Organization and Training	8.5

APPENDIX 3

EMERGENCY KITS

Columbia Generating Station Fire Brigade Stations

Fire Brigade turnout stations are strategically located inside and outside the Radiologically Controlled Area (RCA). Contents include fire fighter protective equipment, self-contained breathing apparatus (SCBA) units, radios, fire fighter tools and equipment, First Responder medical kits, hazardous materials response kits, and radiological monitoring equipment.

Columbia Generating Station Decontamination Kits

Two decontamination kits are located in the Radwaste Building decontamination area, and one is located in the Yakima Building (GSB) Emergency Equipment Area.

Columbia Generating Station Protective Equipment Kit

A kit containing protective equipment and radiological monitoring equipment is located in the Technical Support Center.

Energy Northwest Field Monitoring Kits

Kits containing protective equipment, radiological monitoring equipment, communications equipment, and emergency supplies for Environmental Monitoring Field Teams are located at the Kootenai Building and Energy Northwest's Office Complex (ENOC). Kits located at ENOC also include a River Evacuation Monitoring Kit.

Hospital Radiological Emergency Kits

Kits containing protective equipment, radiological monitoring equipment, and emergency supplies are located at Kadlec Medical Center in Richland, Our Lady of Lourdes Hospital in Pasco, and Kennewick General Hospital in Kennewick.

APPENDIX 4

AGREEMENT LETTERS

This appendix refers to signed letters of agreement which formalize commitments between Energy Northwest and outside organizations to provide or receive mutual aid and support during emergency conditions.

Listed below are the outside agencies Energy Northwest has agreements with. Agreements are maintained in files by Energy Northwest's Emergency Preparedness Group.

Agreements already in place or provided for in existing response plans provide detailed, formalized commitments to provide or receive mutual aid or support during emergency conditions. These plans are referenced in Appendix 1 of this plan.

In addition, Federal commitment to support Columbia Generating Station is provided in Federal response plans maintained by Nuclear Regulatory Commission and Federal Emergency Management Agency. These plans are listed in section 3.6.1 and 3.6.3, as well as Appendix 1.

Annually, Energy Northwest will review the agreements listed below to ensure they remain accurate and applicable. The results of this review will be communicated to the affected organizations. Acknowledgements for this annual review are requested and maintained in the agreement file. Records of verbal acknowledgements are acceptable and will be maintained.

1. Agreement Letter With Our Lady of Lourdes Hospital

2. Agreement Letter With Kennewick General Hospital

3. Agreement Letter With Kadlec Medical Center

4. (Memorandum of Understanding Between) Department of Energy Richland Operations Office, Hanford Environmental Health Foundation, Emergency Response At the Hanford Site - Use of the Emergency Decontamination Facility

5. Law Enforcement Agency Agreement - Benton County

6. Hanford Site Support Services, Fire and Ambulance

APPENDIX 5

NUREG-0654

CROSS-REFERENCE

NUREG-0654 CROSS-REFERENCE

II. Planning Standards and Evaluation Criteria

A. Assignment of Responsibility (Organizational Control)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.a.	Each plan shall identify organizations that are intended to be part of the overall response. (See Appendix 5)	Sect. 2 X Sect. 3	X	X
b.	Specify its concept of operations, and its relationship to the total effort.	X Sect. 3	X	X
c.	Illustrate these interrelationships in a block diagram.	1.6.5 X Table 1-1	X	X
d.	Identify a specific individual by title who shall be in charge of the emergency response.	X 2.1	X	X
e.	Provide for 24-hour per day emergency response, including manning of communications links	X 2.2, 2.3	X	X
2.a.	Specify the functions and responsibilities for major elements and key individuals by title. (See Section B for licensee.)		X	X
b.	The legal basis for such authorities.		X	X
3.	Include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations.	X App. 4	X	X
4.	Shall be capable of continuous (24-hour) operations for a protracted period.	X 2.1	X	X

B. Onsite Emergency Organization

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.	Specify the onsite emergency organization of plant staff personnel.	2.2 X 2.3		
2.	Designate an individual as emergency coordinator who shall be on shift at all times.	X 2.2		
3.	Identify a line of succession for the emergency coordinator.	X 2.1		
4.	Establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated.	X 2.11		
5.	Specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1.	Sect. 2, Table 2-1		
6.	Specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram.	X Sect. 3, Figure 21		
7.	Specify the corporate management, administrative, and technical support personnel who will augment the plant staff.	X 2.4		
a.	logistics support for emergency personnel;	2.4.1.1, X 2.4.2.8		

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
B.	Onsite Emergency Organization (Cont'd.)	Licensee	State	Local
b.	technical support for planning and reentry/recovery operations;	X 2.3.3.1		
c.	management level interface with governmental authorities; and	X 2.3.3.1		
d.	release of information to news media during an emergency.	X 2.3.3.1		
8.	Specify the contractor and private organizations who may be requested to provide technical assistance	X 3.3		
9.	Identify the services to be provided by local agencies for handling emergencies. Provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan.	3.2 X App. 4		

C. Emergency Response Support and Resources

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Make provisions for incorporating the Federal response capability into its operation plan, including the following:			
a.	specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.	2.3.3.2, X 3.6.2	X	

C. Emergency Response Support and Resources (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and	X 3.6.2	X	
c. specific licensee, State and local resources available to support the Federal response.	X 3.6.2	X	X
2.a. Each principal offsite organization may dispatch representatives to the licensee's near-site Emergency Operations Facility.		X	X
b. Prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.	X 3.1		
3. Identify radiological laboratories and their general capabilities and expected availability.	3.3.1 3.3.2 3.3.3 X 3.6.2	X	
4. Shall identify nuclear and other facilities, organizations or individuals which can be relied upon.	3.3 X App. 4	X	X

D. Emergency Classification System

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee.	X 4.1, 4.2, 4.4		
2. The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the FSAR.	X 4.1		

D. Emergency Classification System (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
3. Establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.		X	X
4. Have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility.		X	X

E. Notification Methods and Procedures

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish procedures which describe mutually agreeable bases for notification of response organizations.	4.6 X Table 4-2	X	X
2. Establish procedures for alerting, notifying, and mobilizing emergency response personnel.	X 4.6.1	X	X
3. Establish the contents of the initial emergency messages to be sent from the plant.	X 4.6.5		
4. Make provisions for followup messages from the facility.	X 4.6.6		
5. Establish a system for disseminating to the public appropriate information.		X	X
6. Establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public.	X 4.6.4	X	X

E. Notification Methods and Procedures (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide written messages intended for the public, consistent with the licensee's classification scheme.	X 4.6.5	X	X

F. Emergency Communications

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish reliable primary and backup means of communication.			
a. provision for 24-hour per day notification to and activation of the State/local emergency response network;	X 4.6	X	X
b. provision for communications with contiguous State/local governments within the Emergency Planning Zones;	X 4.6.3	X	X
c. provision for communications as needed with Federal emergency response organizations;	X 4.6	X	X
d. provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations centers, and radiological monitoring teams;	X Table 6-1	X	X
e. provision for alerting or activating emergency personnel in each response organization; and	X 4.6.1	X	X

F. Emergency Communications (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
f. provision for communication with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.	4.6.3 X 6.5.3		
2. Ensure that a coordinated communication link for fixed and mobile medical support facilities exists.	X 3.2.2	X	X
3. Conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).	X 6.6	X	X

G. Public Education and Information

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1. Provide a coordinated periodic (at least annually) dissemination of information to the public.	X 9.1.1	X	X
2. Provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material. Shall also be used to disseminate to any transient population appropriate information that would be helpful if an emergency or accident occurs.	X 9.1.1, 9.1.3	X	X
3.a. Designate the points of contact and physical locations for use by news media during an emergency.	X 9.2.3	X	X

G. Public Education and Information (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. Provide space which may be used for a limited number of the news media at the nearsite Emergency Operations Facility.	X 9.2.3		
4.a. Designate a spokesperson who should have access to access to all necessary information.	X 9.2.3	X	X
b. Establish arrangements for timely exchange of information among designated spokespersons.	X 9.2.3	X	X
c. Establish coordinated arrangements for dealing with rumors.	X 9.2.5	X	X
5. Conduct coordinated programs at least annually to acquaint news media with the emergency plans	X 9.1.2	X	X

H. Emergency/Facilities and Equipment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish a Technical Support Center and an onsite operations support center	6.1.2 X 6.1.3		
2. Establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out.	X 6.2		
3. Establish an emergency operations center for use in directing and controlling response functions.		X	X

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
4.	Provide for timely activation and staffing of the facilities and centers described in the plan.	6.5.6 X 6.5.9	X	X
5.	Identify and establish onsite monitoring systems that are to be used to initiate emergency measures, as well as those to be used for conducting assessment.	5.1, X 5.2		
	The equipment shall include:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	5.1 X 5.2		
b.	radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	5.1.2 X App. 3		
c.	process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and	6.3 X 5.1.1		
d.	fire and combustion products detectors.	X 5.1.1		
6.	Make provisions to acquire data from or for emergency access to offsite monitoring and analysis equipment including:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1.1		
b.	radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided; and	X 5.2.2		
c.	laboratory facilities, fixed or mobile.	X 5.4.5		

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.	X 5.4.3	X	X
8.	Provide meteorological instrumentation and procedures, and provisions to obtain representative current meteorological information from other sources.	X 5.2.1		
9.	Provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies.	X 6.1.3		
10.	Make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use.	6.4 X 8.4	X	X
11.	Each plan shall, in an appendix, include identification of emergency kits by general category.	X App. 3	X	X
12.	Establish a central point for the receipt and analysis of all field monitoring data and coordination of sample media.	6.2.4 6.2.8 X 6.2.10	X	X

I. Accident Assessment

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents	Table 4-1 X 5.1		

I. Accident Assessment (Cont'd)

	Abbreviated Evaluation Criteria	Licensee	State	Local
2.	Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident.	X 5.1 thru 5.3		
3.	Establish methods and techniques to be used for determining:			
a.	the source term of releases of radioactive material within plant systems.	X 5.3.1		
b.	the magnitude of the release of radioactive materials.	X 5.3.2		
4.	Establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.	X 5.3.2		
5.	Have the capability of acquiring and evaluating meteorological information.	X 5.2.1 6.2.4		
6.	Establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.	X 5.3.1		
7.	Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone.	X 5.4	X	X
8.	Provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.	X 5.1 5.3 5.4	X	X

Column group heading: Applicability and Cross Reference to Plans

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans: Licensee	State	Local
9.	Have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uCi/cc.	X 5.4.4	X	
10.	Establish means for relating the various measured parameters and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.	5.9.3 X 5.5	X	
11.	Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.		X	

J. Protective Response

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans: Licensee	State	Local
1.	Establish the means and time required to warn or advise:			
a.	Employees not having emergency assignments;	X 5.7.3		
b.	Visitors;	X 5.7.3		
c.	Contractor and construction personnel; and	X 5.7.3		
d.	Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.	3.2.3 X 5.7.3		

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
2.	Make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.	5.7.2 X 5.7.3		
3.	Provide for radiological monitoring of people evacuated from the site.	X 5.7.4		
4.	Provide for the evacuation of onsite non-essential personnel and shall provide a decontamination capability at or near the monitoring point specified in J.3.	X 5.7.3		
5.	Provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.	X 5.7.5		
6.	Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:			
a.	Individual respiratory protection;	X 5.9.6		
b.	Use of protective clothing; and	X 5.9.4.2		
c.	Use of radioprotective drugs, (e.g., individual thyroid protection).	X 5.9.7		
7.	Establish a mechanism for recommending protective actions to the appropriate State and local authorities.	X 5.9.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
8.	Contain time estimates for evacuation within the plume exposure EPZ.	Table 5-1 X 5.8		
9.	Establish a capability for implementing protective measures based upon protective action guides and other criteria.		X	X
10.	The organization's plans to implement protective measures for the plume exposure pathway shall include:			
a.	Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	Fig. 5-1 Fig. 5-2 X Fig. 5-5	X	X
b.	Maps showing population distribution around the nuclear facility;	Fig. 5-3 X Fig. 5-4	X	X
c.	Means for notifying all segments of the transient and resident population;	X 5.8.2	X	X
d.	Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;		X	X
e.	Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.		X	X

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	Include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;		X	X
g.	Means of relocation;		X	X
h.	Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone;		X	X
i.	Projected traffic capacities of evacuation routes under emergency conditions;		X	X
j.	Control of access to evacuated area and organization responsibilities for such control;		X	X
k.	Identification of and means for dealing with potential impediments to use of evacuation routes, and contingency measures;		X	X
l.	Time estimates for evacuation of various sectors and distances; and		X	X
m.	The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions.	X 5.5.1	X	

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
11. Specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food-stuffs. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained.		X	
12. Describe the means for registering and monitoring of evacuees at relocation centers in host areas.		X	

K. Radiological Exposure Control

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish onsite exposure guidelines for:			
a. removal of injured persons;	X 5.9.3		
b. undertaking corrective actions;	X 5.9.3		
c. performing assessment actions;	X 5.9.3		
d. providing first aid;	X 5.9.3		
e. performing personnel decontamination;	X 5.9.3		

K. Radiological Exposure Control (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
f.	providing ambulance service; and	X 5.9.3		
g.	providing medical treatment services.	X 5.9.3		
2.	Provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.	X 5.9		
3.a.	Make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X 5.9.5	X	X
b.	Ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records.	X 5.9.5.2	X	X
4.	Establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides.		X	X
5.a.	Specify action levels for determining the need for decontamination.	X 5.9.4.2	X	X
b.	Establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.	X 5.9.4.3	X	X
6.	Provide onsite contamination control measures including:			
a.	area access control;	X 5.9.4.1		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. drinking water and food supplies;	X 5.9.4.4		
c. criteria for permitting return of areas and items to normal use.	X 7.1		
7. Provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.	X 5.9.4.3		

L. Medical and Public Health Support

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X 3.2.2	X	X
2. Provide for onsite first aid capability.	6.1.5 X 6.2.9		
3. Develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities		X	
4. Arrange for transporting victims of radiological accidents to medical support facilities.	X 3.2.2.3	X	X

M. Recovery and Reentry Planning and Postaccident Operations

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Develop general plans and procedures for reentry and recovery.	X Sect. 7	X	X
2. Plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization.	X 7.3		
3. Specify means for informing members of the response organizations that a recovery operation is to be initiated.	X 7.3.2	X	
4. Establish a method for periodically estimating total population exposure.	X 5.3.3	X	

N. Exercises and Drills

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1.a. Exercises shall be conducted as set forth in NRC and FEMA rules.	X 8.9	X	X
b. Provide for a critique of the evaluated exercise by Federal and State observers/ evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once each six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.	8.6.1 X 8.8	X	X

N. Exercises and Drills (Con'td.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
2.	Conduct drills, in addition to the annual exercise at the frequencies indicated below.	X Table 8-1		
a.	Communication Drills			
	Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually.	X Table 8-1	X	X
b.	Fire Drills			
	Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.	8.7.2 X Table 8-1		
c.	Medical Emergency Drills			
	A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies shall be conducted annually.	8.7.3 X Table 8-1		X
d.	Radiological Monitoring Drills			
	Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually.	8.7.4 X Table 8-1	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
e. Health Physics Drills			
(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	8.7.5 X Table 8-1	X	
(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.	8.7.5 X Table 8-1		
3. Describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.			
a. The basic objective(s) of each drill and and exercise and appropriate evaluation criteria;	X 8.6.2	X	X
b. The date(s), time period, place(s) and participating organizations;	X 8.6.2	X	X
c. The simulated events;	X 8.6.2	X	X
d. A time schedule of real and simulated initiating events;	X 8.6.2	X	X
e. A narrative summary describing the conduct of the exercises or drills;	X 8.6.2	X	X
f. A description of the arrangements for and advance materials to be provided to official observers.	X 8.6.2	X	X

N. Exercises and Drills (Con'td.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
4.	A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.	X 8.6.1	X	X
5.	Each organization shall establish means for evaluating observer and participant comments on areas needing improvement.	X 8.6.1	X	X

O. Radiological Emergency Response Training

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Each organization shall assure the training of appropriate individuals.	X 8.5	X	X
a.	Provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.	X 8.5.1		
b.	Each offsite response organization shall participate in and receive training.		X	X
2.	The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills.	X 8.5.1		
3.	Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.	6.1.6 X 8.5.1.1		

O. Radiological Emergency Response Training (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
4.	Establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs shall be provided in the following categories:			
a.	Directors or coordinators of the response organizations;	X 8.5.1.1	X	X
b.	Personnel responsible for accident assessment;	X 8.5.1.1	X	*
c.	Radiological monitoring teams and radiological analysis personnel;	X 8.5.1.1	X	*
d.	Police, security and fire fighting personnel;	X 8.5.2	*	X
e.	Repair and damage control/correctional action teams (onsite);	X 8.5.1.1		
f.	First aid and rescue personnel;	X 8.5.1.1	*	X
g.	Local support services personnel including Civil Defense/Emergency Service personnel;	X 8.5.2		X
h.	Medical support personnel;	X 8.5.2	X	X
i.	Licensee's headquarters support personnel;	X 8.5.1.2		
j.	Personnel responsible for transmission of emergency information and instructions.	X 8.5.1.1	X	X

*NRC and FEMA encourage State and Local Governments which have these capabilities to continue to include them in their training programs.

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
5. Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.	X 8.5.2	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide for the training of individuals responsible for the planning effort.	X 8.1	X	X
2. Identify by title the individual with the overall authority and responsibility for radiological emergency response training.	X 8.1	X	X
3. Designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X 8.1	X	X
4. Update its plan and agreements as needed, review and certify it to be current on an annual basis.	X 8.2	X	X
5. Changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans.	X 8.2	X	X
6. Each plan shall contain a detailed listing of supporting plans and their source.	X App. 1	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Each plan shall contain as an appendix listing, by title, procedures required to implement the plan.	X App. 2	X	X
8.	Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.	Table of Contents X App. 5	X	X
9.	Arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.	X 8.3		
10.	Provide for updating telephone numbers in emergency procedures at least quarterly.	X 6.5.3	X	X

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Superseded pages per Rev to Emergency Plan dtd. 9/7/01
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ENERGY NORTHWEST

EMERGENCY PLAN

COLUMBIA GENERATING STATION

Revision 29

APPROVALS: PRIOR NRC APPROVAL REQUIRED: __ Yes _X_ No

RECEIVED: __________ Date Correspondence No.: ______________

[signature] 4/17/01
Corporate Emergency Preparedness, Safety and Health Officer — Date

D. W. Coleman 4/18/01
Manager, Regulatory Affairs — Date

[signature] 5/9/01
Plant Operations Committee Chairman — Date

[signature] 5/9/01
Plant General Manager — Date

ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 29 - SYNOPSIS OF CHANGES

Summary

In revision 29 of the Emergency Plan, the responsibilities of the Shift Technical Advisor (STA) are categorized into emergency response duties and engineering duties, and the Basic Emergency Function described in the Emergency Plan for the STA is revised to reflect that emergency response duties may be performed by either the STA or Emergency Response Senior Reactor Operator (SRO) depending upon control room staffing configuration. Related changes occur in Table 2-1 and Figure 2-1.

Affected Pages	Description of Changes
EP 2.1	Provided clarification of the STA title in Section 2.1, and indicated that the STA role is a function. Responsibility for implementing the STA function may be performed by other qualified personnel on shift. Assuring that the functions of the STA, both emergency response and providing engineering expertise on shift, are provided at all times by qualified personnel does not reduce the effectiveness of the emergency plan. The title of the STA is revised to reflect the emergency response function of the Shift Technical Advisor/Emergency Response SRO in Section 2.2. Currently, the STA position implements two functions: an engineering assistance and advice function, and an emergency response and advice function. The emergency response function includes advising the Shift Manager on emergency notifications, emergency classification, and recommending protective actions for employees and PARs for offsite agency representatives, and performing offsite dose projections.

REVISION 29 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 2.1(cont)	Assigning the emergency response STA function to another SRO on shift, when the STA function resides with either the Shift Manager or Control Room Supervisor, provides assurance that all emergency response activities are addressed at all times when the plant is operating in all modes. The justification for this change is endorsed by NRC in Generic Letter 86-04, Policy Statement on Engineering Expertise On Shift. This document discusses two options for the STA. Option 1 provides for the elimination of the separate STA position by allowing licensees to combine the STA function with a Senior Reactor Operator (SRO) position. Option 2 states that licensees may continue to use an NRC approved STA program while meeting licensed operator staffing requirements. The Commission encouraged licensees to move toward the dual role SRO/STA position in GL 86-04. The Emergency Response SRO will be required to be on shift at all times when filling the emergency response function. Since all of the emergency response duties and advice functions will be retained by either the STA or Emergency Response SRO position in the control room, no reduction of effectiveness occurs with this change.
EP 2.2	The discussion of the responsibilities of the STA and Emergency Response SRO roles in Section 2.3 is expanded to clarify the function of this role. If the STA function on shift is providing engineering expertise and filling a dual role as either the Shift Manager or Control Room Supervisor, another SRO (designated as the Emergency Response SRO) is assigned on shift to support the following emergency response functions: notifications, emergency classifications, dose projections and recommending protective actions. Since all of the emergency response functions currently performed by the on shift STA will now be performed by either the STA or Emergency Response SRO, no reduction of effectiveness occurs with this change.

ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 29 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 2.4/5	The Basic Emergency Function description of STA is revised to indicate that the function may be filled by an on shift STA qualified individual present in Modes 1, 2, or 3, per FSAR requirements. Specific stipulations for on shift staffing for the STA or Emergency Response SRO function are added. Added new section 2.3.1.7, Emergency Response SRO, to provide a description of the duties this position would perform when filling the emergency response function. Providing this additional detail does not reduce the effectiveness of the Emergency Plan because the emergency response functions are retained by either the STA qualified individual filling the STA function or the Emergency Response SRO, depending upon the staffing configuration at the time.
EP 2.19/20	Table 2-1 is changed to relocate the STA from Engineering Group to the Operations Group, and the current title of the STA in this table is changed to "Shift Technical Advisor" with Footnote 1. The STA function is filled on shift by the STA in Modes 1, 2, and 3, and available within 60 minutes in modes 4 and 5 through the applicability of Footnote 1. Additionally, Footnote 1 is expanded to specify that another SRO is required to be on shift at all times when the STA function is performed by either the Shift Manager or Control Room Supervisor. Additionally, a new position, "Emergency Response SRO", is added to the "On Shift" column with new Footnote 6 to Table 2-1. Footnote 6 indicates that this position may be filled by an STA qualified individual or designated on shift SRO, and also indicates that when the Shift Manager or Control Room Supervisor is filling the STA function, another SRO (Emergency Response SRO) will be present in all modes to provide emergency response advice to the Shift Manager. This change provides additional detail to ensure that required emergency response activities are addressed at all times and does not decrease the effectiveness of the Emergency Plan.
EP 2.22	The title of STA is changed to Shift Technical Advisor/Emergency Response SRO in Figure 2-1. This change reflects the redistribution of emergency responsibilities described for pages EP 2.2, EP 2.5, and EP 2.20/21 above. This change is editorial and does not decrease the effectiveness of the Emergency Plan.

ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 29 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 8.4	Added reference to the new position title of "Emergency Response SRO" to the second bullet of section 8.5.2.2.a, to include this position as receiving training in Protective Action Recommendations, Emergency Classifications, Dose Projection, and Emergency Notifications, as does the STA. This change has no affect on the effectiveness of the Emergency Plan as emergency functions are being provided by either the STA or an additional SRO qualified individual in the Control Room if the STA function is being filled by either the Shift Manager or Control Room Supervisor. This additional SRO qualified individual supports the Shift Manager in providing emergency response functions in the event of an emergency declaration in this instance.

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SECTION 1
INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

The Energy Northwest Emergency Plan (or Plan) was written to address emergencies at the Columbia Generating Station located on the Hanford Reservation and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations as required by Title 10, Code of Federal Regulations, Part 50. It was developed in conjunction with the Washington State and the Benton County Fixed Nuclear Facility Emergency Response Plan and the Franklin County Radiological Response: Energy Northwest plan. All plans were developed to meet the intent of NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2 PURPOSE OF THE EMERGENCY PREPAREDNESS PROGRAM

The emergency preparedness program provides concepts and protective actions that are necessary to limit the consequences of radiation accidents and other emergencies. The primary objectives include the necessary arrangements, procedures and organizations necessary to effectively resolve any plant emergency to ensure the safety of the general public and to safeguard plant personnel and property.

1.3 ENERGY NORTHWEST COMMITMENT TO SAFETY

Energy Northwest is committed to the safe operation of its nuclear project. The commitment begins at the highest level of management and is reflected in the day-to-day activities of all employees. In addition to meeting, or in many cases exceeding, regulatory requirements, Energy Northwest is committed to providing a comprehensive program of personnel safety and corporate loss prevention. This Plan is a description of the comprehensive preparedness exhibited by Energy Northwest and its employees.

A trained staff of emergency response personnel is available, equipped and ready to respond to any emergency at Energy Northwest's nuclear project. Arrangements have been made with federal, state, and local response organizations and other nuclear facilities for assistance, if needed, during an emergency. Together these organizations can quickly implement a unified effort to assess the hazards, make the necessary decisions, and initiate actions to protect the health and safety of both emergency workers and the general population.

Energy Northwest works closely with all involved agencies. A coordinated training program between Energy Northwest and the Department of Energy in Richland provides emergency personnel from Benton and Franklin counties and the State of Washington with the training needed to assist during an emergency. Participation by Energy Northwest in joint programs with the Department of Energy to upgrade county and state emergency response capabilities is an example of the commitment to safety which Energy Northwest recognizes as its responsibility.

1.4 SITE CHARACTERISTICS

Energy Northwest leases 1089 acres of land on the Hanford Reservation, located north of Richland, Washington, and controlled by the Department of Energy. The land leased by Energy Northwest is approximately three miles west of the Columbia River and 12 miles north of the populated area of Richland. Figures 1-1 and 1-2, the Plume Exposure and Ingestion Exposure Emergency Planning Zone maps, show the location of the facilities on the Hanford Reservation.

1.4.1 Plant Design

Columbia Generating Station is a boiling water reactor (BWR-5) with the reactor system supplied by the General Electric Company. This plant has an approximate electrical output of 1250 megawatts (MWe). Fuel for the reactor consists of slightly enriched uranium dioxide pellets sealed in Zircaloy-2 fuel rods. These fuel rods are assembled into individual fuel assemblies. Control of the core is achieved by movable, bottom-entry control rods.

The principal structures located on the plant site are shown in Figure 1-3 and include:

a. Reactor Building - envelopes the Mark II primary containment and provides a secondary containment structure. It also contains the new and spent fuel storage, refueling equipment, emergency core cooling systems and auxiliary equipment.

b. Radwaste and Control Building - houses the liquid and solid radwaste system, components of the off-gas system, and the main control room.

c. Turbine Building - houses the turbine-generator consisting of one high pressure and three low pressure turbines connected to a single generator.

d. Diesel Generator Building - location of the standby diesel generators and associated controls and instrumentation.

e. Yakima Building (GSB) - houses the makeup water treatment system, machine shop, and office area.

f. Technical Support Center - this emergency response facility is utilized by the plant staff during an emergency. A more detailed description is provided in Section 6, "Emergency Facilities and Equipment."

g. Wind River Building (Circulating Water Pumphouse) - houses the circulating water pumps, plant service water pumps, and fire pumps.

h. Spray Ponds - the ultimate heat sink providing cooling water to the reactor for emergency shutdown.

i. Cooling Towers - six mechanical draft cooling towers used to dissipate the main condenser cooling water heat to the atmosphere.

1.4.2 Kootenai Buidling (PSF)

The Kootenai Building is used for support of the plant site and the interface with off-site support agencies. It houses the Plant Simulator, the Site Training Center, and the Emergency Operations Facility. Its location is shown in Figure 1-4. See Section 6 for a detailed description of the emergency centers located in this facility.

1.5 ACTIVATION OF THE EMERGENCY PLAN AND PROCEDURES

This Emergency Plan provides the basis for classifying emergencies according to severity, assigning responsibilities, and outlining the most effective course of action to safeguard the public and plant personnel in the event of an incident. Detailed emergency procedures required to implement the Emergency Plan are listed in Appendix 2. The Emergency Plan Implementing Procedures prescribe the appropriate course of action necessary to activate the emergency response organizations and minimize the consequences of an incident.

The Emergency Plan Implementing Procedures (EPIPs) are used when an emergency is declared in accordance with Section 4 of this plan. In the absence of other controlling procedures, EPIPs are used as appropriate. The section of EPIPs designated as "Supporting Information Procedures" are implemented on a continuing basis and are used to ensure long term program maintenance.

1.6 ASSIGNED AUTHORITIES

1.6.1 Hanford Reservation

The 570 square mile Hanford Reservation is under the control of the Department of Energy - Richland Operations. The Department of Energy maintains a well-trained and qualified organization capable of responding to emergencies on the Hanford Reservation. The Department of Energy maintains responsibility for response actions on the Hanford Reservation outside the exclusion area boundaries.

Representatives from the Department of Energy will coordinate their response efforts to an Energy Northwest emergency with Energy Northwest, State, and County organizations from Energy Northwest's Emergency Operations Facility. Communications will be maintained with the Department of Energy's Occurrence Notification Center in Richland, Washington.

An Energy Northwest emergency may require response by local, state and federal organizations. Because of the unique siting of Energy Northwest facilities on a federal reservation, several areas of responsibility must be defined. A coordinated effort by the response organizations will be jointly conducted from Energy Northwest's Emergency Operations Facility. Responsibilities concerning jurisdictional areas are defined in the following sections. Statements made within this document are not intended to exclude one agency from providing assistance to another agency upon request.

1.6.2 Exclusion Area

The exclusion area for Columbia Generating Station consists of a 1.2 mile radius around the plant. The exclusion area will be monitored by teams from Energy Northwest during an emergency and access will be controlled under the direction of Energy Northwest's Security Force. Coordination of activities within the exclusion area will be under the control of Energy Northwest and directed by the individual serving as the Emergency Director.

Energy Northwest has the authority to control and coordinate all activities within this exclusion area, as granted by Title 10 of the Code of Federal Regulations, Part 100.3. The agreement between Energy Northwest and the Department of Energy concerning the site lease on the Hanford Reservation includes provision for this authority.

1.6.3 Plume Exposure Pathway Emergency Planning Zone

The response to an emergency will usually require actions only within the site boundary; however, accidents are possible that may affect areas several miles from the facility. The planning basis for Energy Northwest's Emergency Preparedness Plan utilizes the emergency planning zone concept as first outlined in NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, dated December, 1978. The emergency planning zones are designated as areas for planning to assure that prompt and effective actions shall be taken to protect the public in the event of an accident. The emergency planning zone concept establishes two zones, a ten-mile Plume Exposure Pathway Emergency Planning Zone and an approximately 50-mile Ingestion Exposure Pathway Emergency Planning Zone.

In the Plume Exposure Pathway (Ten-Mile) Emergency Planning Zone (EPZ) the principal exposure sources are:

a. Whole body external exposure to beta/gamma radiation from the plume and from deposited radioactive material.

b. Inhalation exposure from the passing radioactive plume.

The Plume Exposure Pathway EPZ includes parts of the Hanford Reservation and Benton and Franklin Counties. Response actions will be coordinated between the two counties from their respective County Emergency Operations Centers.

The counties will coordinate all activities off the Hanford Reservation during the initial phases of the emergency. The Benton and Franklin County Emergency Operations Centers will coordinate activities with Energy Northwest and Department of Energy through county representatives at Energy Northwest's Emergency Operations Facility. Energy Northwest will provide dose assessment and protective action recommendations to state and local governments.

The Director for the Washington State Military Department, Emergency Management Division, is responsible for ensuring that the State maintains the capability to protect the public health and safety in the event of a fixed nuclear facility incident.

The Washington State Department of Health (DOH) is responsible for safeguarding the health of the public. Coordination of monitoring activities will be provided from Energy Northwest's Emergency Operations Facility.

1.6.4 Ingestion Exposure Pathway Emergency Planning Zone

The Ingestion Exposure Pathway Emergency Planning Zone (EPZ) as shown in Figure 1-2 extends into the Yakama Indian Nation, eight counties within the State of Washington, and two counties in the State of Oregon. These are Benton, Franklin, Yakima, Kittitas, Grant, Adams, Walla Walla, and Klickitat in the State of Washington[1], and Morrow and Umatilla Counties in the State of Oregon. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The State of Washington maintains communication with the Washington counties in the Ingestion Exposure Pathway EPZ. The State of Oregon does the same for Morrow and Umatilla Counties. Communications with the Yakama Indian Nation are handled by Yakima County. Dose projections and environmental sampling are also the responsibility of the States and will be coordinated from Energy Northwest's Emergency Operations Facility by State representatives. Support to the States of Washington and Oregon is provided by Energy Northwest through the sharing of field team data and other resources.

1.6.5 Emergency Plan Interrelationships

Interrelationships of this plan with procedures, other plans, and emergency arrangements are summarized as follows:

- Detailed actions to be taken by individuals in response to onsite emergency conditions are described in the Emergency Plan Implementing Procedures.
- The Columbia Generating Station Physical Security Plan and Procedures and this plan are coordinated to ensure that appropriate emergency actions can be taken. For example, the Physical Security Plan and Procedures contain provisions for emergency response personnel and vehicle access when required by the Emergency Plan Procedures.

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[1]Kittitas and Klickitat Counties do not actively participate in radiological emergency preparedness efforts. The State of Washington has established measures to ensure that appropriate actions will be taken for these two counties. Refer to the State of Washington Emergency Response Plan.

- Site construction groups at WNP-1 and the maintenance contractors at Columbia Generating Station that develop emergency procedures for their personnel are tasked with coordinating their procedures with this plan.

- The Columbia Generating Station Plant Procedure Manual, Radiological Protection Procedures Section defines administrative controls and procedures such as radiological control limits and precautions, use of personnel monitoring devices, use of protective clothing and equipment, personnel decontamination, etc. Additionally, the Chemistry Procedure Section and Radiation Protection Procedure Section provide instructions for conducting surveys, analyzing samples, operating health physics/radiation protection equipment, etc. Information and details provided in these documents have either been incorporated into the Plan or Emergency Plan Implementing Procedures, or have been appropriately referenced.

- Columbia Generating Station has formulated Abnormal Condition Procedures, as part of the Plant Procedure Manual, which discuss generic emergencies such as floods, volcanic ash, and other severe weather conditions. The methods and equipment developed for such emergencies are available for use in concert with emergency actions described in this plan.

- Formal agreements have been negotiated to define the coordination and interface between onsite and offsite organizations and agencies having related radiological emergency planning responsibilities. Continuing liaison with the offsite organizations ensures compatibility and proper interfacing with this plan. Section 3 of this plan further describes those agencies' activities with respect to an emergency at Columbia Generating Station.

- Other offsite organizations, not within the immediate area, may also be requested to offer technical assistance (e.g., Institute of Nuclear Power Operations, General Electric, NPS Energy Services, etc.).

1.7 DEFINITIONS

1.7.1	Activated	-	An Emergency Center may be activated when all appropriate personnel are present and capable of appropriately addressing the emergency condition.
1.7.2	ALARA	-	As Low as Reasonably Achievable.
1.7.3	Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.
1.7.4	Annually, or Annual	-	Performed or executed at anytime during a calendar year.
1.7.5	Augmenting Emergency Organization Personnel	-	Emergency Response Organization personnel not designated as essential, but are desired for efficient operation of emergency centers.
1.7.6	Columbia Generating Station	-	Columbia Generating Station is an operational General Electric boiling water reactor rated at approximately 3486 MWth.
1.7.7	Drill	-	A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise and is supervised and evaluated by qualified drill controller(s) and/or evaluator(s).
1.7.8	Early Warning System	-	A system designed to alert all residents and transients within the Ten-Mile Emergency Planning Zone. This system will include sirens for areas along the Columbia River and the Horn Rapids area, and tone alert radios for residents within the ten mile Emergency Planning Zone.
1.7.9	Emergency Action Level	-	Plant-specific indications, conditions or instrument readings which are utilized to determine emergency classifications.

1.7.10	Emergency Decontamination Facility	-	A facility located adjacent to Kadlec Medical Center in Richland to be used for decontamination and emergency medical care of contaminated persons.
1.7.11	Emergency Director	-	This functional position is responsible for all emergency activities at the plant and coordination of outside assistance as needed. The position will be held by either the Shift Manager, the TSC Manager or the EOF Manager.
1.7.12	Emergency Operations Facility (EOF)	-	An area located within the Kootenai Building which is equipped to facilitate command and control decision-making for the coordination of emergency activities and environmental assessments.
1.7.13	EOF Manager	-	This position is responsible for overall management of Energy Northwest resources and will oversee all activities related to the plant emergency response effort when the EOF is activated.
1.7.14	Emergency Response Organization (ERO)	-	Employees designated as emergency response personnel.
1.7.15	Essential ERO Personnel	-	Emergency response positions designated as essential to coordinate a response to a Columbia Generating Station emergency.
1.7.16	Exercise	-	An exercise is an event that tests the integrated capability and a major portion of the Columbia Generating Station emergency preparedness plans and response organizations. It will consist of a simulated emergency that results in offsite radiological releases and may include mobilization of state and local personnel and resources adequate to verify their capability to respond to a Columbia Generating Station accident. Federal and State agencies will be invited to participate as observers/evaluators in exercises.
1.7.17	Exclusion Area	-	An area extending out to a radius of 1.2 miles from the Columbia Generating Station reactor.

1.7.18	Fixed Nuclear Facility	-	A permanent facility (plant) with an operable nuclear reactor.
1.7.19	General Emergency	-	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
1.7.20	Hanford Reservation	-	A federally owned reservation under the control of the Department of Energy, Richland Operations, Richland, Washington. The reservation covers 570 square miles and is located north of the City of Richland in Benton County.
1.7.21	Ingestion Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions for the public is based on potential ingestion of contaminated water and/or foods. This zone consists of the area within a 50-mile radius of Columbia Generating Station including a portion of the State of Oregon. The boundaries of the zone are shown in Figure 1-2.
1.7.22	Monthly	-	Performed or executed at any time during a calendar month.
1.7.23	Nonessential Personnel	-	Personnel not designated as Emergency Response Personnel.
1.7.24	Owner Controlled Area	-	That area that Energy Northwest maintains industrial and process control of.
1.7.25	Onsite Emergency Centers	-	Includes the Control Room, Technical Support Center, and Operations Support Center. Plant personnel will implement emergency actions and make decisions to support plant operations and repair activities from these centers.

1.7.26 Plant - That area containing the Columbia Generating Station reactor and certain support structures within the Protected Area.

1.7.27 Kootenai Building - A facility located approximately 0.75 miles southwest of Columbia Generating Station. The structure includes a shielded area designated as the Emergency Operations Facility.

1.7.28 Plume Exposure Pathway Emergency Planning Zone - A zone around Columbia Generating Station in which planning for protective actions by the public are based on potential exposure to or inhalation of materials carried by a passing radioactive plume released during an accident. This zone consists of the area within an approximate 10-mile radius of Columbia Generating Station, including portions of Benton and Franklin Counties.

1.7.29 Protected Area - An area located within the Owner-Controlled Area which contains the Columbia Generating Station power block and is surrounded by chain link fence.

1.7.30 Protective Action Guides - Numerical doses and concentrations which act as trigger points to initiate protective actions such as sheltering, evacuation, or placement of dairy herds on stored feed. These guides are established by the States of Washington and Oregon, and take the Environmental Protection Agency Protective Action Guides into consideration.

1.7.31 Quarterly - Performed or executed at any time during a calendar quarter.

1.7.32 Recovery Manager - This position is responsible for overall management of Energy Northwest's resources and will be in charge of all activities related to the recovery operations following a plant emergency.

1.7.33 Release in Progress - Any radioactive release that exceeds the Emergency Action Levels for an Unusual Event.

1.7.34	SE Comm	-	South East Communications, the 911 answering division of Benton County Emergency Services.
1.7.35	Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guides exposure levels except near the site boundary.
1.7.36	Energy Northwest	-	Energy Northwest is a "Joint Operating Agency" incorporated under the laws of the State of Washington. Its members include public utility districts and municipalities. Energy Northwest holds the license to operate Columbia Generating Station.
1.7.37	Support Emergency Response Organization	-	Consists of personnel that perform limited support functions, or may only be needed under certain conditions.
1.7.38	Thermoluminescent Dosimeter (TLD)	-	A device for measuring gamma, neutron and some beta radiation exposure.
1.7.39	Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

1.8 ACRONYMS

AMS	Aerial Measuring System
ARC	American Red Cross
ARM	Area Radiation Monitor
ATWS	Anticipated Transient Without Scram
BOP	Balance of Plant
BPA	Bonneville Power Administration
CAS	Central Alarm Station
Ci	Curie
CR	Control Room
CRS/SM	Control Room Supervisor/Shift Manager
DAC	Derived Air Concentration
DBA	Design Basis Accident
DEM	Department of Emergency Management
DG	Diesel Generator
DIL	Derived Intervention Level
DOE-RL	Department of Energy - Richland Operations
DOH	Department of Health
DW	Drywell
EAL	Emergency Action Level
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ED	Emergency Director
EDPS	Emergency Dose Projection System
EFPD	Effective Full Power Days
EFSEC	Energy Facility Site Evaluation Council, Washington State
EMD	Emergency Management Division
EMT	Emergency Medical Technician
EO	Equipment Operator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data Systems
ERO	Emergency Response Organization
ERP	Elevated Release Point
EWAC	Emergency Worker/Assistance Center
FAX	Facsimile
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRERP	Federal Radiological Emergency Response Plan
GPM	Gallons Per Minute
HP	Health Physics
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning

I&C	Instrumentation and Control
JIC	Joint Information Center
KI	Potassium Iodide (Thyroid Blocking Agent)
KV	Kilovolt
LERN	Law Enforcement Radio Network
LLEA	Local Law Enforcement Agency
LOCA	Loss of Cooling Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
mREM	Millirem
MPF	Multipurpose Facility
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Safety/Relief Valve
MUDAC	Meteorology and Unified Dose Assessment Center
NPRDS	Nuclear Plant Reliability Data System
NRC	Nuclear Regulatory Commission
OAC	Offsite Agency Coordinator
OSC	Operations Support Center
PAD	Protective Action Decision
PAG	Protective Action Guide
PAAP	Protected Area Access Point
PAR	Protective Action Recommendation
PASS	Post-Accident Sampling System
PIO	Public Information Officer
PSIG	Pounds Per Square Inch Gauge
RACES	Radio Amateur Civil Emergency Service
RB	Reactor Building
RCIC	Reactor Core Isolation Cooling
REM	Radiological Emergency Manager
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RW	Radioactive Waste

SAS	Secondary Alarm Station
SC	Suppression Chamber
SCC	Security Communications Center
SE COMM	South East Communications
SECON	Security Condition
SFP	Spent Fuel Pool
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SM	Shift Manager
SP	Suppression Pool
SSW	Standby Service Water
TGB	Turbine Generator Building
TSC	Technical Support Center
USCG	United States Coast Guard
WEIC	Washington Emergency Information Center
WSDA	Washington State Department of Agriculture
WSP	Washington State Patrol
WW	Wetwell

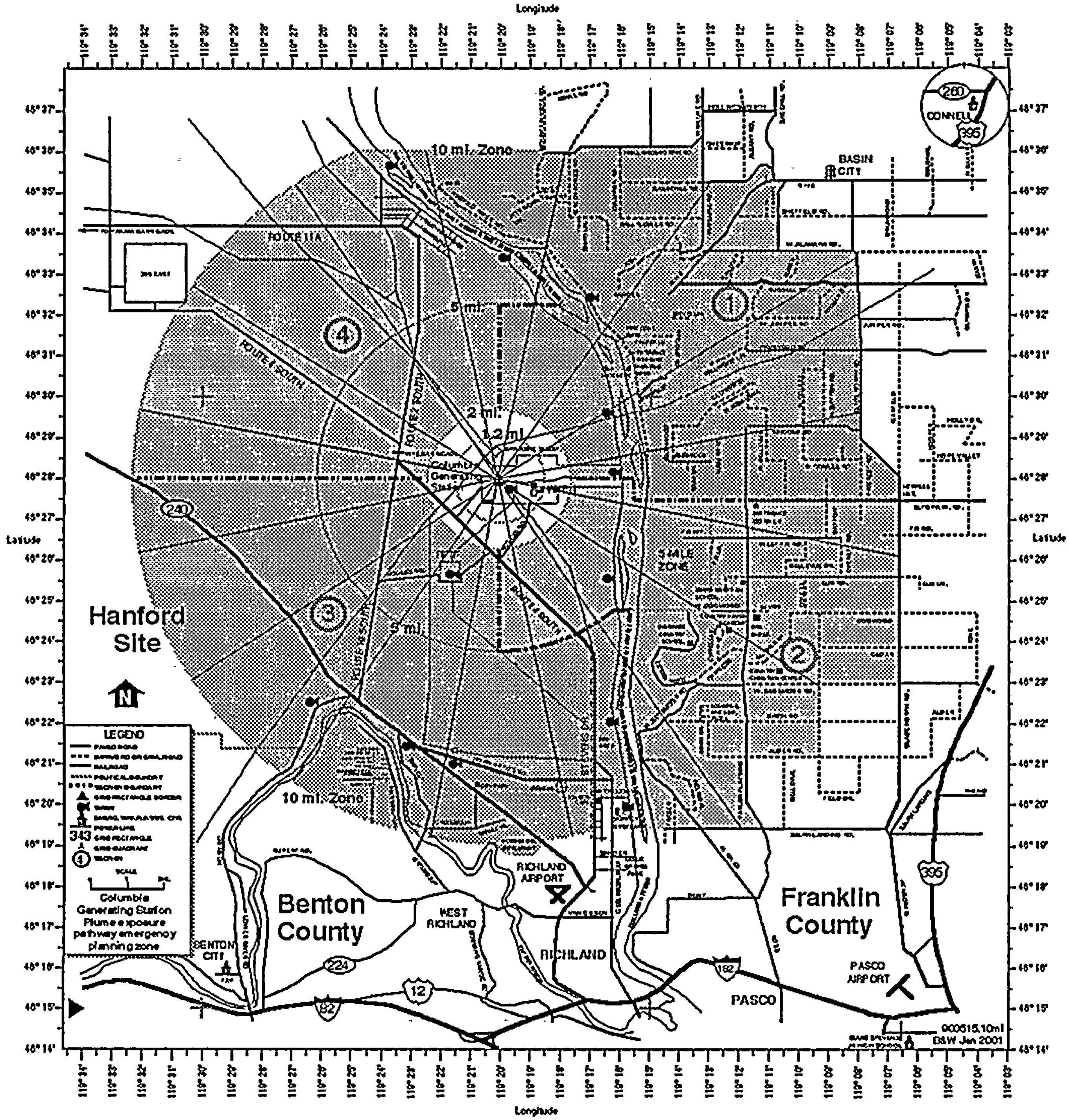
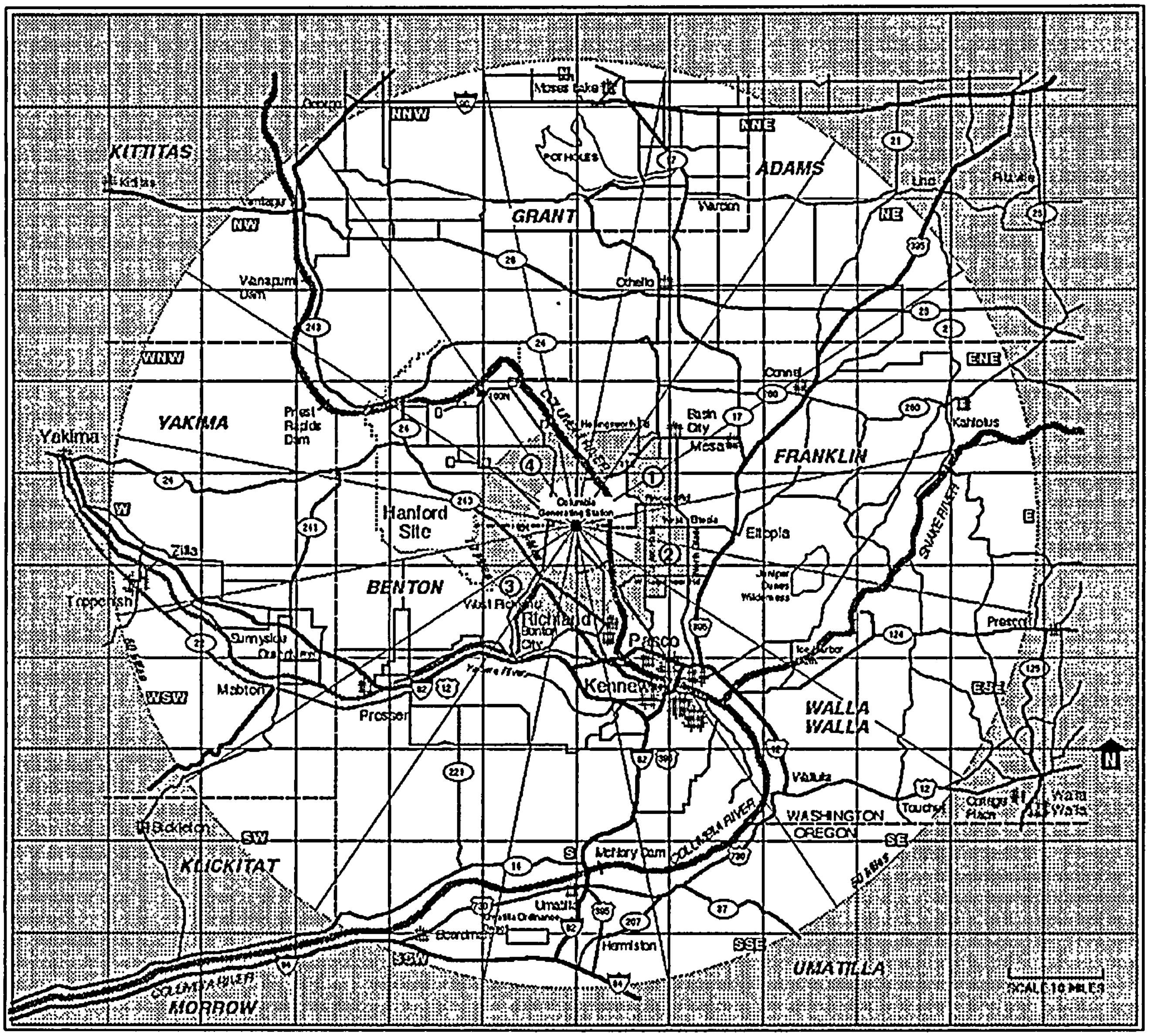


Figure 1-1, Ten-Mile Emergency Planning Zone (EPZ)



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50 Mile Map

Figure 1-2, Fifty-Mile Emergency Planning Zone (EPZ)

Site Plan

Bldg No.	Building Description
2	Reactor Building
3	Radwaste Building
4	Turbine Generator Building
5	Technical Support Building
6	Health Physics Access Point
7	Diesel Generator Building
8	ASD Building
9	Palouse - Engineering
11	Chelan - Facilities
12	Heavy Equip. Maintenance
13	Cowlitz - Facilities
15	Laborers Storage
17	Wenatchee - Site Maintenance
19	Battery Storage
21	Backflow Preventer Building
22	Service Substation
23	Diesel Fuel Polishing Building
24	Visitor Center
25	Protected Area Access Point (P.A.A.P.)
26	Deschutes - Plant Engineering Center
30	Wind River Bldg. - Ciro Water Pumphouse
32	Colville - Site Contractor Fab Shop
47	Document Storage
62	Primary Access Point (P.A.P.) (Security)
64	Willamette - Site Support Contractor/Records Mgmt.
75	Warehouse /Painters
88	Okanogan - Site Cafeteria/NDE/I&C Security
94	Laborers/Procedures
100	Fitness for Duty Facility/First Aid

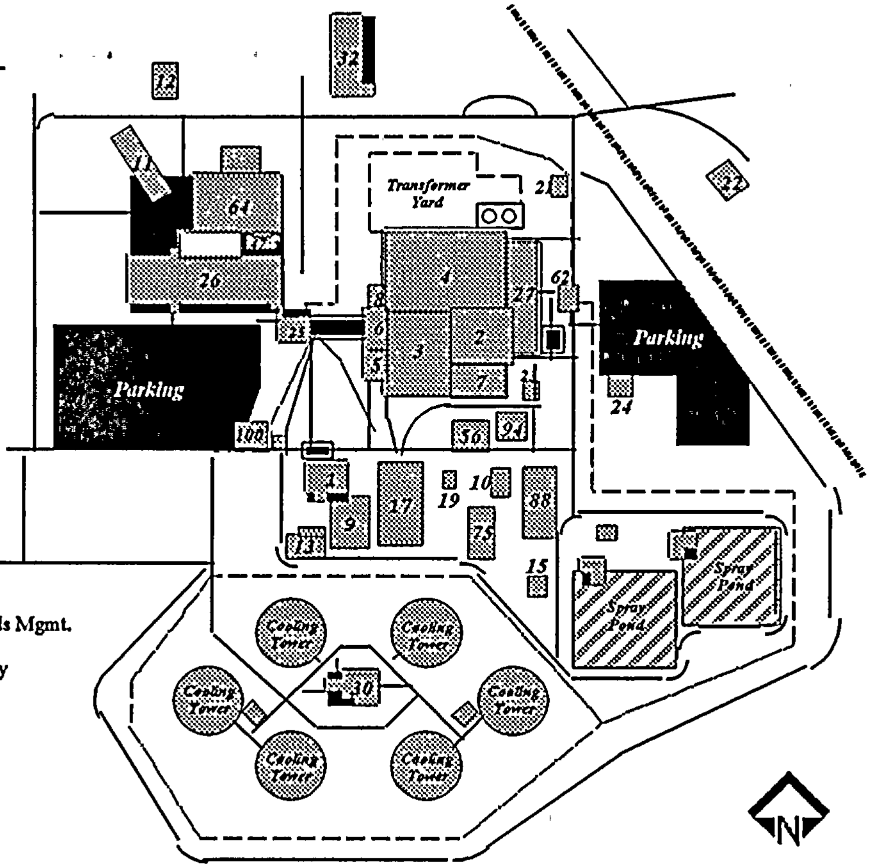

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Figure 1-3, Columbia Generating Station Site

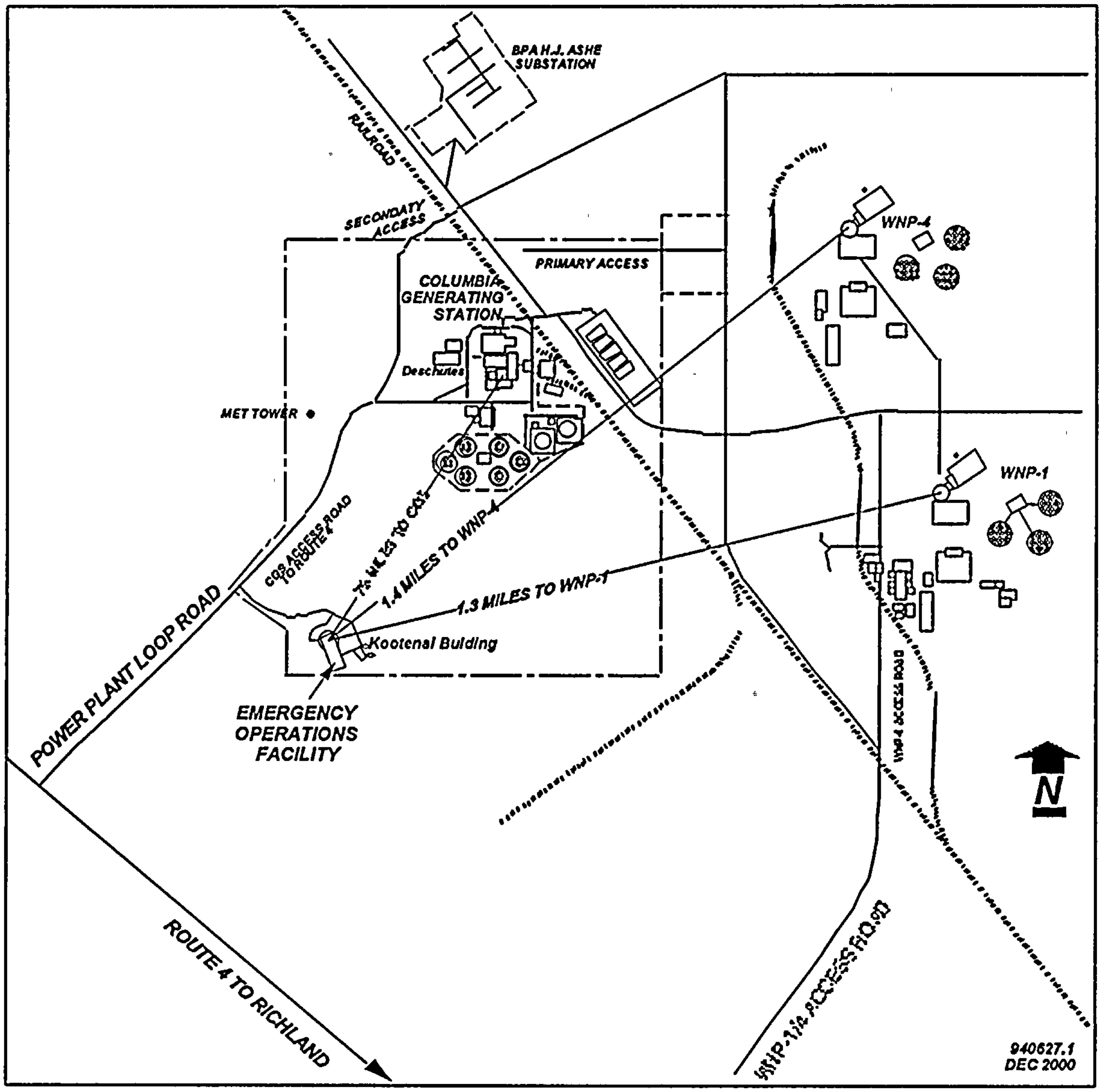

Figure 1-4, Emergency Operations Facility Location

SECTION 2
ENERGY NORTHWEST EMERGENCY ORGANIZATION

2.1 ORGANIZATIONAL CONCEPTS

This section of the Plan describes the emergency response organization at Energy Northwest. The normal plant operating organization serves as a foundation for the emergency organization and is augmented by the on-call Emergency Response Organization (ERO) at an Alert or higher emergency class. The normal organization is described in the corporate organization charts. An overview of the emergency organization is shown in Figure 2-1.

Energy Northwest's Emergency Response Organization consists of positions that satisfy requirements for initial and augmented staffing during declared emergency as well as positions that may be summoned as needed. The members of the emergency organization which are essential to implementation of the Plan and the augmenting organization which supports the essential personnel are shown in Figure 2-1. The Emergency Organization Assignment List contains a listing of the personnel assigned to the ERO. The title of Shift Technical Advisor (STA) describes a function, and the responsibility for implementing that function may be performed by other on-shift personnel qualified to perform the STA function for purposes of NUREG-0737 and NUREG-0654.

Responsibility for emergency direction and control (i.e., overall direction of the plant's emergency response which must include the non-delegable responsibilities for emergency classification, the decision to notify, and to recommend protective actions to authorities responsible for offsite emergency measures) is normally transferred from the Shift Manager to the TSC Manager to the EOF Manager. However, if the situation dictates, the responsibilities may be transferred from the Shift Manager directly to the EOF Manager. The transfer of responsibilities only takes place when the individual relieving the Shift Manager is at his assigned location, has minimum staffing level or greater in place, and has received a formal turnover.

2.2 SHIFT ORGANIZATION

The operating crew for each shift at the plant normally consists of a Shift Manager, to whom reports a Control Room Supervisor, Shift Support Supervisor, Shift Technical Advisor or Emergency Response SRO as required, licensed reactor operators, equipment operators, health physics technicians, chemistry technicians, and Security Force personnel. Operations personnel are trained to perform emergency maintenance functions in the absence of on shift maintenance personnel. The Shift Manager on duty has the immediate responsibility for the plant at all times, and has full authority and responsibility for recognizing and declaring emergencies. Each shift is provided with a complement of qualified individuals who have specialized training in notifications, the operation of the reactor and other plant systems, plant instrumentation, radiation safety, and maintenance.

Security force personnel and the control room have 24 hour communications capability with the ERO and offsite response agencies.

Plant Technical Specifications and 10 CFR 50.54 (m) provide for reduced staffing in reactor operational modes 4 and 5. Energy Northwest recognizes that these are minimum staffing levels and that additional personnel are necessary to perform emergency functions. On shift staffing, in all modes, includes adequate numbers of qualified personnel to perform classification, notification, and dose assessments within time requirements.

The Plant General Manager has full authority and responsibility for the overall supervision and administration of the nuclear plant. Technical support is provided by a staff experienced in reactor physics, nuclear power plant systems technology and operation and health physics and chemistry. The normal plant operating organizations are complemented by a group of specialists available from other departments of Energy Northwest and are identified in the corporate organization charts.

2.3 EMERGENCY RESPONSE ORGANIZATION

Energy Northwest's Emergency Response Organization (ERO) consists of positions that satisfy requirements for initial and augmented staffing during a declared emergency as well as positions that may be summoned as needed. This organization has the capability of continuous (24 hour) operations for a protracted period. The ERO is arranged in the following response categories:

On Shift:

On shift positions consist of the Shift Manager, Control Room Supervisor, Reactor Operators, Shift Technical Advisor (not required in Mode 4 and 5, thus can't provide initial response in these modes), Equipment Operators, HP Technicians, Chemistry Technicians, I&C Technicians, Electrical and Mechanical Craft, and Security. In addition, if the Shift Technical Advisor providing the engineering expertise on-shift is filling a dual role as the Control Room Supervisor or the Shift Manager, an SRO dedicated to supporting the Shift Manager in emergency response functions shall be on-shift. This position is designated as the Emergency Response SRO and is filled by an on-shift SRO.

Essential:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means at any time to respond within a specified time. Essential ERO personnel will normally assist on shift personnel to provide assessment and mitigation of accident conditions, notifications to offsite agencies, or provide overall direction, control and logistical support for emergency operations.

Augmenting:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means to respond at any time within a specified time. Augmenting personnel provide additional emergency assessment, accident mitigation and logistics support to on shift and essential personnel.

Support:

Consists of positions which may or may not be designated on a rotating on-call list or ERO assignment list, but may be summoned by electronic or manual means when needed to support emergency operations.

The essential emergency organization has the capability to provide manpower and other resources to assist the normal plant organization within approximately one hour if an emergency situation arises. The essential organization has been established with responders designated on a rotating on call list. The emergency duties of the normal plant staff are transferred to the ERO as the corresponding members arrive on site and the emergency centers are activated.

If an emergency situation arises, the Shift Manager will activate the ERO to supplement the normal operating staff. Those members of the ERO who are not on site at the time of the emergency will be able to respond within about one hour of the emergency. In addition, designated members of the Emergency Preparedness department are available to assist with Emergency Operation Facility activation.

Following are general descriptions of the Essential Emergency Response Organization. Duties are discussed in more detail in the Emergency Plan Implementing Procedures. Table 2-1 demonstrates how these positions align with NUREG-0654/FEMA-REP-1, Rev. 1, Table B-1 requirements.

2.3.1 On Shift Emergency Organization

2.3.1.1 Shift Manager

Basic Emergency Function: The Shift Manager reports to the Operations Manager and is responsible for overall plant control. The Shift Manager assumes the Emergency Director duties and responsibilities upon initial emergency classification until relieved by the TSC Manager or EOF Manager. Once an emergency classification is declared, the Shift Manager, as the Emergency Director, is responsible for activation and direction of the emergency response organization to the extent required by the emergency.

NOTE: The Shift Manager is responsible for ensuring safe operation of the plant under all conditions. The Shift Manager, as the Emergency Director, ensures necessary protective actions are carried out. The priority of actions shall be in the following order:

- Public Safety
- On Site Personnel Safety
- Equipment Protection
- Plant Reliability

The Senior Reactor Operator (SRO) license holders on shift and the STAs are available to perform offsite dose assessment at all times when required.

2.3.1.2 Control Room Supervisor (On shift as required by Technical Specifications)

Basic Emergency Function: The Control Room Supervisor (CRS) is the senior individual responsible for plant control actions during both normal and emergency operations. The Control Room Supervisor will assume Shift Manager responsibilities, including emergency direction and control authority, in the absence of the Shift Manager.

2.3.1.3 Reactor (Control Room) Operators

Basic Emergency Function: The Reactor Operators (RO) are responsible for the day to day operations of the reactor and implement necessary actions under the direction of the Control Room Supervisor to terminate the condition causing the emergency and place the plant in a safe condition.

2.3.1.4 Security Communication Center Staff

Basic Emergency Function: The Security Communication Center (SCC) Staff will assist with notifications to Energy Northwest ERO personnel and to offsite agencies during both the emergency and recovery phases. The SCC staff reports to the Security Manager.

2.3.1.5 Equipment Operators

Basic Emergency Function: The Equipment Operators (EO) are responsible for responding to the emergency as directed by the Control Room Supervisor or Fire Brigade (FB) Leader. The location of the Equipment Operators is assigned by the Control Room Supervisor/FB Leader. Control and accountability of Equipment Operators may, after discussion between the Shift Manager and OSC Manager, be transferred to the OSC.

2.3.1.6 Shift Technical Advisor (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Shift Technical Advisor (STA) qualified individual should keep abreast of plant activities and status. The STA qualified individual evaluates the risk associated with planned plant activities and advises shift management on actions to be taken to minimize the associated risk. When appropriate, the STA qualified individual should advise shift management on technical matters.

An STA qualified individual shall be on shift in Modes 1, 2, or 3, per FSAR requirements.

When the STA qualified individual is performing a dual role as the Shift Manager or Control Room Supervisor, another SRO (Emergency Response SRO) shall be on shift to provide independent oversight of plant activities and status, and to assist the Shift Manager in emergency response activities. This individual may be the Shift Support Supervisor (SSS), if SRO qualified.

2.3.1.7 Emergency Response SRO (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Emergency Response SRO shall be on shift in all modes when the STA function is provided by the Shift Manager or Control Room Supervisor. The Emergency Response SRO is another SRO present to advise and assist the Shift Manager on emergency response actions such as emergency classifications and notifications, protective action recommendations, and off-site dose assessment.

2.3.1.8 Fire Brigade

Basic Emergency Function: The Fire Brigade (FB) is responsible for fire fighting, first aid and search and rescue operations. The team will perform radiological surveys and contamination control as necessary. Members of the FB may also perform plant systems manipulation tasks to mitigate consequences of an accident. The FB is under the direction of the Shift Manager until directed to report to the OSC Manager.

2.3.1.9 Health Physics, Chemistry, and Maintenance Support Personnel

Basic Emergency Function: Health Physics, Chemistry, and Maintenance Support personnel are responsible for providing radiation surveillance, chemistry analyses, and maintenance operations as repair or reentry and recovery team members. These support staff will report to the OSC Manager for in plant team activities.

2.3.2 Essential Plant Emergency Organization

Figure 2-1 identifies the key shift personnel who are sufficiently trained to perform all necessary duties until relief personnel arrive. Figure 2-1 provides a diagram of the ERO showing the reporting chain within the ERO. The following sections detail duties of the essential emergency response organization.

2.3.2.1 TSC Manager

Basic Emergency Function: The Technical Support Center Manager (TSC Manager) is responsible for the coordination of onsite response efforts during an emergency. This position is also responsible for the overall development and implementation of accident mitigation and repair/damage control efforts. In some cases the TSC Manager may assume the responsibility for emergency direction and control until the EOF Manager assumes this responsibility at the Emergency Operations Facility. The TSC Manager initiates evacuation and onsite recovery actions as necessary. The TSC Manager is also responsible for ensuring plant security is maintained and provisions are made for immediate entry of necessary emergency assistance such as ambulance or fire equipment.

The Maintenance Manager, Operations Manager, Technical Manager, Radiation Protection Manager, Plant Admin Manager, Plant/NRC Liaison, and OSC Manager report to the TSC Manager.

2.3.2.2 TSC Radiation Protection Manager

Basic Emergency Function: The Radiation Protection Manager (RPM) is responsible for directing the health physics staff, assessing radiological conditions, reviewing radiological data received, ensuring personnel exposures are maintained As Low As is Reasonably Achievable (ALARA), and providing recommendations concerning radiation safety matters to the TSC Manager.

The Radiation Protection Manager will also assess offsite doses and make recommendations concerning protective actions to the TSC Manager until the Radiological Emergency Manager at the EOF takes over this function.

2.3.2.3 TSC Plant/NRC Liaison

Basic Emergency Function: The Plant/NRC Liaison is the primary plant interface with the NRC Headquarters concerning emergency matters and will coordinate commitments made to the NRC. He will keep the TSC Manager advised of NRC activities and, as necessary, will staff the NRC/ENS phone. The Plant/NRC Liaison is responsible for ensuring activation of the Emergency Response Data System (ERDS) for an Alert or higher classification.

2.3.2.4 TSC Technical Manager

Basic Emergency Function: The Technical Manager is responsible for analysis of plant data and the development of plans and procedures in direct support of plant operations personnel. The primary objective is to achieve a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This position supervises the analysis of plant safety parameters by the plant technical and operations staff.

2.3.2.5 TSC Core Thermal Engineer

Basic Emergency Function: Provides information on reactor water pressures and temperature distribution, heat transfer and fluid flow rates, and performs core damage assessments.

2.3.2.6 TSC Electrical Engineer

Basic Emergency Function: Provides information and recommendations about plant and offsite electrical power sources and distribution.

2.3.2.7 TSC Mechanical Engineer

Basic Emergency Function: Provides information and recommendations on mechanical systems and hardware modifications.

2.3.2.8 TSC Operations Manager

Basic Emergency Function: The Operations Manager will assist the TSC Manager by providing oversight and direction to Control Room operations. He provides the interface between the TSC and Control Room. The Operations Manager keeps the TSC Manager informed of plant status and provides input concerning plant operations necessary for the accident and recovery process.

2.3.2.9 OSC Manager

Basic Emergency Function: The Operations Support Center (OSC) Manager is responsible for assigning and dispatching Repair Teams. This individual provides updates to the TSC Manager via the Maintenance Manager on team activities. The OSC Manager is also responsible for ensuring plant personnel accountability is performed. The Fire Brigade reports to the OSC Manager once it is released by the Shift Manager.

2.3.2.10 HP Lead

Basic Emergency Function: The HP Lead identifies hazardous areas within the plant, provides repair team HP briefings and assigns HP resources to repair teams. The HP Lead communicates with the OSC Manager and TSC RPM.

2.3.2.11 Repair Team

Basic Emergency Function: The Repair Teams provide the necessary manpower to perform tasks throughout the plant involving investigation of the accident, repair of equipment or taking actions to minimize the extent of damage. The Repair Teams report to the OSC Manager.

2.3.3 Essential Emergency Operations Facility Emergency Organization

The Emergency Operations Facility (EOF) is activated at the Alert classification and will be utilized by the EOF Manager and his staff to implement necessary actions during an Alert, Site Area or General Emergency. The EOF Manager normally assumes responsibility for emergency direction and control within approximately one hour of the declaration of an Alert or higher emergency. He normally receives a turnover from the TSC Manager but in some cases may receive a turnover from the Shift Manager. The EOF Manager is responsible for the overall management of Energy Northwest emergency resources and has full authority to make commitments for the company. The basic functions which will be directed from the Emergency Operations Facility are:

a. Manage the overall Energy Northwest emergency effort.

b. Evaluate the magnitude and consequences of actual or potential radiological releases.

c. Coordinate field sampling and analysis of radioactive material released from the plant.

d. Coordinate emergency response activities with local, state, and federal agencies and provide recommendations concerning appropriate offsite protective measures.

e. Provide technical support to the plant.

f. Provide necessary security controls.

g. Provide decontamination and medical assistance for personnel evacuated from the plant.

h. Secure necessary supplies and equipment.

i. Develop public information reports for the Joint Information Center concerning plant status, emergency actions underway, and hazards to the public.

j. Advise upper management concerning plant conditions.

k. Coordinate the overall recovery effort including the development of procedures and schedules, procurement of equipment, and identification of necessary licensing actions.

l. Provide for adequate work area for the recovery effort.

2.3.3.1 EOF Manager

Basic Emergency Function: The Emergency Operations Facility (EOF) Manager is responsible for the overall management of Energy Northwest resources and will be in charge of activities related to plant emergency and recovery operations. The EOF Manager has the authority to request outside assistance, including resources available from the federal government, and will assume the responsibility for emergency direction and control. The decision to request outside assistance, change emergency classifications, approve offsite protective action recommendations and make decisions concerning the notification of offsite authorities cannot be delegated once the EOF Manager has assumed the Emergency Director duties.

The Engineering Manager, Site Support Manager, Offsite Agency Coordinator, EOF Public Information Officer, Radiological Emergency Manager, TSC Manager, Security Manager, Licensing Manager, and Joint Information Center Manager report to the EOF Manager.

At his discretion, the EOF Manager may request one or more assistants. The assistant(s) perform duties as assigned by the EOF Manager.

2.3.3.2 EOF Radiological Emergency Manager

Basic Emergency Function: The Radiological Emergency Manager (REM) reports to the EOF Manager. The REM is responsible for managing radiological dose assessment and field monitoring activities. The REM assists in development of Protective Action Recommendations and, during the late phases of the response, coordinates this activity with the States of Washington and Oregon and the US DOE and provides offsite radiological Protective Action Recommendations to the EOF Manager. The REM also coordinates Energy Northwest offsite radiological monitoring effort with the States of Washington and Oregon and the US DOE.

2.3.3.3 EOF Field Team Coordinator

Basic Emergency Function: The Field Team Coordinator provides overall management of field teams, identifies plume path and areas requiring survey; directs the Field Team Dispatcher, and makes field teams available for river evacuation; communicates field team summary information to the REM.

2.3.3.4 Environmental Field Teams

Basic Emergency Function: The Environmental Field Teams are responsible for determining offsite radiological hazards and for conducting the required offsite surveys, monitoring and sampling. Field team activities are coordinated by the Field Team Coordinator. At least three teams will be available to conduct environmental sampling in the field.

2.3.3.5 *EOF Telecommunications Manager*

Basic Emergency Function: Provide for the operability of Energy Northwest communications systems. Will direct and dispatch Telecommunications Technicians to areas requesting assistance with phones or other telecommunications equipment.

2.3.4 Essential Joint Information Center Emergency Organization

The essential Joint Information Center emergency organization consists of the Joint Information Center Manager. This function ensures timely, accurate releases of information and assists offsite organizations in developing coordinated information for release to the public.

2.3.4.1 Joint Information Center Manager

Basic Emergency Function: The Joint Information Center (JIC) Manager will ensure timely and accurate releases of information to the media and public and will monitor and respond to misinformation. The JIC Manager will also coordinate Energy Northwest's emergency public information activities with those of Benton and Franklin counties, Washington State, Oregon State, and the Federal Government. The JIC Manager reports to the EOF Manager.

2.4 AUGMENTING EMERGENCY ORGANIZATION

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential Energy Northwest emergency organization described in Section 2.3. In addition to the positions described in this section, other augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures are listed in the Emergency Response Organization List.

2.4.1 Augmenting Plant Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential plant emergency organization described in Section 2.3.1. These positions will be filled by activating previously selected personnel who can respond as required.

2.4.1.1 TSC Plant Administrative Manager

Basic Emergency Function: The Plant Administrative Manager is responsible for providing the TSC Manager with the necessary administrative services including accountability, requests for additional personnel and office services support. The TSC Administrative staff reports to the Plant Administrative Manager.

2.4.1.2 TSC Maintenance Manager

Basic Emergency Function: The Maintenance Manager is responsible for assigning tasks to be performed by the Operations Support Center (OSC) teams, determining the priority to be assigned for each task, and acting as the focal point between the TSC and OSC for the work control process.

2.4.1.3 Information Coordinators

Basic Emergency Function: Provide information and plant status updates to the center manager and staff. Communicate pertinent emergency related information from their assigned center to the other information coordinators. Information Coordinators are assigned to the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

2.4.1.4 TSC Chemistry/Effluent Manager

Basic Emergency Function: The Chemistry/Effluent Manager is responsible for monitoring the Plant effluent and ARM monitors. Changes in radiological conditions are reported to the Radiation Protection Manager. The Chemistry/Effluent Manager may also perform emergency dose projections. In addition, the Chemistry/ Effluent Manager advises the TSC Manager of chemistry concerns.

2.4.1.5 OSC Team Tracker

Basic Emergency Function: The OSC Team Tracker is responsible for maintaining communications with in-plant Repair Teams performing actions during the event following dispatch from the OSC. The Team Tracker is responsible for keeping the OSC Manager informed of team status and location. The Team Tracker also is responsible for coordination of site personnel accountability.

2.4.1.6 Repair Team Coordinator

Basic Emergency Function: Communicates maintenance tasks from the TSC and relays information about actions taken to the TSC. Responsible for directing repair team activities.

2.4.1.7 OSC Craft Leads

Basic Emergency Function: The Craft Leads will assist the OSC Manager in briefing and debriefing Repair-Teams. They will also assist the Team Tracker in tracking of teams and personnel as required. Craft leads respond for Electrical, Mechanical, I&C and Health Physics disciplines.

2.4.2 Augmenting Emergency Operations Facility Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Emergency Operations Facility essential organization which is described in Section 2.3.2. These positions will be filled by activating previously selected personnel.

2.4.2.1 Assistant EOF Manager

Basic Emergency Function: The Assistant EOF Manager will assist the EOF Manager in the overall management of Energy Northwest resources and will assume the EOF Manager duties including Emergency Director responsibilities if the EOF Manager is not available at the EOF.

2.4.2.2 EOF Manager Secretary

Basic Emergency Function: The responsibilities of the EOF Manager Secretary include maintaining a log of EOF Manager actions, monitoring EOF Manager's phones, initiating Crash calls and performing other EOF administrative support duties as requested by the EOF Manager.

2.4.2.3 Dose Projection Health Physicist

Basic Emergency Function: The Dose Projection Health Physicist is responsible for completing dose projections, providing input to Protective Action Recommendations, and keeping the Radiological Emergency Manager informed of radiological release status. Refer to Section 6.4.2 for a description of the Meteorology and Unified Dose Assessment Center (MUDAC).

2.4.2.4 EOF Engineering Manager

Basic Emergency Function: The Engineering Manager and staff members are responsible for analyzing plant information and for developing plans and procedures in direct support of plant.

2.4.2.5 Emergency Operations Facility Public Information Officer

Basic Emergency Function: The Emergency Operations Facility Public Information Officer (EOF PIO) will prepare and transmit news releases to the Joint Information Center which can be used by Energy Northwest and offsite agencies. The EOF PIO keeps the EOF Manager up-to-date on public relations matters.

2.4.2.6 EOF Radiation Detection Systems Engineer

Basic Emergency Function: Analyzes radiation detection systems and assists in location of radiation source.

2.4.2.7 EOF Security Manager

Basic Emergency Function: The Security Manager is responsible for ensuring that security is maintained at all Energy Northwest facilities and security support groups are fully operational. This individual provides information and advice to the EOF Manager concerning the coordination of Energy Northwest Security and local law enforcement agency (LLEA) response actions. The Security Manager reports to the EOF Manager and supervises the Security staff.

2.4.2.8 EOF Site Support Manager

Basic Emergency Function: The Site Support Manager is responsible for coordinating requests for administrative and technical support to the plant and EOF. He also makes provisions to secure necessary supplies and equipment requested. The Site Support Manager reports to the EOF Manager and supervises the Offsite Agency Coordinator, EOF Information Coordinator, Telecommunications Manager, Manpower Scheduler and Admin Support staff.

2.4.2.9 Energy Northwest Representatives to County Emergency Operation Centers

Basic Emergency Function: Energy Northwest representatives will keep the staff members at the Benton and Franklin Counties Emergency Operations Center (EOCs) informed of the emergency conditions and Energy Northwest responses. The offsite representative will report to the Site Support Manager, normally through the EOF Offsite Agency Coordinator.

2.4.3 Augmenting Joint Information Center Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Joint Information Center Manager described in Section 2.3.3. In addition to the positions described below, other administrative augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures will be filled by personnel who can respond as required.

2.4.3.1 Assistant JIC Manager

Basic Emergency Function: The Assistant JIC Manager manages the preparation of Energy Northwest news releases, coordinates the process for news releases prepared by agencies and jurisdictions represented in the JIC, manages the team responsible for distribution of news releases to the media and other emergency centers and assumes the duties of JIC Manager, if requested. The Assistant JIC Manager supervises the Distribution Team Supervisor and News Release Editor and reports to the JIC Manager.

2.4.3.2 JIC Media Manager

Basic Emergency Function: The Media Manager will address the information needs of media representatives at the Energy Northwest JIC. The Media Manager supervises the JIC Receptionist and reports to the JIC Manager.

2.4.4 Support Emergency Organization

2.4.4.1 Administrative Support Staff

Basic Emergency Function: Performs duplication and facsimile services, record searches, verification of document revision.

2.4.4.2 TSC Manager Secretary

Basic Emergency Function: Maintains a log of activities for the TSC Manager, initiates and monitors crash calls, and screens phone calls.

2.4.4.3 TSC/OSC Communicator:

Basic Emergency Function: Communicates maintenance tasks to the OSC and relays OSC information about actions taken to the TSC staff.

2.4.4.4 TSC Computer Engineer

Basic Emergency Function: The Computer Engineer is responsible for ensuring that the computer systems available in the TSC are operating as required. The Computer Engineer will troubleshoot system problems and assist TSC Engineering staff in obtaining information from the various Plant computers.

2.4.4.5 TSC Trending Forecaster

Basic Emergency Function: Trend plant parameters and forecast plant status.

2.4.4.6 EOF Plant Systems Assessment Engineer

Basic Emergency Function: Analyzes plant systems and provides technical input to the INPO Network Coordinator

2.4.4.7 EOF Fuels Assessment Engineer

Basic Emergency Function: Evaluates core damage, interfaces with the TSC Core Thermal Engineer and EOF Engineering Manager to provide results and projections of core damage. Provides input for PAR determinations to the Radiological Emergency Manager.

2.4.4.8 EOF PDIS Analyst

Basic Emergency Function: Provides technical data for EOF engineering and monitors the information network for problems.

2.4.4.9 EOF Manpower Scheduler

Basic Emergency Function: Coordinates the preparation of overall shift staffing rosters.

2.4.4.10 EOF State/County Technical Liaison

Basic Emergency Function: Informs Energy Northwest representatives to the state and counties of plant conditions.

2.4.4.11 EOF Offsite Agency Coordinator

Basic Emergency Function: Coordinates requests from offsite agencies for information and keeps the EOF Manager informed of those requests. Coordinates airspace or airport closure requests with the Federal Aviation Agency.

2.4.4.12 EOF INPO Network Coordinator

Basic Emergency Function: Prepares and transmits technical descriptions of major events during an emergency to INPO.

2.4.4.13 Health Physics Center Staff

Basic Emergency Function: Prepares the Health Physics Center for use by setting up tables, lanes, and signs.

2.4.4.14 EOF Electrical/I&C Engineer

Basic Emergency Function: Analyzes plant electrical and I&C systems and provides information to the Emergency Manager.

2.4.4.15 EOF PIO Technical Support

Basic Emergency Function: Provides technical interpretations of information for the EOF PIO to formulate accurate news releases for the JIC.

2.4.4.16 EOF Field Team Dispatcher

Basic Emergency Function: Dispatch of field teams and log keeping.

2.4.4.17 Energy Northwest Representative to the State

Basic Emergency Function: Dispatched to Washington State EOC, provides technical expertise to EOC personnel.

2.4.4.18 EOF Licensing Manager

Basic Emergency Function: Interface with onsite NRC response team and communicates with the NRC on licensing issues.

2.4.4.19 JIC Information Manager

Basic Emergency Function: The Information Manager coordinates response to telephone requests for information from news media representatives or the general public. The Information Manager coordinates responses to rumors and public concerns and insures timely and accurate information is provided. This individual directs activities of the Media and Public Phone Team Supervisors and reports to the JIC Manager.

2.4.4.20 JIC Offsite Agency Representatives

Basic Emergency Function: The Offsite Agency Representatives reporting to the JIC will coordinate the emergency public information activities of the organizations they represent. The representatives report to their parent agencies. Their activities are coordinated by the JIC Manager or the Assistant JIC Manager.

2.4.4.21 JIC Phone Team Supervisor

Basic Emergency Function: The Phone Team Supervisor, Public Phone Teams and Media Phone Teams will respond to incoming calls from the public and media, provide information updates as necessary, and make efforts to correct misinformation as necessary. The Public Phone Team Supervisor supervises the Public and Media Phone Teams and reports to the Information Manager.

2.4.4.22 JIC Support Manager

Basic Emergency Function: Provides administrative support and procurement of supplies for JIC personnel.

2.4.4.23 JIC Spokesperson

Basic Emergency Function: Conducts news conferences at the JIC and provides timely information during the conferences.

2.4.4.24 JIC Technical Spokesperson

Basic Emergency Function: Provides technical information in an easy to understand format.

2.4.4.25 JIC Health Physics Spokesperson

Basic Emergency Function: Provides health physics information in an easy to understand format.

2.4.4.26 JIC News Release Editor

Basic Emergency Function: Assists in preparing news releases for dissemination to the media.

2.4.4.27 JIC Public and Media Phone Teams

Basic Emergency Function: Answer phone calls made by the public and media to disseminate correct information and dispel rumors.

2.4.4.28 JIC Audio/Visual

Basic Emergency Function: Coordinates operation of A/V equipment during news conferences at the JIC.

2.4.4.29 JIC Distribution Team Supervisor

Basic Emergency Function: Supervises the JIC Distribution Team.

2.4.4.30 JIC Distribution Team

Basic Emergency Function: Distributes faxes, news releases, and makes copies for the JIC staff.

2.4.4.31 JIC Receptionist

Basic Emergency Function: Provides receptionist duties for the JIC

2.4.4.32 JIC Secretary

Basic Emergency Function: Provides secretarial duties for the JIC staff.

ENERGY NORTHWEST EMERGENCY RESPONSE ORGANIZATION
MINIMUM STAFFING REQUIREMENTS

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Senior Management	Emergency Operations Facility Mgr[3]		1
	Technical Support Center Mgr[3]		1
	Joint Information Center Mgr		1
Operations	Shift Manager[3]	1	
	Control Room Supervisor	1[1]	
	Reactor Operator	2	
	Equipment Operator	2	
	Operations Manager[5]		1
	STA Function	1[1]	
	Emergency Response SRO	1[6]	
Notification/Communication	Control Room ENS Communicator[4]	1	
	SCC Duty Officer	1	
	Security Responder	1[2]	
	Telecom Manager		1
	Plant/NRC Liaison		1
Health Physics	Radiation Protection Manager		1
	HP Technicians (In Plant Surveys)	1	2
	HP Technicians (Protective Actions)	2	4
	Field Team Coordinator[5]		1
	Environmental Field Teams (Offsite Surveys)		4
	Environmental Field Teams (Onsite Surveys Out of Plant)		2
	Radiological Emergency Manager (Offsite Dose Assessment)		1

Table 2-1

MINIMUM STAFFING REQUIREMENTS(Continued)

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Nuclear Chemistry	Chemistry Technicians	1	1
Maintenance	Operations Support Center Mgr[5]		1
	Electrical Maintenance/	1[2]	2
	I/C Support		1
	Mechanical Maintenance/Radwaste	1[2]	1
	Operator		1
Engineering	Core/Thermal Hydraulics		1
	Electrical		1
	Mechanical		1
	Technical Manager[5]		1
Security	Per Security Plan		
Firefighting	Fire Brigade	Fire Brigade per FSAR Section 13	Local Support
First Aid and Rescue Operations	Fire Brigade	2[2]	Local Support

[1] On Shift as required by Technical Specifications in Modes 1, 2, and 3. Available within 60 minutes for call in for Modes 4 and 5. The STA qualified individual may be an individual staffing the CRS, SM or SSS position. When the STA is filling a dual role as the CRS or SM, another SRO is required to be on shift to perform duties as the Emergency Response SRO in all modes.

[2] May be provided by shift personnel assigned other functions

[3] Shift Manager initially assumes the responsibility for emergency direction and control, then is relieved by the TSC Manager or EOF Manager

[4] Duties of ENS Communicator are assumed by an individual designated by Shift Manager

[5] Not identified as a Table B-1, NUREG 0654 requirement

[6] Position may be filled by STA qualified individual or designated on shift SRO. This position may not be filled by the CRS or SM when they are also fulfilling the STA function.

Table 2-1

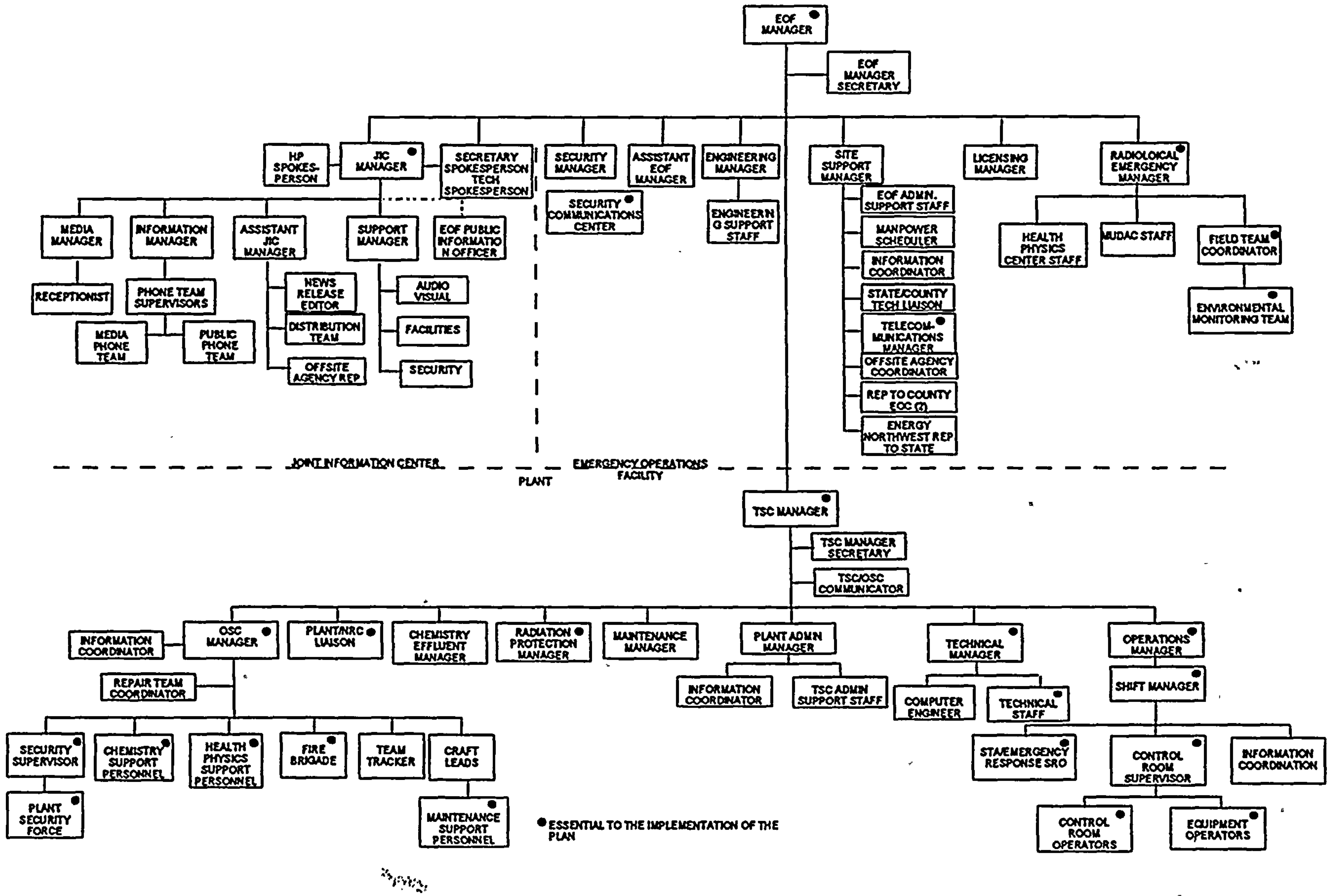

Figure 2-1, Emergency Response Organization Chart

SECTION 3
EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.1 COORDINATION OF SUPPORT ORGANIZATIONS

The Energy Northwest individual assigned the Emergency Director function is responsible for coordinating the use of emergency response resources available from outside Energy Northwest. These external resources are available through formal agreements referenced in Appendix 4 or in the emergency plans referenced in Appendix 1. Figure 3-1 shows the relationship between Energy Northwest emergency centers and the various outside response agencies. The Shift Manager/Emergency Director can call on any or all of these resources for support during an emergency.

The Energy Northwest Emergency Operations Facility contains provisions for outside organizations to coordinate actions with Energy Northwest. Specific areas in the Emergency Operations Facility and Energy Northwest Office Complex (ENOC) are designated in the Emergency Plan Implementing Procedures to be utilized by various offsite response organizations.

Energy Northwest representatives will normally be dispatched to the Benton and Franklin County Emergency Operations Centers at the Alert or higher emergency classification. The Energy Northwest representative to the state will normally report to the EOF at the Alert level, and be dispatched to the Washington State Emergency Operations Center at Site Area Emergency to assist. Energy Northwest representatives will assist in providing clarification of information and data.

The Offsite Agency Coordinator in the EOF will provide necessary support to responding agencies.

Figure 3-1 illustrates the various assistance organizations which may respond to the Emergency Operations Facility.

3.2 LOCAL SUPPORT SERVICES

A rapid response is available to Energy Northwest from local fire, medical, law enforcement, and radiological organizations. Agreements have been made with response agencies either through agreement letters or through their emergency plans. In cooperation with Energy Northwest and Benton and Franklin Counties Emergency Management, a training program has been established to familiarize responding agencies with their role at the plant site during an emergency. Energy Northwest will provide escorts, assistance, and dosimetry for all persons entering the plant protected areas, as requested.

3.2.1 Fire

Agreements established between the Department of Energy and Energy Northwest provide for Hanford Contract Fire Department response to all Energy Northwest facilities on the Hanford Reservation. Additional fire department response, if needed, is available through mutual aid agreements between county and municipal fire departments. The Hanford Contract Fire Department personnel are specifically trained to handle nuclear facility fire incidents and have specially equipped vehicles and personnel for rescue and other emergencies. Fire organizations performing functions onsite will interface directly with the Fire Brigade Leader.

3.2.2 Medical

The Emergency Director or designee is responsible for notifying the medical facility and providing qualified health physics personnel to assist. Communications with medical response agencies is coordinated through the radio network described in Section 6.5.1 of this Plan. The fixed medical facilities (i.e., hospitals) can also be reached by telephone using the numbers provided in the Emergency Phone Directory.

3.2.2.1 Local Hospitals

Kennewick General Hospital in Kennewick, Washington; Our Lady of Lourdes Hospital in Pasco, Washington; and Kadlec Medical Center in Richland, Washington, provide hospital and medical services. Any combinations of these three hospitals serves as the primary and backup medical facility. These hospitals have emergency room coverage twenty-four hours per day. The State of Washington also maintains agreements for handling contaminated patients with other hospitals in the State of Washington.

Energy Northwest has placed and maintains kits containing radiological monitoring equipment and decontamination supplies for use in the care of radiation accident patients at these hospitals. Energy Northwest also assists each hospital in developing procedures for the care of radiation accident patients as requested. Training and assistance on radiological decontamination procedures is offered by Energy Northwest to these hospitals when requested. Drills are periodically conducted to evaluate hospital proficiency for handling contaminated victims

3.2.2.2 Special Medical Facilities

The Emergency Decontamination Facility (EDF), located next to Kadlec Medical Center, can be used for handling highly contaminated patients.

If high levels of radioactive contamination or exposure are involved, injuries will be pre-treated at the specially equipped EDF. The EDF is a sophisticated unit specifically designed for handling and treatment of radiation/contamination accident victims. Provisions include decontamination equipment, shielded surgery tables, remote TV viewing, contaminated water retention, air filtration, radiation monitoring instrumentation, whole body counting, and communications equipment.

The EDF is operated by the Hanford Environmental Health Foundation (HEHF) for the Department of Energy in support of nuclear activities on the Hanford Reservation. The physicians responding to the EDF are prepared and qualified to make radiation exposure and uptake evaluations.

3.2.2.3 Medical Transportation

Medical emergency transportation will be provided by the Department of Energy - Richland Operations (DOE-RL). If additional assistance is required, local ambulance services may be used. An Energy Northwest employee knowledgeable in health physics will accompany contaminated patients to the hospital or meet the ambulance at the hospital to assist in the emergency. Additional health physics assistance may be requested from DOE-RL, or Washington State Department of Health.

3.2.3 Law Enforcement

The Benton County Sheriff has jurisdiction on the Hanford Reservation highways. Arrangements have been made for this organization to provide traffic control in order to limit access to the Hanford Reservation during an Energy Northwest emergency.

The Sheriff has jurisdiction at the Energy Northwest site for all civil disturbances or threats. Request for assistance to the Benton County Sheriff can be made directly to the Sheriff's office or through the 24 hour Emergency Dispatch Center (SE COMM) located in Richland. The Energy Northwest communications centers are capable of communicating with responding law enforcement agencies.

The Security Manager is the main interface with local law enforcement personnel and administers the agreement for law enforcement services. Activation of this support is under the direction of the Emergency Director.

In the event that evacuation is needed for areas off the Hanford Reservation, the Emergency Director, or designee, will notify the County Emergency Chairman or designee, at the Benton and Franklin County Emergency Operations Centers and provide available information concerning the nature of releases. Within the guidelines established by Washington State, a recommendation concerning necessary protective actions to be taken by the general public will be made by Energy Northwest. Following receipt of a protective action decision by an appropriate county authority, the Sheriffs of Benton and Franklin Counties will be responsible for implementing evacuation, traffic control, community security and search and rescue activities in their respective jurisdictions.

The Washington State Patrol provides assistance to the Sheriff concerning traffic control and area access. The local State Patrol headquarters has direct radio communications with the Benton and Franklin County sheriffs and the Emergency Dispatch Center (SE COMM).

3.2.4 Radiological

The Department of Energy (see Section 3.6.2) and Siemens Power Corporation (see Section 3.3.1) can provide a large number of trained personnel capable of assisting during a radiological emergency. Additionally, a training program for local support organizations (i.e., hospital, ambulance and fire companies) developed jointly by Energy Northwest and Benton and Franklin Counties, provides information on proper actions to take during a radiological emergency. Supporting emergency plans for this service are listed in Appendix 1.

3.3 PRIVATE RESPONSE ORGANIZATIONS

3.3.1 Framatome ANP

The Framatome facility, located just outside the Southern boundary of the Hanford Reservation, approximately 8 miles south of Columbia Generating Station, maintains 24-hour health physics coverage of operations. As provided for in their Emergency Plan, listed in Appendix 1, assistance can be quickly provided during an Energy Northwest emergency to monitor radiological conditions along the southern Hanford Site boundary. Assistance will be provided upon request of the Emergency Operations Facility Manager and will be coordinated from the Emergency Operations Facility.

3.3.2 Environmental Sample Analysis

Service contracts are currently maintained with appropriate vendors by Energy Northwest's Radiological Environmental Monitoring Program group for environmental sample analytical services.

3.3.3 General Electric Company

The General Electric Company, suppliers of the Columbia Generating Station nuclear steam supply system, provides a support program utilizing the resources of their Nuclear Energy Group in San Jose, California. An emergency response team can be dispatched to the Emergency Operations Facility within twenty-four hours to provide technical assistance. A technical support team with experts in appropriate technical disciplines will be activated at General Electric Headquarters and will establish telephone communications with the onsite General Electric Emergency Response Team. The response team, dispatched to Energy Northwest, will be provided work space in the Emergency Operations Facility and will coordinate efforts with the EOF Engineering Manager. General Electric personnel may be used in the plant as needed. When in the plant, the TSC Technical Manager will be the primary interface.

3.3.4 Institute of Nuclear Power Operations

The Institute of Nuclear Power Operations (INPO) will provide assistance in identifying and mobilizing the resources of the nuclear industry in the event of an emergency. INPO will be notified of any emergency at the alert or greater classification.

INPO will provide the following assistance, if requested:

a. Designated INPO representatives who can be dispatched to the utility.

b. Dedicated 24-hour emergency notification system.

c. Ability to locate personnel with specific technical expertise.

d. Obtaining industry experience regarding plant equipment through NPRDS.

3.3.5 American Nuclear Insurers

American Nuclear Insurers (ANI) provides insurance coverage for Energy Northwest's nuclear facilities. If an accident occurs which involves the general public, ANI will provide financial assistance and reimbursement of reasonable expenses to persons required to relocate. Within 24 hours of the declaration of the emergency, ANI will dispatch a representative to the local area and will coordinate with the Emergency Response Team.

3.3.6 Hanford Environmental Health Foundation

The Hanford Environmental Health Foundation provides physicians trained in the treatment of radiation accident patients and for response and consultation services to the plant and to the hospitals which have agreements with Energy Northwest. Refer to Appendix 4.

3.3.7 Dosimetry

Energy Northwest has provisions for thermoluminescent dosimeters and related services.

3.4 <u>COUNTY ORGANIZATIONS</u>

3.4.1 Benton and Franklin Counties

The Benton and Franklin County plans for responding to a nuclear emergency, referenced in Appendix 1, provides for a coordination of effort, resources, and facilities. Mitigation and preparedness responsibilities include coordinating local radiological emergency response planning, exchanging emergency preparedness information and, along with Energy Northwest assisting local agencies and officials in developing appropriate emergency capabilities, establishing a radiological emergency response program, emergency response training, and promoting the development of effective communications and other emergency resources. Local law enforcement agencies provide access control services for the Hanford reservation.

Emergency response activities of the Benton and Franklin Counties emergency organizations include implementing local emergency public information and instruction activities, establishment of emergency worker and assistance centers and the Benton and Franklin County Emergency Operations Centers, making protective action decisions, activation of the early warning system, and coordination of local protective action implementation and support. County officials are notified of an emergency through the Emergency Dispatch Centers, and also receive any recommendations provided by Energy Northwest in this manner. When activated, the county staff in the Emergency Operations Centers will communicate with the staff at the Emergency Operations Facility over Energy Northwest dedicated communications systems. Activation of the county plans is automatic for an Alert, a Site Area Emergency, or General Emergency and county representatives will be dispatched to the Emergency Operations Facility and the Joint Information Center.

Benton and Franklin Counties will also play an active role during recovery operations and will work closely with the State of Washington and Energy Northwest to ensure appropriate measures are taken for affected members of the public within their jurisdiction.

3.4.2 Counties Within the Ingestion Exposure Pathway Emergency Planning Zone

Six Washington counties (in addition to Benton and Franklin Counties) as well as two Oregon counties are located within the Ingestion Exposure Pathway Emergency Planning Zone (EPZ). A portion of the Yakama Indian Nation also falls within the Ingestion Exposure EPZ. The State of Washington will provide notification to these counties and the Yakama Indian Nation will be notified by Yakima County. This will be coordinated through the Washington State Emergency Management, or the Oregon Department of Energy, by the EOF Radiological Emergency Manager. Local governments will be kept informed regarding the status of the plant and recommended protective actions by the state(s).

3.5 STATE ORGANIZATIONS

3.5.1 State of Washington

The Washington State Plan referenced in Appendix 1 describes the detailed response which will be given during an emergency. Responsibilities are outlined for all state agencies which have a response role. The following list outlines the response actions of several of the state agencies which would respond during an Energy Northwest emergency. A Washington State Representative will proceed to the Emergency Operations Facility during a Site Area or General Emergency, and if conditions warrant during an Alert, to coordinate State resources. The Offsite Agency Coordinator will provide support and function as a working liaison with the State Representative when in the Emergency Operations Facility. Response time is estimated to be less than 6 hours.

3.5.1.1 Washington Emergency Management

Washington Emergency Management is the State agency responsible for radiological response planning and coordination of operations. The responsibility of this agency includes the following items:

a. Develop and maintain the Washington State Fixed Nuclear Facility Emergency Response Plan and assist the counties in developing their individual emergency response plans.

b. Arrange training programs for state and local agencies designed to promote effective response to radiological incidents.

c. Provide affected communities with warning confirmation, upon request.

d. Coordinate communications and other available support to affected local governments.

e. Coordinate the support of other state agencies and political subdivisions near the affected area and obtain assistance of federal agencies as required.

Dedicated communications with the State Emergency Operation Center are available. Representatives from Washington Emergency Management will have access to the Emergency Operations Facility (EOF) and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.5.1.2 Department of Health

The Department of Health (DOH) is responsible for administering and directing radiation control program activities within the State. DOH provides local authorities with technical guidance, assistance in establishing monitoring and decontamination programs, and recommending appropriate emergency countermeasures and recovery actions offsite. Responding at an Alert or higher classification, DOH provides representatives to support the emergency response as follows:

a. To the Meteorology and Unified Dose Assessment Center (MUDAC) for joint control of environmental field monitoring teams, assessment of dose projection information, preparation of protective action recommendations for the plume exposure pathway and ingestion zones, and estimation of total dose exposure. Also, DOH provides Radiation Control (Radcon) monitoring teams that perform radiological monitoring, collect samples and provide limited field analysis and monitoring and decontamination support to the counties at emergency worker and assistance centers.

b. Outside of the EOF, DOH normally furnishes a representative to the Joint Information Center (JIC) for the coordination of public information. At the State Emergency Operations Center (EOC), DOH representatives furnish guidance on implementation of protective actions and assist local health officials with the implementation of protective actions. Agency response times to the Richland area are expected to be less than six hours.

3.5.1.3 Washington State Patrol

The Washington State Patrol (WSP) will assist each affected county and provide, upon request from either state or county officials law enforcement functions, communications support, and transportation assistance to other agencies when the WSP's law enforcement commitment is not jeopardized. Energy Northwest has space available in the Emergency Operations Facility for a representative from the WSP to coordinate their activities with Energy Northwest Security Manager as needed.

3.5.1.4 Energy Facility Site Evaluation Council

The Energy Facility Site Evaluation Council (EFSEC) is the lead state organization for siting of power generating facilities in the State of Washington. EFSEC is responsible for assessing compliance with the Site Certification Agreement and administering contracts with state agencies and local governments for emergency preparedness services in support of the Columbia Generating Station Emergency Plan.

The council is periodically apprised of Energy Northwest's emergency preparedness per section V.A.2 of the Columbia Generating Station Site Certification Agreement.

3.5.1.5 Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for the control and protection of agricultural products within the boundaries of Washington State. This is accomplished by implementing agricultural protection measures in coordination with other participating agencies and local jurisdictions. These measures include preparing and issuing agricultural advisories to protect the public; preparing and implementing plans in coordination with affected agencies and jurisdictions to reduce the Food Control Area, release food, dispose of contaminated food and conduct embargoes. They will also provide input, as requested by other agencies, in the areas of soil, water and crop decontamination; claims procedures; reduction of Food Control Area and public information.

3.5.2 State of Oregon

The State of Oregon has the responsibility to protect the health and safety of Oregon residents during a radiological emergency at Columbia Generating Station. The Oregon Office of Energy has prepared a Columbia Generating Station Emergency Response Program for that purpose.

A major emergency at Columbia Generating Station is not expected to have immediate, life-threatening radiological impacts on Oregon. During the emergency phase, Oregon's involvement will be limited to maintaining communications and monitoring the emergency. If the emergency involves ingestion exposure considerations, however, Oregon will be involved in a cooperative effort with Energy Northwest, Washington State, and federal response agencies to assess conditions within the state boundaries, initiate necessary public protective measures, and provide public information (e.g., news releases) as may be required. Upon declaration of a Site Area Emergency, Oregon will begin a limited activation of the Oregon EOC in Salem. They will also send representatives to Energy Northwest EOF, JIC, and the Washington EOC. In addition, they will send one or more field teams to Morrow and Umatilla Counties and will provide field team assistance to Washington State as requested.

The Governor or designee will make protective action decisions for Oregon. During ingestion pathway events, Oregon will coordinate protective actions with other members of the protective action recommendation/decision group at the EOF and the Washington EOC.

Communications with the State Emergency Operations Center in Salem are available. Representatives from Oregon Office of Energy will have access to the EOF and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.6 FEDERAL ORGANIZATIONS

3.6.1 Nuclear Regulatory Commission

Personnel from the Nuclear Regulatory Commission (NRC), including Resident Inspectors, may elect to respond to any emergency. The NRC Resident Inspectors assigned to Energy Northwest facilities will be notified of any emergency condition on-site by pager and/or by phone contact and may proceed to the control room or any other areas. Facilities are available for NRC personnel in the Technical Support Center, Joint Information Center, and the Emergency Operations Facility. Dedicated communications are available between these facilities and the NRC. Additionally, the NRC duty officer in White Flint, Maryland is notified of the emergency by the Emergency Notification System (a dedicated phone circuit provided by NRC) of every emergency condition and will adapt their response to the situation as it evolves. If the dedicated phone circuit fails, the NRC duty officer can be reached by commercial phone lines using the numbers provided in the Emergency Phone Directory.

The role of NRC personnel during incidents at nuclear power plants is to monitor actions by the licensee to ensure that people in the vicinity of the plant are adequately protected and to provide any assistance requested by the licensee or offsite officials. NRC's principal role in the event of a power plant emergency is to ensure that appropriate protective actions are being taken. If it appears that warranted protective actions are not being recommended by the licensee or are not being taken by offsite officials, NRC representatives will contact the licensee or offsite officials and present their concerns.

NRC is the lead federal agency concerned with technical aspects of an accident at one of its licensed facilities (e.g., nuclear power plants). The specific NRC response roles are to:

a. monitor the licensee to ensure that appropriate protective action recommendations are being made off site:

b. support offsite authorities, including confirming the licensee's recommendation to offsite authorities, if requested;

c. support the licensee;

d. keep other federal agencies and entities (e.g., Congress and the White House) informed of the status of the incident;

e. keep the media informed of NRC's knowledge of the status of the incident, including coordination with other public affairs groups; and

f. intervene in a limited fashion to direct the licensee's on-site response in some unusual and very rare situations.

3.6.2 Department of Energy

Assistance from of the Department of Energy can be requested by the Emergency Director. The Department of Energy-Richland Operations office located in Richland, Washington, is capable of providing radiological response, such as field monitoring teams, within two hours. The Department of Energy will provide additional federal field monitoring and dose assessment capability when requested. Coordination with Energy Northwest will be through the Offsite Agency Coordinator or the Radiological Emergency Manager. A representative from the Department of Energy may proceed to the Emergency Operations Facility to coordinate the effort.

The Department of Energy-Richland Operations (RL) has large resources of equipment and manpower available. Technical personnel and laboratory facilities can quickly be made available. RL will provide support for the alerting of personnel, and establishment of a safety zone on the portion of the Columbia River within the Columbia Generating Station Ten-Mile Emergency Planning Zone. Also, RL will coordinate and implement protective actions for portions of the 10-mile Emergency Planning Zone on Hanford outside of the Columbia Generating Station Exclusion Area.

Assistance which can be requested via the Department of Energy includes:

a. Emergency Decontamination Facility staffed by qualified radiological emergency personnel able to treat contaminated patients.

b. Hanford contractor ambulances with qualified EMT support personnel.

c. Hanford contractor Fire Department resources to respond to fires on the Hanford Reservation.

d. Hanford contractors with additional respirators, protective clothing and equipment for personnel decontamination.

e. Hanford contractors that can assist with field monitoring, dose assessment, meteorological data and laboratory analysis.

Eight DOE Regional Coordinating Offices for Radiological Assistance provide radiological assistance on request in any region of the country. The radiological assistance teams are the front lines of Federal assistance under the Federal Radiological Emergency Response Plan (FRERP). RAP teams will generally be requested quite early in an event by the State and/or the NRC. RAP teams typically are composed of four to six people. They are capable of conducting gross gamma, alpha, and beta monitoring. They will require only one half to two hours to prepare for a response. Response time will depend on travel time to the location of the accident. The RAP team will also act as an advance team for coordination of further DOE assistance such as the Federal Radiological Monitoring and Assessment Center (FRMAC) or the Aerial Measuring System (AMS).

When assistance is requested, DOE coordinates the monitoring and assessment efforts of all Federal agencies. The FRMAC is usually established near the site of the accident as part of or in conjunction with the Federal Response Center established by the Federal Emergency Management Agency (refer to Section 3.6.3). The size and complexity of the assistance effort will depend on the incident. DOE can provide the most extensive monitoring and assessment capabilities available in the United States. It will require about 24 hours for a fully operational unit to be established. DOE has delegated the responsibility for establishing this service to the DOE Nevada Operations Office.

The AMS is an airborne radiological detection system that can respond to radiological incidents and perform plume tracking, radiation surveys, and radiation mapping over large areas around the site of an incident. Most of the aerial monitoring assets are located in Las Vegas, Nevada, but there are also some capabilities based at Andrews Air Force Base, near Washington, D.C. The AMS will be integrated into the assistance effort once it is established.

3.6.3 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) coordinates federal responses to nuclear facilities for both radiological and non-radiological emergencies. In the event of a radiological emergency a number of federal agencies can be activated through FEMA to support State and County activities. FEMA would coordinate these activities through provisions of the Federal Radiological Emergency Response Plan (FRERP). For a Site Area or General Emergency, FEMA would normally establish a Federal Response Center (FRC) in the Tri-Cities area. Space would also be made available at the Energy Northwest Emergency Operations Facility (EOF) for representatives of responding federal agencies. If resources are needed from FEMA to support offsite emergency activities, the State has the authority to request offsite assistance. Energy Northwest will coordinate with the FEMA representative concerning field response activities.

3.6.4 U.S. Coast Guard

The U.S. Coast Guard, through the Thirteenth District Commander in Seattle, Washington, and the Captain of the Port in Portland, Oregon, regulates activities on navigable waters. For Site Area or General Emergencies, the Coast Guard may establish a safety zone on the Columbia River and broadcast a river closure notice to mariners.

U.S. Coast Guard assistance is a special case which, by virtue of pre-coordination with Benton and Franklin Counties, is automatically provided or may be made directly. Coast Guard Officers of authority may establish the "Safety Zone" within the 10-Mile Emergency Planning Zone (EPZ) for the Columbia River when notified of a Site Area or General Emergency. This Safety Zone provides authority for DOE and Sheriff's Office patrol craft to control river access within the EPZ. This service is provided for by the plan and procedures maintained by Benton and Franklin Counties, via the Fixed Nuclear Facility Response Plans referenced in Appendix 1.

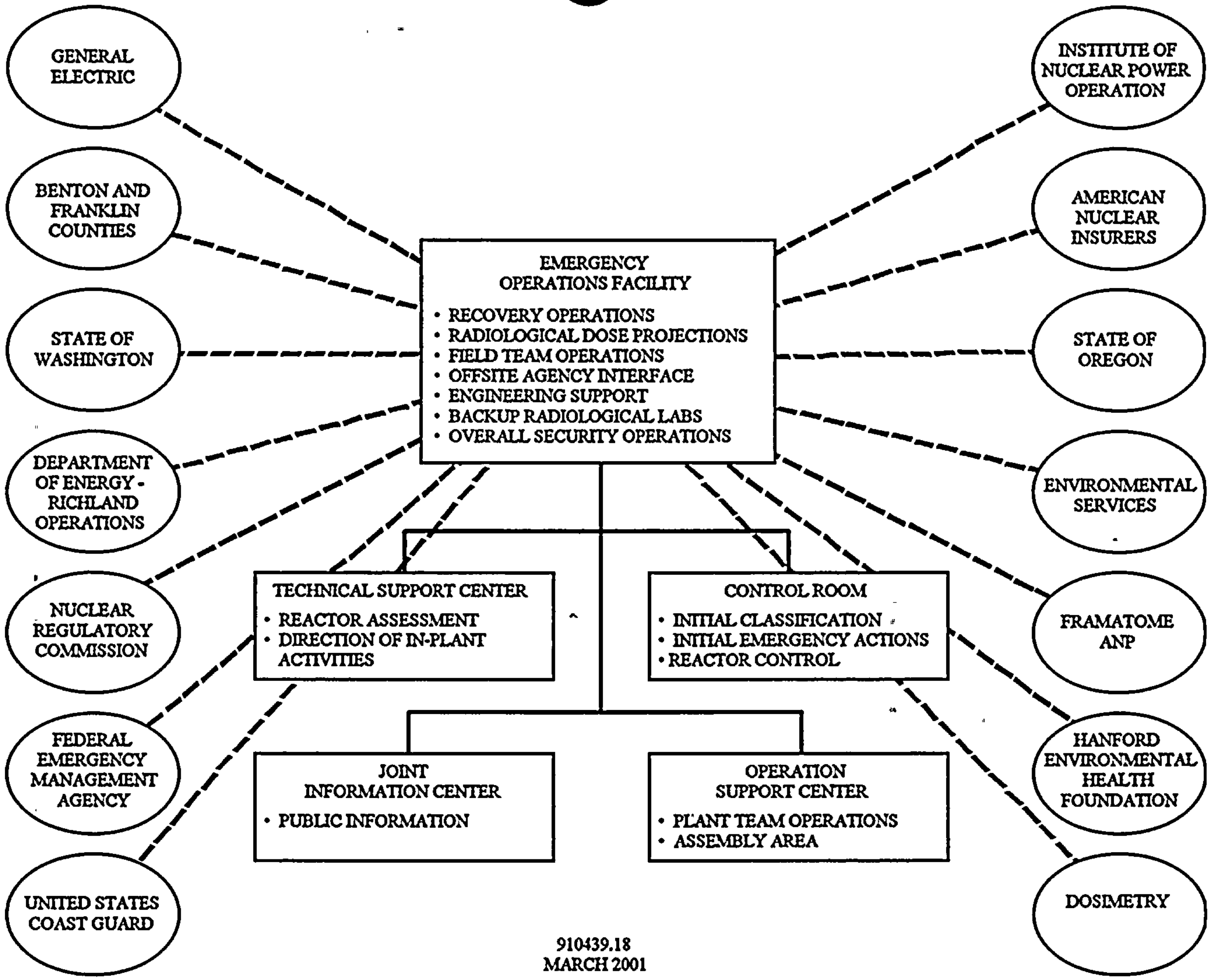

Figure 3-1, Outside Response Agency Resources

SECTION 4
EMERGENCY CLASSIFICATION AND NOTIFICATION

4.1 EMERGENCY CLASSIFICATION

The Emergency Plan provides for four classes of emergency to cover a spectrum of plant events that could lead to a loss of control over radioactive materials which could result in the need to initiate protective measures for the public. These four classes, in order of increasing severity of plant conditions, are Unusual Event, Alert, Site Area Emergency, and General Emergency. The basic regulatory premise for these classifications is found in 10 CFR 50 Part 47, with further guidance in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1, where example initiating conditions are provided for each emergency classification.

The initiating conditions (ICs) form the basis for establishing specific indications, i.e., plant instrument readings or personal observations, which would indicate that a given initiating condition had been met and thus an emergency classification must be declared. These instrument readings and personal observations are known as Emergency Action Levels (EALs).

Classifying an event based on plant abnormal conditions is the responsibility of the Emergency Director. Initiating events or conditions are included in this section, and implemented by Emergency Plan Implementing Procedure EPIP 13.1.1, Classifying the Emergency.

A conservative philosophy for emergency classification is used to declare the highest category for which an EAL has been met. For example, a Site Area Emergency would be declared directly if a Site Area Emergency EAL is met. This would be done without having first declared the Unusual Event or Alert emergency classifications. Also, if two or more EALs have been met, the EAL representing the highest emergency classification would be used to declare the emergency to ensure that appropriate notifications and actions are taken.

The initiating conditions presented in Table 4-1 are all inclusive of EALs and demonstrate how the EPIP 13.1.1 EALs are arranged. Due to the comprehensive nature of the initiating conditions, however, all postulated accidents in the Final Safety Analysis Report (FSAR) for Columbia Generating Station are fully covered and could be classified, when necessary, by using this scheme. Since some FSAR accidents are not representative of a significant plant event and do not pose a challenge to the fission product barriers, not all FSAR accidents would require declaration of an emergency classification.

Events occurring offsite at nearby nuclear facilities or transportation accidents involving hazardous materials, such as chemicals or nuclear fuel, will only be classified under the Columbia Generating Station EALs when conditions onsite are changed by the event to where they meet the criteria in EPIP 13.1.1. Columbia Generating Station actions will be based on the significance of these events. A transportation accident that does not directly impact the Plant site will be categorized as a Transportation Emergency.

4.2 EMERGENCY ACTION LEVEL CRITERIA

The Columbia Generating Station EAL criteria is based on a combination of methods. The combination ranges from primarily event-based EALs for Unusual Events, to primarily symptom-based or barrier-based EALs for General Emergencies. This type of an approach to EAL development ensures that timely recognition and notification occurs, that events occurring during refueling and cold shutdown are appropriately covered, and that multiple events can be effectively classified.

The symptom-based and barrier-based parameters used in the EALs are consistent with the parameters used in the Plant Emergency Operating Procedures, which are derived from accident analysis done by General Electric and the Boiling Water Reactor (BWR) Owner's Group after the Three Mile Island-2 accident. Symptom-based parameter examples are provided in EPIP 13.1.1, and represent conditions of plant system malfunctions or failures. Some of the parameters are linked to an electronic system which displays an alarm on the Computerized Graphic Display System (GDS) in the Control Room whenever certain abnormal conditions are met.

Situation-based parameters used in the EALs define other abnormal conditions which cannot be easily computerized or quantitatively defined and for which classification may require some judgement. In these cases, personnel are instructed to make decisions based on conservative principles and the definitions and purposes for event classification. Further guidance and justification for the Columbia Generating Station EALs is provided in a technical bases document, EPIP 13.1.1.A, Classifying the Emergency Technical Bases.

4.3 OFFSITE AGENCY REVIEW OF EMERGENCY ACTION LEVELS

EPIP 13.1.1 is the document provided to the NRC, the states, the US Department of Energy, Richland Operations, and the local government agencies to use for review and comment on emergency classification criteria.

A major revision of EPIP 13.1.1 EALs were discussed and agreed upon with state and local governments, and approved by the NRC on December 9, 1994. On at least an annual basis, the most recent revision to EPIP 13.1.1 is reviewed with state and local government representatives.

4.4 CLASSIFICATION DEFINITIONS AND PURPOSES

The conditions for event classification presented here are not intended to cover all situations. Other events and combinations of situations can warrant conservative action and emergency classifications. Classifications shall be made utilizing conservative principles and in situations not covered by examples. The Emergency Director shall declare an appropriate emergency classification where, in his judgement, plant status warrants such a declaration.

4.4.1 Unusual Event

a. Definition

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Purpose

To bring the plant operating staff to a heightened state of readiness, provide for a more systematic handling of information and decision making, and to ensure that notification is made to the emergency response organization, including all offsite emergency authorities.

c. Rationale

The rationale for the Unusual Event classification is to provide early notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. Emergency response organizations are typically not activated for an Unusual Event declaration.

d. Actions:

(1) Promptly inform states and/or local offsite authorities of the nature of the unusual condition as soon as discovered.

(2) Augment on shift resources as needed.

(3) Assess and respond.

(4) Escalate to a higher classification, if appropriate, or

(5) Close out with verbal summary to offsite authorities, followed by written summary within 24 hours.

4.4.2 Alert

a. Definition

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

b. Purpose

To provide additional help in responding to the situation and provide systematic handling of information and decision making. Declaring an Alert will provide additional manpower in the Technical Support Center to help the normal operating crew in those duties not directly related to plant control, such as offsite dose assessment, technical problem evaluation, and communications with outside organizations. It will also activate the Operations Support Center, which will provide additional manpower to respond to plant conditions, and the Emergency Operations Facility and Joint Information Center to improve offsite communications and the ability to relay information to the news media and the public.

c. Rationale

The rationale for the Alert classification is to provide prompt notification of minor events of more significance than the Unusual Event category and to ensure fuller response preparations are performed. The Columbia Generating Station emergency response organization is activated for an Alert declaration.

d. Actions:

(1) Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered.

(2) Augment resources and activate on-site Technical Support Center, on-site Operations Support Center near site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site monitoring teams and associated communications.

(5) Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

(6) Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases, from the appropriate emergency center.

(7) Escalate to a more severe class, if appropriate.

(8) Close out or recommend reduction in emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction.

4.4.3 Site Area Emergency

a. Definition

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

b. Purpose

To assure that all emergency response centers are activated, field monitoring teams dispatched, evacuation coordinators readied, predetermined protective actions issued for the public, and to keep the public informed.

c. Rationale

The rationale for the Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring but where a fuel failure situation is not indicated based on current information. In this situation full mobilization of emergency personnel, and the assembly, accountability and evacuation of non-essential personnel in the near site environs is indicated, as well as associated offsite communications, and the dispatch of radiation monitoring personnel.

d. Actions:

(1) Promptly inform State and/or local offsite authorities of site area emergency status and reason for emergency as soon as discovered.

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provided meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Escalate to general emergency class, if appropriate

or

(10) Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.4 General Emergency

a. Definition

Events are in progress or have occurred which involve actual or imminent substantial fuel degradation or failure with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite at distances more than the immediate site area.

b. Purpose

To initiate predetermined actions for the public, provide for continuous offsite assessment, initiate additional measures, as indicated by radiological releases or plant conditions, and to provide for consultation and flow of information to and from the various offsite authorities.

c. Rationale

The rationale for the General Emergency classification reflects conditions where actual or imminent substantial fuel degradation or failure with the potential for loss of containment are occurring. In this situation, evacuation becomes the preferred immediate action.

d. Actions:

(1) Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local).

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF), and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Close out or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.5 One-Hour Reportability

Events are evaluated against the criteria of 10CFR50.72(b)(1). PPM 1.10.1, Notifications and Reportable Events, implements this criteria. NUREG 1022 contains clarifying NRC guidance.

4.5 STATE AND COUNTY CLASSIFICATION SYSTEM

The States of Washington and Oregon have adopted a fixed nuclear facility emergency classification scheme with classification levels. Each State maintains individual emergency response plans with these classification levels and specific guidelines for responding to emergencies at Columbia Generating Station.

The Columbia Generating Station 10-Mile Emergency Planning Zone lies within two counties. These counties, Benton and Franklin, have agreed to use the emergency classification scheme used by Columbia Generating Station and the States.

As part of the annual EAL review process, Energy Northwest ensures that both the counties' emergency response plans and the State emergency response plan continue to use a classification scheme consistent with the Columbia Generating Station scheme.

4.6 NOTIFICATION METHODS AND PROCEDURES

The Energy Northwest notification process for activating the emergency organizations includes notification of emergency response personnel and assistance organizations, who are notified when an emergency is declared. Initial communication links between the Energy Northwest Emergency Director and the duty officers of Benton and Franklin Counties, and the State of Washington are available on a 24 hour per day basis. The extent of notification will depend upon the emergency classification. A means for verifying the authenticity of all initial offsite notifications is established.

Communication links are established among the various on-site and offsite emergency centers. Descriptions of the emergency response positions at each center include responsibilities for communications with specific positions or other emergency response facilities. Those communication responsibilities are further specified in the EPIPs.

4.6.1 Energy Northwest Emergency Organization Notification

The in-plant paging system, high noise area paging devices, a radio paging system, and an Automated Notification System will be used to notify Energy Northwest ERO personnel. Instructions will be provided if protective measures are required.

Activation of response teams during normal working hours will be via the telephone system, the inplant public address system, or the paging system. Activation during hours other than normal working hours will be accomplished by the paging system, public address and automatic notification system. The automatic notification system will be initiated by the Security Communication Center Duty Officer. The Duty Officer will be directed to make the notifications by the Emergency Director. The Duty Officer is able to manually activate the radio paging system, and this system will serve as a backup notification method.

On-duty Energy Northwest personnel will notify Washington Emergency Management, Benton County Emergency Management, Franklin County Emergency Management, and the Department of Energy.

The extent of the notification will depend upon the emergency classification. However, the Emergency Director may call anyone deemed necessary to support the emergency effort. Table 4-2 outlines the response organizations that will be notified by Energy Northwest for each emergency class. The above scheme is established in procedures.

4.6.2 Nearby Facilities Notification

Initial emergency notification to nearby facilities will be made. Instructions will be provided if protective measures are required.

The Department of Energy is responsible for notifying facilities on the Hanford Reservation during an Energy Northwest emergency; however, Energy Northwest will notify the Fast Flux Test Facility (FFTF) control room when an Exclusion Area evacuation is implemented. DOE notifies Energy Northwest in the event of a sodium oxide release from FFTF.

4.6.3 Support Organizations Notification

Initial notification to Benton County Emergency Management, Franklin County Emergency Management, Department of Energy, and Washington Emergency Management will be made from the Control Room, the Technical Support Center or the Emergency Operations Facility. The Nuclear Regulatory Commission Emergency Response Center will be notified. The Nuclear Regulatory Commission offices will patch the call through to the Nuclear Regulatory Commission offices in Region IV, Arlington, Texas. A means for verifying the authenticity of the notification is established.

4.6.4 General Public Notification

Emergency notification to both transients and residents is the responsibility of the County Emergency Chairman. Notification will be based on information received from Energy Northwest and, if time permits, consultation with the staffs of the Benton County Emergency Operations Center, Franklin County Emergency Operations Center, and Washington State Emergency Operations Center.

Transient and resident populations are advised in public information material to monitor the Emergency Alerting System (EAS) for emergency announcements and protective action instructions. The initial instructions will consist of prescribed emergency messages consistent with the Emergency Classification and will contain information such as:

a. Identification of agency/organization issuing information.

b. A statement that a facility has had an accident.

c. Identification of the communities or geographical areas affected by the emergency.

d. A brief description of the type of emergency and the nature of the hazard.

e. Specific protective measures such as sheltering or evacuation to be taken by residents of the affected areas.

f. A statement that further information will be given over the Emergency Alerting System (EAS).

Copies of the text of prerecorded EAS messages and the messages to be read over the siren system are provided in the Benton and Franklin Counties Emergency Response Plans.

Initial and follow-up notifications of an emergency at the plant are made to the County Emergency Dispatch Center, to the Department of Energy-Richland Operations, and to the State of Washington from the control room, the TSC or the EOF. Washington State is responsible for notifying Oregon DOE. The Benton County Emergency Operations Center is responsible for notifying the public in Benton County. The Franklin County Emergency Operations Center is responsible for notifying the public in Franklin County. Benton County is responsible for making Protective Action Decisions (PADs) in Benton County during the Plume phase of an emergency. Franklin County is responsible for making PADs in Franklin County during the Plume phase of an emergency. They will notify the public within fifteen minutes after a Protective Action Decision is made. The State of Washington is responsible for making PADs during the ingestion phase of an emergency. The Department of Energy has the responsibility to alert and provide information to its employees and contractors on the Hanford Reservation. The Joint Information Center will coordinate public news releases with responding agencies.

The Early Warning System is designed to alert and provide information to the population in the Ten-Mile Emergency Planning Zone.

Tone activated radios provide the primary means of notification. These radios are activated by the Emergency Alerting System signal and provide instructions for protective actions. Transient population along the Columbia River is notified by sirens within the 10-mile EPZ, a Coast Guard marine band broadcast and, if necessary, by Sheriffs Department. Transient population along the Yakima River and in the Horn Rapids area within the 10-mile EPZ are notified by sirens. In addition, Washington State Department of Fish and Wildlife may inform members of the public of protective response actions required.

4.6.5 Initial Messages to Offsite Response Organizations

Initial messages to response organizations will contain such information as:

a. Type of notification
b. Facility experiencing emergency
c. Time of incident
d. Emergency classification
e. Protective action recommendation

4.6.6 Follow-up Messages

Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as:

a. Name and telephone number of caller
b. Location of incident
c. Date/Time of incident
d. Classification of Emergency
e. Type of actual or projected release and estimated duration/impact times
f. Estimate of quantity of radioactive material released or being released, and the points of release
g. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
h. Meteorological conditions
i. Actual or projected dose rates at site boundary; projected integrated dose at site boundary
j. Projected dose rates and integrated dose at the projected peak and at 2 and 10 miles, including sector(s) affected
k. Estimate of any surface radioactive contamination; in-plant, onsite or offsite
l. Emergency response actions underway
m. Recommended emergency actions, including protective action recommendations
n. Request for offsite organization support needed onsite
o. Prognosis for worsening or termination of event based on plant information

TAB

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.1 Coolant Activity	Fuel Clad Degradation 1.1.U.1 1 | 2 | 3 | 4 | | RCS sample activity GT Technical Specification 3.4.8 for GT LCO Action Statement time.	Loss OR potential loss of fuel clad 1.1.A.1 1 | 2 | 3 | | | Coolant activity GT 300 μCi/gm dose equivalent iodine.	Loss or potential loss of any two fission product barriers 1.1.S.1 1 | 2 | 3 | | | Coolant activity GT 300 μCi/gm dose equivalent iodine AND ANY of the following: • <u>Any</u> RCS Loss Indicators, Table 1 • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • <u>Any</u> PC Loss Indicators, Table 2 • Cannot maintain plant parameters within SRVTPLL, or PSP	A loss of any two fission product barriers and loss or potential loss of the third 1.1.G.1 1 | 2 | 3 | | | Coolant activity GT 300 μCi/gm dose equivalent iodine AND Drywell pressure response not consistent with LOCA conditions 1.1.G.2 1 | 2 | 3 | | | Coolant activity GT 300 μCi/gm dose equivalent iodine AND Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2, upscale high AND <u>Any</u> PC Loss Indicators, Table 2 1.1.G.3 1 | 2 | 3 | | | Coolant activity GT 300 μCi/gm dose equivalent iodine AND <u>Any</u> RCS Loss Indicators, Table 1 AND either of the following: <u>Any</u> PC Loss Indicators, Table 2 OR Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP

TAB

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.2 Radiation Monitors	Fuel Clad Degradation 1.2.U.1 1 2 3 SJAE CONDSR OUTLET RAD HI-HI alarm (P602)	Loss OR potential loss of RCS 1.2.A.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Loss or potential loss of any two fission product barriers 1.2.S.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr	A loss of any two fission product barriers and loss or potential loss of the third 1.2.G.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr 1.2.G.2 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr AND ANY of following: • Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP. • Drywell pressure response not consistent with LOCA conditions. • Any PC Loss Indicators, Table 2

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.3 Refueling Incidents	Unexpected decrease in water covering irradiated fuel assemblies 1.3.U.1 1 | 2 | 3 | 4 | 5 | def Uncontrolled water level decrease in the reactor cavity or SFP below the level of the weirs with all irradiated fuel assemblies remaining covered by water	Major damage to irradiated fuel OR loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the RPV 1.3.A.1 1 | 2 | 3 | 4 | 5 | def HIGH alarm on ARM-RIS-1 (Fuel Pool ARM) resulting from an uncontrolled irradiated fuel handling process		
		Loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel 1.3.A.2 1 | 2 | 3 | 4 | 5 | def Water level, when not intentionally lowered, observed to be below the top of the gate sill separating the reactor cavity and the SFP 1.3.A.3 1 | 2 | 3 | 4 | 5 | def Report of visual observation of irradiated fuel uncovered or uncovering imminent.		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.1 RPV Water Level	RCS Leakage 2.1.U.1 1 2 3 Valid unidentified leakage GE 10 gpm or upscale high indicated on recorder EDR-FRS-623, Pen 1 (P632) (Non RCC) OR Valid identified leakage GE 25 gpm indicated on recorder EDR-FRS-623, Pen 2 (P632)	Loss OR potential loss of RCS 2.1.A.1 1 2 3 Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Loss or potential loss of any two fission product barriers 2.1.S.1 1 2 3 4 5 RPV level LT -161 inches (for ATWS conditions, RPV level LT -192") or cannot be determined	A loss of any two fission product barriers and loss of potential loss of the third 2.1.G.1 1 2 3 Entry into Severe Accident Guidelines 2.1.G.2 1 2 3 RPV level LT -161 inches, (for ATWS conditions, RPV level LT -192") or cannot be determined AND ANY of following: • Rapid unexplained decrease of PC pressure following an initial increase. • Drywell pressure response not consistent with LOCA conditions • Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists

TAB
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.2 Reactivity Control	Inadvertent Criticality 2.2.U.1 2 3 4 5 An extended and unplanned sustained positive period observed on NIs, while NOT performing a reactor startup.	Failure of Reactor Protection System (RPS) instrumentation to complete or initiate a reactor scram AND manual scram was successful. 2.2.A.1 1 2 <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Manual Actions (mode switch in shutdown, manual push buttons and ARI) result in reactor power LE 5%.	Failure of RPS instrumentation to complete or initiate an automatic reactor scram once a RPS setpoint has been exceeded AND manual scram was NOT successful 2.2.S.1 1 2 <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND either: Reactor power GT 5% or unknown OR Wetwell temperature GT 110°F	Failure of the RPS to complete an automatic scram AND manual scram was NOT successful AND there is indication of an extreme challenge to the ability to cool the core. 2.2.G.1 1 2 <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Wetwell temperature cannot be maintained LT the HCTL

TAB

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.1 Primary Containment Pressure	Loss or potential loss of primary containment 3.1.U.1 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase	Loss or potential loss of either fuel clad or RCS 3.1.A.1 1 2 3 Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	Loss or potential loss of any two fission product barriers 3.1.S.1 1 2 3 Drywell pressure response not consistent with LOCA conditions 3.1.S.2 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	A loss of any two fission product barriers and loss or potential loss of the third 3.1.G.1 1 2 3 PC pressure exceeds PCPL
3.2 Wetwell Temperature/ Level	Loss or potential loss of primary containment 3.2.U.1 1 2 3 Cannot maintain plant parameters within SRVTPLL		Loss or potential loss of any two fission product barriers 3.2.S.1 1 2 3 RPV pressure and wetwell temperature cannot be maintained below HCTL	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.2 Wetwell Temperature/Pressure			Loss or potential loss of any two fission product barriers 3.2.S.2 1 | 2 | 3 | | | Cannot maintain plant parameters within SRVTPLL or PSP AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.3 Combustible Gas Concentration				A loss of any two fission product barriers and loss or potential loss of the third 3.3.G.1 1 2 3 PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
3.4 Containment Isolation Status	Loss or potential loss of primary containment 3.4.U.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists	Main steam line break outside containment with isolation 3.4.A.1 1 2 3 Indications of a MSL break AND MSIV closure <u>has isolated</u> the break	Loss or potential loss of any two fission product barriers 3.4.S.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists. AND ANY of following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell 3.4.S.2 1 2 3 Indications of a MSL break AND MSIV closure <u>has not isolated</u> the break	A loss of any two fission product barriers and loss or potential loss of the third 3.4.G.1 1 2 3 Intentional venting of Primary Containment to prevent failure.

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4 Secondary Containment 4.1 Reactor Building Temperature/ Radiation Levels			Loss or potential loss of any two fission product barriers 4.1.S.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures).	A loss of any two fission product barriers and loss of potential loss of the third 4.1.G.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures). AND ANY of the following: • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr • RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches) or cannot be determined • Coolant activity GT 300 μCi/gm dose equivalent iodine

TAB
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.1 Offsite Release	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times ODCM limits for 60 minutes or longer 5.1.U.1 1 | 2 | 3 | 4 | 5 | def	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological specifications for 15 minutes or longer 5.1.A.1 1 | 2 | 3 | 4 | 5 | def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release 5.1.S.1 1 | 2 | 3 | 4 | 5 | def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the release using actual meteorology 5.1.G.1 1 | 2 | 3 | 4 | 5 | def
	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "UE" for GT 60 minutes 5.1.U.2 1 | 2 | 3 | 4 | 5 | def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Alert" for GT 15 minutes 5.1.A.2 1 | 2 | 3 | 4 | 5 | def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Site Area" for GT 15 minutes 5.1.S.2 1 | 2 | 3 | 4 | 5 | def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "General" for GT 15 minutes 5.1.G.2 1 | 2 | 3 | 4 | 5 | def
	Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" OR Sample analysis indicates release GT 2 times ODCM 6.2.1.1 limits for GT 60 minutes	Offsite dose calculations indicate dose rates GT Table 4 column "Alert" OR Sample analysis indicates release GT 200 times ODCM 6.2.1.1 limits for GT 15 minutes	Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area"	Offsite dose calculations indicate doses or dose rates GT Table 4 column "General" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "General".

TAB[illegible]
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.2 Area Radiation	Unexpected increase in plant radiation levels 5.2.U.1 1 2 3 4 5 def Valid reading GT 5E3 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-20 thru ARM-RIS-30 • ARM-RIS-32 thru ARM-RIS-34 (High Range)	Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown 5.2.A.1 1 2 3 4 5 def Valid reading GT 15 mR/hr on ARM-RIS-19 (CR) OR Valid reading GT 1E4 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-23 • ARM-RIS-24 • ARM-RIS-32 thru ARM-RIS-34 (High Range)		

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
6 Electrical Failures 6.1 AC Power Loss	Loss of all offsite power to critical AC busses for greater than 15 minutes 6.1.U.1 1 2 3 4 5 def Power is unavailable to SM-7 and SM-8 from offsite AC sources GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.A.1 4 5 def Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes Power capability to critical AC busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout. 6.1.A.2 1 2 3 Available emergency bus AC power has been reduced to only one of the following sources for GT 15 min • TR-N1 (SM-7 and/or SM-8) • TR-S (SM-7 and/or SM-8) • TR-B (SM-7 and/or SM-8) • DG-1 (SM-7) • DG-2 (SM-8)	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.S.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Prolonged loss of all offsite power and prolonged loss of all onsite power to critical AC busses 6.1.G.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 AND either of the following: In the judgement of the Emergency Director, AC power to either SM-7 or SM-8 is not likely to be restored within 4 hours OR RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
6.2 DC Power Loss	Degradation of all critical DC power for greater than 15 minutes. 6.2.U.1 4 5 def Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicated by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes		Degradation of all critical DC power for greater than 15 minutes 6.2.S.1 1 2 3 Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicted by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes	

TABLE 1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.1 System Failures	Inability to reach required shutdown within technical specification limits 7.1.U.1 [1 | 2 | 3 | | |] Plant is not brought to required operating mode within T.S. LCO action statement time 7.1.U.2 [1 | 2 | 3 | 4 | 5 | def] Uncontrolled flooding in a safe shutdown building, Table 5, that has the potential to affect safety related equipment needed for the current operating mode	Inability to maintain plant in cold shutdown 7.1.A.1 [| | | 4 | 5 |] Inability to restore and maintain reactor coolant temp LT 200°F 7.1.A.2 [1 | 2 | 3 | 4 | 5 | def] Report by plant personnel confirming the occurrence of plant uncontrolled internal flooding in a safe shutdown building, Table 5 AND Affected safe shutdown system parameters indicate degraded performance		
7.2 Control Room Evacuation		Control room evacuation has been initiated 7.2.A.1 [1 | 2 | 3 | 4 | 5 |] The decision to evacuate the Control Room has been made.	Control room evacuation has been initiated, but plant control CANNOT be established 7.2.S.1 [1 | 2 | 3 | 4 | 5 |] CR evacuation initiated AND Control of plant equipment needed to maintain adequate core cooling cannot be established at either the Remote Shutdown Panel or Alternate Remote Shutdown panel within 15 minutes of the SRO in charge of the CR physically leaving the CR	

TABLE 1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Unplanned loss of most or all safety system annunciators or indication in the control room for greater than 15 minutes 7.3.U.1 1 | 2 | 3 Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd. C associated with safety related equipment GT 15 minutes	Unplanned loss of most or all safety system annunciators or indications in the control room with EITHER: 1) a significant transient in progress; OR 2) Compensatory non-alarming indicators are unavailable 7.3.A.1 1 | 2 | 3 Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd C associated with safety related equipment GT 15 minutes AND either of the following: A significant plant transient is in progress OR Compensatory non-alarming indications are <u>not</u> available (plant computer system and GDS)	Inability to monitor a significant transient in progress. 7.3.S.1 1 | 2 | 3 Loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603 and Bd. C associated with safety related equipment AND Compensatory nonalarming indications are unavailable (process computer system and GDS) AND Significant transient in progress AND Loss of indications needed to monitor ANY of the following plant critical safety parameters: • Reactor power • RPV level • RPV pressure • Drywell pressure • Drywell temperature • Wetwell pressure • Wetwell/Drywell H2/O2 Concentrations • Wetwell level • Wetwell temperature • Radioactive Gaseous Effluents	
	Significant loss of onsite OR offsite communications capabilities 7.3.U.2 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following onsite communications capability: • Plant Public Address (PA) System • Plant Telephone System • Plant Radio System Operations and Security Channels			

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Significant loss of onsite or offsite communications capabilities 7.3.U.3 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following offsite communications capability: • State/County Notification (CRASH) System • Offsite calling capability from the Control Room via direct telephone and fax lines • Long distance calling capability on the Plant ("2000") Switch and Kootenai (Plant Support Facility)/Deschutes (Plant Engineering Center) ("8000") Switch			

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.1 Security Threats	Confirmed security event which indicates a potential degradation in the level of safety of the plant 8.1.U.1 1 | 2 | 3 | 4 | 5 | def Bomb device discovered within plant protected area but outside a Safe Shutdown Building, Table 5 OR Confirmed report of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes	Security event in a Plant Protected Area 8.1.A.1 1 | 2 | 3 | 4 | 5 | def Confirmed report of an intrusion by a hostile force into the Plant Protected Area	Security event in a Plant Vital Area 8.1.S.1 1 | 2 | 3 | 4 | 5 | def Bomb device discovered or detonated within a Safe Shutdown Building, Table 5 OR Confirmed report of intrusion by a hostile force into a Safe Shutdown Building, Table 5	Security event resulting in loss of ability to reach and maintain cold shutdown 8.1.G.1 1 | 2 | 3 | 4 | 5 | def Loss of physical control of the CR due to security event OR Loss of physical control of the remote shutdown capability due to security event
8.2 Fire/Explosion Caused by Equipment Failure	Fire within the Protected Area Boundary not extinguished within 15 minutes of detection OR an explosion within Protected Area Boundary 8.2.U.1 1 | 2 | 3 | 4 | 5 | def Fire within or adjacent to any Safe Shutdown Building, Table 5, which is not extinguished within 15 minutes of either CR notification by plant personnel or receipt of an alarm OR Report by plant personnel of an unplanned explosion within the Protected Area boundary resulting in visible damage to permanent structures or equipment	Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown 8.2.A.1 1 | 2 | 3 | 4 | 5 | def Confirmed fire or explosion in a safe shutdown building, Table 5 AND either of the following: Affected safe shutdown system parameters indicate degraded performance OR Report by plant personnel of visible damage to the affected safe shutdown building or equipment contained within the affected safe shutdown building		

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.3 Man-Made Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.3.U.1 1 | 2 | 3 | 4 | 5 | def	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.3.A.1 1 | 2 | 3 | 4 | 5 | def		
	Vehicle crash into or projectile which impacts a Safe Shutdown Building, Table 5 8.3.U.2 1 | 2 | 3	Vehicle crash or projectile impact which impedes access to or damages equipment in a Safe Shutdown Building, Table 5 8.3.A.2 1 | 2 | 3		
	Turbine failure resulting in casing penetration or damage to turbine or generator seals	Missiles generated from a turbine failure have resulted in visible structural damage to or penetration of a safe shutdown building, Table 5		
	Release of toxic or flammable gases affecting the Protected Area Boundary deemed detrimental to safe operation of the plant. 8.3.U.3 1 | 2 | 3 | 4 | 5 | def	Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. 8.3.A.3 1 | 2 | 3 | 4 | 5 | def		
	Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for evacuation or shelter of site personnel based on offsite event	Report or detection of toxic or flammable gases within a safe shutdown building, Table 5, in concentrations that will be life threatening to plant personnel or impede access to equipment needed for safe plant operation.		

TABL[illegible]
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.1 1 | 2 | 3 | 4 | 5 | def MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake 8.4.U.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 80 mph OR CR measured winds GT 66 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary 8.4.U.3 1 | 2 | 3 | 4 | 5 | def Range fires near the plant which threaten to reduce the level of safety	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.1 1 | 2 | 3 | 4 | 5 | def OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake 8.4.A.2 1 | 2 | 3 | 4 | 5 | def Weather Service projected winds GT 100 mph OR CR measured winds GT 76 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5 8.4.A.3 1 | 2 | 3 | 4 | 5 | def Ash fallout from volcanic activity is severe enough to warrant plant shutdown		

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.4 1 | 2 | 3 | 4 | 5 | def Visible ash fallout from volcanic activity 8.4.U.5 1 | 2 | 3 | 4 | 5 | def River level increase which threatens to flood the river pumphouse	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.4 1 | 2 | 3 | 4 | 5 | def Report by plant personnel of an event causing visible structural damage to a safe shutdown building, Table 5		

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Other 9.1 Other	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Unusual Event. 9.1.U.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, events are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Alert. 9.1.A.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, events are in progress or have occurred which indicate actual or potential substantial degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a Site Area Emergency 9.1.S.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a General Emergency 9.1.G.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, other conditions exist which indicate either of the following: Actual or imminent substantial core degradation or melting with the potential for loss of containment integrity OR Potential for uncontrolled radionuclide releases which can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary
	Loss OR potential loss of Primary Containment 9.1.U.2 1 | 2 | 3 | | | Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment as indicted by Fission Product Barrier Degradation Table, Table 6	Loss OR potential loss of fuel clad or RCS 9.1.A.2 1 | 2 | 3 | | | Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier as indicted by Fission Product Barrier Degradation Table, Table 6	Loss or potential loss of any two fission product barriers 9.1.S.2 1 | 2 | 3 | | | Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of any two fission product barriers as indicted by Fission Product Barrier Degradation Table, Table 6	A loss of any two fission product barriers and loss or potential loss of the third 9.1.G.2 1 | 2 | 3 | | | Any event, in the judgement of the Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third as indicated by Fission Product Barrier Degradation Table, Table 6

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

Table 1 RCS Barrier Loss Indicators
• Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr
• RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
• Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell

Table 2 PC Barrier Loss Indicators
• Rapid unexplained decrease of PC pressure following an initial increase
• Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND
downstream pathway outside primary containment

TABLE 3

Table 3 Effluent Monitor Classification Thresholds				
Monitor	UE	Alert	Site Area	General
NOTE: If a dose projection cannot be performed, and the monitor reading is sustained for longer than the specified time then the declaration must be made based on the valid reading.				
	60 minutes	15 minutes	15 minutes	15 minutes
PRM-RE-1B Reactor Bldg. Exhaust Inter.	1.35E4 cps	N/A	N/A	N/A
PRM-RE-1C Reactor Bldg. Exhaust Hi	N/A	1.14E3 cps	9.65E3 cps	9.35E4 cps
TEA-RIS-13 Turbine Bldg. Exhaust. Low	1.7E4 cpm	4.4E4 cpm	4.4E5 cpm	N/A
TEA-RIS-13A Turbine Bldg. Exhaust, Int.	N/A	N/A	N/A	11 PMU
WEA-RIS-14 Rad Waste Bldg. Exhaust	1.2E5 cpm	1.7E5 cpm	1.7E6 cpm	N/A
WEA-RIS-14A Rad Waste Bldg. Int.	N/A	N/A	N/A	29 PMU
TSW-RIS-5 TSW Effluent	3.9E3 cpm	3.9E5 cpm	N/A	N/A
FDR-RIS-606 Rad. Waste Effluent	2 x Hi-Hi alarm	200 x Hi-Hi alarm	N/A	N/A
SW-RIS-604 SW 'A' Process	2.0E2 cps	2.0E4 cps	N/A	N/A
SW-RIS-605 SW 'B' Process	2.0E2 cps	2.0E4 cps	N/A	N/A

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

TABLES 4 & 5

cps = counts per second cpm = counts per minute PMU = panel meter units N/A = not applicable (outside of meter range)

Table 4 Offsite Dose Calculation/Field Survey Sample Analysis Classification Thresholds at 1.2 miles

	UE	Alert	Site Area	General
TEDE	N/A	N/A	100 mrem	1000 mrem
CDE Thyroid	N/A	N/A	500 mrem	5000 mrem
TEDE rate	0.1 mrem/hr	10 mrem/hr	100 mrem/hr (projected GT 60 min)	1000 mrem/hr (projected GT 60 min)
CDE Thyroid rate	0.3 mrem/hr	50 mrem/hr	500 mrem (for GT 1 hr inhalation)	5000 mrem (for GT 1 hr inhalation)

Table 5 Safe Shutdown Buildings
• Vital portions of the RadWaste/Control Building • Reactor Building • Vital portions of the Turbine Building • Standby Service Water Pump Houses • Diesel Generator Building • Diesel Generator Fuel Oil Storage Area

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

TABLE 4-2
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Energy Northwest:				
Technical Support Center	N,R	A	A	A
Operations Support Center	N,R	A	A	A
Security Communications Center	A	A	A	A
Emergency Operations Facility	N,R	A	A	A
Joint Information Center (Energy Northwest Richland Office Complex)	N,R	A	A	A
County:				
Benton Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
Benton and Franklin County Sheriffs[1]	N,R	A	A	A
County:				
Franklin Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
State:				
Washington State Emergency Management	N	A	A	A
Oregon State[2] Department of Energy	N	N	A	A

A = Activate N = Notify for information only R = Respond if requested

[1] Notified by Benton County or Franklin County, as appropriate, Emergency Dispatch
[2] Notified by Washington State

TABLE 4-2 (Cont'd.)
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Federal:				
Nuclear Regulatory Commission	N	N	A	A
U.S. Coast Guard		R	N,A	A
Federal Emergency Management Agency	N	N,R	A	A
Department of Energy Richland (will notify and activate DOE contractors)	N	N,R	A	A
Support Services:				
Siemens Corporation	R	R	N,R	N,R
General Electric	R	R	N,R	N,R
Institute of Nuclear Power Operations		N	N,R	N,R
American Nuclear Insurers		N	N,R	A
Northwest Health Services	R	R	N,R	N,R
Hospitals	R	R	R	R
BPA Substation	N	N	N	N

A = Activate N = Notify for information only R = Respond if requested

SECTION 5
ACCIDENT ASSESSMENT AND PROTECTIVE RESPONSE

5.1 ASSESSMENT ACTIONS, PLANT INSTRUMENTATION, AND RADIOLOGICAL MONITORING

Effective coordination and direction of all elements of the emergency response organization requires that accident assessment be continued throughout the emergency. Using plant instrumentation and radiological monitoring, each emergency class invokes similar assessment methods. The magnitude of the assessment actions posed by each classification varies. An important focus of assessment actions is to track the ability of plant systems to contain the core inventory of radioactive material (i.e., radionuclides) and to monitor whether the potential exists for accidental release of this material into the environment. Assessment actions also include determining the consequences of a radioactive material release on both a projected and actual basis.

For the Unusual Event classification level, assessment actions will generally involve situations that do not pose a threat to containment of the reactor core's radioactive material. Usually, declaration of an emergency classification will result from alarms, instrument readings, severe weather warnings, operating experience, or any combination thereof. Continuing assessment for an Unusual Event category of emergency will consist of the normal monitoring of Control Room and plant instrumentation and status. Tornado and severe weather assessment actions consist of keeping in contact with the load dispatcher and appropriate public authorities. If a fire prompted the declaration of an Unusual Event, the Fire Brigade Leader will go to the fire location, make continuing assessments, and report to the Shift Manager on whether offsite fire fighting support is required.

Once an incident has been classified as an Alert, assessment actions will include:

a. Increased surveillance of in-plant instrumentation.

b. If possible, the dispatching of shift personnel to the identified problem area to confirm and visually assess the problem.

c. The dispatching of personnel to monitor for possible releases, and to confirm the correct classification.

d. If a radiological incident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected offsite doses will occur. Dose assessment activity will continue until termination of the emergency so that assessment updates may be provided to all concerned offsite agencies and to the Emergency Director. Emergency Plan Implementing Procedures are provided to allow a rapid, consistent projection of offsite doses.

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Assessment actions for the Site Area Emergency and General Emergency category are similar to the actions for an Alert. However, due to the increased magnitude of the possible release, assessment activity of greater scope will occur. The personnel necessary for this assessment effort will be provided by full mobilization of the onsite and offsite emergency response organizations. The assessment actions at these levels will include:

a. An increased amount of plant instrumentation will be monitored. (In particular, indications of core status, e.g., saturation temperature, core covery/uncovery indications etc.)

b. Radiation monitoring efforts will be greatly increased. Field Monitoring Teams will be available for dispatch. Beta-gamma field measurements will be performed; air sampling, environmental thermoluminescent dosimeter (TLD) change out, and collection of environmental media for assessment of material transport and deposition will be performed as necessary.

c. Dose assessment activities will be performed more frequently, with an increased emphasis on dose projection for use as a factor in determining necessary protective actions. Radiological and meteorological instrumentation readings will be used to project the dose rate at predetermined distances from the plant, and to project the potential integrated dose.

   In reporting the dose projections to the Emergency Director, the dose rate, dose, and basis for the time used for the dose estimate should be provided. Confirmation of dose rates by Field Monitoring Teams will be reflected in reports or revised dose estimate information provided to offsite agencies.

   All dose projections will be performed in accordance with the Emergency Plan Implementing Procedures which incorporate recommendations found in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." Reports to offsite authorities will include the relationship of dose to these guidelines. Emergency Plan Implementing Procedures provide for the recording of pertinent information.

Detailed plant operating procedures are available for use during emergencies, as well as during normal operations. Specific Emergency Operating Procedures and Abnormal Condition Procedures are provided to assist the Control Room operators in placing the plant in a safe condition and taking corrective actions.

5.1.1 Plant Instrumentation

Plant instrumentation measures appropriate parameters that are indicative of the status of various plant systems and the reactor. Instrumentation used to ensure safe reactor operation is deemed safety related. An important group of safety related parameters is commonly referred to as the Safety Parameter Display System (SPDS). The purpose of this system as outlined in NUREG-0696, is to help Control Room personnel make quick assessments of plant safety status. At Columbia Generating Station, the SPDS is made up of hard wired Control Room instrumentation. This instrumentation is sufficiently concentrated in the Main Control Room to allow rapid assessment of plant conditions. Additional information that is useful for emergency response is supplied by the Graphic Display System (GDS) which is part of SPDS. The SPDS provides information related to assessment of the following plant functions:

- Reactivity control,
- Reactor core cooling and heat removal,
- Reactor coolant system integrity,
- Radioactivity control, and
- Containment integrity.

The SPDS and other post-accident monitoring instrumentation provide the means to assess plant status during and following an accident. For more detailed information on plant instrumentation, refer to the Final Safety Analysis Report, Chapter 7.

The structures, systems, components and instrumentation important to safety at Columbia Generating Station are designed and located to minimize the probability and effect of fires and explosions, as well as to withstand the effects of natural phenomena such as earthquakes, tornadoes, and floods without the loss of capability to perform their safety functions.

Facilities and equipment for detecting, annunciating, and extinguishing fires are provided to protect both plant and personnel. These include fire detection and alarm systems, deluge water spray systems, dry and wet pipe sprinkler systems, carbon dioxide systems, hose stations, portable fire extinguishers, and halon flooding systems. In addition, noncombustible and heat resistant materials are used wherever practical throughout the Plant, particularly in locations such as the containment and Control Room. For more detailed information on the fire protection systems, refer to the Columbia Generating Station Fire Protection Evaluation.

The Plant site is near the Columbia River, which is the predominant hydrologic feature of the area. The elevations of safety related systems and components, however, are sufficient to protect the Plant against design basis flood conditions. All safety related structures, systems and components are also designed to withstand the effects of an earthquake, estimated as the maximum earthquake potential for this area. Instrumentation used to monitor earthquake seismic motion at Columbia Generating Station complies with Regulatory Guide 1.12 requirements and provides both a printout and an alarm annunciation if certain levels of seismic motion are detected. For more detailed information on tornado, flood and earthquake protection, refer to the Final Safety Analysis Report, Chapter 3. If needed as backup, flood information can be obtained from the U.S. Coast Guard and seismic information can be obtained from the Department of Energy, Richland Operations. Both agencies are listed in the Emergency Phone Directory.

5.1.2 Radiological Monitoring Instrumentation

The plant radiation monitoring instrumentation is used to provide information in regard to general area radiation levels as well as the radiation levels in process and effluent streams, i.e., fluids in piping systems or air in ventilation systems. The area radiation and airborne radioactivity monitoring systems are comprised of area monitoring components located throughout the plant. Under normal operating conditions, the area monitors warn personnel both locally and remotely of increasing radiation levels. These monitors provide information to assessment personnel so that decisions can be made with respect to deployment of personnel or initiation of protective actions in the event of a radiation accident. For more detailed information on the area radiation and airborne radioactivity monitoring systems, refer to the Final Safety Analysis Report, Chapter 12.

The process and effluent radiological monitoring and sampling systems provide the means for sampling and continuously monitoring paths by which significant amounts of radioactivity could be released to the environment during normal operation and anticipated operational occurrences. As part of the plant radiological monitoring program, the process and effluent radiological monitoring and sampling systems assist in limiting effluent radioactivity to within the limits of 10CFR 20 and 10CFR 50, Appendix I and provide measurement for reporting radioactivity released to the environs in compliance with Regulatory Guide 1.21. These systems also provide the accident radiation monitoring required for compliance with NUREG-0737. Portions of these systems are also employed during postulated accident conditions for monitoring effluent discharge paths, and initiating automatic control features. A detailed description of the process and effluent monitoring and sampling systems is included in the Final Safety Analysis Report, Chapter 11.

5.2 METEOROLOGICAL AND ENVIRONMENTAL MONITORING

5.2.1 Meteorological Monitoring System

The primary onsite meteorological equipment includes a 240-foot tower with a 5 ft. wind mast located approximately 1700 feet west of Columbia Generating Station and provides data to Columbia Generating Station. System measurements include wind speed, wind direction, sigma theta, temperature, dew point, barometric pressure, precipitation, and temperature differential. The Operational Meteorological Program is described in Chapter 2 of the Final Safety Analysis Report.

Wind speed, wind direction, and temperatures, except the temperature at 245 feet, are available in the control room as near real-time digital displays, (five-minute averages). The averaged data is sent via the supervisory system to the Control Room. The data is then sent to chart recorders and the PPCRS computer. The data is also accessible at the Emergency Operations Facility, the Technical Support Center, and the control room via the plant computer system.

Backup meteorological information is available. Wind speed and direction, temperature, dew points, and sigma theta parameters are available. This and other information is available from Pacific Northwest National Laboratory (PNNL) or the National Weather Service, for 15-minute averaging (manual) and input to the computer systems.

The outputs of the primary tower sensors are fed to the plant process computer for 15 minute averaging for input to the Emergency Dose Projection System (EDPS). Error diagnostics, simulated data entry, and archiving are performed concurrently. Near real time access for both emergency and routine operations is thus provided.

A procedure shall be available for the use of normal and backup meteorological data.

5.2.2 Radiological Environmental Monitoring Program

A routine radiological environmental monitoring program is established in accordance with the Offsite Dose Calculation Manual (ODCM) requirement. Energy Northwest activities include air, milk, water, garden produce, fish, soil and sediment sampling, and thermoluminescent dosimeter (TLD) placement. Energy Northwest environmental monitoring locations are similar to Figure 5-1 and are fully listed in Section 5.0 of Energy Northwest ODCM.

In case of an emergency at Columbia Generating Station, TLDs will provide a time integrated exposure record. Permanent TLD stations are located within the Ten-Mile Emergency Planning Zone, around the Exclusion Area Boundary, and at various points of interest around the Hanford Reservation and across the Columbia River in Franklin County. A control station is located near Grandview, approximately 30 miles southwest of the site. Exchange frequency during normal operations is quarterly; however, during an emergency the TLDs may be exchanged more frequently based on release conditions. In addition, continuous air samplers are located within the Ten-Mile Emergency Planning Zone. The air samplers collect airborne radioiodines and particulates on filters which are analyzed either in the field or at the radiological laboratory in the Emergency Operations Facility.

5.3 <u>OFFSITE DOSE PROJECTIONS</u>

5.3.1 Source Term Determinations

Release data, such as volumetric flow rates and gross radiation levels, in conjunction with calibration factors and time dependent nuclide ratios, will be utilized during an accident to assess the radiological source term. Capability exists on shift to perform dose assessment projections using real time meteorological and effluent monitor data at all times. Data from instrumentation in the airborne effluent release pathways are available to be entered into the Emergency Dose Projection System (EDPS) to calculate the source term. A more detailed assessment of the isotopic composition of the release will be determined by laboratory analysis of effluent and field sampling media. Methods for determining release rate in the event the instrumentation is offscale or inoperative are contained in the Emergency Plan Implementing Procedures.

5.3.2 Emergency Dose Projection System

The Emergency Dose Projection System (EDPS) consists of 2 programs, QEPDS and EDPS Main. Both programs are accessed via personal computer. Both programs rely on a precalculated, real time, site-specific relationship between effluent monitor readings and on-site and offsite dose rates.

QEDPS is designed for rapid evaluation of a release with restricted data input and a straight-line dispersion model. QEDPS provides incremental dose projections from the site boundary out to 10 miles. QEDPS is available in the Control Room, TSC, EOF, and Alternate EOF, and provides text and map output. Field Team data may be used to calculate dose projections or validate previous projections.

Having the QEDPS software loaded on multiple, stand-alone computers located in the Control Room and EOF ensures backup dose projection capability.

EDPS Main is designed to accept much more detailed inputs for a more thorough release evaluation with more extensive text and graphical output. EDPS Main has the choice of puff or straight-line dispersion models and incremental dose projections from the site boundary out to 10 or 50 miles. EDPS Main has a graphical map output as well as a text output of the dose projection. EDPS Main is available in the TSC and EOF.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

5.3.3 Total Population Exposure

The Columbia Generating Station plant data systems collect and maintain files of effluent flow, radiation monitor readings, and five minute average meteorology data. These data are manually input into a joint frequency program, into the XOQDOQ program, and then to the GASPAR II computer code to calculate total population dose for occupied areas. The GASPAR II code can be adapted to emergency operations by input of short term atmospheric dispersion factors and appropriate exposure pathway parameters out to 50 miles.

5.4 FIELD MONITORING

5.4.1 Environmental Field Teams

Field monitoring capabilities will be activated whenever an Alert classification occurs. Field monitoring will be performed by environmental field teams that have been selected and trained to perform these duties.

Sufficient personnel are identified within Energy Northwest and outside assistance agencies to maintain 24-hour shift coverage if needed for an extended period. Energy Northwest maintains sufficient dedicated equipment to adequately equip four Energy Northwest environmental field teams.

Field team members responding during offshift hours will report to their emergency duty station within 60 minutes. Field team deployment time from their emergency duty station will be as needed, and can be achieved in less than 30 minutes. This is based on the time necessary to brief the team, load equipment, and depart the staging area. This deployment time could be shorter during normal work hours when field team personnel are more available and could respond sooner than the 60 minute required response time.

Field monitoring will concentrate in the downwind area from the plant. Locations used during the normal environmental monitoring program will be used as preselected monitoring points when applicable (Figure 5-1).

5.4.2 Aerial Monitoring

Aerial monitoring may be used to locate a plume in a delayed or extended release, or to identify areas of radioactive deposition following a release. Aerial monitoring capability is available through federal emergency resources. The decision to employ aerial monitoring will be made by representatives of the Washington Department of Health, Oregon Department of Health, US Department of Energy, and Energy Northwest. Any request for federal resources to conduct aerial monitoring will be directed through the Washington State Emergency Operations Center (EOC).

5.4.3 Environmental Field Team Kits

Environmental field team monitoring kits are maintained in a state of readiness. Additional supplies and equipment are available to replace equipment out of service for repair and recalibration. Equipment in the calibration laboratory provides an additional resource. Appendix 3 provides lists of equipment and their location.

5.4.4 Radioiodine Determinations

Environmental air samples are analyzed for particulate and radioiodine concentrations. Analysis of particulate filters and iodine sampling cartridges are performed using a portable count rate meter. Procedures concerning sampling time and field analysis techniques are established to measure airborne radioiodine concentrations as low as 10^{-7} microcuries per cubic centimeter under field conditions.

5.4.5 Laboratory Capability

Laboratory analysis of environmental field samples can be conducted at Energy Northwest facilities as described in Section 6.2.8 of this Plan. In addition, the States of Oregon and Washington both maintain laboratories under the direction of their respective Departments of Health. These laboratories have the capability to identify, both qualitatively and quantitatively, the constituent elements that might be contained in radiological releases from Columbia Generating Station during a nuclear incident. Following such an event, samples of air, drinking water, milk, pasture and other agricultural products would be obtained by field teams and brought to the labs for analysis. The results of this analysis would then be used to determine the existence of radiological hazards in food products. The specific capabilities of the state laboratories are evaluated by FEMA.

5.5 PROTECTIVE ACTION AND RESPONSIBILITIES

The appropriate protective actions for an airborne release of radioactive material are evacuation and sheltering. The decision to evacuate or shelter is based on the dose to be avoided by the protective action relative to the risk associated with implementing a protective action. Dose to be avoided by a protective action can be affected by duration and quantity of radioactive release as well as time of release relative to time of implementation of the protective action. Protective Action Guides, discussed in Section 5.5.1, provide pre-planned guidance for making response decisions. When applied with professional judgement, they help to ensure rapid action to protect members of the public. Specifically:

a. Evacuation - Evacuation and control of access to an affected area can be the most effective protective action for reducing the dose to the public. However, constraints such as severe weather conditions, obstruction of roads, and limited time may impact the benefits of evacuation.

b. Sheltering - Sheltering in buildings with windows and doors closed and ventilation turned off can provide partial protection from a passing radioactive plume. The extent of the protection depends on the duration and isotopic mixture of the release and the type of building.

The provisions for relating measured parameters to dose rates for key isotopes and for estimating integrated dose from projected and actual dose rates shall be described in procedures.

5.5.1 Recommendations to Counties, States and Department of Energy-Richland Operations (RL)

Energy Northwest will make prompt recommendations for protective actions to state, county and DOE-RL officials. These officials will make decisions on the specific actions to be implemented in their jurisdiction.

Protective Action Recommendations (PARs) will be made based on plant or radiological conditions. Recommendations for evacuation and sheltering of certain areas are required upon classification of a General Emergency without regard to whether a radiological release is occurring. If plant conditions and a radiological release both warrant PARs, the most conservative recommendation will be made.

Shelter, evacuation or access control guidelines are based on the EPA Protective Action Guidelines and NUREG-0654 Supplement 3 recommendations.

The preferred initial action to protect the public from a severe reactor accident is to evacuate immediately about two miles around the plant and 10 miles downwind unless other conditions make evacuation dangerous. Persons in the remainder of the plume zone should be directed to stay indoors and listen to EBS/EAS broadcasts while the situation is evaluated further.

Travel conditions that may present extreme hazard may prompt offsite officials to recommend shelter until conditions improve. Shelter may also be appropriate for special, transit-dependent populations, or during controlled, short duration releases of radioactivity.

Plant and offsite officials will continue to assess plant conditions to determine additional protective actions. These protective actions should be based on field monitoring data and dose projections that indicate EPA PAGs may be exceeded in areas beyond those that have been evacuated.

5.5.2 Energy Northwest Responsibilities

Primary responsibilities of Energy Northwest associated with offsite area protective actions are to:

a. Provide the best possible effort to resolve the emergency onsite, thus alleviating the offsite condition.

b. Notify the affected county, DOE, and state officials responsible for Protective Action Decisions of the emergency condition and provide the best possible information, recommendations, and support services.

c. Coordinate Energy Northwest actions with those of federal, state, and local agencies involved in implementing protective actions.

d. Ensure that all required agencies are advised of the protective actions recommended and provided periodic updates.

5.6 POPULATION DISTRIBUTION

Figures 5-3 and 5-4 present the compass sector population estimates for the Columbia Generating Station site. Estimates for the Ten-Mile Emergency Planning Zone were acquired from population surveys conducted by the Benton and Franklin County Offices of Emergency Management. The transient industrial worker populations on the Hanford Site have been updated by the appropriate facilities. Transient recreationist figures for the Columbia River and Horn Rapids areas were updated through contacts with local representatives of the Washington Department of Fisheries and the Washington Department of Wildlife.

5.6.1 Permanent Residents

Permanent residents include all persons residing in the area. In 1996 an estimated 3,044 people were living within the Ten-Mile Emergency Planning Zone. The nearest inhabitants occupy farms which are located east of the Columbia River and are thinly spread over five compass sectors. There are no permanent residents located within three miles of the site. About 274 persons reside between the three-mile and the five-mile radii; these are all located east of the Columbia River. Of the 3,044 people residing in the Ten-Mile Emergency Planning Zone, about 2,186 live in Franklin County and about 858 in Benton County.

There are no significant changes in land use expected in Franklin County over the next several years. As it is currently irrigated to about the maximum amount practicable, little population increase is foreseen. No significant change in land use on the Hanford Reservation is expected, and no foreseeable population will reside there. The unincorporated area near the Horn Rapids Dam on the Yakima River in the SSW sector is expected to be the primary growth area within the Ten-Mile Emergency Planning Zone. Population growth within the Ten-Mile Emergency Planning Zone is projected to be about 6% per annum.

5.6.2 Transient Population

The transient population is divided into three main subgroups: 1) industrial employees, 2) migratory agricultural workers, and 3) recreationists. Figure 5-4 illustrates this population location graphically.

Industrial employees in the Ten-Mile EPZ total 7,926. Most will be located in Benton County and form the main population to be evacuated. About 1200 industrial employees work at Columbia Generating Station and at the Kootenai Building.

Industrial employment in the Ten-Mile Emergency Planning Zone includes:

WNP-1 (Energy Northwest & Non-Energy Northwest personnel) (5/96)	27
Ashe Substation (5/96)	10
Columbia Generating Station (5/96 Operational dayshift value)	728
Deschutes Building (5/96)	246
Kootenai Building (5/96)	122
DOE 400 Area (FFTF, Fast Flux Test Facility) (5/96)	454
Siemens Nuclear Power Corporation (5/96)	800
DOE 300 Area (5/96)	1,671
DOE 3000 Area, (Battelle and other contractors in POB area) (5/96)	2,896
Battelle (Private) (5/96)	972
TOTAL	7,926

The majority of these employees work days, but there may be some shift workers in the DOE figures. Credit is not deducted from the population values due to emergency personnel remaining in place. Therefore, the planning figure of 7,926 to be evacuated is conservatively high.

There are up to approximately 4,244 migrant farm workers in the Ten-Mile Emergency Planning Zone. This figure may be high due to the possibility of double counting during the different harvest periods. The peak season for these workers is May and June; the next highest employment season is during the fall harvest. These workers consist of both permanent and temporary residents of the Tri-Cities area, some living within the Ten-Mile Emergency Planning Zone. The numbers shown on Figure 5-4 and Table 5-1 reflect their work locations in Franklin County within the Ten-Mile Emergency Planning Zone, not their residences.

Recreationists, consisting of hunters, fishermen and boaters, enjoy activities mainly along the east bank of the Columbia river. The primary fishing season is from June through November; the main hunting season being October through January. The heaviest use of the area by recreationists is on weekends and holidays in the early morning hours. On the average, 52 fishermen and 80 hunters are present in Franklin County during the weekdays. This increases to about 155 fishermen and 200 hunters on weekends and holidays. Recreationists also use the Yakima River with an estimated maximum of 42 at any time in this area. During peak fishing or hunting times, up to 1,275 fishing and hunting recreationists may be located within the Ten-Mile Emergency Planning Zone. Of these, 1,233 are assigned to Franklin County and 42 to Benton County.

The main concentration of recreationists consists of fishermen located just south of the Ringold Fish Hatchery spillway on the Franklin County side of the Columbia River. Hunting consists of both water fowl, hunted at the Wahluke Hunting Area on the Franklin County side of the Columbia River, and upland game birds, hunted inland on the farm land of Franklin County. Up to 600 recreationists may be located around the Ringold Fish Hatchery and the Wahluke Hunting Area and the rest distributed inland.

An additional recreation attraction is in the south section of the Ten-Mile Emergency Planning Zone in Benton County as an Off-Road Vehicle Park (ORV). As many as 1,500 participants and spectators may be present during an event. Thus, a maximum total of 2,775 recreationists may be located within the Ten-Mile Emergency Planning Zone. Additional provisions have been made for the Horn Rapids housing development and golf course.

5.6.3 Special Facility Population

There are no individuals within the Ten-Mile Emergency Planning Zone confined to facilities such as hospitals, nursing homes, or penal institutions. There are four schools, the Edwin Markham Elementary School, the Country Haven Academy, the Country Christian Center, and the Big River Country School, with a total enrollment of approximately 580 (students and faculty). Most of the students live within the Ten-Mile Emergency Planning Zone.

5.7 EVACUATION ROUTES AND ASSISTANCE CENTERS

5.7.1 Public Evacuation Routes

The Benton County Fixed Nuclear Facility Response Plan and the Franklin County Radiological Columbia Generating Station Response Plan (referred to in Appendix 1) contain information concerning evacuation routes and assistance centers for personnel who would be evacuated from the Ten-Mile Emergency Planning Zone. See Figure 5-5 for Assistance Center locations.

5.7.2 Site Evacuation Routes

Several evacuation routes are available to site personnel. These are shown in Figure 5-5 and include:

a. Route 4 South - This four-lane road leads southeast from the site to Richland and is the main route from the plants.

b. Route 10 South - A two-lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads on into Richland.

c. Route 4 South - A two-lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.

d. Route 2 South - A two-lane road leading north from the plants, intersecting with Highway 240 and Highway 24 to Yakima.

All of these roads have an expected vehicle capacity of between 1200 and 1800 vehicles per lane per hour.

5.7.3 Plant and Nearby Facilities Evacuation

Radiological conditions may dictate evacuation of the plant and nearby facilities. If an evacuation of the plant is ordered by the Emergency Director, plant personnel, visitors, and contract personnel other than those with emergency functions will evacuate plant areas. Procedures and equipment are provided to immediately determine the habitability of the area. Preliminary surveys will also be made to determine the contamination or exposure status of personnel and identify those individuals needing decontamination.

For a Site Area Emergency or General Emergency, personnel within the Protected Area may be evacuated to the Kootenai Building (PSF) or the Energy Northwest Office Complex, for monitoring or decontamination as necessary. Procedures provide for personnel accountability and assessment of contamination/exposure status. Personnel that do have assigned emergency functions will proceed to their emergency center.

Non-essential personnel in the Exclusion Area will be evacuated as needed at a Site Area Emergency or General Emergency. They will be directed to go home if radiological contamination concerns do not exist, otherwise they will be directed to the Energy Northwest Office Complex (or other area as appropriate and designated by procedure). Personnel assigned emergency functions will proceed to their emergency center.

5.7.4 Radiological Monitoring and Decontamination of Personnel

Personnel will be monitored for contamination prior to leaving the plant if conditions permit. Whole body friskers and portable detectors are available at the plant exit. Personnel decontamination facilities in the plant include showers, sinks, and cleaning agents. Decontamination capabilities for emergency purposes are also available at the Kootenai Building, at remote decontamination locations, and for injured personnel at the Hanford Environmental Health Foundation Emergency Decontamination Facility in Richland.

For the general population, monitoring will be conducted under provisions of the Benton County Fixed Nuclear Facility Response Emergency Plan and the Franklin County Radiological Response: Energy Northwest plan. Emergency Worker/Assistance Centers (EWAC) are identified for the monitoring of personnel leaving the affected sectors of the 10 mile EPZ. Personnel evacuated from affected segments of the Columbia River will be monitored when necessary at a location along the river. The Washington State Department of Health will be in charge of the monitoring and decontamination effort.

5.7.5 Personnel Accountability

Personnel accountability will be conducted at predetermined locations. The Operations Support Center Manager is responsible for ensuring performance of accountability within the Protected Area and reporting the results to the TSC Manager or Shift Manager if the TSC is not activated. Non-essential personnel will be logged offsite utilizing the electronic access control system or personnel logs. The goal is to complete personnel accountability inside the Protected Area within 30 minutes. The last known location of unaccounted individuals will be obtained and search and rescue procedures initiated to locate the missing individuals.

For the Exclusion Area, personnel are alerted by the evacuation siren, public address announcement or telephones and will follow evacuation procedures. Energy Northwest personnel will be available to initiate the search and rescue procedures as needed.

5.8 EVACUATION TIME ESTIMATES

Evacuation time estimates for the Columbia Generating Station site have been developed in the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study, Revision 3, June 1996. Table 5-1 of this section summarizes the results.

5.8.1 Emergency Planning Zone Sub-Areas

The Ten-Mile Emergency Planning Zone was divided into several sub-areas as follows:

0-2 miles	entire circumference
0-5 miles	four approximate 90° sections
2-10 miles	four approximate 90° sections
0-10 miles	entire EPZ

The two-mile radius was not subdivided because it contains no residential population and the only institution populations are transients all working on contiguous Energy Northwest properties. Only three of the four 5 and 10 mile sectors (about 90°) were examined because the fourth, entirely on the Hanford Reservation, contains no residential, transient or special population. These sectors are graphically shown on Figure 5-5. The Columbia River forms a natural border between Benton and Franklin Counties and was used to form the division between Sector 2 and Sector 3. Franklin County was divided, approximately in half, since it was assumed that those persons north of the plant location would evacuate north toward Mesa and Connell and those persons south of the plant would evacuate south towards Pasco. When making estimates for outer portions of the sectors it was assumed that the inner adjacent portions were being simultaneously evacuated.

5.8.2 Notification, Preparation, Response and Confirmation Times

The evacuation time estimates shown in Table 5-1 include preparation time and response time. Notification times and confirmation times are shown as separate items.

Energy Northwest has established procedures to notify officials of Washington State, Benton and Franklin Counties and the Department of Energy-Richland Operations within 15 minutes of a declaration of any emergency classification. The Energy Northwest early warning system was designed to enable the county to notify the permanent 10-mile population within 15 minutes from the time the decision to take a protective action is made by county officials. Therefore, a maximum of 30 minutes notification time is assumed.

In the event of an evacuation, residents needing transportation are instructed to call the respective county emergency management office to request transportation. The respective emergency management office will dispatch emergency workers to collect these residents. Energy Northwest will be responsible for personnel accountability at Energy Northwest facilities (estimated to take a maximum of 30 minutes). The calculated evacuation time estimates start at the time of the announcement over the Emergency Broadcast System (EBS) or Emergency Alerting System (EAS) station to begin evacuation and end when the evacuation is complete.

The Figure 5-6 series illustrates "S-curves" for various populations and conditions. In the congested traffic environment which is characteristic of an evacuation process, travel time on a roadway section is, to a large extent, determined by the capacity of that section. Roadway capacities were based upon the type of roadway considered and the presence of traffic control. The following table presents the per-lane capacities utilized:

Roadway Type	Per-lane Capacity (Veh/hr)
Freeway	1800
Arterial/Rural Road	1500
Local Street	1200

A vehicle occupancy of three persons per vehicle was generally used for residents and transients. Exceptions are the industrial plants for which 1.5 persons per vehicle was used, the schools for which 35 persons per school bus was used, and the Off-Road Vehicle Park for which 2 persons per vehicle was used.

5.8.3 Adverse Weather

Severe weather conditions such as blizzards, heavy rain storms, flooding, fog, or high winds could seriously hamper evacuation. However, historical records indicate that severe conditions of this nature have occurred rarely in the past. Because of the effect of weather on the capacity of roadway and the fact that capacity is a controlling factor in deriving evacuation times, it is necessary to adjust capacity figures to represent estimated road conditions during adverse weather. Based on limited empirical data, weather conditions such as heavy rain reduce the values of capacity for the highways utilized as evacuation routes by approximately 20 percent. For adverse conditions during the winter months, estimated capacity reductions and free-flow speed reductions of 30 percent each, relative to normal weather conditions are assumed.

5.8.4 Special Facilities

The only special facilities within the Ten-Mile Emergency Planning Zone are Edwin Markham Elementary School, Country Haven Academy, the Big River Country School, and the Country Christian Center, with a total enrollment of approximately 580 students and faculty. Because of the small size of this population, it was considered counted as part of the permanent population in making evacuation time estimates. Buses which could be used in the evacuation are located at the district bus lot in north Pasco during the day. The buses can be dispatched to the schools within the one hour preparation time assumed for this section.

Public transportation, although not specifically identified as being needed, is available to the public in a portion of the Ten-Mile Emergency Planning Zone and is not relied upon for evacuation. The sheriffs' departments will be patrolling the area during an emergency and could make transportation arrangements for anyone not already evacuated.

5.9 RADIOLOGICAL EXPOSURE CONTROL

Radiation exposure limits and guidelines have been established for the control of radiation exposure to workers during an emergency. Facilities are available and arrangements can be made for internal and external personnel dose assessment. The individual functioning as Emergency Director has the responsibility to authorize exposures in excess of 10CFR20 limits or EPA-400 guidance, but can delegate this responsibility if necessary to improve command and control operations.

5.9.1 ALARA Policy

ALARA is an acronym meaning As Low As Reasonably Achievable. Energy Northwest's ALARA policy states:

> "Energy Northwest shall conduct all operations involving radiation and radioactive material such that radiation exposures to employees, contractors and the general public are maintained as low as is reasonably achievable. "Reasonably achievable" takes into account the state of technology and the economics of exposure reduction in relationship to the benefits to health and safety."

The principles of ALARA will be considered during all phases of the emergency and applied where practical. Refer to Section 5.9.3.

5.9.2 Administrative Exposure Hold Points

Administrative exposure hold points are used during normal operations to bring exposures which are or could be significant to the attention of Plant Management. Energy Northwest administrative exposure hold points will be automatically waived upon declaration of an Alert or higher emergency classification. The Radiation Protection Manager (RPM), for onsite, and the Radiological Emergency Manager (REM), for offsite, are still responsible for limiting personnel exposures in keeping with the ALARA philosophy.

Whenever the administrative exposure hold points are waived, efforts shall be made to keep all exposures below 10 CFR 20 limits.

5.9.3 Protective Action Guides (PAGs)

The Environmental Protection Agency (EPA) has established Emergency Worker and Lifesaving Activity Protective Action Guides as follows:

PROTECTIVE ACTION GUIDES FOR EMERGENCY WORKERS		
DOSE LIMIT	ACTIVITY	PROTECTIVE ACTIONS
5 rem TEDE[1]	ALL	Emergency Workers continuously monitor and limit exposure.
10 rem TEDE	PROTECTING VALUABLE PROPERTY	Evaluate alternatives prior to granting authorization to exceed limits. Exposures above 5 rem require approval of the Emergency Director or designee.
25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Lower doses not practicable.
>25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Provide specific review and decision for each VOLUNTARY life-saving mission. Only volunteers fully aware of the risks should request exceeding this limit.

Energy Northwest will at all times attempt to keep exposures below EPA 400 Guidelines. However, situations such as the following may arise which could necessitate application of the above Protective Action Guides:

a. lifesaving activities
b. removal of injured persons
c. undertaking corrective actions
d. performing assessment actions
e. providing first aid
f. performing personnel decontamination
g. providing ambulance services
h. providing medical treatment services

Permission for emergency workers to receive additional radiation exposure is contained in procedures which includes expeditious decisions and comparison of relative risk.

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[1]The total effective dose equivalent (TEDE) is the sum of the deep dose equivalent (DDE) resulting from exposure to external sources and the committed effective dose equivalent (CEDE) projected over 50 years for internal exposures. CEDE is the risk weighted sum of committed dose equivalents (CDE) to organs. CDE is the total dose from an internally deposited radionuclide over the subsequent 50 year period.

5.9.4 Contamination Control

5.9.4.1 Area Access

Controls have been established at Columbia Generating Station to ensure there is no detectable fixed or loose contamination (beta-gamma or alpha) outside of the Radiologically Controlled Area (RCA) under normal or emergency conditions. Energy Northwest policy is to minimize the potential for personnel contamination and to prevent the spread of contamination to uncontrolled areas at all times. Normally all personnel and equipment leaving the RCA are monitored to ensure the limits for contamination levels are met. However, normal in-plant contamination control procedures may be suspended during an emergency by the plant Radiation Protection Manager to allow for prompt emergency response and to minimize personnel exposure to other hazards. Contamination control measures intended to prevent transport of radioactive materials out of the plant or into continuously occupied areas such as the control room shall retain high priority.

5.9.4.2 Personnel

Personnel work practices within the RCA are controlled by Health Physics procedures. Upon leaving a radiologically contaminated area, each worker will normally proceed to the nearest personnel monitoring station which has a background count rate of less than 300 cpm and perform a personal survey. Individuals leaving the RCA are normally monitored for contamination before entering an uncontrolled area.

If survey of an individual indicates contamination levels in excess of established contamination limits, decontamination will be performed. Records will be maintained in accordance with established Health Physics procedures. Potassium Iodide, respirators and protective clothing can be distributed to plant personnel if needed.

5.9.4.3 Decontamination

Decontamination limits apply to personnel and equipment during routine and emergency operations. Only the Radiation Protection Manager or his delegate can waive these limits and then only on a case by case basis.

Normal personnel decontamination is accomplished in the 487′ elevation Radwaste Building decontamination facility. All drains lead to the Radwaste system where the liquid is processed and monitored prior to discharge. During site emergency evacuation conditions, personnel decontaminations can be accomplished at the Kootenai Building where a decontamination shower and supplies are maintained.

Energy Northwest policy requires decontamination of personnel, equipment, and material prior to release from a radiologically controlled area according to the criteria found in Chapter 12.5 of the FSAR.

If the contamination cannot be reduced to these limits by reasonable methods, such as with radioiodine skin contamination, the Radiation Protection Manager (for inside the Protected Area) and the Radiological Emergency Manager (for outside of that area) shall determine a further course of action. This may include referral to a local medical facility or placing the individual in an on-going exposure tracking program.

5.9.4.4 Drinking Water and Food Supplies

Radiological surveys will periodically be made in areas where food is stored onsite and isotopic analyses will periodically be made of the Columbia Generating Station drinking water supply. The primary source of potable water for Columbia Generating Station is the Columbia River. It is unlikely that an airborne release of radioactive material could affect this supply.

Offsite vegetation and milk samples are also analyzed routinely as part of the Radiological Environmental Monitoring Program (REMP). In the event of an airborne release of radioactive materials, environmental samples are collected and analyzed.

5.9.5 Personnel Dose Assessment

Routine and emergency personnel exposure monitoring and dose assessments are accomplished by issuing thermoluminescent dosimeters (TLDs), electronic or direct reading dosimeters and monitoring for airborne radioactivity. A twenty-four hour per day capability to analyze Energy Northwest issued dosimetry is available. Energy Northwest maintains a personnel monitoring program through the use of appropriate dosimetry and whole body counters.

5.9.5.1 Thermoluminescent Dosimeters

Issuance of personnel TLDs will be in accordance with established Health Physics procedures. Special provisions are included to increase the frequency of TLD processing, as necessary, during emergencies.

The measured dose as determined by TLDs shall serve as the permanent and official record of the individual's deep dose equivalent (DDE) and skin dose. Radiation dose to the hands, forearms, feet and ankles shall be obtained by placing additional TLDs in those locations when extremity exposure may be the controlling factor.

5.9.5.2 Direct Reading Dosimeters

Electronic or direct reading pocket dosimeters are issued to personnel entering radiologically controlled areas. Personnel shall be instructed to read these dosimeters frequently. Dosimeter readings provide an estimated record of external exposure received on a daily basis.

5.9.5.3 Issuance of Dosimetry to Offsite Emergency Personnel Responding Onsite

Offsite emergency personnel who respond onsite and do not have preassigned dosimetry will be issued the appropriate personnel dosimetry upon arrival at the site access point.

Emergencies requiring immediate response are characterized by the necessity for access by emergency response personnel with minimal or no delay. Examples include fire fighting teams, emergency medical personnel or bomb squads. In this situation, dosimetry will be dispensed by Security personnel at the access point. Procedures are established to ensure dosimeters are read at appropriate frequencies. Dosimetry and necessary personal and exposure information will be collected upon leaving the site. Energy Northwest Security will be provided with sufficient dosimetry devices, procedures, and data forms for this type of occurrence.

Offsite (State and County) personnel responding to the EOF will respond with their own dosimetry or will be provided dosimetry by Energy Northwest if necessary.

5.9.5.4 Airborne Radioactivity Monitoring

The primary method utilized to determine potential internal exposure of plant personnel is the measurement of airborne radioactivity. Standard Health Physics procedures describe the collection and analysis of air samples.

5.9.5.5 Whole Body Counting and In-Vitro Bioassays

Whole body counting and in-vitro bioassay will be available during and after an emergency to aid in determining the extent of an individual's internal exposure to radioactive materials. Measurements of radioactivity in the body (in-vivo), and/or radioactivity excreted from the body (in-vitro), will be performed as necessary. This will enable timely evaluation of uptakes of radioactive material whenever it is suspected that the individual has been exposed to airborne radioactivity above predetermined levels specified in established procedures.

5.9.5.6 Radiation Exposure Records

Exposure records are maintained by the Total Exposure System for external and internal radiation exposure for each person entering a radiologically controlled area at an Energy Northwest nuclear facility. These records include external dose [Deep Dose Equivalent (DDE)], skin and extremities dose [Skin Dose Equivalent (SDE)] and internal dose [Committed Dose Equivalents (CDE)] determined by dosimetry, whole body counting and/or in-vitro bioassay.

5.9.6 Respiratory Protection

Selected personnel assigned in-plant emergency response duties are trained in the use of respiratory protective equipment and qualified through quantitative respiratory fit testing. Respiratory protective equipment is maintained at strategic locations in the plant with backup supplies available. Respiratory protection under emergency conditions is administered in accordance with normal operating procedures with special provisions for prompt emergency action requirements.

Facilities and equipment are available to qualify outside response personnel on the use of respiratory protective equipment.

5.9.7 Thyroid Blocking Agent

Potassium Iodide (KI) is maintained for use by emergency workers at strategic locations.

In the event of a release involving radioiodine, the TSC Manager, in consultation with the Radiation Protection Manager, will issue instructions concerning the use of potassium iodide by in-plant emergency workers. The EOF Manager, in consultation with the Radiological Emergency Manager, will issue instructions to Energy Northwest environmental field teams and emergency workers in the Exclusion Area concerning the use of potassium iodide and will recommend that other offsite (State, County, etc.) emergency workers be issued instructions concerning use of potassium iodide. The EOF Manager will forward his recommendations to the appropriate offsite authorities. The thyroid blocking capability of KI is most effective when taken prior to or immediately after exposure to radioiodine. Therefore, a timely decision is necessary concerning this action.

Whenever offsite resources are expended, Energy Northwest will provide KI, along with personnel monitoring, dosimetry and decontamination services, when needed by offsite emergency workers.

Description	Total Within 2 Miles	Areas Within 5 Miles				Areas Within 10 Miles			
		I	II	III	Total	I	II	III	Total
Permanent Population	-	124	40	-	164	1050	1136	858	3044
Permanent Population Vehicles	-	41	13	-	54	347	380	286	1013
Transient Population	1133	1744	141	1560	3445	1571	7154	3931	12,656
Transient Population Vehicles	971	581	64	964	2580	5763	2636	2944	6102
General Population	1133	1868	181	1560	3609	2621	8290	4789	15,700
Total Vehicles	971	622	77	964	2634	670	3016	3230	7115
Notification Time Minutes	15	30	30	30	30	30	30	30	30
Permanent Population Evac. Time Normal Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Normal Conditions Hours Minutes	1:00	1:00	1:00	1:30	1:30	1:30	1:20	2:15	2:15
Permanent Population Evac. Time Adverse Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Adverse Conditions Hours Minutes	1:30	1:00	1:00	2:00	2:00	1:30	1:30	2:30	2:30
Confirmation Time Minutes	30	60	60	60	60	60	60	60	60

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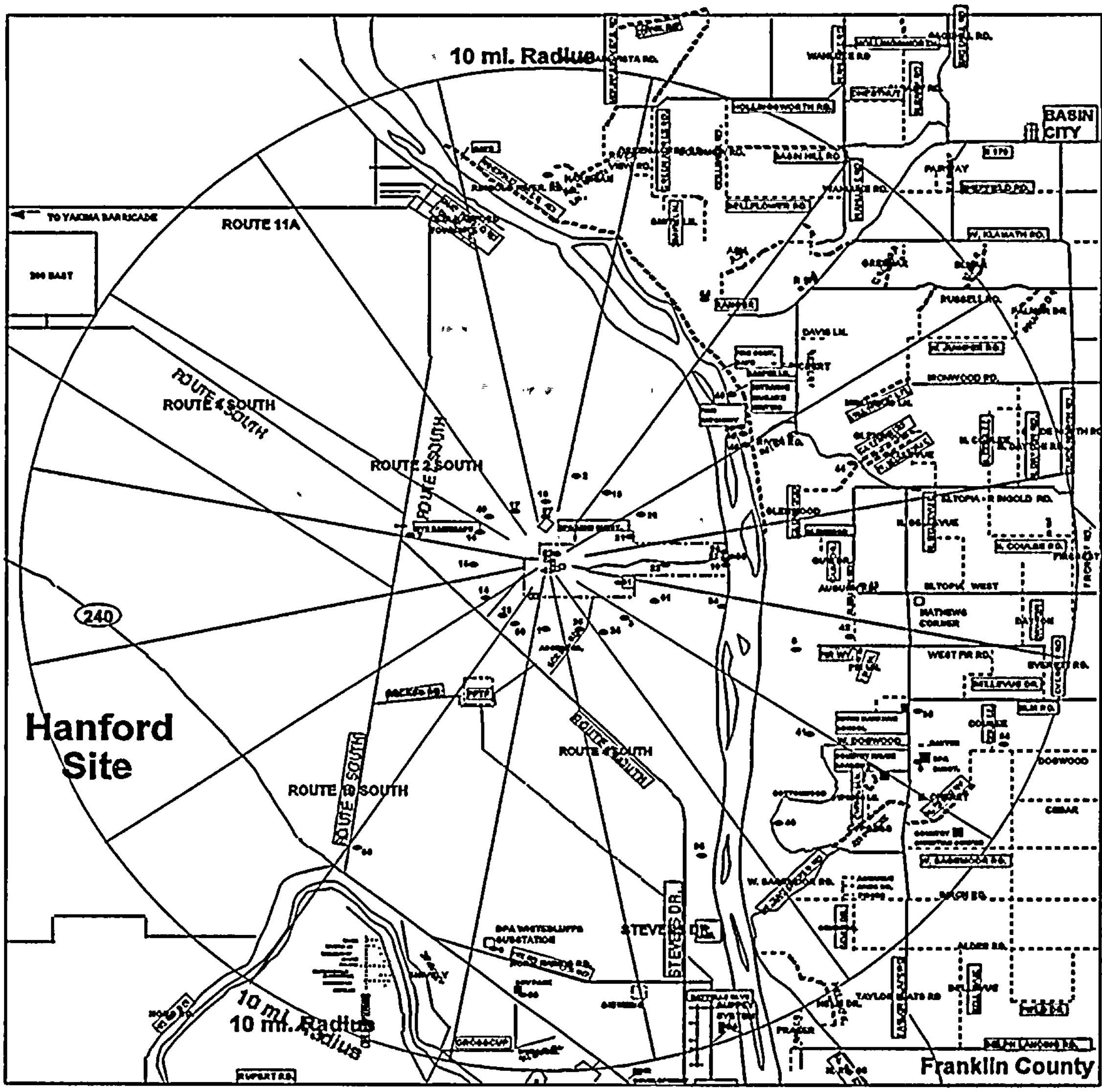
Table 5-1, Summary of Results of Evacuation Times Analysis



Station	Reactor	Radial Miles*	TLD	AP/AI
1	S	1.3	O	X
2	NNE	1.8	O	
3	SE	2.0	X	
4	ESE	9.3	O	O
5	ESE	7.7	O	X
6	S	7.7	O	X
7	WNW	2.7	O	X
8	ESE	4.7	O	O
9A*	WSW	30.0	O	O
9B*	WSW	35.0		
9C*	WSW	33.0	O	
10	E	3.1	X	
11	ENE	3.1	X	
12	NNW	6.1	O	
13	SW	1.4	O	
14	WSW	1.4	O	
15	W	1.4	O	
16	WNW	1.4	O	
17	NNW	1.2	O	
18	N	1.1	O	

Station	Reactor	Radial Miles*	TLD	AP/AI
19	NE	1.8	O	
20	ENE	1.3	O	
21	ENE	1.5	X	X
22	S	2.1	O	
23	ESE	3.0	X	X
24	SE	1.9	O	
25	SSE	1.6	O	
26*	E	3.2		
27	E	3.2		
29	SSE	11.0		
30	E	3.5		
31	E	1.1		
32	E	1.2		
33	ENE	3.3		
34	ESE	3.3		
35	ENE	10.5		
36	ESE	7.2		
37A	SSE	17.0		
37B	SSE	16.0		
38*	E	26.5 (95.0)		

Station	Reactor	Radial Miles*	TLD	AP/AI
40	SE	6.4	O	O
41	SE	5.8	O	
42	ESE	5.8	O	
43	E	5.7	O	
44	ENE	5.7	O	
45	ENE	4.2	O	
46	NE	4.7	X	
47	N	0.5		O
48	NE	4.3	O	
49	NW	1.2	O	
50	SSW	1.2	O	
51	ESE	2.1	O	
52	N	0.1		
53	N	7.5	O	
54	NNE	6.5	O	
55	SSE	7.0	O	
56	SSW	7.0	O	
57	N	0.7		O
65	S	6.7		X

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June 1999

LEGEND
PAVED ROAD
IMPRVD RD OR GRVL ROAD
BOUNDRY LINES
SCALE

- Control location.
X Sample collected at station (non-ODCM)
O Offsite Dose Calculation Manual (ODCM) sample collected at station.
* Estimated from center at WNP-2 Containment from map position.
AP/AI Air Particulate and Iodine

Figure 5-1, Environmental Sampling Points

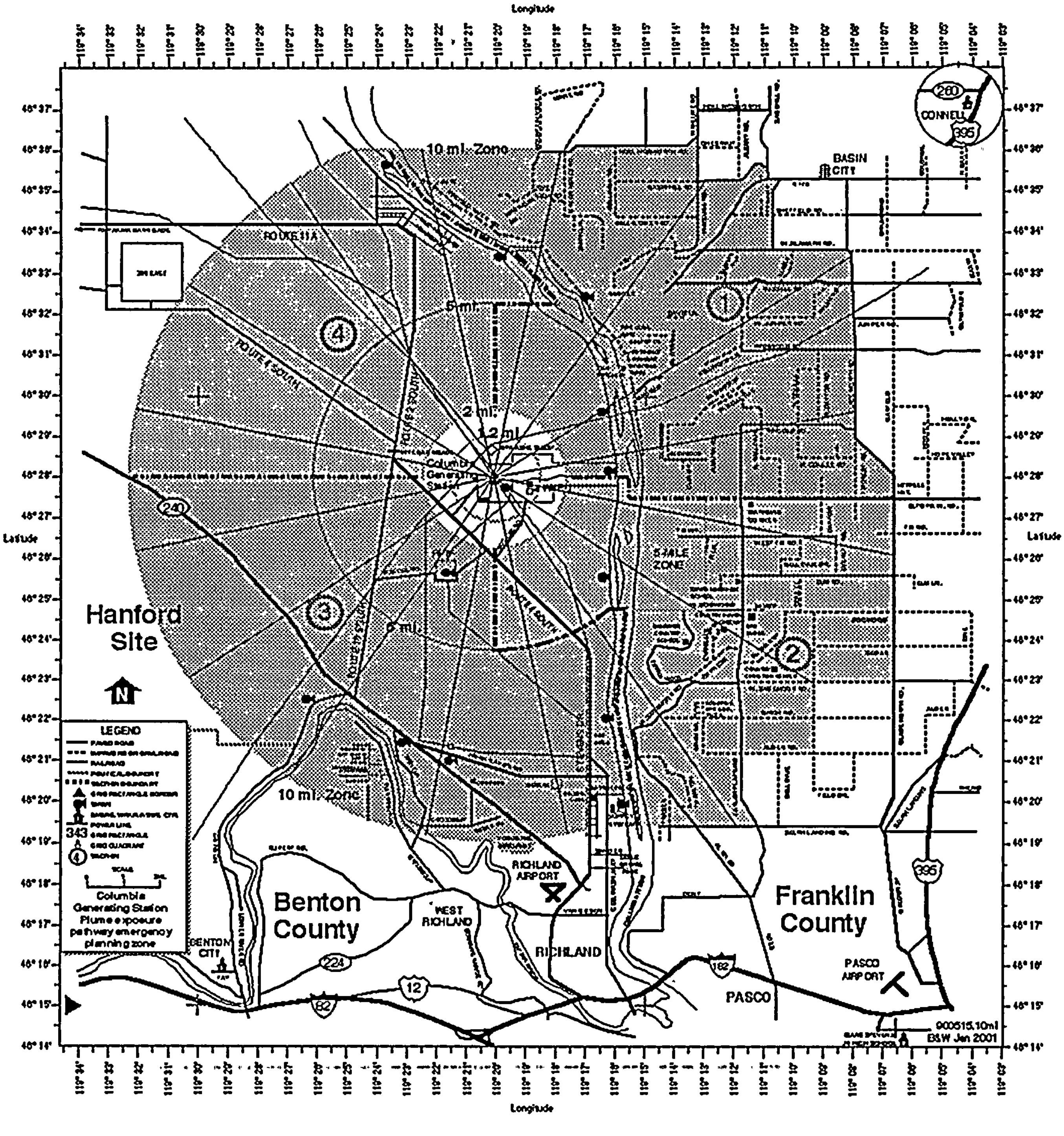
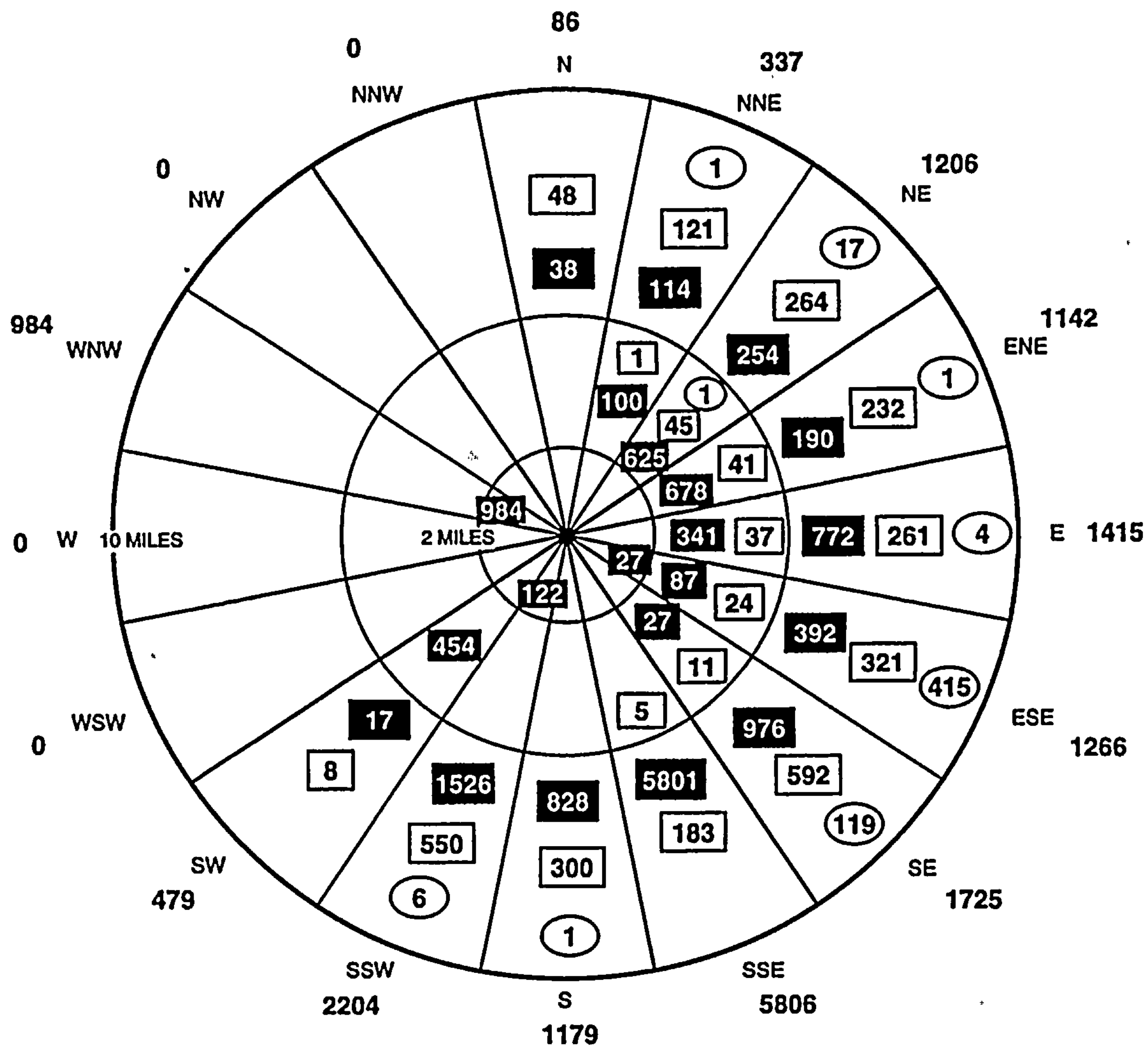


Figure 5-2, Ten Mile Grid Map



POPULATION TOTALS - PERMANENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	164	0-5	164
5-10	2880	0-10	3044

POPULATION TOTALS - TRANSIENT			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2312	0-5	3445
5-10	10,775	0-10	14,220

POPULATION TOTALS - SPECIAL			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	0	0-2	0
2-5	1	0-5	1
5-10	564	0-10	565

POPULATION TOTALS			
RING MILES	RING POPULATION	TOTAL MILES	CUMULATIVE POPULATION
0-2	1133	0-2	1133
2-5	2477	0-5	3610
5-10	14,219	0-10	17,829

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Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down Into Classifications

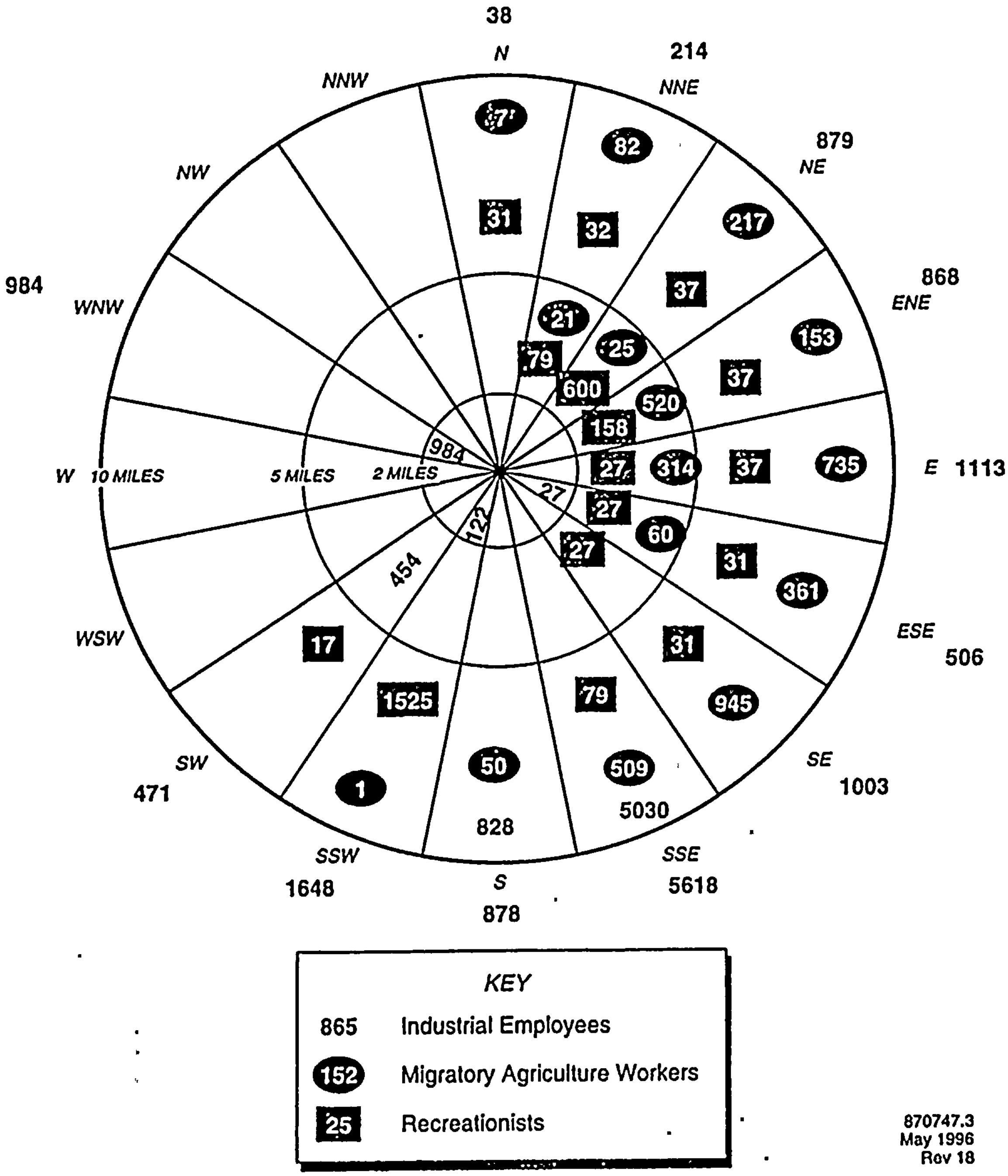


Figure 5-4, Distribution of Transient Population Within 10-Mile EPZ

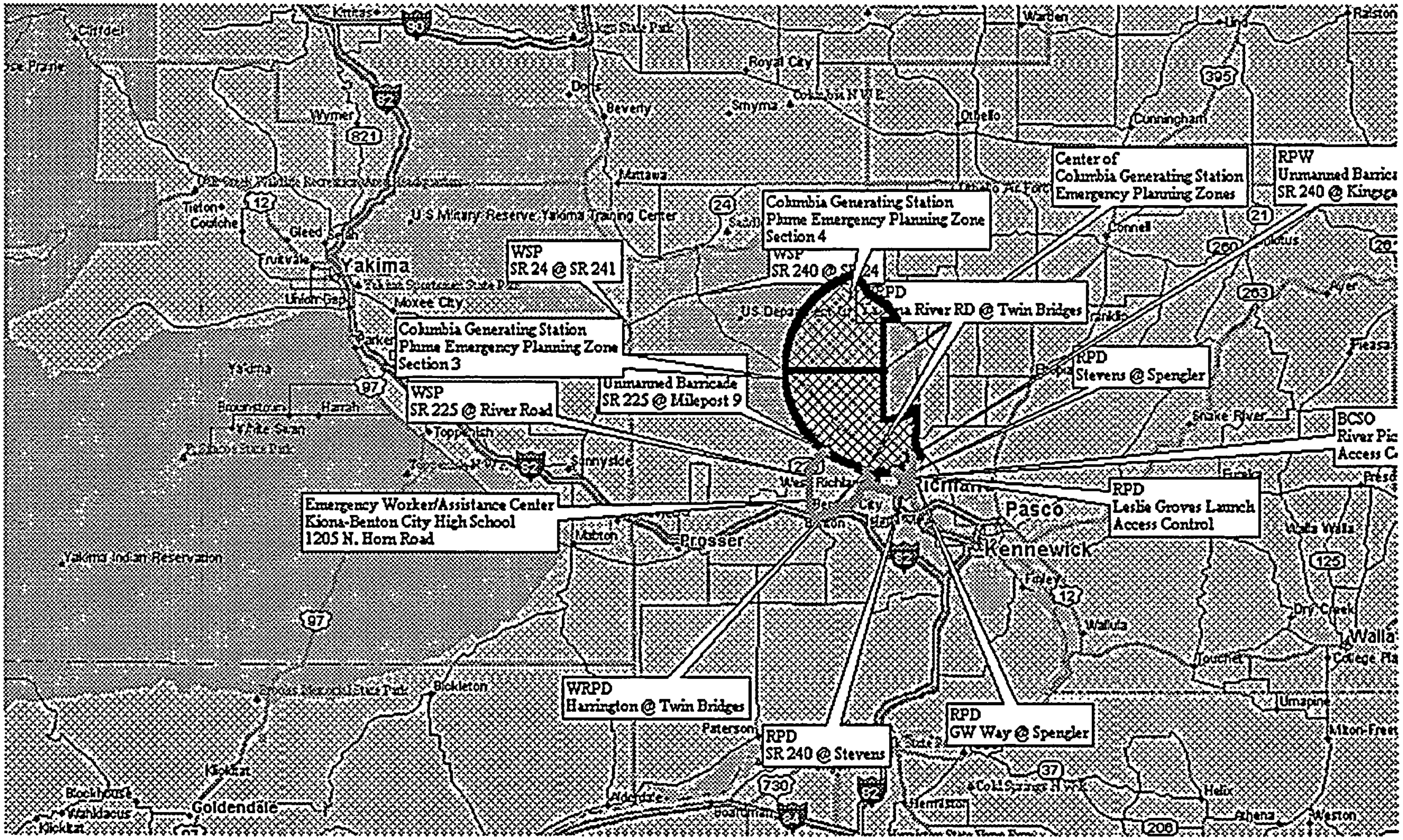


Figure 5-5, Benton County Evacuation Routes

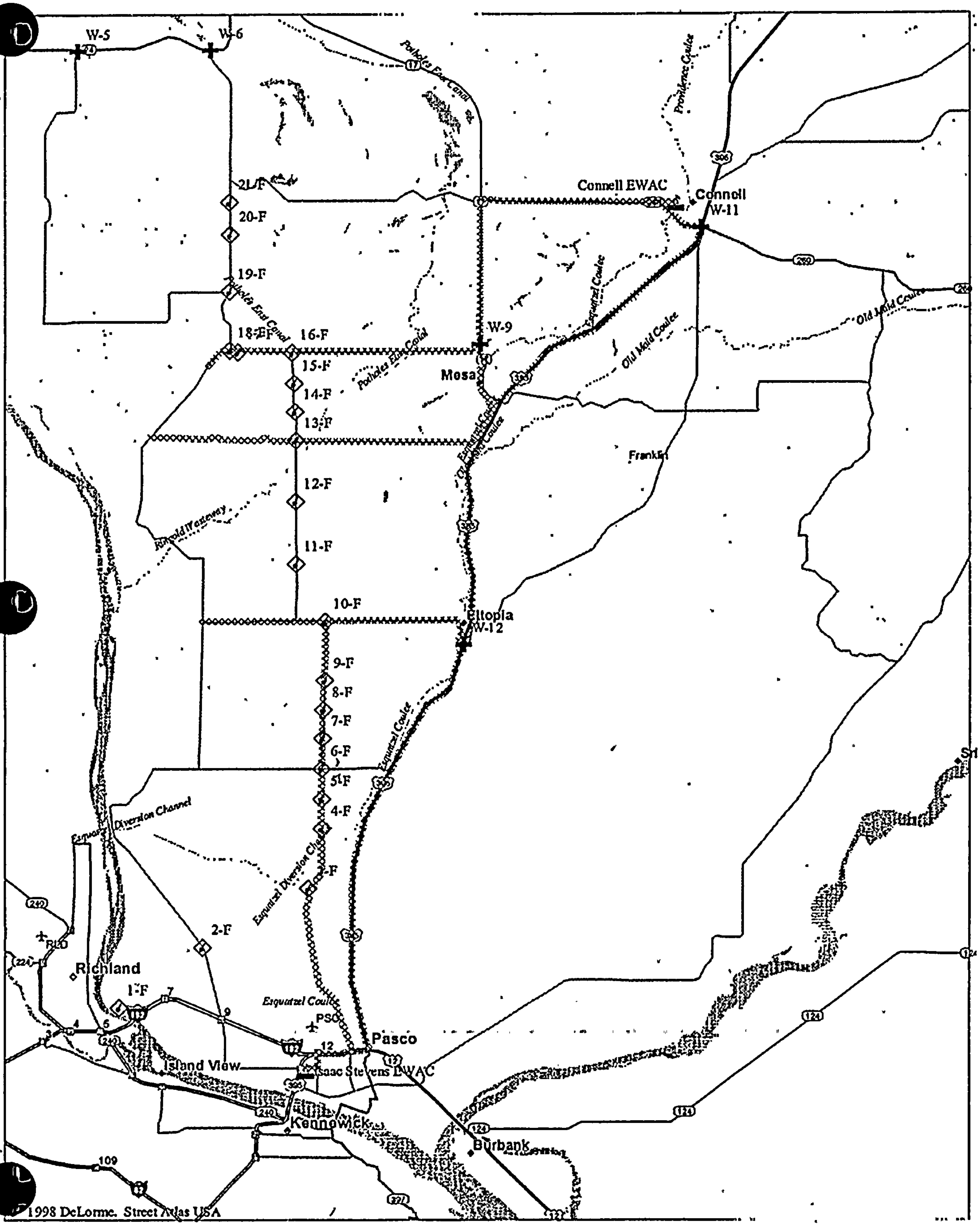


Figure 5-6, Franklin County Evacuation Routes

FRANKLIN COUNTY ACCESS CONTROL POINTS

ID #	LOCATION	RESPONSIBLE AGENCY
1-F	Road 68 @ Dent	Pasco PD
2-F	Dent Rd @ Court St	Pasco PD
3-F	Selph Landing @ Glade North	FC Sheriffs Office
4-F	Alder @ Glade North	FC Public Works *
5-F	Birch @ Glade North	FC Public Works *
6-F	West Sagemoor @ Glade North	FC Sheriffs Office
7-F	Cedar @ Glade North	FC Public Works *
8-F	Dogwood @ Glade North	FC Public Works *
9-F	Fir @ Glade North	FC Public Works *
10-F	Eltopia West @ Glade North	FC Sheriffs Office
11-F	Ringold @ Glade North	FC Public Works *
12-F	Ironwood @ Glade North	FC Public Works *
13-F	Russell @ Glade North	FC Public Works *
14-F	Klamath @ Glade North	FC Public Works *
[illegible]	Sheffield @ Glade North	FC Public Works *
[illegible]	SR 170 @ Glade North	FC Sheriffs Office
17-F	Fairway @ SR 170	FC Public Works *
18-F	SR 170 @ Sagehill	FC Sheriffs Office
19-F	Hollingsworth @ Sagehill	FC Public Works *
20-F	Fern @ Sagehill	FC Public Works *
21-F	North Wahluke @ Sagehill	FC Public Works *
W-5	Hwy 24 @ Mountain Vista	Washington State Patrol
W-6	Hwy 24 @ Sagehill	WSP
W-9	Hwy 17 @ Road 170	WSP
W-11	Hwy 395 @ Connell	WSP
W-12	Hwy 395 @ Eltopia West	WSP

Figure 5-7

NOTE: Asterisk (*) indicates Access Control Point is an unmanned barricade.

LEGEND:

= EWAC

= Evacuation Route

= Franklin Co. ACP

= WA State Patrol ACP

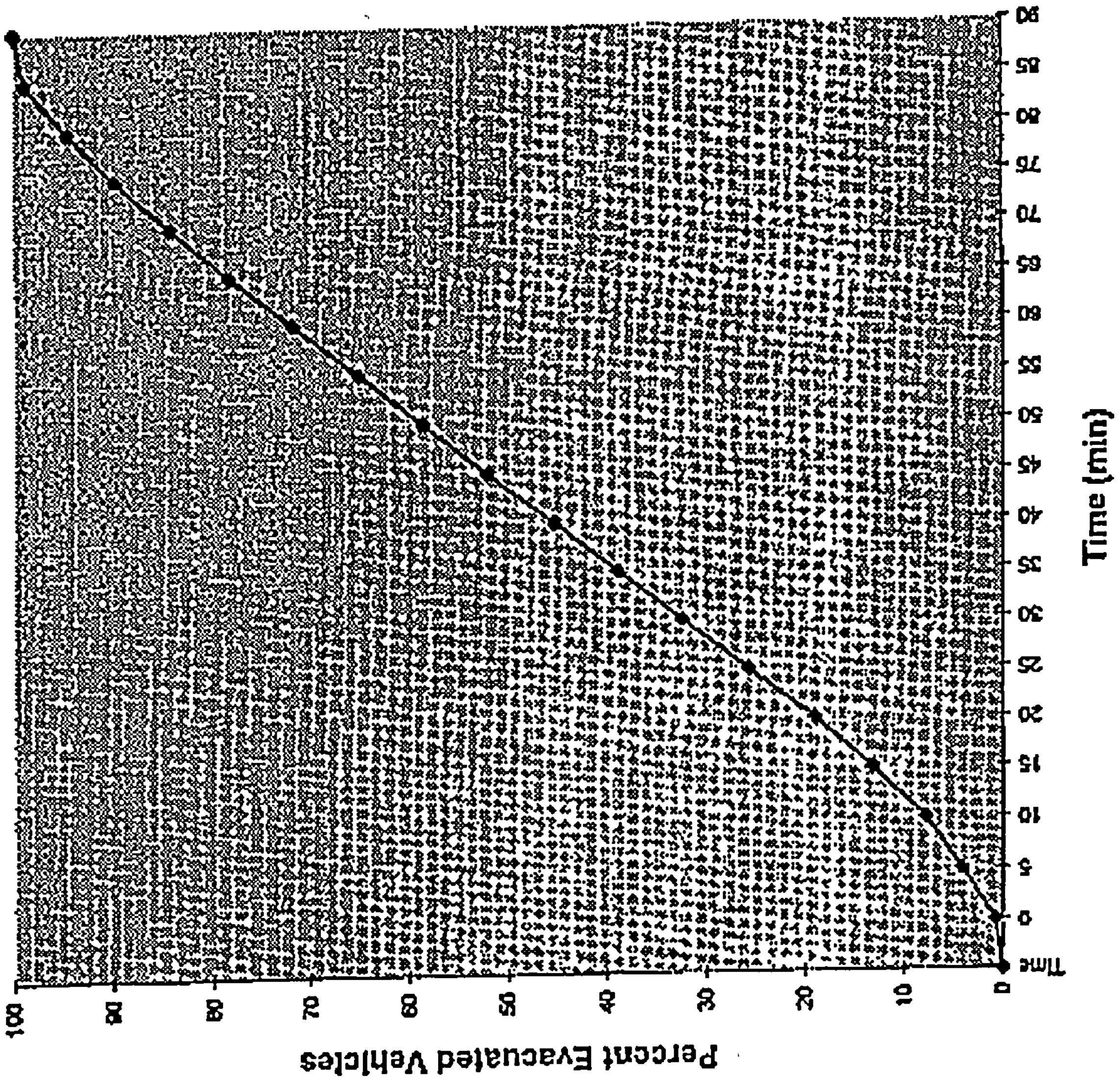


Figure 5-8.A Permanent Population-Normal Conditions

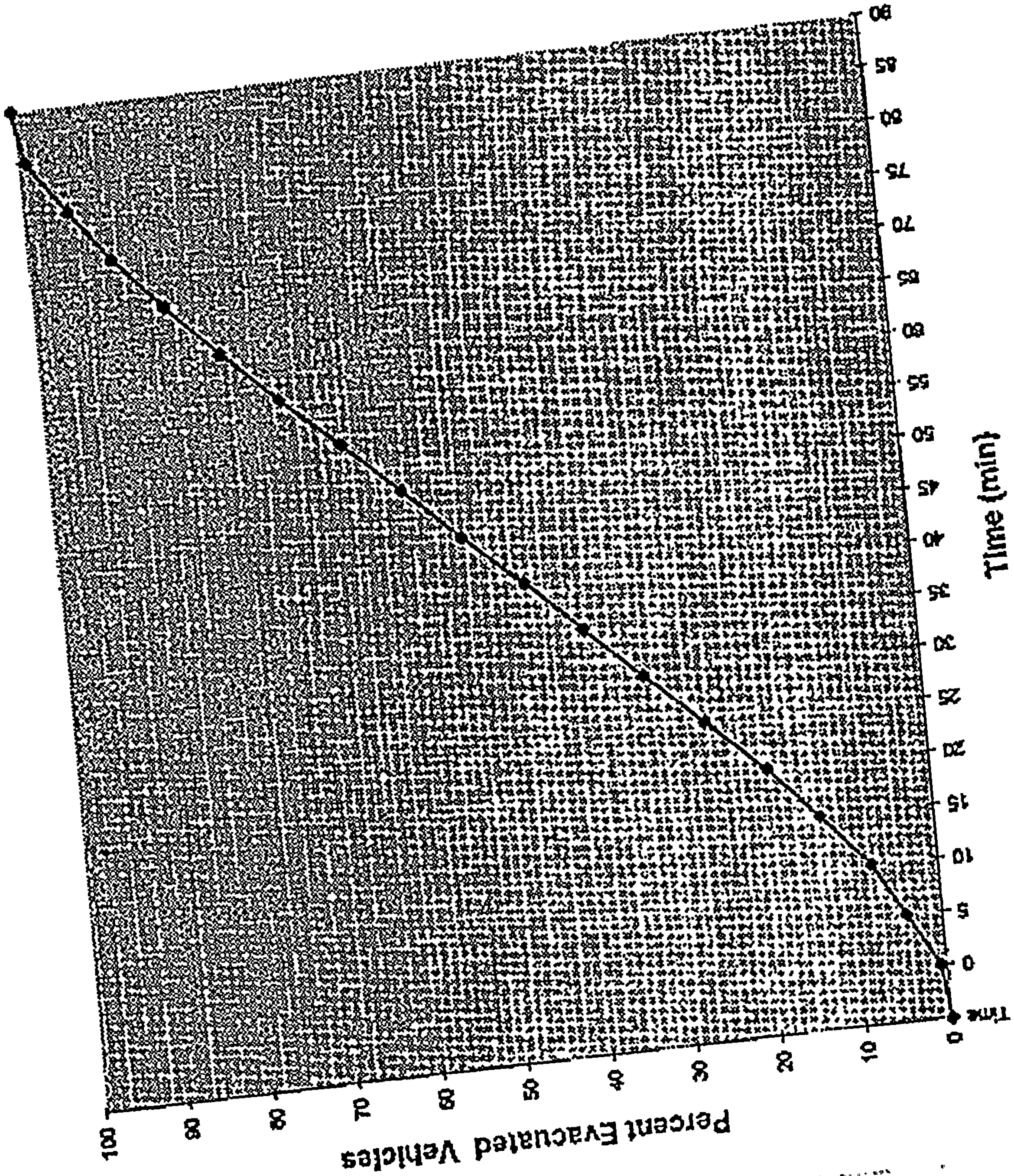


Figure 5-8.B Permanent Population-Adverse Conditions

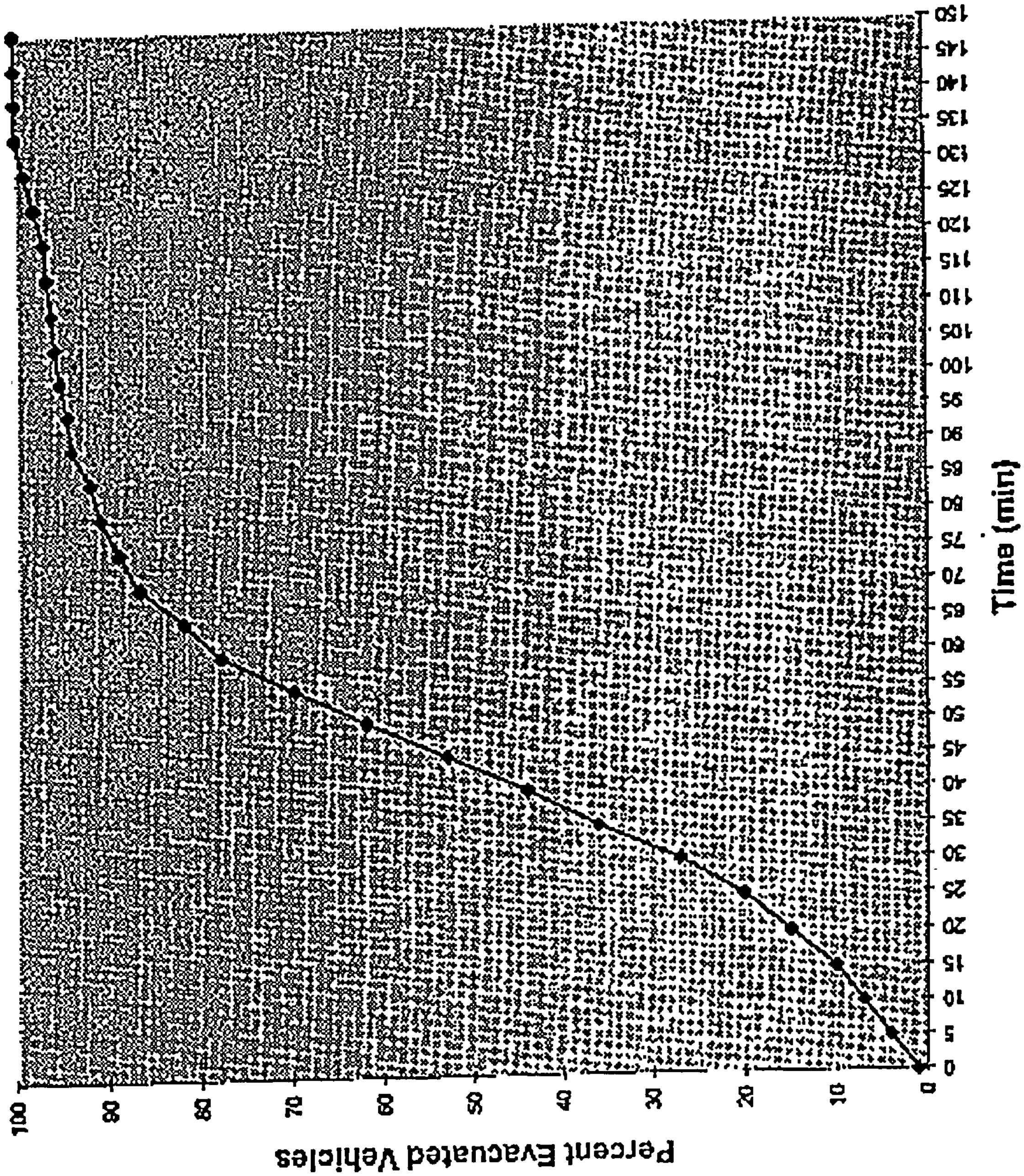


Figure 5-8.C General Population-Normal Conditions

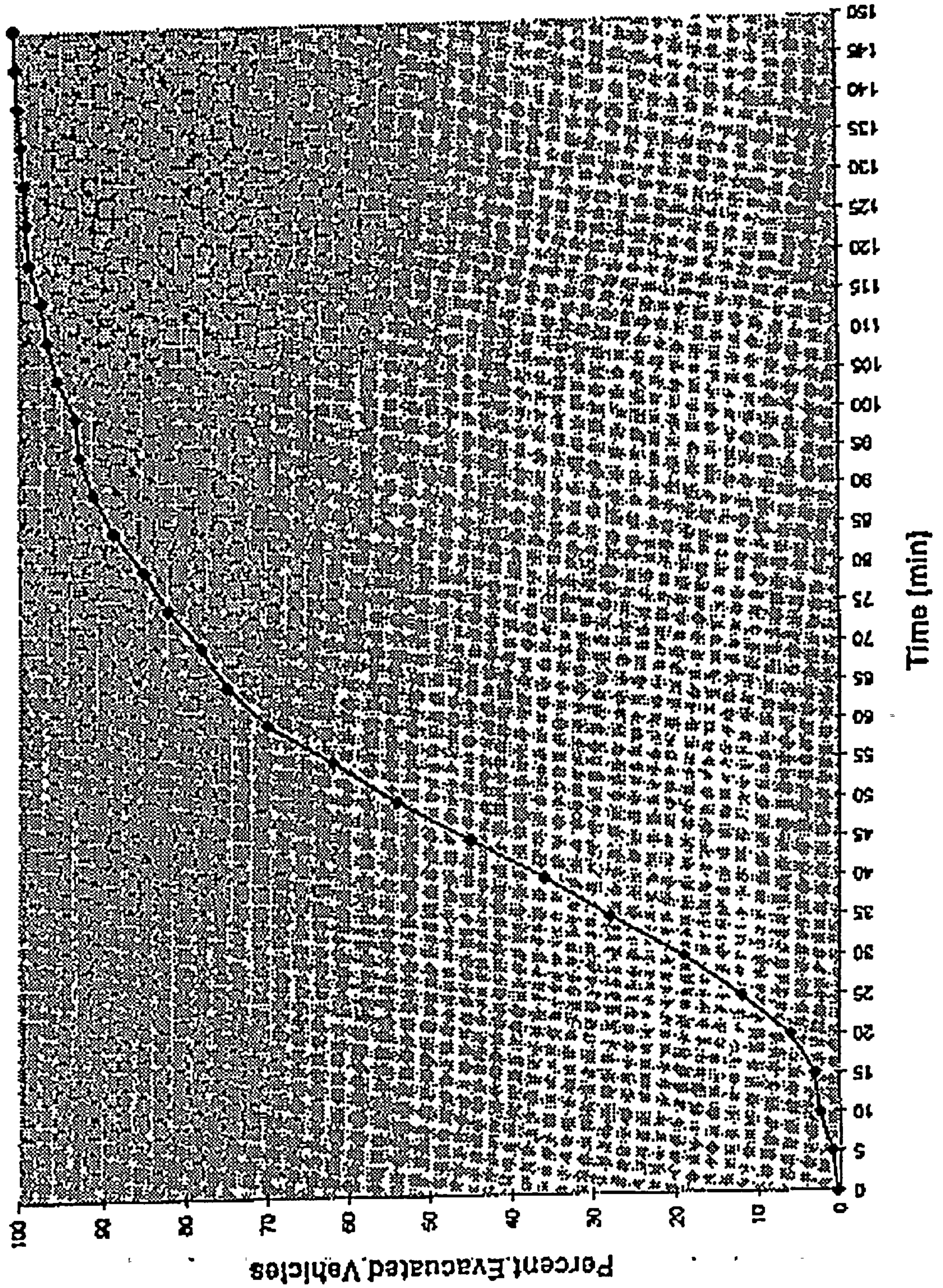


Figure 5-8.D General Population-Adverse Conditions

SECTION 6
EMERGENCY FACILITIES AND EQUIPMENT

6.1 PLANT FACILITIES

Located within the Columbia Generating Station facilities are several areas which will be used for evaluation and initiation of emergency actions. These facilities have the capability to manage the short term response and maintain plant control through sustained emergency and recovery operations.

6.1.1 Control Room

The Columbia Generating Station Control Room is located in the Radwaste Building, adjacent to the Reactor Building, as shown in Figure 6-1. Several entrance/exit points, each with airlocks, are provided. The Control Room contains instrumentation, controls and displays for the nuclear, reactor coolant, electrical, safety and accident monitoring systems and is where an emergency would be initially classified and declared.

The Control Room is staffed by licensed reactor operators and senior reactor operators and is under the direction of the plant Shift Manager twenty-four hours per day. Control Room personnel are responsible for coordinating all emergency response activities until other emergency facilities are activated. Control Room personnel are responsible to diagnose any abnormal plant conditions, perform corrective actions to mitigate the abnormal conditions, manage plant operations and perform initial emergency response activities.

Access to the Control Room during an emergency will be limited to essential personnel such as operators on duty or persons given specific permission for entry by the Technical Support Center Manager or the Shift Manager.

The Control Room has been designed for accessibility and habitability during the occurrences of postulated accidents that could result in the release of fission products and/or hazardous chemicals. To limit inward migration of hazardous materials the Control Room is maintained at a positive pressure with respect to adjacent areas using the pressurization mode of the control room ventilation system. The Control Room will be informed of a sodium oxide release from FFTF. Refer to FSAR section 6.4.4.2.2.

The system has been designed with both normal and remote sources of air to ensure the availability of uncontaminated air at all times. Both HEPA and charcoal filters are included. Shielding is provided to ensure that the combined radiation exposure of Control Room personnel during a postulated design-basis accident would remain within regulatory guidelines.

The Control Room communication system permits contact with the onsite Technical Support Center (TSC), the onsite Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the federal, state and local emergency response organizations on a twenty-four hour per day basis.

6.1.2 Technical Support Center

The Columbia Generating Station Technical Support Center (TSC) is a structure attached to the Radwaste Building on the west side of the plant (refer to Figure 6-1). A typical floor diagram is shown in Figure 6-2. The TSC is as habitable as the Control Room during accidents. The TSC ventilation HEPA filters and charcoal absorbers are the same type as those used for the Control Room System. The ventilation system normal air intake will automatically switch to the Control Room remote air intake upon receipt of an isolation signal. Should the TSC become uninhabitable, the TSC Manager in consultation with radiation protection personnel, will decide on an alternate TSC location and setup where the TSC functions can continue to be performed.

The TSC is activated during an Alert or higher emergency classification and is under the direction of the TSC Manager. The TSC Manager may assume the duties of Emergency Director from the Shift Manager if not transferred directly to the EOF Manager. Staffing includes designated technical, engineering and senior management personnel. Space is available for a small staff of Nuclear Regulatory Commission personnel during emergency conditions.

Functions of the TSC are to provide management and technical support to plant operations personnel during emergencies. This relieves the reactor operators of peripheral duties not directly related to reactor systems manipulation and prevents congestion in the Control Room. The TSC will perform Emergency Operations Facility functions during Alert, Site Area Emergency and General Emergency classifications until the Emergency Operations Facility becomes functional. TSC personnel have ready access to up-to-date plant documents needed to perform emergency functions.

The TSC is the primary onsite communications center for the plant during an emergency. It has reliable voice communications with the onsite Operations Support Center, Emergency Operation Facility, Energy Northwest Office Complex (ENOC), Control Room, NRC, and state and local Emergency Operations Centers.

Plant status, meteorological instrumentation, Plant Display and Information System (PDIS), display equipment and power supplies are provided in the TSC to support a comprehensive analysis of emergency conditions. A power circuit supplies the TSC from a Class 1E source located in the plant. This power source is backed by a diesel generator. Radiological monitoring equipment is available to continuously monitor dose rates and airborne radioactivity concentrations in the TSC. The TSC also assesses plant radiological conditions. In addition, protective equipment such as anti-contamination clothing, respirators and potassium iodide are provided in the TSC should conditions warrant their use.

6.1.3 Operations Support Center

A designated portion of the Yakima Building will serve as the Operations Support Center (OSC) for Columbia Generating Station and will be activated for an Alert or higher emergency classification. The location of this center is shown in Figure 6-1. If the primary OSC location becomes uninhabitable, the OSC Manager, in consultation with radiation protection personnel, will decide on an alternative OSC setup, and OSC personnel will be evacuated to an alternate location where OSC functions can continue to be performed.

The OSC will be under the control of the OSC Manager who is responsible for dispatching and coordinating in-plant team activities during emergencies. The OSC is activated during an Alert or higher emergency classification and provides a location for coordinated logistic support outside the Control Room.

The OSC Manager has communications necessary to dispatch and coordinate emergency team activities with the Shift Manager and TSC Manager, for other necessary onsite and offsite communication, and for emergency team communications (see Section 6.5). Equipment and supplies are available in the OSC for emergency team use. A list of emergency equipment kits is provided in Appendix 3.

6.1.4 Security Alarm Stations

Two security alarm stations are maintained at Columbia Generating Station. The Central Alarm Station (CAS) is the primary security center and is located in a separate building near the Yakima Building. The Secondary Alarm Station (SAS) is the backup security center located in the Control Room.

6.1.5 Protected Area Access Point

Persons requesting entrance to the plant will report to the Protected Area Access Point. Security will issue dosimeters as needed, maintain personnel accountability, and notify the onsite Operations Support Center of the arrival of persons and receive permission to allow entry. In situations which require immediate access by personnel and equipment, such as fire or medical emergencies, Security will be notified to permit immediate entry. The Security Shift Lieutenant will coordinate with the Technical Support Center Manager for implementation of the Safeguards Contingency Plan.

6.1.6 Personnel Decontamination and First Aid Facilities

First aid equipment kits required by the Washington Industrial Safety and Health Act are located as close as feasible to areas which have the heaviest concentration of workers. Designated locations are similar to those shown in Appendix 3.

Initial first aid for employees is provided by the Fire Brigade Team (FB) which is composed of first aid trained personnel who are designated FB members during each work shift.

Medical emergencies are reported via a special phone number that is posted throughout the plant. The special number rings into the Control Room where personnel can then dispatch FB members to an emergency by radio, telephone, or by the plant public address system.

Fire Brigade members receive initial and annual continuing education training in first aid from an in-house program that is certified as meeting "First Responder" requirements by the State of Washington.

A decontamination facility is provided on the 487′ elevation of the Radwaste Building (refer to Figure 6-3). The facility consists of a large shower area with drains connected to the radwaste effluent treatment system. First aid equipment and decontamination supplies are located nearby and will be used whenever a contamination incident is involved. Decontamination will also be implemented as necessary at the Energy Northwest Office Complex and Emergency Worker Assistance Centers (EWACs)

6.2 EMERGENCY OPERATIONS FACILITY (KOOTENAI BUILDING)

The Kootenai Building is located 0.75 miles southwest of Columbia Generating Station. This facility is used to support normal plant operations and includes a 20,000 square foot shielded area in the lower level which includes the 4,500 square foot Emergency Operations Facility (EOF).

A typical floor plan of the Kootenai Building is shown in Figure 6-4. The EOF contains several functional areas which are provided for various groups and will be activated as necessary for an Unusual Event and fully for an Alert, Site Area Emergency or General Emergency.

The EOF is under the direction of the Emergency Operations Facility (EOF) Manager and assists the plant by handling those functions associated with evaluating and minimizing the offsite effects of the accident, as well as supporting the TSC and Control Room with technical data analysis. This assistance includes such functions as field monitoring, dose projections, area security, interfacing with outside organizations, recommendation of protective actions for the public, assisting the plant technical staff, public information, administrative services, scheduling of personnel, and establishing a recovery program. If response to the primary EOF is hampered by radiological or other conditions, personnel unable to respond to the primary EOF will be directed to respond to the alternate EOF located at the Energy Northwest Richland Office Complex. Sufficient telephone links are available at the alternate EOF to communicate with the primary EOF and TSC. If the primary EOF location becomes uninhabitable, the EOF Manager in consultation with radiation protection personnel, will determine whether to evacuate the primary EOF, what equipment to take, and where to relocate. Select EOF staff will then evacuate and continue to perform the EOF functions.

The EOF will be used by representatives of the various offsite agencies to coordinate activities, resolve problems, maintain duty rosters, and make periodic status reports to their respective agencies. A close working relationship between these agencies and Energy Northwest is essential to the success of operations involving the general public. The personnel in the EOF receive information from all functional areas and provide clarifications to their respective agencies. Periodic briefings will be provided by Energy Northwest personnel to keep Energy Northwest and offsite agency personnel up-to-date on plant conditions and emergency measures underway.

The EOF is not used as a normal work location outside of drill and emergency use. It is subjected to periodic walkdowns by emergency preparedness personnel, as well as regularly scheduled inspections to ensure its readiness.

6.2.1 Emergency/Recovery Operations Area

The EOF Manager and his immediate staff will coordinate activities from the Emergency/ Recovery Operations Area of the EOF. The EOF Manager is responsible for the overall emergency effort and provides the necessary support to the TSC Manager. The Emergency/ Recovery Operations Area will maintain up-to-date information on plant and offsite status, recovery planning and scheduling, and will function as the designated area for periodic update briefings with selected personnel assigned to the EOF, including outside agency personnel.

6.2.2 Engineering Support Area

A segment of the EOF is designated as an Engineering Support Area which is established for use by Energy Northwest's engineering personnel, and architect/engineers, vendors, and contractors requested to assist Energy Northwest. A technical data information system including meteorological, radiological, and plant system status is available. Essential plant technical information is available in this area.

Using this area in the EOF, personnel from organizations outside the plant staff can provide needed technical assistance without responding directly to the plant. This provides technical personnel readily available to the plant if needed. The Engineering Support Area also provides a secondary location to track plant conditions and provides current and projected plant status reports to MUDAC and to the EOF Manager for inclusion in the formulation of Protective Action Recommendations.

6.2.3 Logistics Support Area

A designated portion of the EOF is established for logistics support functions which are provided by the Site Support Manager and staff. The Site Support Manager and his staff will provide general administrative support and logistical support to the EOF staff and as directed for other emergency centers.

6.2.4 Meteorology and Unified Dose Assessment Center

The Meteorology and Unified Dose Assessment Center (MUDAC) is utilized as a joint center by Energy Northwest, DOE-RL, and States of Washington and Oregon Departments of Health to coordinate field team operations, project dose rates, record actual measured dose rates during an emergency, and determine protective action recommendations. The computerized Emergency Dose Projection System as described in Section 5 is located in this center. Actual and projected doses obtained will be available for use in determining protective action recommendations for the general populations. From the MUDAC information can be sent by facsimile to the Benton and Franklin County Emergency Operations Centers, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and other Energy Northwest emergency centers. Communications with the field monitoring teams is provided in MUDAC. This capability allows for relaying instructions and receiving survey results.

6.2.5 Security Communications Center

The Security Communications Center is utilized in the notification process and has voice and hard copy transmission capabilities as detailed in Section 4.6. Any information received here will be delivered to the appropriate personnel.

6.2.6 News Release Preparation and Media Briefing

A news release preparation area is provided in the EOF for Energy Northwest's public relations personnel to develop public information status reports. These status reports will be updated and distributed to the Joint Information Center (JIC) located at the ENOC. Groups of media personnel may be escorted to the EOF, as conditions permit, for briefings and tours. This action will be taken under the direction of the EOF Public Information Officer (PIO), and with approval of the EOF Manager.

6.2.7 Work Areas

Several work areas are identified for Energy Northwest personnel as well as for Government agencies (DOE, FEMA, NRC, Washington and Oregon States, etc.), outside consultants, architect/engineers, contractors, and vendors in the EOF. Other general office or classrooms are available as needed.

6.2.8 Health Physics Center

The Health Physics Center consists of several areas in the protected Emergency Operations Facility and the non-protected Kootenai Building, a radiological laboratory, and counting lab. Energy Northwest contracts with a vendor to process thermoluminescent dosimeters and provide results to Energy Northwest in a timely manner. This vendor is certified to the standards of the National Voluntary Laboratory Accreditation Program (NVLAP). Results are recorded into a computerized Total Exposure System (TES) which can be accessed for information from the plant health physics areas as well as the Operations Support Center and Emergency Operations Facility.

A whole body counting, respiratory testing, and computerized internal dose assessment system is in use at Energy Northwest. The respiratory testing area consists of fitting and testing equipment. A large supply of respirators is available if required for emergency response or recovery operations.

The radiological laboratory and adjoining counting lab provide for radiological analysis of environmental samples as well as partial backup capability for plant laboratories. If plant analytical capabilities become unusable, plant samples can be transported to the Emergency Operations Facility or a support agency laboratory for chemical and/or radiological analysis. Energy Northwest contracts with outside laboratories for backup environmental sample analysis.

6.2.9 First Aid and Decontamination Area

A first aid facility is located near the Protected Area of the plant, and a decontamination facility is located in the unprotected portion of the Kootenai Building. The relative locations of these facilities provide for treatment and decontamination of injured personnel as well as independent operation of both facilities. Drains from the decontamination area are connected to an isolable tank. Energy Northwest contracts with HEHF for treatment of severely contaminated injured personnel. This first aid facility is staffed by qualified personnel and first aid equipment is available for normal first aid treatment.

6.2.10 Environmental Programs Area

The environmental programs area includes an environmental equipment area and biology lab. The environmental equipment area will be used to store any backlog of environmental samples. Additional storage is available in the biology lab. Provisions have been made for cataloging stored samples.

6.2.11 Habitability

The Emergency Operations Facility is a protected area in the Kootenai Building which has special shielding and ventilation to maintain habitability requirements. The ventilation system is designed to provide maximum habitability during an accidental radiological release. HEPA filters condition entering air during emergency conditions. Ion chambers are strategically located in the ventilation system to detect potential infiltration of contaminated air thus automatically allowing reconfiguration of airflows from replenishment to recirculation modes.

The EOF is designed to ensure that the total dose to occupying personnel is less than the Environmental Protection Agency Protective Action Guide limit of 5 rem TEDE for the duration of the postulated accident. Shielding requirements were determined using source terms from BWR/PWR accident scenarios described in the WASH 1400 Reactor Safety Study. Calculations considered worst case meteorology and assumed a 0.75 miles distance from the plant to the Emergency Operations Facility.

6.2.12 Emergency Power

A 365 kilowatt emergency power generator provides power to the Emergency Operations Facility during power loss. Vital equipment such as communication systems, counting equipment, dose assessment equipment, and lights are connected to the emergency power generator.

6.3 ALTERNATE EMERGENCY OPERATIONS FACILITY

The Alternate Emergency Operations Facility (EOF) is located approximately 10 miles south of the plant. This facility may be activated in the event of the primary EOF becoming uninhabitable, or inaccessible to offsite responders. The EOF Manager, in consultation with radiation protection personnel, will determine when to activate this facility, and appropriate staffing levels.

A Crash phone, dedicated facsimile machines, and a NRC Emergency Notification System phone are available to provide notifications to offsite agencies. The emergency functions for direction and control, emergency classification, notifications, protective action recommendations, dose projection operations, and field team dispatch and control may be provided from this facility. The Alternate EOF has sufficient communications capability to continue to communicate with the control room, TSC, primary EOF, field teams, and offsite agencies.

6.4 JOINT INFORMATION CENTER

The Energy Northwest Joint Information Center, (JIC), located approximately 10 miles south of the plant, integrates emergency response/recovery public information functions with the resources normally available to upper management personnel. Figure 6-5 shows the typical floor plan for the JIC.

Designated staff may support the EOF Manager and the emergency effort from the JIC.

Dedicated phones provide continuous contact with the plant and Emergency Operations Facility. Facsimile is available for the exchange of the latest data with other emergency centers. Access to certain areas are controlled when emergency centers are activated. The JIC will function as a joint news release center for Energy Northwest, county, state, DOE-RL and other federal agencies to facilitate consistent media releases. Areas will be set up to provide work space for the various media personnel.

Emergency power is provided for the JIC and telephone system.

6.5 EMERGENCY EQUIPMENT AND SUPPLIES

Appendix 3 identifies the emergency equipment staged for Fire Brigade Response at Columbia Generating Station. In addition to the Fire Brigade turnout stations, other equipment is staged throughout the plant for use by the Fire Brigade. This includes fire fighting hose stations, foam kits for Class B fires, and smoke removal.

Equipment is stored for field team use at the Emergency Operation Facility and at an offsite location. Vehicles and survey equipment kits are available for use by the field teams.

An inspection, inventory, and operational check of emergency equipment/instruments in each emergency cabinet or kit is conducted at least quarterly and after each drill which utilized that particular cabinet and kit. The equipment designated for emergency use will be calibrated at the intervals recommended by the manufacturer. Sufficient reserves of instruments and equipment are maintained to replace instruments removed from kits for repair or calibration. Emergency respiratory equipment will be inspected monthly. Required quantities in each cabinet or kit are established by procedure.

6.6 COMMUNICATION SYSTEMS

The Rolm phone system and the 300 dial-up system may be used as a backup to the Crash system for notification of offsite agencies. The Emergency Director will notify the SCC Duty Officer and offsite agency representatives using one or more of the following systems:

6.6.1 Radio Network

The radio system consists of radio channels covering several different radio bands. The Emergency Operations Facility is the primary facility for communication with emergency responders and offsite response organizations.

Limited radio capability is available in the Central Alarm Station, the Secondary Alarm Station (in the Control Room), the Technical Support Center, and the Operations Support Center. Mobile and portable radios are provided for selected vehicles and plant personnel.

Field monitoring teams will utilize the state sanctioned common emergency radio channel of 46.00 MHz. This system has a mountaintop base station that provides communications with field monitoring teams.

The mountaintop radio repeaters and 46.00 MHz base station are powered by a battery and charger system to provide communications capability during a loss of power.

Radio communication with the Department of Energy and the Benton and Franklin County Emergency Operations Centers is also available. The Department of Energy Communications Center and the Benton County Emergency Dispatch Center provide 24-hour monitoring of these radio links. See Table 6-1 for a listing of available radio channels.

6.6.2 Company Telephone System

Energy Northwest's Richland phone system is a computer based, software controlled telephone exchange (Computerized Branch Exchange). It is equipped with redundant computerized processor units and is served by an uninterruptible power supply.

The direct-dial private telephone system provides communication between the Hanford Energy Northwest facilities. The phone system is arranged such that plant telephones can reach other Energy Northwest facilities by direct-dialing and without the need of an operator. Telephones are at various strategic locations throughout the plants, including the Control Room, the remote shutdown panel, the Technical Support Center and Operations Support Center.

There are multiple direct inward dialing trunks to the Computerized Branch Exchange. Columbia Generating Station is connected to this exchange via company owned tie trunk lines. The Emergency Operations Facility has tie trunk lines connected to the Energy Northwest Office Complex (ENOC) Computerized Branch Exchange. The Computerized Branch Exchange in the plant is connected to the outside public telephone system via a minimum of 15 central office trunks. Each plant also has access to a number of long distance State Controlled Automatic Network Circuit (SCAN) trunks. Energy Northwest headquarters also has access to long distance SCAN lines. These SCAN lines are wired direct to Spokane and bypass the local toll centers. This allows bypassing of the local central office in the event of congestion.

6.6.3 Dedicated Telephone Circuits

The following dedicated phone networks are available for emergency communications in addition to the normal Energy Northwest phone network:

a. Energy Northwest Emergency Center Network,
b. Response Agency Network, and
c. NRC Emergency Notification System.

The Energy Northwest Emergency Center Network interconnects the plant and emergency centers. The network uses a push button system in which the caller selects the area to be called, pushes the appropriate button which in turn automatically rings into the selected area.

The Response Agency Network connects the Energy Northwest emergency centers with State and local emergency centers. Lines to the Washington State Emergency Operations Center are routed through the local State Patrol Office switchgear and transmitted via the state microwave system to Camp Murray. By dialing a unique series of numbers the user is able to reach a specific agency. Facilities serviced by these dedicated lines are Columbia Generating Station, the Benton and Franklin County Emergency Operations Centers in Richland and Pasco, the Department of Energy Patrol Occurrence Notification Center on the Hanford site, and the Washington State Emergency Operations Center in Camp Murray. In addition, the network has a crash function, which is why it is referred to as the Crash line or Crash Notification System. This feature of the system operates by dialing a unique activator number that automatically rings all the phones on the system. The Crash line is available in the Alternate EOF.

A federal telephone system (FTS 2000) connects Energy Northwest emergency centers to the Nuclear Regulatory Commission. The Emergency Notification Network (ENS) and the Health Physics Network (HPN) are included in this system. ENS is available in the Control Room, the Technical Support Center and the Emergency Operations Facility. The HPN, ENS, and Crash are available in the Technical Support Center, the Emergency Operations Facility, and the Alternate EOF.

Call list telephone numbers associated with activation of the Emergency Plan are updated at least quarterly by the Emergency Preparedness section.

6.6.4 Sound Powered Phone System

The plant Sound Powered System, designed to provide communications without the use of batteries or other outside power sources, is powered by voice sound energy. This system is completely separate and distinct from the computerized Branch Exchange telephone system.

The Sound Powered System has separate communications loops which are arranged by building and elevation. All sound powered jacks in each loop are wired in parallel and terminated on a switching device. This device provides the capability to merge and isolate various combinations of loops for maintenance and testing activities. Extension cords, handsets, and sound powered head or head-chest sets are provided for use with the jack stations.

6.6.5 In-Plant Public Address System

The Public Address System (PA) is composed of separate public address zones, each accessible through the Plant Computerized Branch Exchange telephone system. An additional phone number accesses all zones for group paging. Paging microphones located in the Control Room, Central Alarm Station, Secondary Alarm Station, Technical Support Center (TSC) and other areas override telephonic paging and transmit to all zones simultaneously. Tone generators operated from the Control Room or the TSC allow an alerting tone to be broadcast over the PA system. The paging microphones have priority over all other functions of the Public Address System.

Portable high noise evacuation devices, each composed of a radio-controlled siren and strobe light, are located in selected areas throughout the plant. These devices are activated by the PA alerting tone.

6.6.6 Area Wide Radio Paging

A Radio Paging System is used to alert on-call members of Energy Northwest's emergency response organization of an emergency.

6.6.7 Facsimile System

Various locations such as the Control Room, Technical Support Center, Emergency Operations Facility, Joint Information Center, Department of Energy-RL, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and the Benton and Franklin County Emergency Operations Centers have facsimile transceivers. The facsimile transceivers enable the transmission and receipt of printed material. The facsimile system which connects the Energy Northwest emergency centers with the county and state emergency centers uses dedicated phone lines.

6.6.8 Early Warning System

Tone activated radios are made available to all households within the Ten-Mile Emergency Planning Zone. These radios monitor the local Emergency Alerting System. If an Emergency Alerting System signal is received, a light is activated and an audible tone is heard. The radio then broadcasts the message. The radios contain a battery backup.

In addition to the tone activated radios, sirens located on the Columbia and Yakima Rivers, and in the Horn Rapids area are provided to assist in notifying sportsmen, boaters, and other recreationists that may be present. The Department of Energy also maintains a system for alerting its employees and its contractor's employees.

6.6.9 Automatic Dialer

An automatic dialing system is used similarly to and at times in conjunction with the area wide radio paging system as a means to notify Energy Northwest emergency personnel.

6.6.10 Emergency Response Data System

The Emergency Response Data System (ERDS) has been established to transmit raw reactor parametric data to the NRC when an Alert or higher emergency is declared. The data is conveyed over an FTS 2000 phone circuit.

6.7 COMMUNICATION SYSTEMS TESTS

The following test schedule of the communication system is established to ensure operability. This test schedule includes:

a. Communications with Emergency Dispatch Center and Department of Energy-RL

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

b. Communications with Washington State Emergency Operation Center

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

c. Communications with Nuclear Regulatory Commission Headquarters

   1. Dedicated telephone lines -- tested monthly.
   2. ERDS - tested quarterly.

d. Communications among Energy Northwest Emergency Facilities

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.
3. Data circuits -- tested monthly.
4. Installed Radio links -- tested monthly.
5. Environmental Field Team radios -- tested quarterly.

e. Notification System

1. Siren system

a) status test -- monthly documentation of status tests conducted at least bi-weekly.
b) complete system test -- annually.

2. EAS Radio receivers test

a) operability -- weekly (performed by the Emergency Alerting System).
b) coverage -- annually (performed by Energy Northwest and Benton and Franklin counties).

3. Automatic Dialer

Perform activation tests -- quarterly.

f. Emergency communications equipment (not covered above)

1. Area Wide Radio Paging -- operational test quarterly.

g. Fire Brigade Equipment

1. Replace batteries and perform operational tests monthly on portable radios (OSC).
2. Perform annual FCC checks on portable radios.

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

I. Emergency Facility Radio Channel Availability

A. Control Room

- In-Plant Operations Channel
- Area Wide Security Channel (Secondary Alarm Station)

B. Technical Support Center (TSC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Field Team - 46.00 MHz

C. Operations Support Center (OSC)

- In-Plant Operations Channel

D. Central Alarm Station (CAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

E. Secondary Alarm Station (SAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

F. Security Communications Center (SCC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel
- LERN (Law Enforcement Radio Network)

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

G. Emergency Operations Facility
- Area Wide Security Channel Link
  1. Franklin County Sheriff
  2. Emergency Dispatch Center
  3. Department of Energy Patrol Emergency Office
- Field Team - 46.00 MHz Channel
- Department of Energy Emergency Response Channel
- LERN Channel (Law Enforcement Radio Network)

H. Department of Energy
- Area Wide plant Security Channel

I. Benton County Emergency Dispatch Center
- Area Wide Security Channel

K. Franklin County Emergency Dispatch Center
- Area Wide Security Channel

J. Benton and Franklin Counties Emergency Operations Centers
- Area Wide Security Channel

II. Energy Northwest Emergency Center Telephone Capability

A. Technical Support Center (TSC) dedicated phone system interconnects with:
- Control Room
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Emergency Operations Facility
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System

B. Operations Support Center (OSC) dedicated phone system interconnects with:
- Control Room
- Technical Support Center
- Emergency Operations Facility
- Central Alarm Station/Secondary Alarm Station
- Facsimile System

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

C. Control Room dedicated phone system interconnects with:

- Technical Support Center
- Operations Support Center
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System
- Emergency Operations Facility

D. Emergency Operations Facility (EOF) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

E. Alternate Emergency Operations Facility (EOF) phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

F. Joint Information Center (JIC) dedicated phone system interconnects with:

- Crash Notification System
- EOF
- Facsimile System

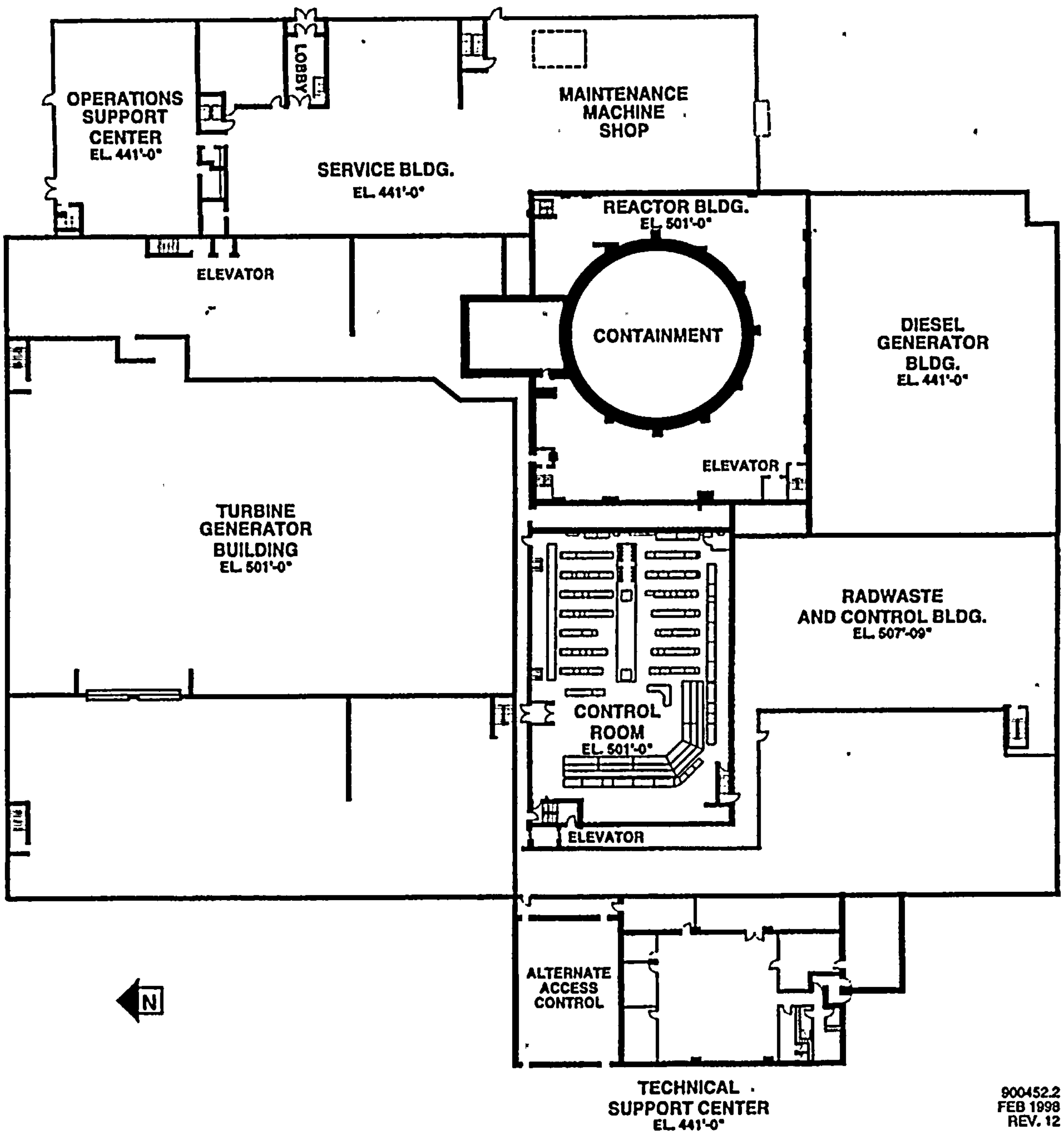


Figure 6-1, Columbia Generating Station Control Room, Technical Support Center and Operations Support Center Locations (Typical Arrangement)

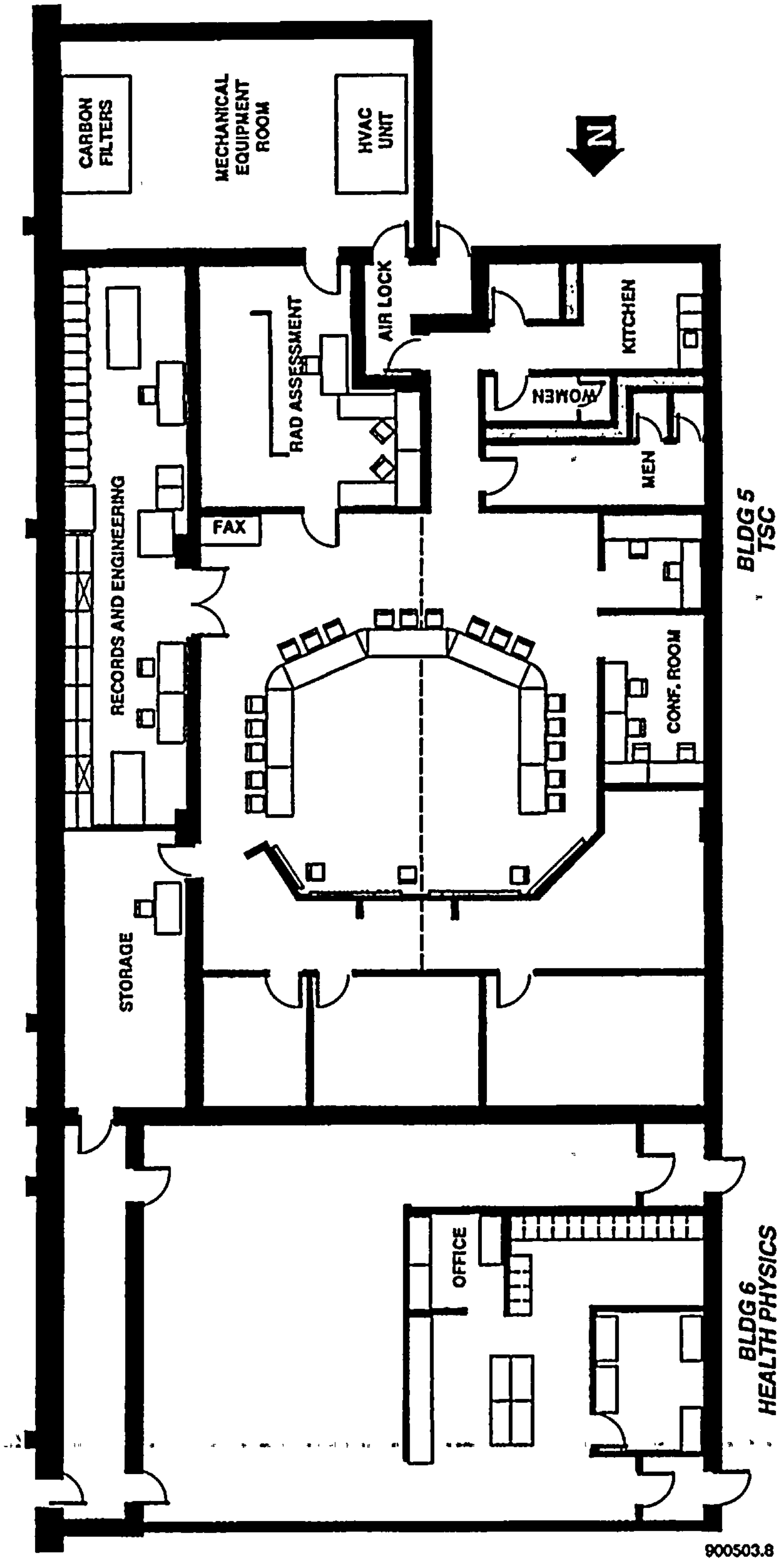


Figure 6-2, Columbia Generating Station Technical Support Center
(Typical Arrangement)

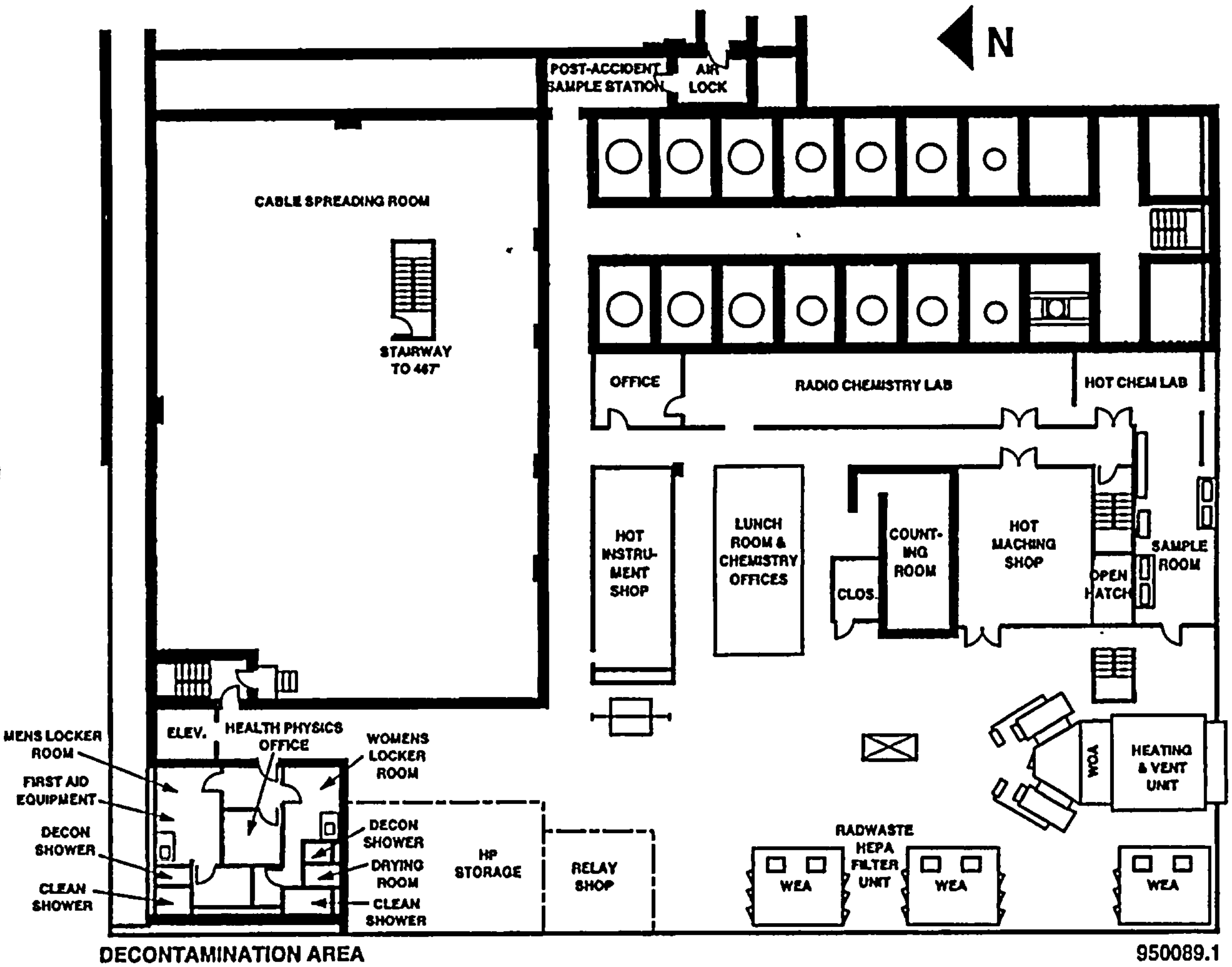


Figure 6-3, Columbia Generating Station Decontamination Area (Typical Arrangement)

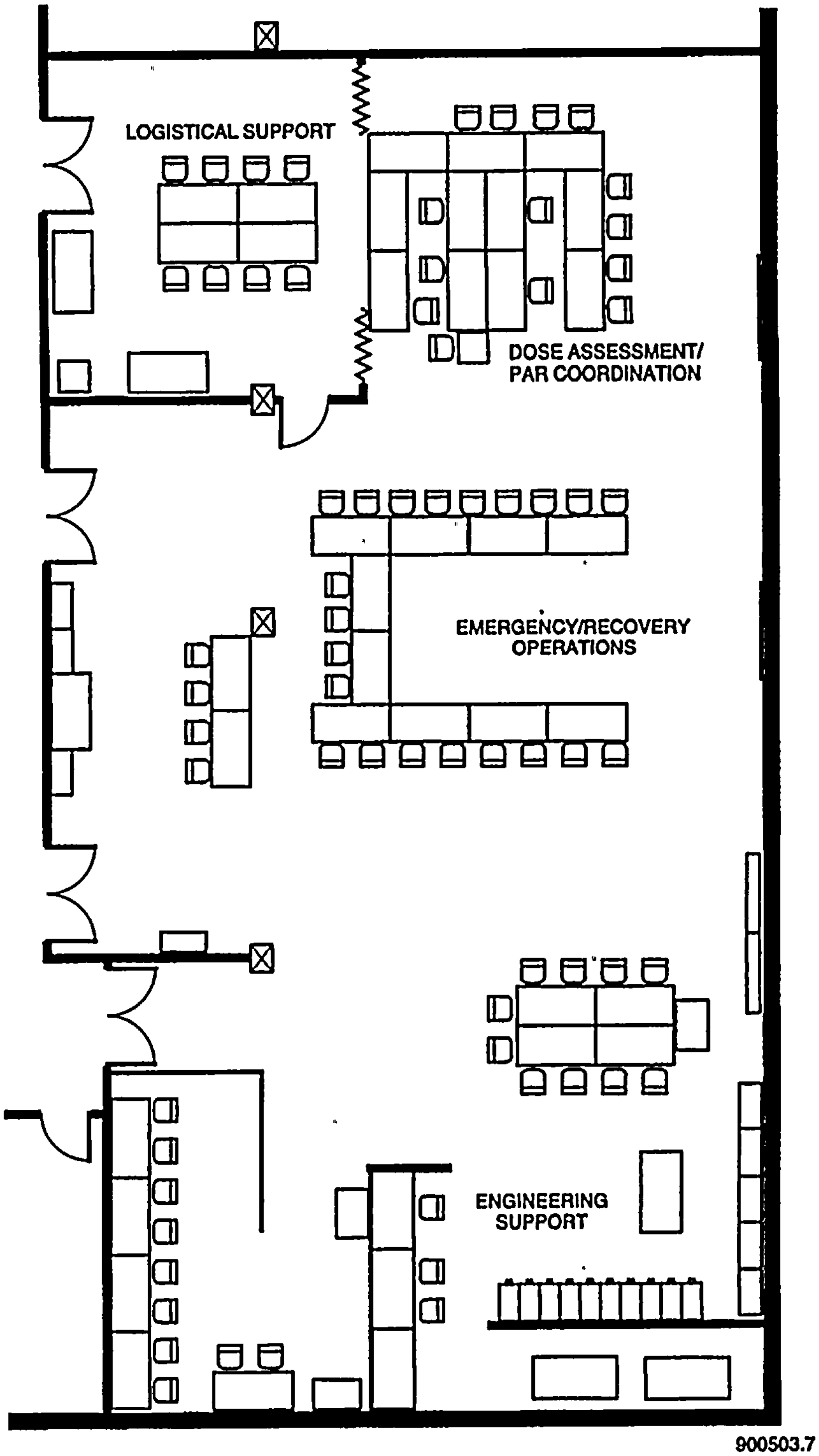


Figure 6-4, Kootenai Building
Emergency Operations Facility (EOF)
(Typical Arrangement)

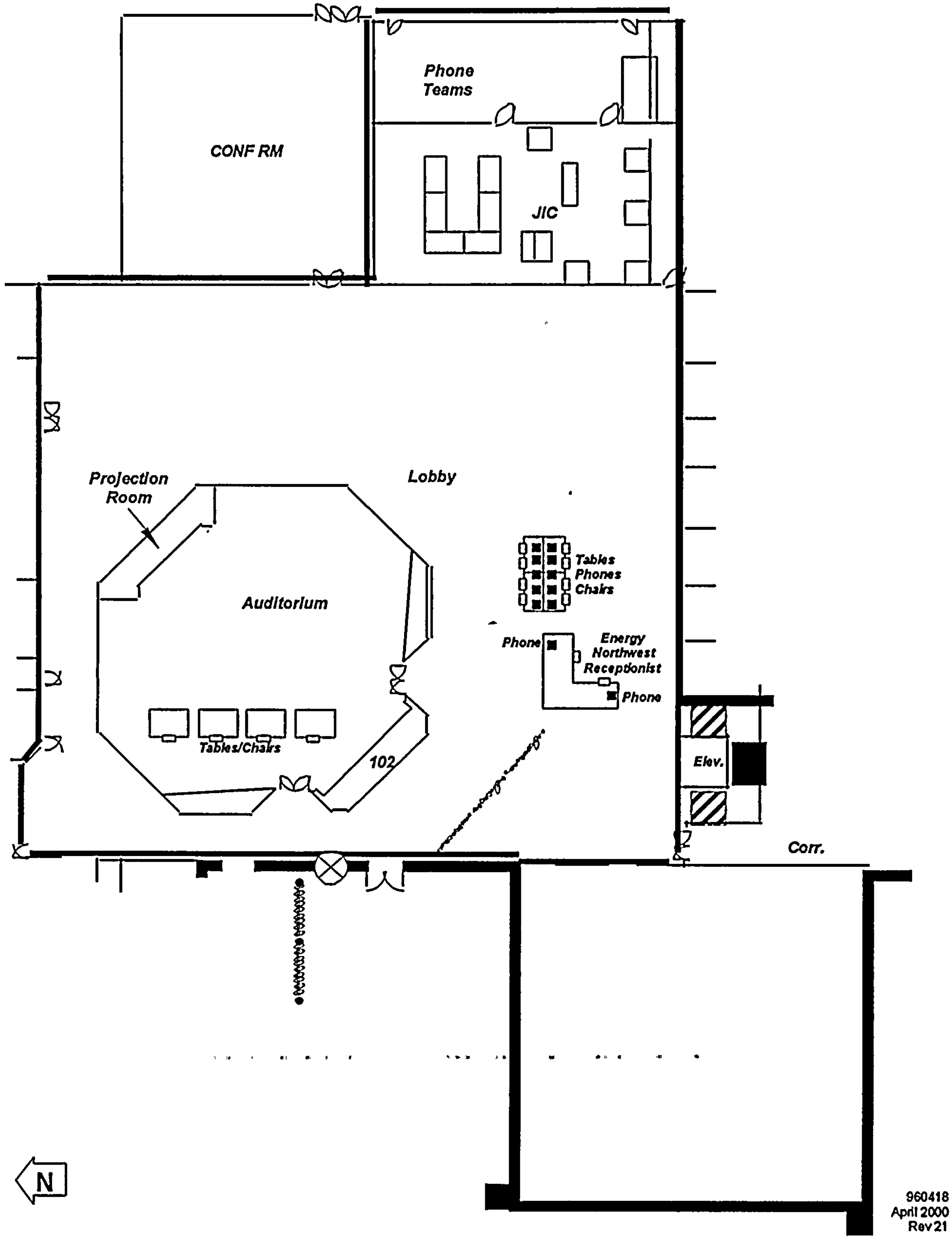


Figure 6-5, Joint Information Center - Typical Arrangement

SECTION 7
REENTRY AND RECOVERY OPERATIONS

7.1 REENTRY AND RECOVERY OPERATIONS

Emergency actions will shift to the recovery phase once the immediate corrective and protective actions have established effective control over the incident. Onsite reentry and recovery operations are addressed in 7.2 and 7.3. Offsite reentry and recovery operations are discussed in 7.4.

7.2 REENTRY INTO ONSITE AREAS

Reentry into evacuated onsite areas may be required during and after an emergency. This could include search and rescue, actions to minimize further accident consequence, or assessment of plant conditions to determine the scope of recovery operations. Exposure guidelines, as outlined in Section 5 of this plan, should not be relaxed without sufficient justification.

Prior to reentry, the Radiation Protection Manager or his representative shall:

a. Review all available radiation survey data and determine plant areas with high radiation exposure and/or contamination potential,

b. Review the radiation exposure records of personnel participating in the reentry operation and determine the need for additional personnel,

c. Review the adequacy of the radiological sampling and survey instrumentation to be used by the team (type, ranges, number, calibration etc.),

d. Review protective clothing, dosimetry, and respiratory protection requirements,

e. Ensure that appropriate communications are available, and

f. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry.

The initial recovery efforts should encompass the following actions:

a. Conduct comprehensive radiation surveys of the plant facilities and define all radiological problem areas;

b. Isolate and post all radiation and contamination areas with appropriate warning signs as conditions and available time allow, and

c. Identify potential hazards that may impact recovery operations.

During the reentry activities immediately following an accident, initial radiation monitoring functions involve only gross hazard evaluations, isolation of the hazard, and the definition of radiological problem areas. This immediate radiation surveillance activity is used to provide the basic information for the development of recovery operations.

7.3 ONSITE RECOVERY OPERATIONS

The EOF Manager and TSC Manager have the joint responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. A Recovery Manager will be appointed and a Recovery Organization will be established to develop and coordinate plans and schedules for the recovery operations. Following a Site Area Emergency or General Emergency, the Corporate Nuclear Safety Review Board (CNSRB) will review and comment on the recovery planning effort to assure that all nuclear safety aspects of the recovery are satisfied. (The CNSRB will report their findings to the Recovery Manager, who shall take the actions deemed appropriate for safe recovery operations.) Refer to Figure 7-1 for key positions and responsibilities of the recovery organization.

7.3.1 Initiating the Recovery Phase

Prior to terminating an emergency and entering the recovery phase, the EOF Manager will coordinate with the TSC Manager to ensure that the following criteria have been considered:

a. The conditions which caused the emergency have stabilized, are under control, and are unlikely to deteriorate further.

b. Plume tracking is no longer required. The only environmental assessment activities in progress may be those necessary to assess the extent of deposition resulting from passage of the plume.

c. In-plant radiation levels are stable or decreasing.

d. Radioactive releases are under control.

e. The potential for an uncontrolled radioactive release is acceptably low.

f. Containment pressure is within technical specifications.

g. The reactor is in a stable safe shutdown condition and long-term core cooling is available as required.

h. Any fire, flood, earthquake or similar emergency conditions no longer exist.

i. Offsite conditions will not limit access of personnel and support resources to the site.

j. Discussions have been held with DOE-RL, Washington, Oregon, affected counties and select regulatory agencies, and agreement has been reached to begin the recovery phase.

The extent of recovery activities will dictate the precise framework of the Recovery Organization:

a. For events of a minor nature, the normal onshift organization should be adequate to perform necessary close-out actions (e.g., for UNUSUAL EVENT classifications).

b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization, or portions thereof, should be adequate to coordinate the necessary recovery actions (e.g., for ALERT classifications).

c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, a formal Recovery Organization will be established to manage the recovery actions. Specific members of the Recovery Organization will be selected based upon the sequence of events that preceded the recovery activities.

7.3.2 Conducting Recovery Operations

Recovery operations will be performed in accordance with written procedures developed by the Recovery Manager and staff prior to implementation of any recovery action. These procedures shall be based upon information collected by the initial reentry team(s) and any subsequent updates. Special precautions will be identified for any potentially hazardous conditions. If radiological hazards exceed the boundaries of the radiation access controlled areas, the security access lists should be reviewed and revised to prevent unauthorized or unintentional entry into hazardous areas.

The Recovery Manager is responsible for directing the activities of the Recovery Organization and should:

a. Ensure that sufficient personnel from Columbia Generating Station and other organizations are available to support recovery.

b. Direct the development of a recovery plan and implementing procedures, as required.

c. Coordinate with the CNSRB to ensure adequate review of engineering activities and proper review and approval of the recovery plan and implementing procedures.

d. Coordinate the deactivations of emergency response facilities and personnel as appropriate.

e. Coordinate the integration of available state and federal assistance into recovery activities.

f. Coordinate with offsite authorities, and provide support as required for offsite recovery activities.

g. Approve all technically oriented recovery information released by the Public Information Organization.

h. Periodically estimate total population exposure.

When criteria to enter the recovery phase are met, the Recovery Manager will inform emergency centers and offsite agencies by crash call of the transition to recovery. The Recovery Manager then initiates a discussion of recovery items with the Recovery Task Force members to develop a shutdown safety plan focusing on procedurally defined priorities.

The Recovery Task Force will produce initial plans to cope with near and long term activities, provide direct input to the maintenance organization for an integrated outage plan, and provide assistance to the Recovery Manager to transition from a recovery phase to an outage, as appropriate.

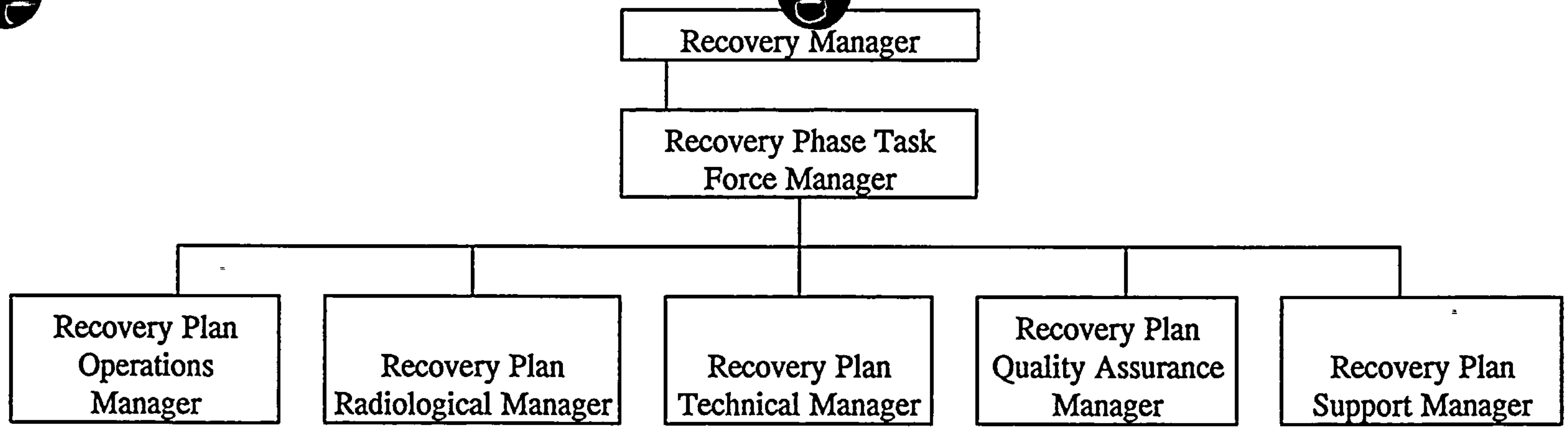
During the recovery operations, particular attention should be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine the extent of any equipment damage and to determine the sequence of events that led up to the accident for event reporting and lessons learned findings.

The Recovery Manager will ensure that onsite ERO and appropriate offsite agencies are notified prior to initiating any recovery operation with a potential for a radiological release. The ERO and offsite agencies will also be notified of any changes in the key positions of the recovery organizational structure.

All recovery operations are considered to be terminated when the plant has returned to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.4 OFFSITE REENTRY AND RECOVERY OPERATIONS

A Reentry and Recovery Task Force is established by the State and County emergency response plans and is responsible for coordinating offsite recovery following radiological incidents including the requirements for reentry conditions for any offsite evacuated areas. Energy Northwest will provide a representative and additional assistance to this Task Force, as requested. Specific details of offsite reentry and recovery operations can be found in the State and County emergency response plans and implementing procedures.



<u>Areas of Oversight Responsibilities:</u>

Production Scheduling	Environmental	Fuels	Commitments	Procedures
Safety	Decon	Licensing	Reviews	Scheduling
Maintenance	Restoration HP	Vendors	Oversight	Finance
Security (Plant)	Radwaste	Analysis	Qualifications	Public Relations
OPS	Surveys	Plant Support		Legal
Shutdown Safety				Site Support
				Procurement
				Add'l Staffing

<u>NOTE</u>: The NRC will be invited to participate in this task force as deemed appropriate.

Figure 7-1

SECTION 8
MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES FOR THE PLANNING EFFORT

Overall responsibility and authority for emergency planning lies with the Vice President, Operations Support/Public Information Officer. The Manager, Resource Protection, reports directly to this Vice President, and has emergency preparedness as one of his general areas of responsibility. Reporting to the Manager, Resource Protection, is the Corporate Emergency Preparedness, Safety and Health Officer, who has specific responsibility for the Emergency Preparedness organization, and implementation of the program itself. Formal position descriptions specify minimum qualifications for the emergency planning personnel. Professional qualifications are maintained by periodic attendance at industry seminars and short courses, through observation of and participation in radiological emergency exercises conducted at other nuclear facilities, and through job-related in-house topical training sessions.

Specific responsibilities for the Corporate Emergency Preparedness, Safety and Health Officer include, but are not necessarily limited to, the following:

a. Ensure that the information, data, and procedures detailed in the Emergency Plan Implementing Procedures are consistent with the Columbia Generating Station Emergency Plan.

b. Ensure that the Emergency Plan Implementing Procedures and other procedures are coordinated and interface properly (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

c. Ensure the coordination of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures with the State, County and DOE-RL Plans.

d. Ensure an adequate staffing of the ERO.

e. Ensure emergency preparedness related training documentation is sent to Records Management.

f. Ensure emergency preparedness related drills and exercises are coordinated as described in this Plan.

g. Ensure periodic review and update of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures occurs as described in this Plan.

h. Ensure the maintenance and inventory of emergency facilities, equipment and supplies as described in this Plan.

i. Maintain knowledge current with respect to changes in the federal regulations and guidance that impact emergency preparedness activities.

j. Public information and education on emergency preparedness issues.

8.2 EMERGENCY PREPAREDNESS PLAN REVIEW

The Emergency Plan and the Agreements which support the plan are reviewed annually and updated as necessary. Critiques of past exercises, changes in company organizational structure, and issuance of new regulations provide the primary input to plan review. The Corporate Emergency Preparedness, Safety and Health Officer is responsible for developing and updating the Emergency Plan and coordinating the plan with other response organizations. The Plant Operations Committee is responsible for reviewing any proposed changes and submittal of the proposed revision to the Corporate Nuclear Safety Review Board.

The Corporate Emergency Preparedness, Safety and Health Officer provides a distribution list of all organizations and individuals with responsibility for implementation of the Emergency Plan. The Emergency Plan and all subsequent revisions are then distributed through a manuals control system which verifies receipt of the revisions by the implementing organization or individual. Revised pages are dated and marked to indicate where changes have occurred. If no revisions have occurred, the Corporate Emergency Preparedness, Safety and Health Officer will certify by letter to all Emergency Plan manual holders that the plan and supporting agreements have been reviewed and are current.

8.3 INDEPENDENT AUDIT OF THE EMERGENCY PREPAREDNESS PROGRAM

Either of two types of audit groups may be employed to ensure an adequate Emergency Preparedness Program. Audits may be performed by an outside organization with technical expertise in emergency planning or by an organization within Energy Northwest which is independent of the emergency preparedness program.

An audit will be conducted in accordance with 10 CFR 50.54(t) and the OQAPD. The review shall include the Emergency Plan, the Emergency Plan Implementing Procedures, training, readiness testing, equipment, and interfaces with state and local governments. The results of the audit, along with recommendations for improvement, shall be documented and reported to the Chief Executive Officer, the Plant General Manager, Vice President, Operations Support/PIO, and appropriate corporate and plant management. In addition, involved federal, state, and local organizations will receive results of the audit. The report and recommendations will be retained for a minimum period of five years.

The Corporate Nuclear Safety Review Board has the responsibility to review the Emergency Preparedness Program audit findings to determine if the conduct is adequate, and if the audit responses are appropriate and timely. The Board may expand these audit activities if necessary.

8.4 FACILITIES AND EQUIPMENT MAINTENANCE

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for ensuring that the facilities and equipment specified in Section 6 of this Plan are maintained in operational readiness. In addition to the routine tests and scheduled maintenance evolutions, the Emergency Preparedness staff members conduct periodic facility walk-downs of the on-site emergency response facilities. Various departments within Energy Northwest share the responsibility for performing maintenance and calibration on the equipment necessary to implement the provisions of the Emergency Plan, including survey meter calibration and testing, backup power source maintenance and testing (e.g., uninterruptible power supply batteries, diesel generators, etc.), emergency ventilation system maintenance and operational checks, field team vehicle maintenance, communications systems maintenance and testing, and tone alert radio and siren maintenance and periodic testing.

8.5 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The radiological emergency response training program is one of the most important aspects of the emergency preparedness effort. This training is intended to keep an adequate number of emergency personnel sufficiently familiar with the Emergency Plan and procedures to perform effectively in an emergency. Fire Brigade personnel are trained per FSAR 13.2. Security personnel are trained per the Physical Security Plan.

8.5.1 Emergency Training Program Description

Initial training for emergency responders is provided to all new Energy Northwest emergency response organization candidates. Refresher training is provided to the emergency response organization on an annual basis.

Personnel from local, state, and federal organizations who may be requested to assist during an emergency will be invited to participate in the site specific training program which may include tours to gain familiarization with the facilities. Support organization personnel will be provided qualified escorts if they enter the Plant Site during an emergency.

a. The Emergency Preparedness Training Program will include, but is not limited to the following:

- Applicable Emergency Plan Implementing Procedures
- Location of emergency equipment and supplies
- Names, locations, and functions of the emergency response facilities
- Use of plant communication systems
- Personnel accountability, assembly, and evacuation

b. As a minimum, all Emergency Response Organization personnel shall receive Emergency Preparedness Initial training. Emergency Plan training program lesson plans are developed using applicable guidance from the systematic approach to training process.

c. Initial training for Emergency Response Organization personnel shall include formalized classroom training, and examinations. Additionally, "hands on" training with completion of performance evaluation sign off forms may be used, as appropriate. It is the intent of this training program to qualify Emergency Response Organization personnel in the requirements of the Emergency Plan Implementing Procedures applicable to their emergency positions.

The training courses will provide the necessary information to enable each member of the emergency organization to perform assigned emergency tasks. Selected emergency personnel will attend specialized classes related to particular emergency assignments. Specific training course assignments for members of the emergency organization, and overall training responsibilities, may be found in the Qualification Directory. Detailed training responsibilities may be found in the Site Wide Procedures. The training course descriptions are found in the specific qualification directories.

8.5.1.1 Emergency Training for Essential Personnel

The emergency organization positions which are essential to implementation of this Emergency Plan are identified in Table 2-1. The individuals identified to function in these emergency organization positions will receive appropriate specialized initial training in the duties and responsibilities of the position and the applicable procedures. This training will consist of formal classroom instruction, written examination to verify a satisfactory level of comprehension, and where appropriate will include "hands-on" training with completion of performance evaluation sign off forms.

a. In addition to Emergency Center Overview training, essential personnel receive the following training:

- Emergency Director (Shift Manager, TSC Manager, EOF Manager)
  - > Protective Action Recommendations
  - > Emergency Classification
- Control Room Staff (Shift Manager, Control Room Supervisor, Control Room Operators, Emergency Response SRO, STA)
  - > Protective Action Recommendations (except Control Room Operators)
  - > Emergency Classification

  - > Dose Projection (except Control Room Operators)
  - > Emergency Notification

- Accident Assessment and Rad Monitoring Teams (RPM, Chemistry/Effluent Manager, REM, Dose Projection HP, Field Team Members, Field Team Coordinator)
  - > Protective Action Recommendations (RPM and REM only)
  - > Dose Projection (Chemistry/Effluent Manager, REM and Dose Projection HP only)
  - > Field Team Overview and Operations (FT members and FT Dispatcher only)

- Fire Brigade
  - > Trained per the requirements of FSAR Chapter 13.2

- Repair Teams (HP, Mechanic, Electrician, I&C, Chemistry)
  - > OSC Maintenance Craft Overview

- First Aid/Rescue teams
  - > Equivalent to Red Cross standard First Aid

8.5.1.2 Emergency Training for Augmenting and Support Personnel

Individuals assigned to emergency organization augmenting and support positions (not identified in Table 2-1) will receive training as described in the Qualification Directory.

8.5.2 Training for Offsite Agencies

Orientation and training of state and county agencies and personnel involved in the Columbia Generating Station emergency preparedness efforts will be made available by Columbia Generating Station, as follows:

a. The offsite organizations listed below will be invited, on at least an annual basis, to participate in a training program. The invitation will provide a schedule of drills and exercises to enable offsite agencies to request participation.

- Washington Emergency Management
- Washington Department of Health
- Benton County Emergency Management
- Franklin County Emergency Management
- Oregon Office of Energy
- Oregon State Health Division
- Local media personnel (newspapers, radio, tv, etc.)

b. The program will cover the basics of emergency preparedness as it relates to regulations and public safety. The program will include a review of select Emergency Plan Implementing Procedures with particular emphasis given to:

- Classification of emergencies,
- Reporting requirements,
- Assessments,
- Corrective and protective actions, and
- Communications networks.

Training for local services personnel includes, but is not necessarily limited to, procedures for notification and, where applicable, site access procedures, onsite contact identity, basic radiation protection and emergency response functions. This training is provided to the following organizations:

- Richland, Kennewick, and Pasco Fire Departments

  Initial and annual retraining is provided to the local fire department personnel concerning response requirements for accidents involving a threat of radiological contamination.

- Richland, Kennewick, and Pasco Hospitals

  Hospital personnel who may be involved in response to an emergency involving a potential of radiological contamination receive initial and annual retraining. Training covers how to deal with radiation accident cases.

8.5.3 Frequency of Training

Training for all individuals assigned to emergency organization positions will be successfully completed prior to their initial assignment to the emergency organization. Continuing training will also be administered to insure retention and familiarity with the subjects covered in the initial training. The continuing training will be administered annually.

The annual retraining program for ERO personnel is accomplished using classroom instruction and drill performance with immediate on the spot correction. Completion of self study information or examinations may be used to maintain qualifications of personnel unable to attend classroom sessions or drills.

Classroom instruction is used to refresh ERO personnel on information such as industry events, lesson learned from the past year's experience, significant procedure changes, and a review of response requirements.

Self guided performance evaluations may be used to refresh specific skills necessary for adequate emergency response skills. Written examinations may be used to evaluate comprehension and retention for refresher training.

Drills are used to provide practical experience to enhance information gained in the classroom. During the year, as many emergency response personnel as possible participate in scheduled drills, exercises and team training drills to broaden their experience base and that of the entire emergency organization.

When used, self-study by reading and acknowledgement is used to make responsible emergency response personnel aware of important changes to procedures. This method is primarily used when such information should not be delayed until classroom training can be provided.

8.5.4 Training Records

Responsibility for maintaining documentation of the training program is described in the Site Wide Procedures. Formal lesson plans for each course, including instructor qualifications and performance objectives will be maintained. Attendance records for all courses will also be maintained.

8.6 <u>DRILLS AND EXERCISES</u>

Periodic drills and exercises will be conducted in order to test the overall state of emergency preparedness. The prime objective of this form of training is to determine the level of emergency preparedness of all participating personnel, organizations, and agencies. More specifically, each drill or exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their duties and responsibilities.

b. Verify the adequacy of timing of drills and exercises and content of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures.

c. Test communications networks and systems.

d. Check the availability of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

Remedial exercises will be conducted if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot determine "reasonable assurance" that adequate protective measures can be taken in the event of a radiological emergency.

8.6.1 Drill and Exercise Responsibilities

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for the planning, scheduling, and coordination of all emergency preparedness related drills and exercises. All exercises are subject to the approval of the Manager, Resource Protection, and the Plant General Manager.

When a drill or exercise is to be conducted, the Corporate Emergency Preparedness, Safety and Health Officer will:

a. Schedule a date for and assign a drill or exercise coordinator.

b. Assign personnel to prepare a scenario and to act as controllers.

c. Coordinate efforts with other participating emergency personnel, organizations, and agencies.

d. Oversee conduct of the drill or exercise.

e. Critique the results of the drill or exercise.

f. Assign personnel to correct any deficiencies.

Combined functional drills and exercises will involve onsite as well as offsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted simulating, as closely as possible, actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Whenever practical this will incorporate provisions for "free play" on the part of the participants. Drill scenarios will be prepared that involve the participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations. This may include varying degrees of participation of state, county, and federal organizations and agencies, and local service support personnel and organizations. The Corporate Emergency Preparedness, Safety and Health Officer will make every effort to notify the offsite emergency response organizations and agencies at least 180 days in advance of the scheduled date of the drill or exercise.

Drills will involve on-the-spot correction of erroneous performance and a demonstration of the proper performance for the evaluator. During the conduct of exercises, the controllers are restricted in their ability to correct erroneous performance, and may only intercede to prevent damage to equipment or assure safety of personnel.

Recommendations for revisions to the Emergency Plan, Emergency Plan Implementing Procedures, and/or the upgrading of emergency equipment and supplies as a result of a drill or exercise are forwarded to the Corporate Emergency Preparedness, Safety and Health Officer by observers or participants for appropriate disposition.

8.6.2 Drill/Exercise Package

A drill/exercise package is the controlling document for each drill or exercise. It includes, as a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s) and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
- A description of the arrangements for and advance materials to be provided to official observers.

8.7 TYPES OF DRILLS

This section gives details of some of the types of drills which will be conducted periodically. Other types of drills may be developed as needed to test various portions of the emergency support organization.

8.7.1 Communication Drills

Communication drills are conducted in the following manner:

- Operability of the various communications systems is tested by two-way communication. See Section 6 for a detailed list of the systems tested. These tests may be included as part of a scheduled drill or exercise.
- Communication drills involving the field assessment teams are conducted as a part of the radiological monitoring drills.

- Communication drills with Washington State and local governments, (Benton and Franklin Counties), and DOE-RL are conducted to evaluate the message distribution process, including the ability of participants to understand the content of example messages.

8.7.2 Fire Drills

The Fire Brigade will be activated for response to a simulated fire or may respond to a training area to actually fight a fire under the supervision of the Fire Brigade Leader.

8.7.3 Medical Emergency Drills

This drill involves a simulated injury with contamination and will include provisions for participation by ambulance personnel and offsite medical treatment facilities. This drill shall occur annually. The offsite and onsite portions may be performed out of sequence and at different times. The onsite portion of the medical emergency drill should involve evaluation, packaging, and transport of the simulated victim to the ambulance pickup point.

8.7.4 Radiological Monitoring Drills

These drills involve the Environmental Field Teams. Plant and field activities may involve conducting surveys, tracking radiological plume(s) and deposition, and collecting and analyzing various samples such as water, soil, air, and vegetation. Provisions for communications and record keeping will also be tested.

8.7.5 Health Physics Drills

- The first type of health physics drill involves response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- The second type of health physics drill requires analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system.

8.8 FREQUENCY OF DRILLS AND EXERCISES

Scenarios will be varied from year to year so that all major elements of the plan and preparedness organizations are tested within a six-year period. Drills and exercises will be conducted under various weather conditions and may be unannounced. Provisions will be made to demonstrate an off hours drill between 6:00 P.M. and 4:00 A.M., at least once each six years. Additional drills may be conducted to provide practical training to emergency organization members. These drills may include components that satisfy the required drill elements in Table 8-1.

8.9 DRILL/EXERCISE PREPARATIONS AND CONDUCT

The Emergency Preparedness organization is responsible for initiating and coordinating the development of the drills and exercises necessary to meet the requirements of the Emergency Plan. The drill/exercise coordinator is responsible for overall development of the drill/exercise package and to ensure all preparatory activities between departments and agencies are coordinated (see Section 8.10.1). The minimum necessary actions to be taken in preparation for a drill or exercise are as follows:

a. Develop the drill/exercise scenario including:

   1. The objectives and evaluation criteria;

   2. The desired participants (i.e., response agencies);

   3. The primary actions/plans expected to be implemented, activated; and

   4. The tentative date.

b. Distribute the scenario to the desired participants for review and concurrence.

c. For all exercises, Federal, State, and local government agencies will be invited to observe, evaluate, and critique the exercise.

The use of the Columbia Generating Station Probabilistic Safety Assessment (PSA) should be considered when constructing drill and exercise scenarios. The use of PSA allows efforts to be directed at the most likely accident scenarios. Planning efficiency may therefore be increased by allowing the available resources to be directed at the most likely events. The Columbia Generating Station PSA considers both the likelihood and consequences of severe accidents possible at Columbia Generating Station and thus can be utilized to ensure the drill and exercise scenarios are more realistic to the players.

One of the major objectives of drills and exercises is to test the ability of emergency response organization personnel to utilize the emergency response procedures and to make effective and timely decisions based on available data. To effectively accomplish this objective, the drill/exercise controllers will provide the players with any data which the player would have available to them under the conditions being simulated by the drill or exercise.

Facilitative critique session(s) will be held as soon as practicable after each drill/exercise. The comments of the evaluators, controllers, players and observers including federal and state observers or evaluators, will be discussed and the significant comments will be identified. As a part of the critique report, deficiencies (involving needed plan/procedure changes) will be identified. The Emergency Preparedness Section will be responsible for tracking Energy Northwest corrective actions to completion and maintaining sufficient records to document correction of the deficiencies.

TABLE 8-1

REQUIRED DRILL ELEMENTS

	Drill/Exercise	Frequency
a.	Communications Tests	(As described in Section 6. Can be performed as part of drills or exercises.)
b.	Communications Drills	Monthly (with WA State, DOE RL, and Benton and Franklin County Response Agencies) Quarterly (with state and federal response agencies) Annually (with Columbia Generating Station, state and local field monitoring teams)
c.	Fire Brigade Drills	As described in FSAR Section 13.2 (See Note 1)
d.	Medical Emergency Drills	Annually (See Note 2)
e.	Radiological Monitoring Drills	Annually
f.	Health Physics Drills	
	1. Analysis of simulated samples and measurements in the environment	Semi-Annually
	2. Analysis of in plant liquid samples with actual elevated radiation levels	Annually
g.	Major Exercises, including tests of Public Notification System	Biennially (See Note 3)
h.	Combined Functional Drills	Biennially (See Note 4)

NOTE 1: One of the fire drills may be conducted as a portion of the major exercise or combined functional drill.

NOTE 2: The portion of the medical emergency drill involving offsite support agencies may be performed as a portion of the radiological monitoring, major exercise or combined functional drill.

NOTE 3: Department of Energy - Richland Operations, Benton and Franklin County and Washington State Emergency Management will be afforded the opportunity to participate biennially or more frequently if they so request.

NOTE 4: Performed during the alternating years from the major exercises, and testing a major portion of the basic elements of the plans and organizations.

SECTION 9
PUBLIC EDUCATION AND INFORMATION

9.1 PUBLIC EDUCATION AND INFORMATION PROGRAM

Energy Northwest has developed a public education and information program with the purpose of educating the public concerning power plant safety, expected effects of a reactor accident, and actions which should be taken by the public in the unlikely event of a release of radioactive material. This program is targeted for the transients and residents within the Ten-Mile Emergency Planning Zone (EPZ), as well as other interested members of the general public. Special programs have also been designed to address the special needs of the news media.

9.1.1 Annual Public Information Program

In coordination with the Department of Energy - Richland Operations, State of Washington and Benton and Franklin Counties, Energy Northwest provides information to permanent and transient populations within the Ten-Mile EPZ on such topics as radiation, recommended protective measures, selected evacuation routes and assistance centers, sheltering, respiratory protection, thyroid blocking agents, special needs for the handicapped, tone activated radio operation and contacts for additional information. This program includes written material updated and distributed annually to residences within the Ten-Mile EPZ for reference during an emergency.

Brochures at designated recreational facilities are available to transient populations within the 10-Mile EPZ.

9.1.2 Media Information Program

In addition to Energy Northwest's ongoing media program, special presentations coordinated with county and state emergency management offices are made annually to acquaint the news media with emergency preparedness, radiation hazards, and points of contact for release of public information during an emergency.

9.1.3 Warning Signs

Warning signs are posted and maintained at selected areas frequented by sportsmen within the Ten-Mile EPZ.

The signs inform the transients that upon hearing a steady siren tone to leave the area immediately and tune to the local Emergency Broadcast System frequency.

9.2 PUBLIC INFORMATION DURING EMERGENCIES

9.2.1 Emergency Public Information

During an emergency the Joint Information Center (JIC) Manager is responsible for ensuring an accurate and reliable flow of information. Emergency public information procedures are activated during an emergency and will include provisions for exchange of information between Energy Northwest, the public, and outside agencies.

It is likely that the perceived threat, hence media interest and public concern, will be greater than that actually associated with the emergency. The degree to which the emergency public information program is activated by the JIC Manager will depend upon the classification of the emergency and upon the public perception of the event. Therefore, accelerated operations beyond the requirements expected for the declared class of emergency may be implemented.

9.2.2 Emergency Operations Facility Public Information Operations

The Emergency Operations Facility (EOF) Public Information Officer and news writing staff are responsible for developing media release information, and will work closely with technical personnel in the EOF to assure accurate information.

9.2.3 Public Information Operations

The Joint Information Center, located outside the 10-mile EPZ, can accommodate a large number of media personnel and is activated automatically at an alert or higher classification or at the direction of the JIC Manager.

A News Coordination Team, chaired by the JIC Manager, will be established to issue accurate, coordinated and timely information to the media by conducting media briefings and preparing news releases. This team is composed of representatives from Energy Northwest, the Nuclear Regulatory Commission, the Department of Energy-RL, the Federal Emergency Management Agency (coordinating the rest of the federal agencies), and state and local officials. The team will assure that the spokepersons designated from each group have access to all necessary information, opportunity to exchange information, and have the opportunity to participate in media briefings.

Media briefings will be held at regular intervals. The Joint Information Center has space for briefing over 150 members of the media. Areas in the center will be provided for media work space. Copies of news releases and other support materials will be made available for media use.

A media briefing area is available in the Kootenai Building outside of the EOF. The main media center is located at the Energy Northwest Richland Office Complex in Richland.

9.2.4 Media Telephone Team Operations

A Media Phone Team can be activated and remain operational twenty-four hours per day until the emergency is terminated. This team will respond to incoming media calls with the latest available information. This team may be manned jointly by Energy Northwest, federal, local, and state representatives.

9.2.5 Public Information Telephone Team Operations

Public Information Phone Team operations will begin as directed by JIC Manager. This Team will respond to calls and correct misinformation distributed by the media or other groups. This team may be manned jointly by Energy Northwest, Federal, Local and State Representatives. The Public Information Phone Team, combined with the Media Phone Team, will ensure a comprehensive rumor control effort.

APPENDIX 1

SUPPORTING PLANS AND CONTRACTS

Annually Energy Northwest will review the supporting plans and/or contracts listed below to ensure they remain accurate and applicable relative to Columbia Generating Station activities. The results of this review may be communicated informally, but some form of record will be maintained.

Plan	Source
Washington State Fixed Nuclear Facility Emergency Response Plan	Washington Emergency Management
Benton County Fixed Nuclear Facility Response Plan	Benton County Emergency Management
Franklin County Radiological Emergency Response: Energy Northwest	Franklin County Emergency Management
Oregon Columbia Generating Station Emergency Response Plan	Oregon Office of Energy
Hanford Emergency Management Plan	Department of Energy, Richland Operations
Siemens Pre Emergency Plan Manual	Siemens Power Corporation
INPO 86-032, Emergency Resources Manual	Institute of Nuclear Power Operations
Federal Radiological Emergency Response Plan (FRERP)	Federal Emergency Management Agency
NUREG-0845, Agency Procedures for NRC Incident Response Plan (and supplements)	United States Nuclear Regulatory Commission

APPENDIX 2

EMERGENCY PLAN IMPLEMENTING PROCEDURES
Index for Implementation of Emergency Plan Sections

Procedure	Title	Section of Plan Implemented
	13.1 Emergency Classification	
13.1.1	Classifying the Emergency	4.1 thru 4.4
13.1.1A	Classifying the Emergency - Technical Bases	4.2
	13.2 Protective Measures	
13.2.1	Emergency Exposure Level/Protective Action Guides	5.9
13.2.2	Determining Protective Action Recommendations	5.5
	13.3 Natural Emergency Actions	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.1.1 and the Abnormal Condition Procedures, Section 4.12, of the Plant Procedures Manual.	
	13.4 Notifications	
13.4.1	Emergency Notifications	4.6
	13.5 Evacuation and Accountability	
13.5.1	Localized and Protected Area Evacuations	5.7.2, 5.7.3
13.5.3	Evacuation of Exclusion Area and/or Nearby Facilities	1.6.2 5.7.2, 5.7.3
13.5.5	Personnel Accountability/ Search and Rescue	5.7.5
	13.6 Emergency Security Procedures	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.10.8 and other Security Plan Implementing Procedures.	

Procedure	Title	Section of Plan Implemented
	13.7 Personnel Monitoring, Decontamination, First Aid	
13.7.5	Offsite Assembly Area Operations	5.7.3
	13.8 Offsite Dose Calculations	
13.8.1	Computerized Emergency Dose Projection System Operations	5.3
	13.9 Environmental Field Monitoring	
13.9.1	Environmental Field Monitoring Operations	2.3.3.3, 2.4.4.16, 5.4, 6.2.4
13.9.5	Environmental Sample Collection	5.2.2, 5.4
13.9.8	River Evacuation Monitoring	5.7.4
	13.10 Plant Emergency Facilities	
13.10.1	Control Room Operations and Shift Manager Duties	2.3.1.1 thru 2.3.1.3, 2.3.1.6
13.10.2	TSC Manager Duties	2.3.2.1
13.10.3	Technical Manager and Staff Duties	2.3.2.4, 2.3.2.7
13.10.4	Radiation Protection Manager Duties	2.3.2.2
13.10.5	Operations Manager Duties	2.3.2.8
13.10.6	Plant/NRC Liaison Duties	2.3.2.3
13.10.7	Plant Administrative Manager Duties	2.4.1.1
13.10.8	Security Lieutenant Duties	2.3.1.4
13.10.9	OSC Manager and Staff Duties	2.3.1.8, 2.3.1.9 2.4.1.6, 2.4.1.7 2.10, 2.5.2-11

Procedure	Title	Section of Plan Implemented
13.10.14	Maintenance Manager Duties	2.4.1.2
13.10.16	Chemistry/Effluent Manger Duties	2.14.1.4
	13.11 Emergency Operations Facility	
13.11.1	EOF Manager Duties	2.3.3.1
13.11.2	Assistant EOF Manager Duties	2.4.2.1
13.11.3	Site Support Manager and Staff Duties	2.4.2.8
13.11.7	Radiological Emergency Manager Duties	2.3.3.2
13.11.8	Licensing Manager Duties	2.4.4.18
13.11.10	Security Manager Duties	2.4.2.7
13.11.12	EOF Engineering Manager and Staff Duties	2.4.2.4, 2.4.2.6
13.11.18	Information Coordinator Duties	2.4.1.3
	13.12 Headquarters Emergency Centers	
13.12.19	JIC Management	2.3.4.1
13.12.20	Media and Information Management	6.3
13.12.21	JIC Support Services	6.3
	13.13 Reentry/Recovery	
13.13.1	Reentry	7.2
13.13.2	Recovery Operations	7.3
13.13.3	Intermediate Phase MUDAC Operations	7.3.2
13.13.4	After Action Reporting	4.4

Procedure	Title	Section of Plan Implemented
	13.14 Supporting Information Procedures	
13.14.1	Nearby Nuclear Facility Emergencies/ Requests for Assistance	4.1
13.14.4	Emergency Equipment	6.4, 8.4
13.14.8	Drills and Exercises Program	8.6
13.14.9	Emergency Program Maintenance	8.1 thru 8.4
SWP-EPP-01	Emergency Response Organization and Training	8.5

APPENDIX 3

EMERGENCY KITS

Columbia Generating Station Fire Brigade Stations

Fire Brigade turnout stations are strategically located inside and outside the Radiologically Controlled Area (RCA). Contents include fire fighter protective equipment, self-contained breathing apparatus (SCBA) units, radios, fire fighter tools and equipment, First Responder medical kits, hazardous materials response kits, and radiological monitoring equipment.

Columbia Generating Station Decontamination Kits

Two decontamination kits are located in the Radwaste Building decontamination area, and one is located in the Yakima Building (GSB) Emergency Equipment Area.

Columbia Generating Station Protective Equipment Kit

A kit containing protective equipment and radiological monitoring equipment is located in the Technical Support Center.

Energy Northwest Field Monitoring Kits

Kits containing protective equipment, radiological monitoring equipment, communications equipment, and emergency supplies for Environmental Monitoring Field Teams are located at the Kootenai Building and Energy Northwest's Office Complex (ENOC). Kits located at ENOC also include a River Evacuation Monitoring Kit.

Hospital Radiological Emergency Kits

Kits containing protective equipment, radiological monitoring equipment, and emergency supplies are located at Kadlec Medical Center in Richland, Our Lady of Lourdes Hospital in Pasco, and Kennewick General Hospital in Kennewick.

APPENDIX 4

AGREEMENT LETTERS

This appendix refers to signed letters of agreement which formalize commitments between Energy Northwest and outside organizations to provide or receive mutual aid and support during emergency conditions.

Listed below are the outside agencies Energy Northwest has agreements with. Agreements are maintained in files by Energy Northwest's Emergency Preparedness Group.

Agreements already in place or provided for in existing response plans provide detailed, formalized commitments to provide or receive mutual aid or support during emergency conditions. These plans are referenced in Appendix 1 of this plan.

In addition, Federal commitment to support Columbia Generating Station is provided in Federal response plans maintained by Nuclear Regulatory Commission and Federal Emergency Management Agency. These plans are listed in section 3.6.1 and 3.6.3, as well as Appendix 1.

Annually, Energy Northwest will review the agreements listed below to ensure they remain accurate and applicable. The results of this review will be communicated to the affected organizations. Acknowledgements for this annual review are requested and maintained in the agreement file. Records of verbal acknowledgements are acceptable and will be maintained.

1. Agreement Letter With Our Lady of Lourdes Hospital

2. Agreement Letter With Kennewick General Hospital

3. Agreement Letter With Kadlec Medical Center

4. (Memorandum of Understanding Between) Department of Energy Richland Operations Office, Hanford Environmental Health Foundation, Emergency Response At the Hanford Site - Use of the Emergency Decontamination Facility

5. Law Enforcement Agency Agreement - Benton County

6. Hanford Site Support Services, Fire and Ambulance

APPENDIX 5

NUREG-0654

CROSS-REFERENCE

NUREG-0654 CROSS-REFERENCE

II. Planning Standards and Evaluation Criteria

A. Assignment of Responsibility (Organizational Control)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.a.	Each plan shall identify organizations that are intended to be part of the overall response. (See Appendix 5)	Sect. 2 X Sect. 3	X	X
b.	Specify its concept of operations, and its relationship to the total effort.	X Sect. 3	X	X
c.	Illustrate these interrelationships in a block diagram.	1.6.5 X Table 1-1	X	X
d.	Identify a specific individual by title who shall be in charge of the emergency response.	X 2.1	X	X
e.	Provide for 24-hour per day emergency response, including manning of communications links	X 2.2, 2.3	X	X
2.a.	Specify the functions and responsibilities for major elements and key individuals by title. (See Section B for licensee.)		X	X
b.	The legal basis for such authorities.		X	X
3.	Include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations.	X App. 4	X	X
4.	Shall be capable of continuous (24-hour) operations for a protracted period.	X 2.1	X	X

B. Onsite Emergency Organization

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans: Licensee	State	Local
1.	Specify the onsite emergency organization of plant staff personnel.	2.2 X 2.3		
2.	Designate an individual as emergency coordinator who shall be on shift at all times.	X 2.2		
3.	Identify a line of succession for the emergency coordinator.	X 2.1		
4.	Establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated.	X 2.11		
5.	Specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1.	Sect. 2, Table 2-1		
6.	Specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram.	X Sect. 3, Figure 21		
7.	Specify the corporate management, administrative, and technical support personnel who will augment the plant staff.	X 2.4		
a.	logistics support for emergency personnel;	2.4.1.1, X 2.4.2.8		

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
B. Onsite Emergency Organization (Cont'd.)	Licensee	State	Local
b. technical support for planning and reentry/recovery operations;	X 2.3.3.1		
c. management level interface with governmental authorities; and	X 2.3.3.1		
d. release of information to news media during an emergency.	X 2.3.3.1		
8. Specify the contractor and private organizations who may be requested to provide technical assistance	X 3.3		
9. Identify the services to be provided by local agencies for handling emergencies. Provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan.	3.2 X App. 4		

C. Emergency Response Support and Resources

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Make provisions for incorporating the Federal response capability into its operation plan, including the following:			
a. specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.	2.3.3.2, X 3.6.2	X	

C. Emergency Response Support and Resources (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and	X 3.6.2	X	
c.	specific licensee, State and local resources available to support the Federal response.	X 3.6.2	X	X
2.a.	Each principal offsite organization may dispatch representatives to the licensee's near-site Emergency Operations Facility.		X	X
b.	Prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.	X 3.1		
3.	Identify radiological laboratories and their general capabilities and expected availability.	3.3.1 3.3.2 3.3.3 X 3.6.2	X	
4.	Shall identify nuclear and other facilities, organizations or individuals which can be relied upon.	3.3 X App. 4	X	X

D. Emergency Classification System

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee.	X 4.1, 4.2, 4.4		
2.	The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the FSAR.	X 4.1		

D. Emergency Classification System (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
3. Establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.		X	X
4. Have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility.		X	X

E. Notification Methods and Procedures

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish procedures which describe mutually agreeable bases for notification of response organizations.	4.6 X Table 4-2	X	X
2. Establish procedures for alerting, notifying, and mobilizing emergency response personnel.	X 4.6.1	X	X
3. Establish the contents of the initial emergency messages to be sent from the plant.	X 4.6.5		
4. Make provisions for followup messages from the facility.	X 4.6.6		
5. Establish a system for disseminating to the public appropriate information.		X	X
6. Establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public.	X 4.6.4	X	X

E. Notification Methods and Procedures (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide written messages intended for the public, consistent with the licensee's classification scheme.	X 4.6.5	X	X

F. Emergency Communications

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish reliable primary and backup means of communication.			
a. provision for 24-hour per day notification to and activation of the State/local emergency response network;	X 4.6	X	X
b. provision for communications with contiguous State/local governments within the Emergency Planning Zones;	X 4.6.3	X	X
c. provision for communications as needed with Federal emergency response organizations;	X 4.6	X	X
d. provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations centers, and radiological monitoring teams;	X Table 6-1	X	X
e. provision for alerting or activating emergency personnel in each response organization; and	X 4.6.1	X	X

F. Emergency Communications (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
f. provision for communication with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.	4.6.3 X 6.5.3		
2. Ensure that a coordinated communication link for fixed and mobile medical support facilities exists.	X 3.2.2	X	X
3. Conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).	X 6.6	X	X

G. Public Education and Information

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide a coordinated periodic (at least annually) dissemination of information to the public.	X 9.1.1	X	X
2. Provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material. Shall also be used to disseminate to any transient population appropriate information that would be helpful if an emergency or accident occurs.	X 9.1.1, 9.1.3	X	X
3.a. Designate the points of contact and physical locations for use by news media during an emergency.	X 9.2.3	X	X

G. Public Education and Information (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. Provide space which may be used for a limited number of the news media at the nearsite Emergency Operations Facility.	X 9.2.3		
4.a. Designate a spokesperson who should have access to access to all necessary information.	X 9.2.3	X	X
b. Establish arrangements for timely exchange of information among designated spokespersons.	X 9.2.3	X	X
c. Establish coordinated arrangements for dealing with rumors.	X 9.2.5	X	X
5. Conduct coordinated programs at least annually to acquaint news media with the emergency plans	X 9.1.2	X	X

H. Emergency/Facilities and Equipment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish a Technical Support Center and an onsite operations support center	6.1.2 X 6.1.3		
2. Establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out.	X 6.2		
3. Establish an emergency operations center for use in directing and controlling response functions.		X	X

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
4.	Provide for timely activation and staffing of the facilities and centers described in the plan.	X 6.5.6 6.5.9	X	X
5.	Identify and establish onsite monitoring systems that are to be used to initiate emergency measures, as well as those to be used for conducting assessment.	X 5.1, 5.2		
	The equipment shall include:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1 5.2		
b.	radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	X 5.1.2 App. 3		
c.	process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and	X 6.3 5.1.1		
d.	fire and combustion products detectors.	X 5.1.1		
6.	Make provisions to acquire data from or for emergency access to offsite monitoring and analysis equipment including:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1.1		
b.	radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided; and	X 5.2.2		
c.	laboratory facilities, fixed or mobile.	X 5.4.5		

H. Emergency/Facilities and Equipment (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.	X 5.4.3	X	X
8. Provide meteorological instrumentation and procedures, and provisions to obtain representative current meteorological information from other sources.	X 5.2.1		
9. Provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies.	X 6.1.3		
10. Make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use.	6.4 X 8.4	X	X
11. Each plan shall, in an appendix, include identification of emergency kits by general category.	X App. 3	X	X
12. Establish a central point for the receipt and analysis of all field monitoring data and coordination of sample media.	6.2.4 6.2.8 X 6.2.10	X	X

I. Accident Assessment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents	Table 4-1 X 5.1		

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
2. Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident.	X 5.1 thru 5.3		
3. Establish methods and techniques to be used for determining:			
a. the source term of releases of radioactive material within plant systems.	X 5.3.1		
b. the magnitude of the release of radioactive materials.	X 5.3.2		
4. Establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.	X 5.3.2		
5. Have the capability of acquiring and evaluating meteorological information.	X 5.2.1 6.2.4		
6. Establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.	X 5.3.1		
7. Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone.	X 5.4	X	X
8. Provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.	X 5.1 5.3 5.4	X	X

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
9. Have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uCi/cc.	X 5.4.4	X	
10. Establish means for relating the various measured parameters and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.	5.9.3 X 5.5	X	
11. Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.		X	

J. Protective Response

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
1. Establish the means and time required to warn or advise:			
a. Employees not having emergency assignments;	X 5.7.3		
b. Visitors;	X 5.7.3		
c. Contractor and construction personnel; and	X 5.7.3		
d. Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.	3.2.3 X 5.7.3		

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
2.	Make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.	5.7.2 X 5.7.3		
3.	Provide for radiological monitoring of people evacuated from the site.	X 5.7.4		
4.	Provide for the evacuation of onsite non-essential personnel and shall provide a decontamination capability at or near the monitoring point specified in J.3.	X 5.7.3		
5.	Provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.	X 5.7.5		
6.	Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:			
a.	Individual respiratory protection;	X 5.9.6		
b.	Use of protective clothing; and	X 5.9.4.2		
c.	Use of radioprotective drugs, (e.g., individual thyroid protection).	X 5.9.7		
7.	Establish a mechanism for recommending protective actions to the appropriate State and local authorities.	X 5.9.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans: Licensee	State	Local
8.	Contain time estimates for evacuation within the plume exposure EPZ.	Table 5-1 X 5.8		
9.	Establish a capability for implementing protective measures based upon protective action guides and other criteria.		X	X
10.	The organization's plans to implement protective measures for the plume exposure pathway shall include:			
a.	Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	Fig. 5-1 Fig. 5-2 X Fig. 5-5	X	X
b.	Maps showing population distribution around the nuclear facility;	Fig. 5-3 X Fig. 5-4	X	X
c.	Means for notifying all segments of the transient and resident population;	X 5.8.2	X	X
d.	Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;		X	X
e.	Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.		X	X

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	Include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;		X	X
g.	Means of relocation;		X	X
h.	Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone;		X	X
i.	Projected traffic capacities of evacuation routes under emergency conditions;		X	X
j.	Control of access to evacuated area and organization responsibilities for such control;		X	X
k.	Identification of and means for dealing with potential impediments to use of evacuation routes, and contingency measures;		X	X
l.	Time estimates for evacuation of various sectors and distances; and		X	X
m.	The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions.	X 5.5.1	X	

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
11.	Specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food-stuffs. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained.		X	
12.	Describe the means for registering and monitoring of evacuees at relocation centers in host areas.		X	

K. Radiological Exposure Control

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish onsite exposure guidelines for:			
a.	removal of injured persons;	X 5.9.3		
b.	undertaking corrective actions;	X 5.9.3		
c.	performing assessment actions;	X 5.9.3		
d.	providing first aid;	X 5.9.3		
e.	performing personnel decontamination;	X 5.9.3		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans Licensee	State	Local
f.	providing ambulance service; and	X 5.9.3		
g.	providing medical treatment services.	X 5.9.3		
2.	Provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.	X 5.9		
3.a.	Make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X 5.9.5	X	X
b.	Ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records.	X 5.9.5.2	X	X
4.	Establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides.		X	X
5.a.	Specify action levels for determining the need for decontamination.	X 5.9.4.2	X	X
b.	Establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.	X 5.9.4.3	X	X
6.	Provide onsite contamination control measures including:			
a.	area access control;	X 5.9.4.1		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. drinking water and food supplies;	X 5.9.4.4		
c. criteria for permitting return of areas and items to normal use.	X 7.1		
7. Provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.	X 5.9.4.3		

L. Medical and Public Health Support

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X 3.2.2	X	X
2. Provide for onsite first aid capability.	6.1.5 X 6.2.9		
3. Develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities		X	
4. Arrange for transporting victims of radiological accidents to medical support facilities.	X 3.2.2.3	X	X

M. Recovery and Reentry Planning and Postaccident Operations

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Develop general plans and procedures for reentry and recovery.	X Sect. 7	X	X
2.	Plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization.	X 7.3		
3.	Specify means for informing members of the response organizations that a recovery operation is to be initiated.	X 7.3.2	X	
4.	Establish a method for periodically estimating total population exposure.	X 5.3.3	X	

N. Exercises and Drills

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.a.	Exercises shall be conducted as set forth in NRC and FEMA rules.	X 8.9	X	X
b.	Provide for a critique of the evaluated exercise by Federal and State observers/ evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once each six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.	8.6.1 X 8.8	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
2. Conduct drills, in addition to the annual exercise at the frequencies indicated below.	X Table 8-1		
a. Communication Drills			
Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually.	X Table 8-1	X	X
b. Fire Drills			
Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.	8.7.2 X Table 8-1		
c. Medical Emergency Drills			
A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies shall be conducted annually.	8.7.3 X Table 8-1		X
d. Radiological Monitoring Drills			
Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually.	8.7.4 X Table 8-1	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
e. Health Physics Drills			
(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	X 8.7.5 Table 8-1	X	
(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.	X 8.7.5 Table 8-1		
3. Describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.			
a. The basic objective(s) of each drill and and exercise and appropriate evaluation criteria;	X 8.6.2	X	X
b. The date(s), time period, place(s) and participating organizations;	X 8.6.2	X	X
c. The simulated events;	X 8.6.2	X	X
d. A time schedule of real and simulated initiating events;	X 8.6.2	X	X
e. A narrative summary describing the conduct of the exercises or drills;	X 8.6.2	X	X
f. A description of the arrangements for and advance materials to be provided to official observers.	X 8.6.2	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
4. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.	X 8.6.1	X	X
5. Each organization shall establish means for evaluating observer and participant comments on areas needing improvement.	X 8.6.1	X	X

O. Radiological Emergency Response Training

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Each organization shall assure the training of appropriate individuals.	X 8.5	X	X
a. Provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.	X 8.5.1		
b. Each offsite response organization shall participate in and receive training.		X	X
2. The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills.	X 8.5.1		
3. Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.	6.1.6 X 8.5.1.1		

O. Radiological Emergency Response Training (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
4.	Establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs shall be provided in the following categories:			
a.	Directors or coordinators of the response organizations;	X 8.5.1.1	X	X
b.	Personnel responsible for accident assessment;	X 8.5.1.1	X	*
c.	Radiological monitoring teams and radiological analysis personnel;	X 8.5.1.1	X	*
d.	Police, security and fire fighting personnel;	X 8.5.2	*	X
e.	Repair and damage control/correctional action teams (onsite);	X 8.5.1.1		
f.	First aid and rescue personnel;	X 8.5.1.1	*	X
g.	Local support services personnel including Civil Defense/Emergency Service personnel;	X 8.5.2		X
h.	Medical support personnel;	X 8.5.2	X	X
i.	Licensee's headquarters support personnel;	X 8.5.1.2		
j.	Personnel responsible for transmission of emergency information and instructions.	X 8.5.1.1	X	X

*NRC and FEMA encourage State and Local Governments which have these capabilities to continue to include them in their training programs.

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
5. Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.	X 8.5.2	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide for the training of individuals responsible for the planning effort.	X 8.1	X	X
2. Identify by title the individual with the overall authority and responsibility for radiological emergency response training.	X 8.1	X	X
3. Designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X 8.1	X	X
4. Update its plan and agreements as needed, review and certify it to be current on an annual basis.	X 8.2	X	X
5. Changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans.	X 8.2	X	X
6. Each plan shall contain a detailed listing of supporting plans and their source.	X App. 1	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Each plan shall contain as an appendix listing, by title, procedures required to implement the plan.	X App. 2	X	X
8.	Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.	Table of Contents X App. 5	X	X
9.	Arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.	X 8.3		
10.	Provide for updating telephone numbers in emergency procedures at least quarterly.	X 6.5.3	X	X

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Superseded pages per Rev-30 to Emergency Plan Ltd. 10/2/01

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ENERGY NORTHWEST

EMERGENCY PLAN

COLUMBIA GENERATING STATION

Revision 30

APPROVALS: PRIOR NRC APPROVAL REQUIRED: __ Yes _X_ No

RECEIVED: __________ Date Correspondence No.:_______________

Corporate Emergency Preparedness, Safety and Health Officer — 8/9/01 Date

Manager, Resource Protection — 8/10/01 Date

for WSO
Plant Operations Committee Chairman — 8-22-01 Date

for WSO
Plant General Manager — 8-22-01 Date

ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 30 - SYNOPSIS OF CHANGES

Summary

In revision 30, Section 5.6 is updated with current population figures as a result of an updated Evacuation Time Estimate Study (Revision 4, May 2001) performed to reflect the changing population demographics within the 10 Mile Emergency Planning Zone (EPZ). Population has increased within the 10 Mile EPZ by about 25%, but evacuation time estimates remain bounded by previous evacuation times.

Affected Pages	Description of Changes
EP 2.5	The reference to procedure 1.3.1 in the position title of Emergency Response SRO in 2.3.1.7 was deleted. Because this change corrects the licensing basis - procedure hierarchy and directs licensing document requirement implementation in appropriate procedures, no reduction of effectiveness occurs with this change.
EP 5.10	This was changed to update population values in Section 5.6.1, Permanent Residents, as well as the reference date, due to a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes. Also, this change updates population values in Section 5.6.2, Transient Population, due to a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.
EP 5.11	This change updates the population values for Industrial Employment within the 10 mile EPZ as a result of a revised Evacuation Time Estimate Study. New businesses are also included within the 10 mile EPZ. Additionally, updated population values for migrant farm workers are included in this Section. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.
EP 5.12	This change updates the population value for Section 5.6.3, Special Facility Population, as a result of a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.

REVISION 30 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 5.14	This change updates the revision and reference date for the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study in Section 5.8, Evacuation Time Estimates, due to a revised Evacuation Time Estimate Study. This change is at the editorial level and no reduction of effectiveness occurs as a result of this change.
EP 5.16	This change updates the population value for Section 5.8.4, Special Facilities, for the schools within the ten mile EPZ, as a result of a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.
EP 5.23	This change updates Table 5-1, Summary of Results of Evacuation Times Analysis, to reflect the revised population figures identified in the updated Evacuation Time Estimate Study. The revised population values do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously, so no reduction of effectiveness occurs as a result of these changes.
EP 5.26	This change updates Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down into Classifications, to reflect the revised population figures identified in the updated Evacuation Time Estimate Study. The revised population values do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously, so no reduction of effectiveness occurs as a result of these changes.
EP 5.27	This change updates Figure 5-4, Distribution of Transient Population Within the 10-Mile EPZ, to reflect the revised population figures identified in the updated Evacuation Time Estimate Study. The revised population values do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously, so no reduction of effectiveness occurs as a result of these changes.

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EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 30 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 5.28	This change updates Figure 5-8.A, Permanent Population-Normal Conditions, to reflect the revised percentage of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 5.32	This change updates Figure 5-8.B, Permanent Population-Adverse Conditions, to reflect the revised number of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 5.33	This change updates Figure 5-8.C, General Population-Normal Conditions, to reflect the revised percentage of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 5.34	This change updates Figure 5-8.D, General Population-Adverse Conditions, to reflect the revised percentage of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 6.14	This change corrects "activation test" to "pager activation test/notification drill" in Section 6.7.e.3, Automatic Dialer, to clearly reflect regulatory requirement concerning notification drills. Because this is at the editorial level and more accurately describes regulatory requirements, no reduction of effectiveness occurs as a result of this change.

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SECTION 1
INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

The Energy Northwest Emergency Plan (or Plan) was written to address emergencies at the Columbia Generating Station located on the Hanford Reservation and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations as required by Title 10, Code of Federal Regulations, Part 50. It was developed in conjunction with the Washington State and the Benton County Fixed Nuclear Facility Emergency Response Plan and the Franklin County Radiological Response: Energy Northwest plan. All plans were developed to meet the intent of NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2 PURPOSE OF THE EMERGENCY PREPAREDNESS PROGRAM

The emergency preparedness program provides concepts and protective actions that are necessary to limit the consequences of radiation accidents and other emergencies. The primary objectives include the necessary arrangements, procedures and organizations necessary to effectively resolve any plant emergency to ensure the safety of the general public and to safeguard plant personnel and property.

1.3 ENERGY NORTHWEST COMMITMENT TO SAFETY

Energy Northwest is committed to the safe operation of its nuclear project. The commitment begins at the highest level of management and is reflected in the day-to-day activities of all employees. In addition to meeting, or in many cases exceeding, regulatory requirements, Energy Northwest is committed to providing a comprehensive program of personnel safety and corporate loss prevention. This Plan is a description of the comprehensive preparedness exhibited by Energy Northwest and its employees.

A trained staff of emergency response personnel is available, equipped and ready to respond to any emergency at Energy Northwest's nuclear project. Arrangements have been made with federal, state, and local response organizations and other nuclear facilities for assistance, if needed, during an emergency. Together these organizations can quickly implement a unified effort to assess the hazards, make the necessary decisions, and initiate actions to protect the health and safety of both emergency workers and the general population.

Energy Northwest works closely with all involved agencies. A coordinated training program between Energy Northwest and the Department of Energy in Richland provides emergency personnel from Benton and Franklin counties and the State of Washington with the training needed to assist during an emergency. Participation by Energy Northwest in joint programs with the Department of Energy to upgrade county and state emergency response capabilities is an example of the commitment to safety which Energy Northwest recognizes as its responsibility.

1.4 SITE CHARACTERISTICS

Energy Northwest leases 1089 acres of land on the Hanford Reservation, located north of Richland, Washington, and controlled by the Department of Energy. The land leased by Energy Northwest is approximately three miles west of the Columbia River and 12 miles north of the populated area of Richland. Figures 1-1 and 1-2, the Plume Exposure and Ingestion Exposure Emergency Planning Zone maps, show the location of the facilities on the Hanford Reservation.

1.4.1 Plant Design

Columbia Generating Station is a boiling water reactor (BWR-5) with the reactor system supplied by the General Electric Company. This plant has an approximate electrical output of 1250 megawatts (MWe). Fuel for the reactor consists of slightly enriched uranium dioxide pellets sealed in Zircaloy-2 fuel rods. These fuel rods are assembled into individual fuel assemblies. Control of the core is achieved by movable, bottom-entry control rods.

The principal structures located on the plant site are shown in Figure 1-3 and include:

a. Reactor Building - envelopes the Mark II primary containment and provides a secondary containment structure. It also contains the new and spent fuel storage, refueling equipment, emergency core cooling systems and auxiliary equipment.

b. Radwaste and Control Building - houses the liquid and solid radwaste system, components of the off-gas system, and the main control room.

c. Turbine Building - houses the turbine-generator consisting of one high pressure and three low pressure turbines connected to a single generator.

d. Diesel Generator Building - location of the standby diesel generators and associated controls and instrumentation.

e. Yakima Building (GSB) - houses the potable and demineralized water storage tanks, machine shop, and office area.

f. Technical Support Center - this emergency response facility is utilized by the plant staff during an emergency. A more detailed description is provided in Section 6, "Emergency Facilities and Equipment."

g. Wind River Building (Circulating Water Pumphouse) - houses the circulating water pumps, plant service water pumps, and fire pumps.

h. Spray Ponds - the ultimate heat sink providing cooling water to the reactor for emergency shutdown.

i. Cooling Towers - six mechanical draft cooling towers used to dissipate the main condenser cooling water heat to the atmosphere.

1.4.2 Kootenai Buidling (PSF)

The Kootenai Building is used for support of the plant site and the interface with off-site support agencies. It houses the Plant Simulator, the Site Training Center, and the Emergency Operations Facility. Its location is shown in Figure 1-4. See Section 6 for a detailed description of the emergency centers located in this facility.

1.5 ACTIVATION OF THE EMERGENCY PLAN AND PROCEDURES

This Emergency Plan provides the basis for classifying emergencies according to severity, assigning responsibilities, and outlining the most effective course of action to safeguard the public and plant personnel in the event of an incident. Detailed emergency procedures required to implement the Emergency Plan are listed in Appendix 2. The Emergency Plan Implementing Procedures prescribe the appropriate course of action necessary to activate the emergency response organizations and minimize the consequences of an incident.

The Emergency Plan Implementing Procedures (EPIPs) are used when an emergency is declared in accordance with Section 4 of this plan. In the absence of other controlling procedures, EPIPs are used as appropriate. The section of EPIPs designated as "Supporting Information Procedures" are implemented on a continuing basis and are used to ensure long term program maintenance.

1.6 ASSIGNED AUTHORITIES

1.6.1 Hanford Reservation

The 570 square mile Hanford Reservation is under the control of the Department of Energy - Richland Operations. The Department of Energy maintains a well-trained and qualified organization capable of responding to emergencies on the Hanford Reservation. The Department of Energy maintains responsibility for response actions on the Hanford Reservation outside the exclusion area boundaries.

Representatives from the Department of Energy will coordinate their response efforts to an Energy Northwest emergency with Energy Northwest, State, and County organizations from Energy Northwest's Emergency Operations Facility. Communications will be maintained with the Department of Energy's Occurrence Notification Center in Richland, Washington.

An Energy Northwest emergency may require response by local, state and federal organizations. Because of the unique siting of Energy Northwest facilities on a federal reservation, several areas of responsibility must be defined. A coordinated effort by the response organizations will be jointly conducted from Energy Northwest's Emergency Operations Facility. Responsibilities concerning jurisdictional areas are defined in the following sections. Statements made within this document are not intended to exclude one agency from providing assistance to another agency upon request.

1.6.2 Exclusion Area

The exclusion area for Columbia Generating Station consists of a 1.2 mile radius around the plant. The exclusion area will be monitored by teams from Energy Northwest during an emergency and access will be controlled under the direction of Energy Northwest's Security Force. Coordination of activities within the exclusion area will be under the control of Energy Northwest and directed by the individual serving as the Emergency Director.

Energy Northwest has the authority to control and coordinate all activities within this exclusion area, as granted by Title 10 of the Code of Federal Regulations, Part 100.3. The agreement between Energy Northwest and the Department of Energy concerning the site lease on the Hanford Reservation includes provision for this authority.

1.6.3 Plume Exposure Pathway Emergency Planning Zone

The response to an emergency will usually require actions only within the site boundary; however, accidents are possible that may affect areas several miles from the facility. The planning basis for Energy Northwest's Emergency Preparedness Plan utilizes the emergency planning zone concept as first outlined in NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, dated December, 1978. The emergency planning zones are designated as areas for planning to assure that prompt and effective actions shall be taken to protect the public in the event of an accident. The emergency planning zone concept establishes two zones, a ten-mile Plume Exposure Pathway Emergency Planning Zone and an approximately 50-mile Ingestion Exposure Pathway Emergency Planning Zone.

In the Plume Exposure Pathway (Ten-Mile) Emergency Planning Zone (EPZ) the principal exposure sources are:

a. Whole body external exposure to beta/gamma radiation from the plume and from deposited radioactive material.

b. Inhalation exposure from the passing radioactive plume.

The Plume Exposure Pathway EPZ includes parts of the Hanford Reservation and Benton and Franklin Counties. Response actions will be coordinated between the two counties from their respective County Emergency Operations Centers.

The counties will coordinate all activities off the Hanford Reservation during the initial phases of the emergency. The Benton and Franklin County Emergency Operations Centers will coordinate activities with Energy Northwest and Department of Energy through county representatives at Energy Northwest's Emergency Operations Facility. Energy Northwest will provide dose assessment and protective action recommendations to state and local governments.

The Director for the Washington State Military Department, Emergency Management Division, is responsible for ensuring that the State maintains the capability to protect the public health and safety in the event of a fixed nuclear facility incident.

The Washington State Department of Health (DOH) is responsible for safeguarding the health of the public. Coordination of monitoring activities will be provided from Energy Northwest's Emergency Operations Facility.

1.6.4 Ingestion Exposure Pathway Emergency Planning Zone

The Ingestion Exposure Pathway Emergency Planning Zone (EPZ) as shown in Figure 1-2 extends into the Yakama Indian Nation, eight counties within the State of Washington, and two counties in the State of Oregon. These are Benton, Franklin, Yakima, Kittitas, Grant, Adams, Walla Walla, and Klickitat in the State of Washington[1], and Morrow and Umatilla Counties in the State of Oregon. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The State of Washington maintains communication with the Washington counties in the Ingestion Exposure Pathway EPZ. The State of Oregon does the same for Morrow and Umatilla Counties. Communications with the Yakama Indian Nation are handled by Yakima County. Dose projections and environmental sampling are also the responsibility of the States and will be coordinated from Energy Northwest's Emergency Operations Facility by State representatives. Support to the States of Washington and Oregon is provided by Energy Northwest through the sharing of field team data and other resources.

1.6.5 Emergency Plan Interrelationships

Interrelationships of this plan with procedures, other plans, and emergency arrangements are summarized as follows:

- Detailed actions to be taken by individuals in response to onsite emergency conditions are described in the Emergency Plan Implementing Procedures.
- The Columbia Generating Station Physical Security Plan and Procedures and this plan are coordinated to ensure that appropriate emergency actions can be taken. For example, the Physical Security Plan and Procedures contain provisions for emergency response personnel and vehicle access when required by the Emergency Plan Procedures.

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[1]Kittitas and Klickitat Counties do not actively participate in radiological emergency preparedness efforts. The State of Washington has established measures to ensure that appropriate actions will be taken for these two counties. Refer to the State of Washington Emergency Response Plan.

- Site construction groups at WNP-1 and the maintenance contractors at Columbia Generating Station that develop emergency procedures for their personnel are tasked with coordinating their procedures with this plan.

- The Columbia Generating Station Plant Procedure Manual, Radiological Protection Procedures Section defines administrative controls and procedures such as radiological control limits and precautions, use of personnel monitoring devices, use of protective clothing and equipment, personnel decontamination, etc. Additionally, the Chemistry Procedure Section and Radiation Protection Procedure Section provide instructions for conducting surveys, analyzing samples, operating health physics/radiation protection equipment, etc. Information and details provided in these documents have either been incorporated into the Plan or Emergency Plan Implementing Procedures, or have been appropriately referenced.

- Columbia Generating Station has formulated Abnormal Condition Procedures, as part of the Plant Procedure Manual, which discuss generic emergencies such as floods, volcanic ash, and other severe weather conditions. The methods and equipment developed for such emergencies are available for use in concert with emergency actions described in this plan.

- Formal agreements have been negotiated to define the coordination and interface between onsite and offsite organizations and agencies having related radiological emergency planning responsibilities. Continuing liaison with the offsite organizations ensures compatibility and proper interfacing with this plan. Section 3 of this plan further describes those agencies' activities with respect to an emergency at Columbia Generating Station.

- Other offsite organizations, not within the immediate area, may also be requested to offer technical assistance (e.g., Institute of Nuclear Power Operations, General Electric, NPS Energy Services, etc.).

1.7 DEFINITIONS

1.7.1	Activated	-	An Emergency Center may be activated when all appropriate personnel are present and capable of appropriately addressing the emergency condition.
1.7.2	ALARA	-	As Low as Reasonably Achievable.
1.7.3	Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.
1.7.4	Annually, or Annual	-	Performed or executed at anytime during a calendar year.
1.7.5	Augmenting Emergency Organization Personnel	-	Emergency Response Organization personnel not designated as essential, but are desired for efficient operation of emergency centers.
1.7.6	Columbia Generating Station	-	Columbia Generating Station is an operational General Electric boiling water reactor rated at approximately 3486 MWth.
1.7.7	Drill	-	A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise and is supervised and evaluated by qualified drill controller(s) and/or evaluator(s).
1.7.8	Early Warning System	-	A system designed to alert all residents and transients within the Ten-Mile Emergency Planning Zone. This system will include sirens for areas along the Columbia River and the Horn Rapids area, and tone alert radios for residents within the ten mile Emergency Planning Zone.
1.7.9	Emergency Action Level	-	Plant-specific indications, conditions or instrument readings which are utilized to determine emergency classifications.

1.7.10	Emergency Decontamination Facility	-	A facility located adjacent to Kadlec Medical Center in Richland to be used for decontamination and emergency medical care of contaminated persons.
1.7.11	Emergency Director	-	This functional position is responsible for all emergency activities at the plant and coordination of outside assistance as needed. The position will be held by either the Shift Manager, the TSC Manager or the EOF Manager.
1.7.12	Emergency Operations Facility (EOF)	-	An area located within the Kootenai Building which is equipped to facilitate command and control decision-making for the coordination of emergency activities and environmental assessments.
1.7.13	EOF Manager	-	This position is responsible for overall management of Energy Northwest resources and will oversee all activities related to the plant emergency response effort when the EOF is activated.
1.7.14	Emergency Response Organization (ERO)	-	Employees designated as emergency response personnel.
1.7.15	Essential ERO Personnel	-	Emergency response positions designated as essential to coordinate a response to a Columbia Generating Station emergency.
1.7.16	Exercise	-	An exercise is an event that tests the integrated capability and a major portion of the Columbia Generating Station emergency preparedness plans and response organizations. It will consist of a simulated emergency that results in offsite radiological releases and may include mobilization of state and local personnel and resources adequate to verify their capability to respond to a Columbia Generating Station accident. Federal and State agencies will be invited to participate as observers/evaluators in exercises.
1.7.17	Exclusion Area	-	An area extending out to a radius of 1.2 miles from the Columbia Generating Station reactor.

1.7.18	Fixed Nuclear Facility	-	A permanent facility (plant) with an operable nuclear reactor.
1.7.19	General Emergency	-	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
1.7.20	Hanford Reservation	-	A federally owned reservation under the control of the Department of Energy, Richland Operations, Richland, Washington. The reservation covers 570 square miles and is located north of the City of Richland in Benton County.
1.7.21	Ingestion Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions for the public is based on potential ingestion of contaminated water and/or foods. This zone consists of the area within a 50-mile radius of Columbia Generating Station including a portion of the State of Oregon. The boundaries of the zone are shown in Figure 1-2.
1.7.22	Monthly	-	Performed or executed at any time during a calendar month.
1.7.23	Nonessential Personnel	-	Personnel not designated as Emergency Response Personnel.
1.7.24	Owner Controlled Area	-	That area that Energy Northwest maintains industrial and process control of.
1.7.25	Onsite Emergency Centers	-	Includes the Control Room, Technical Support Center, and Operations Support Center. Plant personnel will implement emergency actions and make decisions to support plant operations and repair activities from these centers.

1.7.26	Plant	-	That area containing the Columbia Generating Station reactor and certain support structures within the Protected Area.
1.7.27	Kootenai Building	-	A facility located approximately 0.75 miles southwest of Columbia Generating Station. The structure includes a shielded area designated as the Emergency Operations Facility.
1.7.28	Plume Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions by the public are based on potential exposure to or inhalation of materials carried by a passing radioactive plume released during an accident. This zone consists of the area within an approximate 10-mile radius of Columbia Generating Station, including portions of Benton and Franklin Counties.
1.7.29	Protected Area	-	An area located within the Owner-Controlled Area which contains the Columbia Generating Station power block and is surrounded by chain link fence.
1.7.30	Protective Action Guides	-	Numerical doses and concentrations which act as trigger points to initiate protective actions such as sheltering, evacuation, or placement of dairy herds on stored feed. These guides are established by the States of Washington and Oregon, and take the Environmental Protection Agency Protective Action Guides into consideration.
1.7.31	Quarterly	-	Performed or executed at any time during a calendar quarter.
1.7.32	Recovery Manager	-	This position is responsible for overall management of Energy Northwest's resources and will be in charge of all activities related to the recovery operations following a plant emergency.
1.7.33	Release in Progress	-	Any radioactive release that exceeds the Emergency Action Levels for an Unusual Event.

1.7.34	SE Comm	-	South East Communications, the 911 answering division of Benton County Emergency Services.
1.7.35	Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guides exposure levels except near the site boundary.
1.7.36	Energy Northwest	-	Energy Northwest is a "Joint Operating Agency" incorporated under the laws of the State of Washington. Its members include public utility districts and municipalities. Energy Northwest holds the license to operate Columbia Generating Station.
1.7.37	Support Emergency Response Organization	-	Consists of personnel that perform limited support functions, or may only be needed under certain conditions.
1.7.38	Thermoluminescent Dosimeter (TLD)	-	A device for measuring gamma, neutron and some beta radiation exposure.
1.7.39	Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

1.8 ACRONYMS

AMS	Aerial Measuring System
ARC	American Red Cross
ARM	Area Radiation Monitor
ATWS	Anticipated Transient Without Scram
BOP	Balance of Plant
BPA	Bonneville Power Administration
CAS	Central Alarm Station
Ci	Curie
CR	Control Room
CRS/SM	Control Room Supervisor/Shift Manager
DAC	Derived Air Concentration
DBA	Design Basis Accident
DEM	Department of Emergency Management
DG	Diesel Generator
DIL	Derived Intervention Level
DOE-RL	Department of Energy - Richland Operations
DOH	Department of Health
DW	Drywell
EAL	Emergency Action Level
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ED	Emergency Director
EDPS	Emergency Dose Projection System
EFPD	Effective Full Power Days
EFSEC	Energy Facility Site Evaluation Council, Washington State
EMD	Emergency Management Division
EMT	Emergency Medical Technician
EO	Equipment Operator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data Systems
ERO	Emergency Response Organization
ERP	Elevated Release Point
EWAC	Emergency Worker/Assistance Center
FAX	Facsimile
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRERP	Federal Radiological Emergency Response Plan
GPM	Gallons Per Minute
HP	Health Physics
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning

I&C	Instrumentation and Control
JIC	Joint Information Center
KI	Potassium Iodide (Thyroid Blocking Agent)
KV	Kilovolt
LERN	Law Enforcement Radio Network
LLEA	Local Law Enforcement Agency
LOCA	Loss of Cooling Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
mREM	Millirem
MPF	Multipurpose Facility
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Safety/Relief Valve
MUDAC	Meteorology and Unified Dose Assessment Center
NPRDS	Nuclear Plant Reliability Data System
NRC	Nuclear Regulatory Commission
OAC	Offsite Agency Coordinator
OSC	Operations Support Center
PAD	Protective Action Decision
PAG	Protective Action Guide
PAAP	Protected Area Access Point
PAR	Protective Action Recommendation
PASS	Post-Accident Sampling System
PIO	Public Information Officer
PSIG	Pounds Per Square Inch Gauge
RACES	Radio Amateur Civil Emergency Service
RB	Reactor Building
RCIC	Reactor Core Isolation Cooling
REM	Radiological Emergency Manager
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RW	Radioactive Waste

SAS	Secondary Alarm Station
SC	Suppression Chamber
SCC	Security Communications Center
SE COMM	South East Communications
SECON	Security Condition
SFP	Spent Fuel Pool
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SM	Shift Manager
SP	Suppression Pool
SSW	Standby Service Water
TGB	Turbine Generator Building
TSC	Technical Support Center
USCG	United States Coast Guard
WEIC	Washington Emergency Information Center
WSDA	Washington State Department of Agriculture
WSP	Washington State Patrol
WW	Wetwell

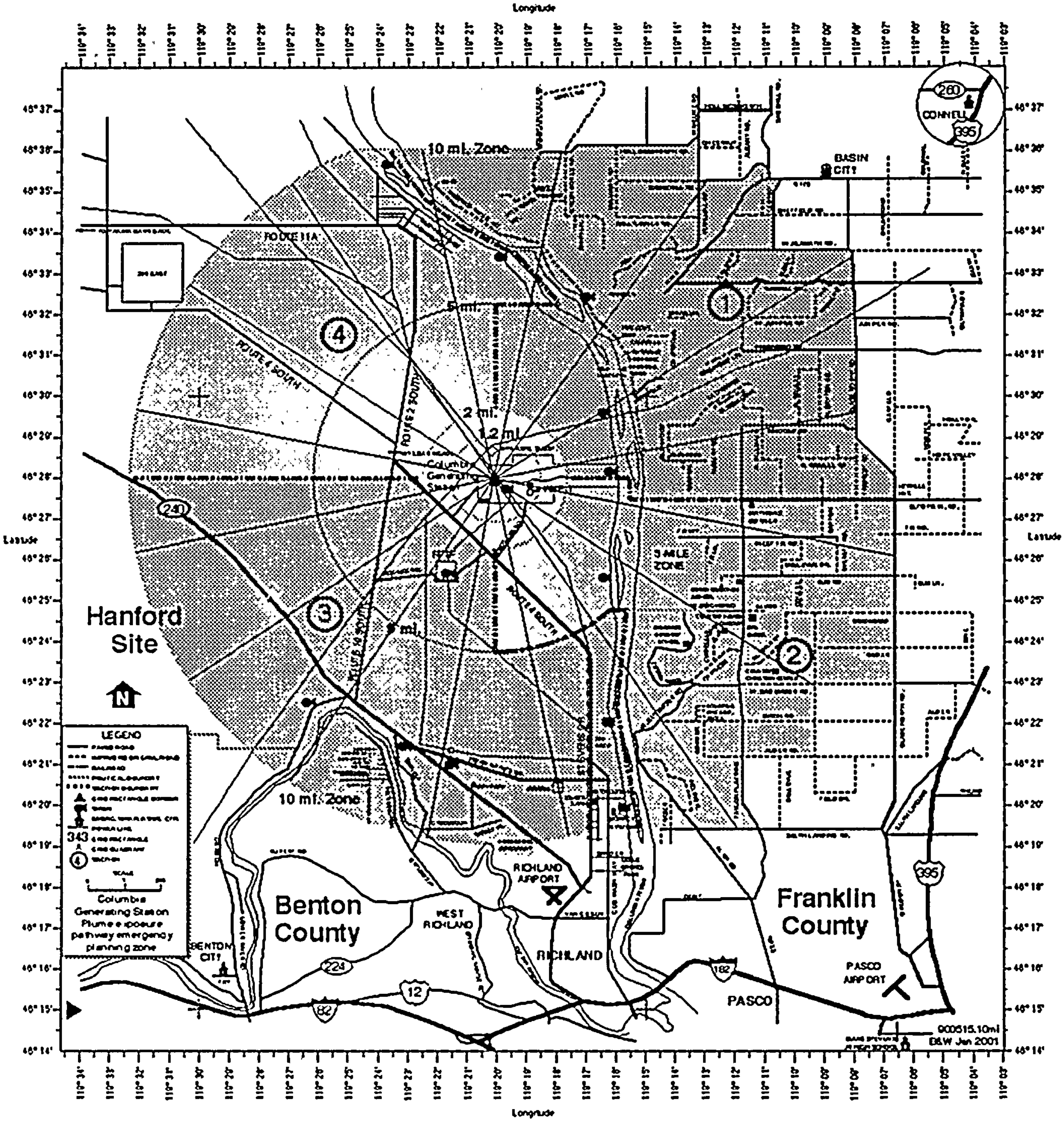
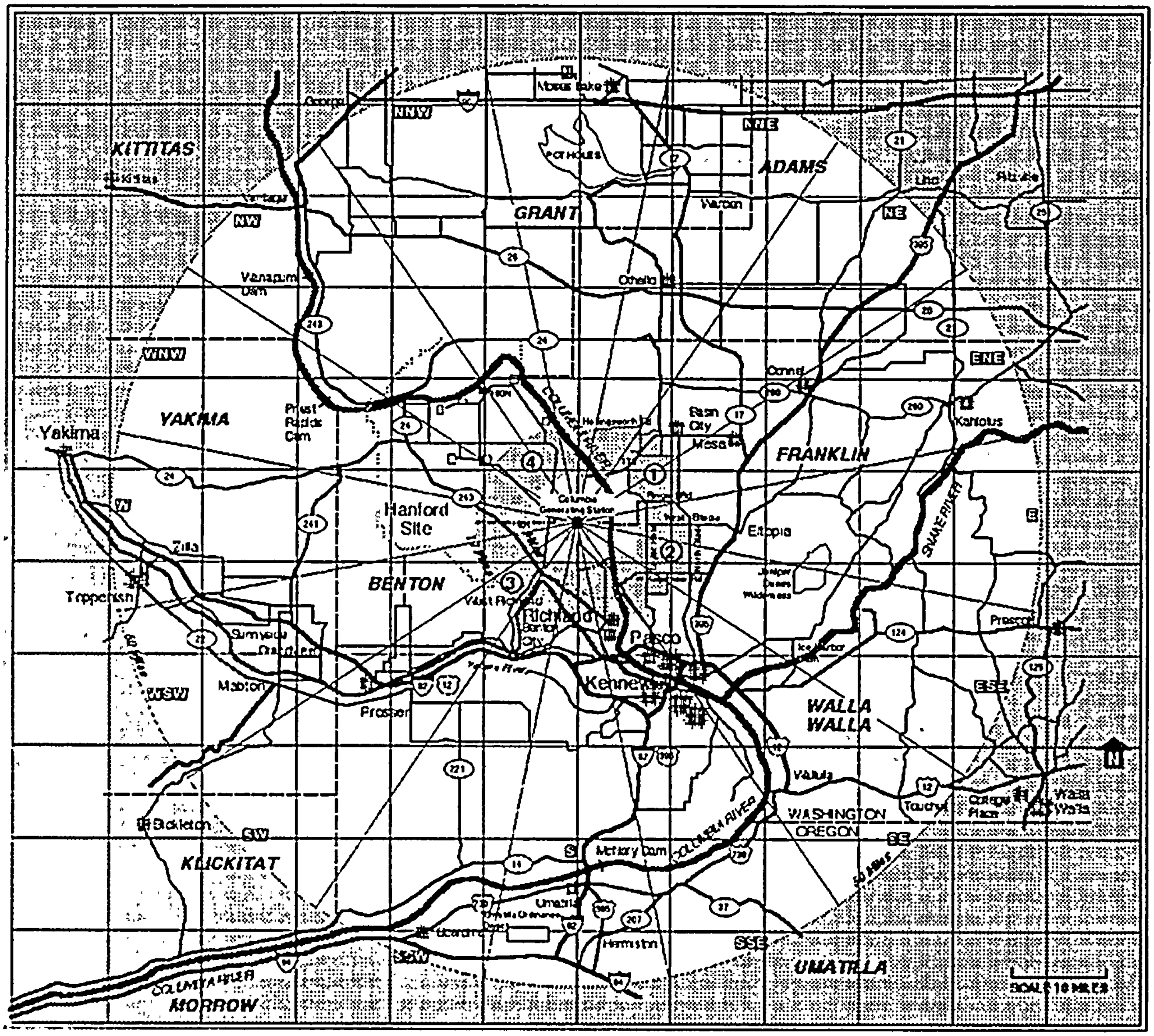


Figure 1-1, Ten-Mile Emergency Planning Zone (EPZ)



50 Mile Map

Figure 1-2, Fifty-Mile Emergency Planning Zone (EPZ)

Site Plan

Bldg No.	Building Description
2	Reactor Building
3	Radwaste Building
4	Turbine Generator Building
5	Technical Support Building
6	Health Physics Access Point
7	Diesel Generator Building
8	ASD Building
9	Palouse - Engineering
11	Chelan - Facilities
12	Heavy Equip. Maintenance
13	Cowlitz - Facilities
15	Laborers Storage
17	Wenatchee - Site Maintenance
19	Battery Storage
21	Backflow Preventer Building
22	Service Substation
23	Diesel Fuel Polishing Building
24	Visitor Center
25	Protected Area Access Point (P.A.A.P.)
26	Deschutes - Plant Engineering Center
30	Wind River Bldg. - Circ Water Pumphouse
32	Colville - Site Contractor Fab Shop
47	Document Storage
62	Primary Access Point (P.A.P.) (Security)
64	Willamette - Site Support Contractor/Records Mgmt.
75	Warehouse /Painters
88	Okanogan - Site Cafeteria/NDE/I&C Security
94	Laborers/Procedures
100	Fitness for Duty Facility/First Aid

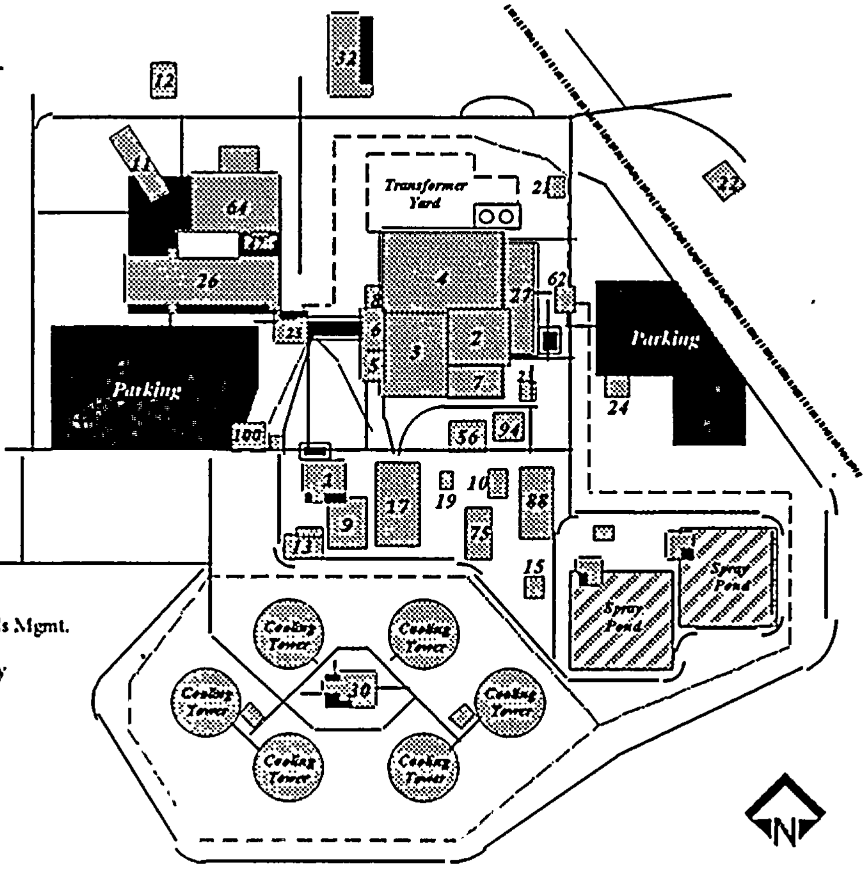


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Figure 1-3, Columbia Generating Station Site

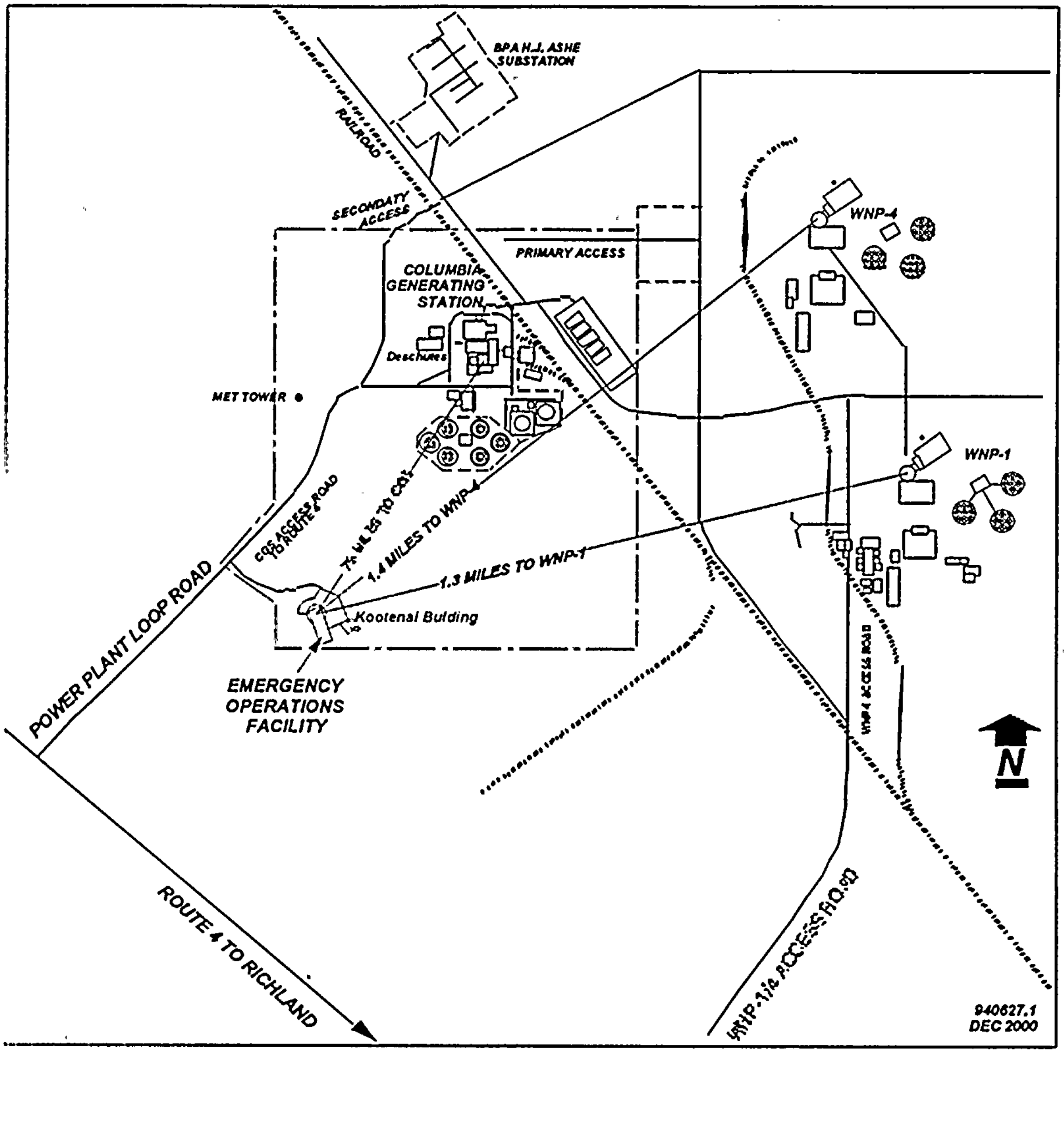

Figure 1-4, Emergency Operations Facility Location

SECTION 2
ENERGY NORTHWEST EMERGENCY ORGANIZATION

2.1 ORGANIZATIONAL CONCEPTS

This section of the Plan describes the emergency response organization at Energy Northwest. The normal plant operating organization serves as a foundation for the emergency organization and is augmented by the on-call Emergency Response Organization (ERO) at an Alert or higher emergency class. The normal organization is described in the corporate organization charts. An overview of the emergency organization is shown in Figure 2-1.

Energy Northwest's Emergency Response Organization consists of positions that satisfy requirements for initial and augmented staffing during declared emergency as well as positions that may be summoned as needed. The members of the emergency organization which are essential to implementation of the Plan and the augmenting organization which supports the essential personnel are shown in Figure 2-1. The Emergency Organization Assignment List contains a listing of the personnel assigned to the ERO. The title of Shift Technical Advisor (STA) describes a function, and the responsibility for implementing that function may be performed by other on-shift personnel qualified to perform the STA function for purposes of NUREG-0737 and NUREG-0654.

Responsibility for emergency direction and control (i.e., overall direction of the plant's emergency response which must include the non-delegable responsibilities for emergency classification, the decision to notify, and to recommend protective actions to authorities responsible for offsite emergency measures) is normally transferred from the Shift Manager to the TSC Manager to the EOF Manager. However, if the situation dictates, the responsibilities may be transferred from the Shift Manager directly to the EOF Manager. The transfer of responsibilities only takes place when the individual relieving the Shift Manager is at his assigned location, has minimum staffing level or greater in place, and has received a formal turnover.

2.2 SHIFT ORGANIZATION

The operating crew for each shift at the plant normally consists of a Shift Manager, to whom reports a Control Room Supervisor, Shift Support Supervisor, Shift Technical Advisor or Emergency Response SRO as required, licensed reactor operators, equipment operators, health physics technicians, chemistry technicians, and Security Force personnel. Operations personnel are trained to perform emergency maintenance functions in the absence of on shift maintenance personnel. The Shift Manager on duty has the immediate responsibility for the plant at all times, and has full authority and responsibility for recognizing and declaring emergencies. Each shift is provided with a complement of qualified individuals who have specialized training in notifications, the operation of the reactor and other plant systems, plant instrumentation, radiation safety, and maintenance.

Security force personnel and the control room have 24 hour communications capability with the ERO and offsite response agencies.

Plant Technical Specifications and 10 CFR 50.54 (m) provide for reduced staffing in reactor operational modes 4 and 5. Energy Northwest recognizes that these are minimum staffing levels and that additional personnel are necessary to perform emergency functions. On shift staffing, in all modes, includes adequate numbers of qualified personnel to perform classification, notification, and dose assessments within time requirements.

The Plant General Manager has full authority and responsibility for the overall supervision and administration of the nuclear plant. Technical support is provided by a staff experienced in reactor physics, nuclear power plant systems technology and operation and health physics and chemistry. The normal plant operating organizations are complemented by a group of specialists available from other departments of Energy Northwest and are identified in the corporate organization charts.

2.3 EMERGENCY RESPONSE ORGANIZATION

Energy Northwest's Emergency Response Organization (ERO) consists of positions that satisfy requirements for initial and augmented staffing during a declared emergency as well as positions that may be summoned as needed. This organization has the capability of continuous (24 hour) operations for a protracted period. The ERO is arranged in the following response categories:

On Shift:

On shift positions consist of the Shift Manager, Control Room Supervisor, Reactor Operators, Shift Technical Advisor (not required in Mode 4 and 5, thus can't provide initial response in these modes), Equipment Operators, HP Technicians, Chemistry Technicians, I&C Technicians, Electrical and Mechanical Craft, and Security. In addition, if the Shift Technical Advisor providing the engineering expertise on-shift is filling a dual role as the Control Room Supervisor or the Shift Manager, an SRO dedicated to supporting the Shift Manager in emergency response functions shall be on-shift. This position is designated as the Emergency Response SRO and is filled by an on-shift SRO.

Essential:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means at any time to respond within a specified time. Essential ERO personnel will normally assist on shift personnel to provide assessment and mitigation of accident conditions, notifications to offsite agencies, or provide overall direction, control and logistical support for emergency operations.

Augmenting:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means to respond at any time within a specified time. Augmenting personnel provide additional emergency assessment, accident mitigation and logistics support to on shift and essential personnel.

Support:

Consists of positions which may or may not be designated on a rotating on-call list or ERO assignment list, but may be summoned by electronic or manual means when needed to support emergency operations.

The essential emergency organization has the capability to provide manpower and other resources to assist the normal plant organization within approximately one hour if an emergency situation arises. The essential organization has been established with responders designated on a rotating on call list. The emergency duties of the normal plant staff are transferred to the ERO as the corresponding members arrive on site and the emergency centers are activated.

If an emergency situation arises, the Shift Manager will activate the ERO to supplement the normal operating staff. Those members of the ERO who are not on site at the time of the emergency will be able to respond within about one hour of the emergency. In addition, designated members of the Emergency Preparedness department are available to assist with Emergency Operation Facility activation.

Following are general descriptions of the Essential Emergency Response Organization. Duties are discussed in more detail in the Emergency Plan Implementing Procedures. Table 2-1 demonstrates how these positions align with NUREG-0654/FEMA-REP-1, Rev. 1, Table B-1 requirements.

2.3.1 On Shift Emergency Organization

2.3.1.1 Shift Manager

Basic Emergency Function: The Shift Manager reports to the Operations Manager and is responsible for overall plant control. The Shift Manager assumes the Emergency Director duties and responsibilities upon initial emergency classification until relieved by the TSC Manager or EOF Manager. Once an emergency classification is declared, the Shift Manager, as the Emergency Director, is responsible for activation and direction of the emergency response organization to the extent required by the emergency.

NOTE: The Shift Manager is responsible for ensuring safe operation of the plant under all conditions. The Shift Manager, as the Emergency Director, ensures necessary protective actions are carried out. The priority of actions shall be in the following order:

- Public Safety
- On Site Personnel Safety
- Equipment Protection
- Plant Reliability

The Senior Reactor Operator (SRO) license holders on shift and the STAs are available to perform offsite dose assessment at all times when required.

2.3.1.2 Control Room Supervisor (On shift as required by Technical Specifications)

Basic Emergency Function: The Control Room Supervisor (CRS) is the senior individual responsible for plant control actions during both normal and emergency operations. The Control Room Supervisor will assume Shift Manager responsibilities, including emergency direction and control authority, in the absence of the Shift Manager.

2.3.1.3 Reactor (Control Room) Operators

Basic Emergency Function: The Reactor Operators (RO) are responsible for the day to day operations of the reactor and implement necessary actions under the direction of the Control Room Supervisor to terminate the condition causing the emergency and place the plant in a safe condition.

2.3.1.4 Security Communication Center Staff

Basic Emergency Function: The Security Communication Center (SCC) Staff will assist with notifications to Energy Northwest ERO personnel and to offsite agencies during both the emergency and recovery phases. The SCC staff reports to the Security Manager.

2.3.1.5 Equipment Operators

Basic Emergency Function: The Equipment Operators (EO) are responsible for responding to the emergency as directed by the Control Room Supervisor or Fire Brigade (FB) Leader. The location of the Equipment Operators is assigned by the Control Room Supervisor/FB Leader. Control and accountability of Equipment Operators may, after discussion between the Shift Manager and OSC Manager, be transferred to the OSC.

2.3.1.6 Shift Technical Advisor (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Shift Technical Advisor (STA) qualified individual should keep abreast of plant activities and status. The STA qualified individual evaluates the risk associated with planned plant activities and advises shift management on actions to be taken to minimize the associated risk. When appropriate, the STA qualified individual should advise shift management on technical matters.

An STA qualified individual shall be on shift in Modes 1, 2, or 3, per FSAR requirements.

When the STA qualified individual is performing a dual role as the Shift Manager or Control Room Supervisor, another SRO (Emergency Response SRO) shall be on shift to provide independent oversight of plant activities and status, and to assist the Shift Manager in emergency response activities. This individual may be the Shift Support Supervisor (SSS), if SRO qualified.

2.3.1.7 Emergency Response SRO

Basic Emergency Function: The Emergency Response SRO shall be on shift in all modes when the STA function is provided by the Shift Manager or Control Room Supervisor. The Emergency Response SRO is another SRO present to advise and assist the Shift Manager on emergency response actions such as emergency classifications and notifications, protective action recommendations, and off-site dose assessment.

2.3.1.8 Fire Brigade

Basic Emergency Function: The Fire Brigade (FB) is responsible for fire fighting, first aid and search and rescue operations. The team will perform radiological surveys and contamination control as necessary. Members of the FB may also perform plant systems manipulation tasks to mitigate consequences of an accident. The FB is under the direction of the Shift Manager until directed to report to the OSC Manager.

2.3.1.9 Health Physics, Chemistry, and Maintenance Support Personnel

Basic Emergency Function: Health Physics, Chemistry, and Maintenance Support personnel are responsible for providing radiation surveillance, chemistry analyses, and maintenance operations as repair or reentry and recovery team members. These support staff will report to the OSC Manager for in plant team activities.

2.3.2 Essential Plant Emergency Organization

Figure 2-1 identifies the key shift personnel who are sufficiently trained to perform all necessary duties until relief personnel arrive. Figure 2-1 provides a diagram of the ERO showing the reporting chain within the ERO. The following sections detail duties of the essential emergency response organization.

2.3.2.1 TSC Manager

Basic Emergency Function: The Technical Support Center Manager (TSC Manager) is responsible for the coordination of onsite response efforts during an emergency. This position is also responsible for the overall development and implementation of accident mitigation and repair/damage control efforts. In some cases the TSC Manager may assume the responsibility for emergency direction and control until the EOF Manager assumes this responsibility at the Emergency Operations Facility. The TSC Manager initiates evacuation and onsite recovery actions as necessary. The TSC Manager is also responsible for ensuring plant security is maintained and provisions are made for immediate entry of necessary emergency assistance such as ambulance or fire equipment.

The Maintenance Manager, Operations Manager, Technical Manager, Radiation Protection Manager, Plant Admin Manager, Plant/NRC Liaison, and OSC Manager report to the TSC Manager.

2.3.2.2 TSC Radiation Protection Manager

Basic Emergency Function: The Radiation Protection Manager (RPM) is responsible for directing the health physics staff, assessing radiological conditions, reviewing radiological data received, ensuring personnel exposures are maintained As Low As is Reasonably Achievable (ALARA), and providing recommendations concerning radiation safety matters to the TSC Manager.

The Radiation Protection Manager will also assess offsite doses and make recommendations concerning protective actions to the TSC Manager until the Radiological Emergency Manager at the EOF takes over this function.

2.3.2.3 TSC Plant/NRC Liaison

Basic Emergency Function: The Plant/NRC Liaison is the primary plant interface with the NRC Headquarters concerning emergency matters and will coordinate commitments made to the NRC. He will keep the TSC Manager advised of NRC activities and, as necessary, will staff the NRC/ENS phone. The Plant/ NRC Liaison is responsible for ensuring activation of the Emergency Response Data System (ERDS) for an Alert or higher classification.

2.3.2.4 TSC Technical Manager

Basic Emergency Function: The Technical Manager is responsible for analysis of plant data and the development of plans and procedures in direct support of plant operations personnel. The primary objective is to achieve a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This position supervises the analysis of plant safety parameters by the plant technical and operations staff.

2.3.2.5 TSC Core Thermal Engineer

Basic Emergency Function: Provides information on reactor water pressures and temperature distribution, heat transfer and fluid flow rates, and performs core damage assessments.

2.3.2.6 TSC Electrical Engineer

Basic Emergency Function: Provides information and recommendations about plant and offsite electrical power sources and distribution.

2.3.2.7 TSC Mechanical Engineer

Basic Emergency Function: Provides information and recommendations on mechanical systems and hardware modifications.

2.3.2.8 TSC Operations Manager

Basic Emergency Function: The Operations Manager will assist the TSC Manager by providing oversight and direction to Control Room operations. He provides the interface between the TSC and Control Room. The Operations Manager keeps the TSC Manager informed of plant status and provides input concerning plant operations necessary for the accident and recovery process.

2.3.2.9 OSC Manager

Basic Emergency Function: The Operations Support Center (OSC) Manager is responsible for assigning and dispatching Repair Teams. This individual provides updates to the TSC Manager via the Maintenance Manager on team activities. The OSC Manager is also responsible for ensuring plant personnel accountability is performed. The Fire Brigade reports to the OSC Manager once it is released by the Shift Manager.

2.3.2.10 HP Lead

Basic Emergency Function: The HP Lead identifies hazardous areas within the plant, provides repair team HP briefings and assigns HP resources to repair teams. The HP Lead communicates with the OSC Manager and TSC RPM.

2.3.2.11 Repair Team

Basic Emergency Function: The Repair Teams provide the necessary manpower to perform tasks throughout the plant involving investigation of the accident, repair of equipment or taking actions to minimize the extent of damage. The Repair Teams report to the OSC Manager.

2.3.3 Essential Emergency Operations Facility Emergency Organization

The Emergency Operations Facility (EOF) is activated at the Alert classification and will be utilized by the EOF Manager and his staff to implement necessary actions during an Alert, Site Area or General Emergency. The EOF Manager normally assumes responsibility for emergency direction and control within approximately one hour of the declaration of an Alert or higher emergency. He normally receives a turnover from the TSC Manager but in some cases may receive a turnover from the Shift Manager. The EOF Manager is responsible for the overall management of Energy Northwest emergency resources and has full authority to make commitments for the company. The basic functions which will be directed from the Emergency Operations Facility are:

a. Manage the overall Energy Northwest emergency effort.

b. Evaluate the magnitude and consequences of actual or potential radiological releases.

c. Coordinate field sampling and analysis of radioactive material released from the plant.

d. Coordinate emergency response activities with local, state, and federal agencies and provide recommendations concerning appropriate offsite protective measures.

e. Provide technical support to the plant.

f. Provide necessary security controls.

g. Provide decontamination and medical assistance for personnel evacuated from the plant.

h. Secure necessary supplies and equipment.

i. Develop public information reports for the Joint Information Center concerning plant status, emergency actions underway, and hazards to the public.

j. Advise upper management concerning plant conditions.

k. Coordinate the overall recovery effort including the development of procedures and schedules, procurement of equipment, and identification of necessary licensing actions.

l. Provide for adequate work area for the recovery effort.

2.3.3.1 EOF Manager

Basic Emergency Function: The Emergency Operations Facility (EOF) Manager is responsible for the overall management of Energy Northwest resources and will be in charge of activities related to plant emergency and recovery operations. The EOF Manager has the authority to request outside assistance, including resources available from the federal government, and will assume the responsibility for emergency direction and control. The decision to request outside assistance, change emergency classifications, approve offsite protective action recommendations and make decisions concerning the notification of offsite authorities cannot be delegated once the EOF Manager has assumed the Emergency Director duties.

The Engineering Manager, Site Support Manager, Offsite Agency Coordinator, EOF Public Information Officer, Radiological Emergency Manager, TSC Manager, Security Manager, Licensing Manager, and Joint Information Center Manager report to the EOF Manager.

At his discretion, the EOF Manager may request one or more assistants. The assistant(s) perform duties as assigned by the EOF Manager.

2.3.3.2 EOF Radiological Emergency Manager

Basic Emergency Function: The Radiological Emergency Manager (REM) reports to the EOF Manager. The REM is responsible for managing radiological dose assessment and field monitoring activities. The REM assists in development of Protective Action Recommendations and, during the late phases of the response, coordinates this activity with the States of Washington and Oregon and the US DOE and provides offsite radiological Protective Action Recommendations to the EOF Manager. The REM also coordinates Energy Northwest offsite radiological monitoring effort with the States of Washington and Oregon and the US DOE.

2.3.3.3 EOF Field Team Coordinator

Basic Emergency Function: The Field Team Coordinator provides overall management of field teams, identifies plume path and areas requiring survey; directs the Field Team Dispatcher, and makes field teams available for river evacuation; communicates field team summary information to the REM.

2.3.3.4 Environmental Field Teams

Basic Emergency Function: The Environmental Field Teams are responsible for determining offsite radiological hazards and for conducting the required offsite surveys, monitoring and sampling. Field team activities are coordinated by the Field Team Coordinator. At least three teams will be available to conduct environmental sampling in the field.

2.3.3.5 EOF Telecommunications Manager

Basic Emergency Function: Provide for the operability of Energy Northwest communications systems. Will direct and dispatch Telecommunications Technicians to areas requesting assistance with phones or other telecommunications equipment.

2.3.4 Essential Joint Information Center Emergency Organization

The essential Joint Information Center emergency organization consists of the Joint Information Center Manager. This function ensures timely, accurate releases of information and assists offsite organizations in developing coordinated information for release to the public.

2.3.4.1 Joint Information Center Manager

Basic Emergency Function: The Joint Information Center (JIC) Manager will ensure timely and accurate releases of information to the media and public and will monitor and respond to misinformation. The JIC Manager will also coordinate Energy Northwest's emergency public information activities with those of Benton and Franklin counties, Washington State, Oregon State, and the Federal Government. The JIC Manager reports to the EOF Manager.

2.4 AUGMENTING EMERGENCY ORGANIZATION

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential Energy Northwest emergency organization described in Section 2.3. In addition to the positions described in this section, other augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures are listed in the Emergency Response Organization List.

2.4.1 Augmenting Plant Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential plant emergency organization described in Section 2.3.1. These positions will be filled by activating previously selected personnel who can respond as required.

2.4.1.1 TSC Plant Administrative Manager

Basic Emergency Function: The Plant Administrative Manager is responsible for providing the TSC Manager with the necessary administrative services including accountability, requests for additional personnel and office services support. The TSC Administrative staff reports to the Plant Administrative Manager.

2.4.1.2 TSC Maintenance Manager

Basic Emergency Function: The Maintenance Manager is responsible for assigning tasks to be performed by the Operations Support Center (OSC) teams, determining the priority to be assigned for each task, and acting as the focal point between the TSC and OSC for the work control process.

2.4.1.3 Information Coordinators

Basic Emergency Function: Provide information and plant status updates to the center manager and staff. Communicate pertinent emergency related information from their assigned center to the other information coordinators. Information Coordinators are assigned to the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

2.4.1.4 TSC Chemistry/Effluent Manager

Basic Emergency Function: The Chemistry/Effluent Manager is responsible for monitoring the Plant effluent and ARM monitors. Changes in radiological conditions are reported to the Radiation Protection Manager. The Chemistry/Effluent Manager may also perform emergency dose projections. In addition, the Chemistry/ Effluent Manager advises the TSC Manager of chemistry concerns.

2.4.1.5 OSC Team Tracker

Basic Emergency Function: The OSC Team Tracker is responsible for maintaining communications with in-plant Repair Teams performing actions during the event following dispatch from the OSC. The Team Tracker is responsible for keeping the OSC Manager informed of team status and location. The Team Tracker also is responsible for coordination of site personnel accountability.

2.4.1.6 Repair Team Coordinator

Basic Emergency Function: Communicates maintenance tasks from the TSC and relays information about actions taken to the TSC. Responsible for directing repair team activities.

2.4.1.7 OSC Craft Leads

Basic Emergency Function: The Craft Leads will assist the OSC Manager in briefing and debriefing Repair Teams. They will also assist the Team Tracker in tracking of teams and personnel as required. Craft leads respond for Electrical, Mechanical, I&C and Health Physics disciplines.

2.4.2 Augmenting Emergency Operations Facility Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Emergency Operations Facility essential organization which is described in Section 2.3.2. These positions will be filled by activating previously selected personnel.

2.4.2.1 Assistant EOF Manager

Basic Emergency Function: The Assistant EOF Manager will assist the EOF Manager in the overall management of Energy Northwest resources and will assume the EOF Manager duties including Emergency Director responsibilities if the EOF Manager is not available at the EOF.

2.4.2.2 EOF Manager Secretary

Basic Emergency Function: The responsibilities of the EOF Manager Secretary include maintaining a log of EOF Manager actions, monitoring EOF Manager's phones, initiating Crash calls and performing other EOF administrative support duties as requested by the EOF Manager.

2.4.2.3 Dose Projection Health Physicist

Basic Emergency Function: The Dose Projection Health Physicist is responsible for completing dose projections, providing input to Protective Action Recommendations, and keeping the Radiological Emergency Manager informed of radiological release status. Refer to Section 6.4.2 for a description of the Meteorology and Unified Dose Assessment Center (MUDAC).

2.4.2.4 EOF Engineering Manager

Basic Emergency Function: The Engineering Manager and staff members are responsible for analyzing plant information and for developing plans and procedures in direct support of plant.

2.4.2.5 Emergency Operations Facility Public Information Officer

Basic Emergency Function: The Emergency Operations Facility Public Information Officer (EOF PIO) will prepare and transmit news releases to the Joint Information Center which can be used by Energy Northwest and offsite agencies. The EOF PIO keeps the EOF Manager up-to-date on public relations matters.

2.4.2.6 EOF Radiation Detection Systems Engineer

Basic Emergency Function: Analyzes radiation detection systems and assists in location of radiation source.

2.4.2.7 EOF Security Manager

Basic Emergency Function: The Security Manager is responsible for ensuring that security is maintained at all Energy Northwest facilities and security support groups are fully operational. This individual provides information and advice to the EOF Manager concerning the coordination of Energy Northwest Security and local law enforcement agency (LLEA) response actions. The Security Manager reports to the EOF Manager and supervises the Security staff.

2.4.2.8 EOF Site Support Manager

Basic Emergency Function: The Site Support Manager is responsible for coordinating requests for administrative and technical support to the plant and EOF. He also makes provisions to secure necessary supplies and equipment requested. The Site Support Manager reports to the EOF Manager and supervises the Offsite Agency Coordinator, EOF Information Coordinator, Telecommunications Manager, Manpower Scheduler and Admin Support staff.

2.4.2.9 Energy Northwest Representatives to County Emergency Operation Centers

Basic Emergency Function: Energy Northwest representatives will keep the staff members at the Benton and Franklin Counties Emergency Operations Center (EOCs) informed of the emergency conditions and Energy Northwest responses. The offsite representative will report to the Site Support Manager, normally through the EOF Offsite Agency Coordinator.

2.4.3 Augmenting Joint Information Center Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Joint Information Center Manager described in Section 2.3.3. In addition to the positions described below, other administrative augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures will be filled by personnel who can respond as required.

2.4.3.1 Assistant JIC Manager

Basic Emergency Function: The Assistant JIC Manager manages the preparation of Energy Northwest news releases, coordinates the process for news releases prepared by agencies and jurisdictions represented in the JIC, manages the team responsible for distribution of news releases to the media and other emergency centers and assumes the duties of JIC Manager, if requested. The Assistant JIC Manager supervises the Distribution Team Supervisor and News Release Editor and reports to the JIC Manager.

2.4.3.2 JIC Media Manager

Basic Emergency Function: The Media Manager will address the information needs of media representatives at the Energy Northwest JIC. The Media Manager supervises the JIC Receptionist and reports to the JIC Manager.

2.4.4 Support Emergency Organization

2.4.4.1 Administrative Support Staff

Basic Emergency Function: Performs duplication and facsimile services, record searches, verification of document revision.

2.4.4.2 TSC Manager Secretary

Basic Emergency Function: Maintains a log of activities for the TSC Manager, initiates and monitors crash calls, and screens phone calls.

2.4.4.3 TSC/OSC Communicator:

Basic Emergency Function: Communicates maintenance tasks to the OSC and relays OSC information about actions taken to the TSC staff.

2.4.4.4 TSC Computer Engineer

Basic Emergency Function: The Computer Engineer is responsible for ensuring that the computer systems available in the TSC are operating as required. The Computer Engineer will troubleshoot system problems and assist TSC Engineering staff in obtaining information from the various Plant computers.

2.4.4.5 TSC Trending Forecaster

Basic Emergency Function: Trend plant parameters and forecast plant status.

2.4.4.6 EOF Plant Systems Assessment Engineer

Basic Emergency Function: Analyzes plant systems and provides technical input to the INPO Network Coordinator

2.4.4.7 EOF Fuels Assessment Engineer

Basic Emergency Function: Evaluates core damage, interfaces with the TSC Core Thermal Engineer and EOF Engineering Manager to provide results and projections of core damage. Provides input for PAR determinations to the Radiological Emergency Manager.

2.4.4.8 EOF PDIS Analyst

Basic Emergency Function: Provides technical data for EOF engineering and monitors the information network for problems.

2.4.4.9 EOF Manpower Scheduler

Basic Emergency Function: Coordinates the preparation of overall shift staffing rosters.

2.4.4.10 EOF State/County Technical Liaison

Basic Emergency Function: Informs Energy Northwest representatives to the state and counties of plant conditions.

2.4.4.11 EOF Offsite Agency Coordinator

Basic Emergency Function: Coordinates requests from offsite agencies for information and keeps the EOF Manager informed of those requests. Coordinates airspace or airport closure requests with the Federal Aviation Agency.

2.4.4.12 EOF INPO Network Coordinator

Basic Emergency Function: Prepares and transmits technical descriptions of major events during an emergency to INPO.

2.4.4.13 Health Physics Center Staff

Basic Emergency Function: Prepares the Health Physics Center for use by setting up tables, lanes, and signs.

2.4.4.14 EOF Electrical/I&C Engineer

Basic Emergency Function: Analyzes plant electrical and I&C systems and provides information to the Emergency Manager.

2.4.4.15 EOF PIO Technical Support

Basic Emergency Function: Provides technical interpretations of information for the EOF PIO to formulate accurate news releases for the JIC.

2.4.4.16 EOF Field Team Dispatcher

Basic Emergency Function: Dispatch of field teams and log keeping.

2.4.4.17 Energy Northwest Representative to the State

Basic Emergency Function: Dispatched to Washington State EOC, provides technical expertise to EOC personnel.

2.4.4.18 EOF Licensing Manager

Basic Emergency Function: Interface with onsite NRC response team and communicates with the NRC on licensing issues.

2.4.4.19 JIC Information Manager

Basic Emergency Function: The Information Manager coordinates response to telephone requests for information from news media representatives or the general public. The Information Manager coordinates responses to rumors and public concerns and insures timely and accurate information is provided. This individual directs activities of the Media and Public Phone Team Supervisors and reports to the JIC Manager.

2.4.4.20 JIC Offsite Agency Representatives

Basic Emergency Function: The Offsite Agency Representatives reporting to the JIC will coordinate the emergency public information activities of the organizations they represent. The representatives report to their parent agencies. Their activities are coordinated by the JIC Manager or the Assistant JIC Manager.

2.4.4.21 JIC Phone Team Supervisor

Basic Emergency Function: The Phone Team Supervisor, Public Phone Teams and Media Phone Teams will respond to incoming calls from the public and media, provide information updates as necessary, and make efforts to correct misinformation as necessary. The Public Phone Team Supervisor supervises the Public and Media Phone Teams and reports to the Information Manager.

2.4.4.22 JIC Support Manager

Basic Emergency Function: Provides administrative support and procurement of supplies for JIC personnel.

2.4.4.23 JIC Spokesperson

Basic Emergency Function: Conducts news conferences at the JIC and provides timely information during the conferences.

2.4.4.24 JIC Technical Spokesperson

Basic Emergency Function: Provides technical information in an easy to understand format.

2.4.4.25 JIC Health Physics Spokesperson

Basic Emergency Function: Provides health physics information in an easy to understand format.

2.4.4.26 JIC News Release Editor

Basic Emergency Function: Assists in preparing news releases for dissemination to the media.

2.4.4.27 JIC Public and Media Phone Teams

Basic Emergency Function: Answer phone calls made by the public and media to disseminate correct information and dispel rumors.

2.4.4.28 JIC Audio/Visual

Basic Emergency Function: Coordinates operation of A/V equipment during news conferences at the JIC.

2.4.4.29 JIC Distribution Team Supervisor

Basic Emergency Function: Supervises the JIC Distribution Team.

2.4.4.30 JIC Distribution Team

Basic Emergency Function: Distributes faxes, news releases, and makes copies for the JIC staff.

2.4.4.31 JIC Receptionist

Basic Emergency Function: Provides receptionist duties for the JIC

2.4.4.32 JIC Secretary

Basic Emergency Function: Provides secretarial duties for the JIC staff.

ENERGY NORTHWEST EMERGENCY RESPONSE ORGANIZATION
MINIMUM STAFFING REQUIREMENTS

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Senior Management	Emergency Operations Facility Mgr[3]		1
	Technical Support Center Mgr[3]		1
	Joint Information Center Mgr		1
Operations	Shift Manager[3]	1	
	Control Room Supervisor	1[1]	
	Reactor Operator	2	
	Equipment Operator	2	
	Operations Manager[5]		1
	STA Function	1[1]	
	Emergency Response SRO	1[6]	
Notification/Communication	Control Room ENS Communicator[4]	1	
	SCC Duty Officer	1	
	Security Responder	1[2]	
	Telecom Manager		1
	Plant/NRC Liaison		1
Health Physics	Radiation Protection Manager		1
	HP Technicians (In Plant Surveys)	1	2
	HP Technicians (Protective Actions)	2	4
	Field Team Coordinator[5]		1
	Environmental Field Teams (Offsite Surveys)		4
	Environmental Field Teams (Onsite Surveys Out of Plant)		2
	Radiological Emergency Manager (Offsite Dose Assessment)		1

Table 2-1

MINIMUM STAFFING REQUIREMENTS(Continued)

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Nuclear Chemistry	Chemistry Technicians	1	1
Maintenance	Operations Support Center Mgr[5]		1
	Electrical Maintenance/	1[2]	2
	I/C Support		1
	Mechanical Maintenance/Radwaste	1[2]	1
	Operator		1
Engineering	Core/Thermal Hydraulics		1
	Electrical		1
	Mechanical		1
	Technical Manager[5]		1
Security	Per Security Plan		
Firefighting	Fire Brigade	Fire Brigade per FSAR Section 13	Local Support
First Aid and Rescue Operations	Fire Brigade	2[2]	Local Support

1 On Shift as required by Technical Specifications in Modes 1, 2, and 3. Available within 60 minutes for call in for Modes 4 and 5. The STA qualified individual may be an individual staffing the CRS, SM or SSS position. When the STA is filling a dual role as the CRS or SM, another SRO is required to be on shift to perform duties as the Emergency Response SRO in all modes.

2 May be provided by shift personnel assigned other functions

3 Shift Manager initially assumes the responsibility for emergency direction and control, then is relieved by the TSC Manager or EOF Manager

4 Duties of ENS Communicator are assumed by an individual designated by Shift Manager

5 Not identified as a Table B-1, NUREG 0654 requirement

6 Position may be filled by STA qualified individual or designated on shift SRO. This position may not be filled by the CRS or SM when they are also fulfilling the STA function.

Table 2-1

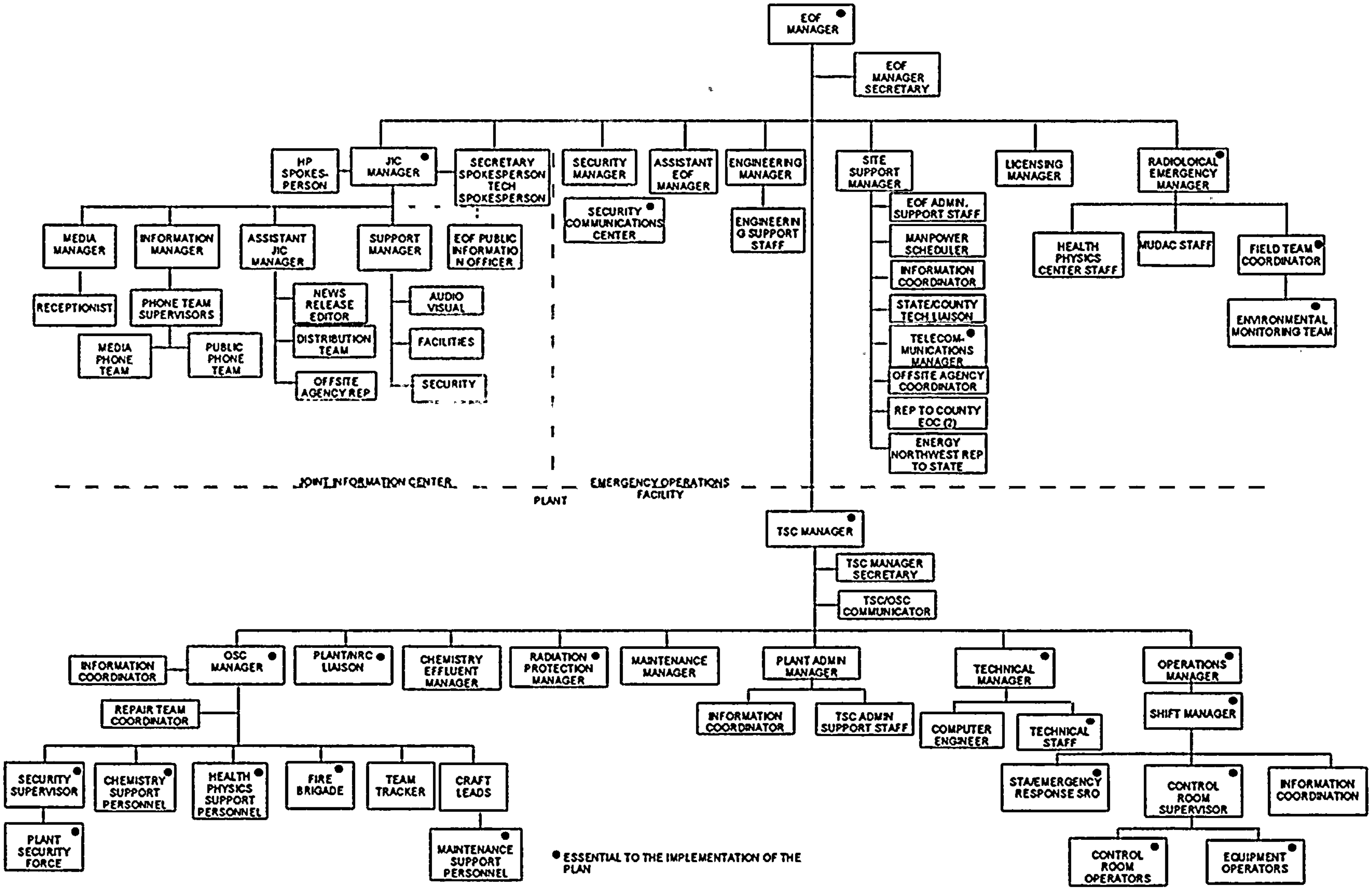

Figure 2-1, Emergency Response Organization Chart

SECTION 3
EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.1 COORDINATION OF SUPPORT ORGANIZATIONS

The Energy Northwest individual assigned the Emergency Director function is responsible for coordinating the use of emergency response resources available from outside Energy Northwest. These external resources are available through formal agreements referenced in Appendix 4 or in the emergency plans referenced in Appendix 1. Figure 3-1 shows the relationship between Energy Northwest emergency centers and the various outside response agencies. The Shift Manager/Emergency Director can call on any or all of these resources for support during an emergency.

The Energy Northwest Emergency Operations Facility contains provisions for outside organizations to coordinate actions with Energy Northwest. Specific areas in the Emergency Operations Facility and Energy Northwest Office Complex (ENOC) are designated in the Emergency Plan Implementing Procedures to be utilized by various offsite response organizations.

Energy Northwest representatives will normally be dispatched to the Benton and Franklin County Emergency Operations Centers at the Alert or higher emergency classification. The Energy Northwest representative to the state will normally report to the EOF at the Alert level, and be dispatched to the Washington State Emergency Operations Center at Site Area Emergency to assist. Energy Northwest representatives will assist in providing clarification of information and data.

The Offsite Agency Coordinator in the EOF will provide necessary support to responding agencies.

Figure 3-1 illustrates the various assistance organizations which may respond to the Emergency Operations Facility.

3.2 LOCAL SUPPORT SERVICES

A rapid response is available to Energy Northwest from local fire, medical, law enforcement, and radiological organizations. Agreements have been made with response agencies either through agreement letters or through their emergency plans. In cooperation with Energy Northwest and Benton and Franklin Counties Emergency Management, a training program has been established to familiarize responding agencies with their role at the plant site during an emergency. Energy Northwest will provide escorts, assistance, and dosimetry for all persons entering the plant protected areas, as requested.

3.2.1 Fire

Agreements established between the Department of Energy and Energy Northwest provide for Hanford Contract Fire Department response to all Energy Northwest facilities on the Hanford Reservation. Additional fire department response, if needed, is available through mutual aid agreements between county and municipal fire departments. The Hanford Contract Fire Department personnel are specifically trained to handle nuclear facility fire incidents and have specially equipped vehicles and personnel for rescue and other emergencies. Fire organizations performing functions onsite will interface directly with the Fire Brigade Leader.

3.2.2 Medical

The Emergency Director or designee is responsible for notifying the medical facility and providing qualified health physics personnel to assist. Communications with medical response agencies is coordinated through the radio network described in Section 6.5.1 of this Plan. The fixed medical facilities (i.e., hospitals) can also be reached by telephone using the numbers provided in the Emergency Phone Directory.

3.2.2.1 Local Hospitals

Kennewick General Hospital in Kennewick, Washington; Our Lady of Lourdes Hospital in Pasco, Washington; and Kadlec Medical Center in Richland, Washington, provide hospital and medical services. Any combinations of these three hospitals serves as the primary and backup medical facility. These hospitals have emergency room coverage twenty-four hours per day. The State of Washington also maintains agreements for handling contaminated patients with other hospitals in the State of Washington.

Energy Northwest has placed and maintains kits containing radiological monitoring equipment and decontamination supplies for use in the care of radiation accident patients at these hospitals. Energy Northwest also assists each hospital in developing procedures for the care of radiation accident patients as requested. Training and assistance on radiological decontamination procedures is offered by Energy Northwest to these hospitals when requested. Drills are periodically conducted to evaluate hospital proficiency for handling contaminated victims

3.2.2.2 Special Medical Facilities

The Emergency Decontamination Facility (EDF), located next to Kadlec Medical Center, can be used for handling highly contaminated patients.

If high levels of radioactive contamination or exposure are involved, injuries will be pre-treated at the specially equipped EDF. The EDF is a sophisticated unit specifically designed for handling and treatment of radiation/contamination accident victims. Provisions include decontamination equipment, shielded surgery tables, remote TV viewing, contaminated water retention, air filtration, radiation monitoring instrumentation, whole body counting, and communications equipment.

The EDF is operated by the Hanford Environmental Health Foundation (HEHF) for the Department of Energy in support of nuclear activities on the Hanford Reservation. The physicians responding to the EDF are prepared and qualified to make radiation exposure and uptake evaluations.

3.2.2.3 Medical Transportation

Medical emergency transportation will be provided by the Department of Energy - Richland Operations (DOE-RL). If additional assistance is required, local ambulance services may be used. An Energy Northwest employee knowledgeable in health physics will accompany contaminated patients to the hospital or meet the ambulance at the hospital to assist in the emergency. Additional health physics assistance may be requested from DOE-RL, or Washington State Department of Health.

3.2.3 Law Enforcement

The Benton County Sheriff has jurisdiction on the Hanford Reservation highways. Arrangements have been made for this organization to provide traffic control in order to limit access to the Hanford Reservation during an Energy Northwest emergency.

The Sheriff has jurisdiction at the Energy Northwest site for all civil disturbances or threats. Request for assistance to the Benton County Sheriff can be made directly to the Sheriff's office or through the 24 hour Emergency Dispatch Center (SE COMM) located in Richland. The Energy Northwest communications centers are capable of communicating with responding law enforcement agencies.

The Security Manager is the main interface with local law enforcement personnel and administers the agreement for law enforcement services. Activation of this support is under the direction of the Emergency Director.

In the event that evacuation is needed for areas off the Hanford Reservation, the Emergency Director, or designee, will notify the County Emergency Chairman or designee, at the Benton and Franklin County Emergency Operations Centers and provide available information concerning the nature of releases. Within the guidelines established by Washington State, a recommendation concerning necessary protective actions to be taken by the general public will be made by Energy Northwest. Following receipt of a protective action decision by an appropriate county authority, the Sheriffs of Benton and Franklin Counties will be responsible for implementing evacuation, traffic control, community security and search and rescue activities in their respective jurisdictions.

The Washington State Patrol provides assistance to the Sheriff concerning traffic control and area access. The local State Patrol headquarters has direct radio communications with the Benton and Franklin County sheriffs and the Emergency Dispatch Center (SE COMM).

3.2.4 Radiological

The Department of Energy (see Section 3.6.2) and Siemens Power Corporation (see Section 3.3.1) can provide a large number of trained personnel capable of assisting during a radiological emergency. Additionally, a training program for local support organizations (i.e., hospital, ambulance and fire companies) developed jointly by Energy Northwest and Benton and Franklin Counties, provides information on proper actions to take during a radiological emergency. Supporting emergency plans for this service are listed in Appendix 1.

3.3 PRIVATE RESPONSE ORGANIZATIONS

3.3.1 Framatome ANP

The Framatome facility, located just outside the Southern boundary of the Hanford Reservation, approximately 8 miles south of Columbia Generating Station, maintains 24-hour health physics coverage of operations. As provided for in their Emergency Plan, listed in Appendix 1, assistance can be quickly provided during an Energy Northwest emergency to monitor radiological conditions along the southern Hanford Site boundary. Assistance will be provided upon request of the Emergency Operations Facility Manager and will be coordinated from the Emergency Operations Facility.

3.3.2 Environmental Sample Analysis

Service contracts are currently maintained with appropriate vendors by Energy Northwest's Radiological Environmental Monitoring Program group for environmental sample analytical services.

3.3.3 General Electric Company

The General Electric Company, suppliers of the Columbia Generating Station nuclear steam supply system, provides a support program utilizing the resources of their Nuclear Energy Group in San Jose, California. An emergency response team can be dispatched to the Emergency Operations Facility within twenty-four hours to provide technical assistance. A technical support team with experts in appropriate technical disciplines will be activated at General Electric Headquarters and will establish telephone communications with the onsite General Electric Emergency Response Team. The response team, dispatched to Energy Northwest, will be provided work space in the Emergency Operations Facility and will coordinate efforts with the EOF Engineering Manager. General Electric personnel may be used in the plant as needed. When in the plant, the TSC Technical Manager will be the primary interface.

3.3.4 Institute of Nuclear Power Operations

The Institute of Nuclear Power Operations (INPO) will provide assistance in identifying and mobilizing the resources of the nuclear industry in the event of an emergency. INPO will be notified of any emergency at the alert or greater classification.

INPO will provide the following assistance, if requested:

a. Designated INPO representatives who can be dispatched to the utility.

b. Dedicated 24-hour emergency notification system.

c. Ability to locate personnel with specific technical expertise.

d. Obtaining industry experience regarding plant equipment through NPRDS.

3.3.5 American Nuclear Insurers

American Nuclear Insurers (ANI) provides insurance coverage for Energy Northwest's nuclear facilities. If an accident occurs which involves the general public, ANI will provide financial assistance and reimbursement of reasonable expenses to persons required to relocate. Within 24 hours of the declaration of the emergency, ANI will dispatch a representative to the local area and will coordinate with the Emergency Response Team.

3.3.6 Hanford Environmental Health Foundation

The Hanford Environmental Health Foundation provides physicians trained in the treatment of radiation accident patients and for response and consultation services to the plant and to the hospitals which have agreements with Energy Northwest. Refer to Appendix 4.

3.3.7 Dosimetry

Energy Northwest has provisions for thermoluminescent dosimeters and related services.

3.4 <u>COUNTY ORGANIZATIONS</u>

3.4.1 Benton and Franklin Counties

The Benton and Franklin County plans for responding to a nuclear emergency, referenced in Appendix 1, provides for a coordination of effort, resources, and facilities. Mitigation and preparedness responsibilities include coordinating local radiological emergency response planning, exchanging emergency preparedness information and, along with Energy Northwest assisting local agencies and officials in developing appropriate emergency capabilities, establishing a radiological emergency response program, emergency response training, and promoting the development of effective communications and other emergency resources. Local law enforcement agencies provide access control services for the Hanford reservation.

Emergency response activities of the Benton and Franklin Counties emergency organizations include implementing local emergency public information and instruction activities, establishment of emergency worker and assistance centers and the Benton and Franklin County Emergency Operations Centers, making protective action decisions, activation of the early warning system, and coordination of local protective action implementation and support. County officials are notified of an emergency through the Emergency Dispatch Centers, and also receive any recommendations provided by Energy Northwest in this manner. When activated, the county staff in the Emergency Operations Centers will communicate with the staff at the Emergency Operations Facility over Energy Northwest dedicated communications systems. Activation of the county plans is automatic for an Alert, a Site Area Emergency, or General Emergency and county representatives will be dispatched to the Emergency Operations Facility and the Joint Information Center.

Benton and Franklin Counties will also play an active role during recovery operations and will work closely with the State of Washington and Energy Northwest to ensure appropriate measures are taken for affected members of the public within their jurisdiction.

3.4.2 Counties Within the Ingestion Exposure Pathway Emergency Planning Zone

Six Washington counties (in addition to Benton and Franklin Counties) as well as two Oregon counties are located within the Ingestion Exposure Pathway Emergency Planning Zone (EPZ). A portion of the Yakama Indian Nation also falls within the Ingestion Exposure EPZ. The State of Washington will provide notification to these counties and the Yakama Indian Nation will be notified by Yakima County. This will be coordinated through the Washington State Emergency Management, or the Oregon Department of Energy, by the EOF Radiological Emergency Manager. Local governments will be kept informed regarding the status of the plant and recommended protective actions by the state(s).

3.5 STATE ORGANIZATIONS

3.5.1 State of Washington

The Washington State Plan referenced in Appendix 1 describes the detailed response which will be given during an emergency. Responsibilities are outlined for all state agencies which have a response role. The following list outlines the response actions of several of the state agencies which would respond during an Energy Northwest emergency. A Washington State Representative will proceed to the Emergency Operations Facility during a Site Area or General Emergency, and if conditions warrant during an Alert, to coordinate State resources. The Offsite Agency Coordinator will provide support and function as a working liaison with the State Representative when in the Emergency Operations Facility. Response time is estimated to be less than 6 hours.

3.5.1.1 Washington Emergency Management

Washington Emergency Management is the State agency responsible for radiological response planning and coordination of operations. The responsibility of this agency includes the following items:

a. Develop and maintain the Washington State Fixed Nuclear Facility Emergency Response Plan and assist the counties in developing their individual emergency response plans.

b. Arrange training programs for state and local agencies designed to promote effective response to radiological incidents.

c. Provide affected communities with warning confirmation, upon request.

d. Coordinate communications and other available support to affected local governments.

e. Coordinate the support of other state agencies and political subdivisions near the affected area and obtain assistance of federal agencies as required.

Dedicated communications with the State Emergency Operation Center are available. Representatives from Washington Emergency Management will have access to the Emergency Operations Facility (EOF) and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.5.1.2 Department of Health

The Department of Health (DOH) is responsible for administering and directing radiation control program activities within the State. DOH provides local authorities with technical guidance, assistance in establishing monitoring and decontamination programs, and recommending appropriate emergency countermeasures and recovery actions offsite. Responding at an Alert or higher classification, DOH provides representatives to support the emergency response as follows:

a. To the Meteorology and Unified Dose Assessment Center (MUDAC) for joint control of environmental field monitoring teams, assessment of dose projection information, preparation of protective action recommendations for the plume exposure pathway and ingestion zones, and estimation of total dose exposure. Also, DOH provides Radiation Control (Radcon) monitoring teams that perform radiological monitoring, collect samples and provide limited field analysis and monitoring and decontamination support to the counties at emergency worker and assistance centers.

b. Outside of the EOF, DOH normally furnishes a representative to the Joint Information Center (JIC) for the coordination of public information. At the State Emergency Operations Center (EOC), DOH representatives furnish guidance on implementation of protective actions and assist local health officials with the implementation of protective actions. Agency response times to the Richland area are expected to be less than six hours.

3.5.1.3 Washington State Patrol

The Washington State Patrol (WSP) will assist each affected county and provide, upon request from either state or county officials law enforcement functions, communications support, and transportation assistance to other agencies when the WSP's law enforcement commitment is not jeopardized. Energy Northwest has space available in the Emergency Operations Facility for a representative from the WSP to coordinate their activities with Energy Northwest Security Manager as needed.

3.5.1.4 Energy Facility Site Evaluation Council

The Energy Facility Site Evaluation Council (EFSEC) is the lead state organization for siting of power generating facilities in the State of Washington. EFSEC is responsible for assessing compliance with the Site Certification Agreement and administering contracts with state agencies and local governments for emergency preparedness services in support of the Columbia Generating Station Emergency Plan.

The council is periodically apprised of Energy Northwest's emergency preparedness per section V.A.2 of the Columbia Generating Station Site Certification Agreement.

3.5.1.5 Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for the control and protection of agricultural products within the boundaries of Washington State. This is accomplished by implementing agricultural protection measures in coordination with other participating agencies and local jurisdictions. These measures include preparing and issuing agricultural advisories to protect the public; preparing and implementing plans in coordination with affected agencies and jurisdictions to reduce the Food Control Area, release food, dispose of contaminated food and conduct embargoes. They will also provide input, as requested by other agencies, in the areas of soil, water and crop decontamination; claims procedures; reduction of Food Control Area and public information.

3.5.2 State of Oregon

The State of Oregon has the responsibility to protect the health and safety of Oregon residents during a radiological emergency at Columbia Generating Station. The Oregon Office of Energy has prepared a Columbia Generating Station Emergency Response Program for that purpose.

A major emergency at Columbia Generating Station is not expected to have immediate, life-threatening radiological impacts on Oregon. During the emergency phase, Oregon's involvement will be limited to maintaining communications and monitoring the emergency. If the emergency involves ingestion exposure considerations, however, Oregon will be involved in a cooperative effort with Energy Northwest, Washington State, and federal response agencies to assess conditions within the state boundaries, initiate necessary public protective measures, and provide public information (e.g., news releases) as may be required. Upon declaration of a Site Area Emergency, Oregon will begin a limited activation of the Oregon EOC in Salem. They will also send representatives to Energy Northwest EOF, JIC, and the Washington EOC. In addition, they will send one or more field teams to Morrow and Umatilla Counties and will provide field team assistance to Washington State as requested.

The Governor or designee will make protective action decisions for Oregon. During ingestion pathway events, Oregon will coordinate protective actions with other members of the protective action recommendation/decision group at the EOF and the Washington EOC.

Communications with the State Emergency Operations Center in Salem are available. Representatives from Oregon Office of Energy will have access to the EOF and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.6 FEDERAL ORGANIZATIONS

3.6.1 Nuclear Regulatory Commission

Personnel from the Nuclear Regulatory Commission (NRC), including Resident Inspectors, may elect to respond to any emergency. The NRC Resident Inspectors assigned to Energy Northwest facilities will be notified of any emergency condition on-site by pager and/or by phone contact and may proceed to the control room or any other areas. Facilities are available for NRC personnel in the Technical Support Center, Joint Information Center, and the Emergency Operations Facility. Dedicated communications are available between these facilities and the NRC. Additionally, the NRC duty officer in White Flint, Maryland is notified of the emergency by the Emergency Notification System (a dedicated phone circuit provided by NRC) of every emergency condition and will adapt their response to the situation as it evolves. If the dedicated phone circuit fails, the NRC duty officer can be reached by commercial phone lines using the numbers provided in the Emergency Phone Directory.

The role of NRC personnel during incidents at nuclear power plants is to monitor actions by the licensee to ensure that people in the vicinity of the plant are adequately protected and to provide any assistance requested by the licensee or offsite officials. NRC's principal role in the event of a power plant emergency is to ensure that appropriate protective actions are being taken. If it appears that warranted protective actions are not being recommended by the licensee or are not being taken by offsite officials, NRC representatives will contact the licensee or offsite officials and present their concerns.

NRC is the lead federal agency concerned with technical aspects of an accident at one of its licensed facilities (e.g., nuclear power plants). The specific NRC response roles are to:

a. monitor the licensee to ensure that appropriate protective action recommendations are being made off site:

b. support offsite authorities, including confirming the licensee's recommendation to offsite authorities, if requested;

c. support the licensee;

d. keep other federal agencies and entities (e.g., Congress and the White House) informed of the status of the incident;

e. keep the media informed of NRC's knowledge of the status of the incident, including coordination with other public affairs groups; and

f. intervene in a limited fashion to direct the licensee's on-site response in some unusual and very rare situations.

3.6.2 Department of Energy

Assistance from of the Department of Energy can be requested by the Emergency Director. The Department of Energy-Richland Operations office located in Richland, Washington, is capable of providing radiological response, such as field monitoring teams, within two hours. The Department of Energy will provide additional federal field monitoring and dose assessment capability when requested. Coordination with Energy Northwest will be through the Offsite Agency Coordinator or the Radiological Emergency Manager. A representative from the Department of Energy may proceed to the Emergency Operations Facility to coordinate the effort.

The Department of Energy-Richland Operations (RL) has large resources of equipment and manpower available. Technical personnel and laboratory facilities can quickly be made available. RL will provide support for the alerting of personnel, and establishment of a safety zone on the portion of the Columbia River within the Columbia Generating Station Ten-Mile Emergency Planning Zone. Also, RL will coordinate and implement protective actions for portions of the 10-mile Emergency Planning Zone on Hanford outside of the Columbia Generating Station Exclusion Area.

Assistance which can be requested via the Department of Energy includes:

a. Emergency Decontamination Facility staffed by qualified radiological emergency personnel able to treat contaminated patients.

b. Hanford contractor ambulances with qualified EMT support personnel.

c. Hanford contractor Fire Department resources to respond to fires on the Hanford Reservation.

d. Hanford contractors with additional respirators, protective clothing and equipment for personnel decontamination.

e. Hanford contractors that can assist with field monitoring, dose assessment, meteorological data and laboratory analysis.

Eight DOE Regional Coordinating Offices for Radiological Assistance provide radiological assistance on request in any region of the country. The radiological assistance teams are the front lines of Federal assistance under the Federal Radiological Emergency Response Plan (FRERP). RAP teams will generally be requested quite early in an event by the State and/or the NRC. RAP teams typically are composed of four to six people. They are capable of conducting gross gamma, alpha, and beta monitoring. They will require only one half to two hours to prepare for a response. Response time will depend on travel time to the location of the accident. The RAP team will also act as an advance team for coordination of further DOE assistance such as the Federal Radiological Monitoring and Assessment Center (FRMAC) or the Aerial Measuring System (AMS).

When assistance is requested, DOE coordinates the monitoring and assessment efforts of all Federal agencies. The FRMAC is usually established near the site of the accident as part of or in conjunction with the Federal Response Center established by the Federal Emergency Management Agency (refer to Section 3.6.3). The size and complexity of the assistance effort will depend on the incident. DOE can provide the most extensive monitoring and assessment capabilities available in the United States. It will require about 24 hours for a fully operational unit to be established. DOE has delegated the responsibility for establishing this service to the DOE Nevada Operations Office.

The AMS is an airborne radiological detection system that can respond to radiological incidents and perform plume tracking, radiation surveys, and radiation mapping over large areas around the site of an incident. Most of the aerial monitoring assets are located in Las Vegas, Nevada, but there are also some capabilities based at Andrews Air Force Base, near Washington, D.C. The AMS will be integrated into the assistance effort once it is established.

3.6.3 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) coordinates federal responses to nuclear facilities for both radiological and non-radiological emergencies. In the event of a radiological emergency a number of federal agencies can be activated through FEMA to support State and County activities. FEMA would coordinate these activities through provisions of the Federal Radiological Emergency Response Plan (FRERP). For a Site Area or General Emergency, FEMA would normally establish a Federal Response Center (FRC) in the Tri-Cities area. Space would also be made available at the Energy Northwest Emergency Operations Facility (EOF) for representatives of responding federal agencies. If resources are needed from FEMA to support offsite emergency activities, the State has the authority to request offsite assistance. Energy Northwest will coordinate with the FEMA representative concerning field response activities.

3.6.4 U.S. Coast Guard

The U.S. Coast Guard, through the Thirteenth District Commander in Seattle, Washington, and the Captain of the Port in Portland, Oregon, regulates activities on navigable waters. For Site Area or General Emergencies, the Coast Guard may establish a safety zone on the Columbia River and broadcast a river closure notice to mariners.

U.S. Coast Guard assistance is a special case which, by virtue of pre-coordination with Benton and Franklin Counties, is automatically provided or may be made directly. Coast Guard Officers of authority may establish the "Safety Zone" within the 10-Mile Emergency Planning Zone (EPZ) for the Columbia River when notified of a Site Area or General Emergency. This Safety Zone provides authority for DOE and Sheriff's Office patrol craft to control river access within the EPZ. This service is provided for by the plan and procedures maintained by Benton and Franklin Counties, via the Fixed Nuclear Facility Response Plans referenced in Appendix 1.

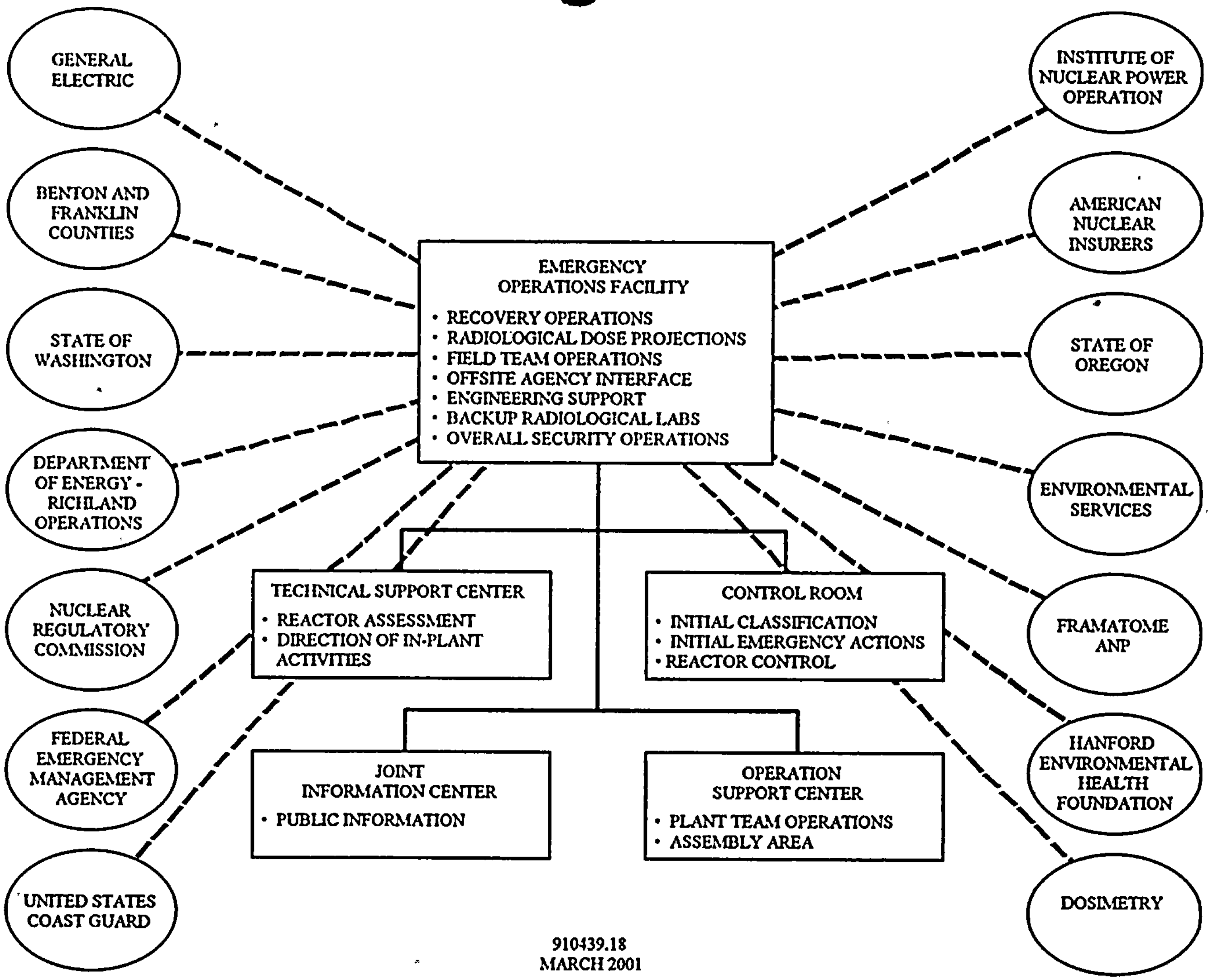

Figure 3-1, Outside Response Agency Resources

SECTION 4
EMERGENCY CLASSIFICATION AND NOTIFICATION

4.1 EMERGENCY CLASSIFICATION

The Emergency Plan provides for four classes of emergency to cover a spectrum of plant events that could lead to a loss of control over radioactive materials which could result in the need to initiate protective measures for the public. These four classes, in order of increasing severity of plant conditions, are Unusual Event, Alert, Site Area Emergency, and General Emergency. The basic regulatory premise for these classifications is found in 10 CFR 50 Part 47, with further guidance in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1, where example initiating conditions are provided for each emergency classification.

The initiating conditions (ICs) form the basis for establishing specific indications, i.e., plant instrument readings or personal observations, which would indicate that a given initiating condition had been met and thus an emergency classification must be declared. These instrument readings and personal observations are known as Emergency Action Levels (EALs).

Classifying an event based on plant abnormal conditions is the responsibility of the Emergency Director. Initiating events or conditions are included in this section, and implemented by Emergency Plan Implementing Procedure EPIP 13.1.1, Classifying the Emergency.

A conservative philosophy for emergency classification is used to declare the highest category for which an EAL has been met. For example, a Site Area Emergency would be declared directly if a Site Area Emergency EAL is met. This would be done without having first declared the Unusual Event or Alert emergency classifications. Also, if two or more EALs have been met, the EAL representing the highest emergency classification would be used to declare the emergency to ensure that appropriate notifications and actions are taken.

The initiating conditions presented in Table 4-1 are all inclusive of EALs and demonstrate how the EPIP 13.1.1 EALs are arranged. Due to the comprehensive nature of the initiating conditions, however, all postulated accidents in the Final Safety Analysis Report (FSAR) for Columbia Generating Station are fully covered and could be classified, when necessary, by using this scheme. Since some FSAR accidents are not representative of a significant plant event and do not pose a challenge to the fission product barriers, not all FSAR accidents would require declaration of an emergency classification.

Events occurring offsite at nearby nuclear facilities or transportation accidents involving hazardous materials, such as chemicals or nuclear fuel, will only be classified under the Columbia Generating Station EALs when conditions onsite are changed by the event to where they meet the criteria in EPIP 13.1.1. Columbia Generating Station actions will be based on the significance of these events. A transportation accident that does not directly impact the Plant site will be categorized as a Transportation Emergency.

4.2 EMERGENCY ACTION LEVEL CRITERIA

The Columbia Generating Station EAL criteria is based on a combination of methods. The combination ranges from primarily event-based EALs for Unusual Events, to primarily symptom-based or barrier-based EALs for General Emergencies. This type of an approach to EAL development ensures that timely recognition and notification occurs, that events occurring during refueling and cold shutdown are appropriately covered, and that multiple events can be effectively classified.

The symptom-based and barrier-based parameters used in the EALs are consistent with the parameters used in the Plant Emergency Operating Procedures, which are derived from accident analysis done by General Electric and the Boiling Water Reactor (BWR) Owner's Group after the Three Mile Island-2 accident. Symptom-based parameter examples are provided in EPIP 13.1.1, and represent conditions of plant system malfunctions or failures. Some of the parameters are linked to an electronic system which displays an alarm on the Computerized Graphic Display System (GDS) in the Control Room whenever certain abnormal conditions are met.

Situation-based parameters used in the EALs define other abnormal conditions which cannot be easily computerized or quantitatively defined and for which classification may require some judgement. In these cases, personnel are instructed to make decisions based on conservative principles and the definitions and purposes for event classification. Further guidance and justification for the Columbia Generating Station EALs is provided in a technical bases document, EPIP 13.1.1.A, Classifying the Emergency Technical Bases.

4.3 OFFSITE AGENCY REVIEW OF EMERGENCY ACTION LEVELS

EPIP 13.1.1 is the document provided to the NRC, the states, the US Department of Energy, Richland Operations, and the local government agencies to use for review and comment on emergency classification criteria.

A major revision of EPIP 13.1.1 EALs were discussed and agreed upon with state and local governments, and approved by the NRC on December 9, 1994. On at least an annual basis, the most recent revision to EPIP 13.1.1 is reviewed with state and local government representatives.

4.4 CLASSIFICATION DEFINITIONS AND PURPOSES

The conditions for event classification presented here are not intended to cover all situations. Other events and combinations of situations can warrant conservative action and emergency classifications. Classifications shall be made utilizing conservative principles and in situations not covered by examples. The Emergency Director shall declare an appropriate emergency classification where, in his judgement, plant status warrants such a declaration.

4.4.1 Unusual Event

a. Definition

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Purpose

To bring the plant operating staff to a heightened state of readiness, provide for a more systematic handling of information and decision making, and to ensure that notification is made to the emergency response organization, including all offsite emergency authorities.

c. Rationale

The rationale for the Unusual Event classification is to provide early notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. Emergency response organizations are typically not activated for an Unusual Event declaration.

d. Actions:

(1) Promptly inform states and/or local offsite authorities of the nature of the unusual condition as soon as discovered.

(2) Augment on shift resources as needed.

(3) Assess and respond.

(4) Escalate to a higher classification, if appropriate, or

(5) Close out with verbal summary to offsite authorities, followed by written summary within 24 hours.

4.4.2 Alert

a. Definition

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

b. Purpose

To provide additional help in responding to the situation and provide systematic handling of information and decision making. Declaring an Alert will provide additional manpower in the Technical Support Center to help the normal operating crew in those duties not directly related to plant control, such as offsite dose assessment, technical problem evaluation, and communications with outside organizations. It will also activate the Operations Support Center, which will provide additional manpower to respond to plant conditions, and the Emergency Operations Facility and Joint Information Center to improve offsite communications and the ability to relay information to the news media and the public.

c. Rationale

The rationale for the Alert classification is to provide prompt notification of minor events of more significance than the Unusual Event category and to ensure fuller response preparations are performed. The Columbia Generating Station emergency response organization is activated for an Alert declaration.

d. Actions:

(1) Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered.

(2) Augment resources and activate on-site Technical Support Center, on-site Operations Support Center near site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site monitoring teams and associated communications.

(5) Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

(6) Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases, from the appropriate emergency center.

(7) Escalate to a more severe class, if appropriate.

(8) Close out or recommend reduction in emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction.

4.4.3 Site Area Emergency

a. Definition

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

b. Purpose

To assure that all emergency response centers are activated, field monitoring teams dispatched, evacuation coordinators readied, predetermined protective actions issued for the public, and to keep the public informed.

c. Rationale

The rationale for the Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring but where a fuel failure situation is not indicated based on current information. In this situation full mobilization of emergency personnel, and the assembly, accountability and evacuation of non-essential personnel in the near site environs is indicated, as well as associated offsite communications, and the dispatch of radiation monitoring personnel.

d. Actions:

(1) Promptly inform State and/or local offsite authorities of site area emergency status and reason for emergency as soon as discovered.

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provided meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Escalate to general emergency class, if appropriate

or

(10) Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.4 General Emergency

a. Definition

Events are in progress or have occurred which involve actual or imminent substantial fuel degradation or failure with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite at distances more than the immediate site area.

b. Purpose

To initiate predetermined actions for the public, provide for continuous offsite assessment, initiate additional measures, as indicated by radiological releases or plant conditions, and to provide for consultation and flow of information to and from the various offsite authorities.

c. Rationale

The rationale for the General Emergency classification reflects conditions where actual or imminent substantial fuel degradation or failure with the potential for loss of containment are occurring. In this situation, evacuation becomes the preferred immediate action.

d. Actions:

(1) Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local)..

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF), and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Close out or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.5 One-Hour Reportability

Events are evaluated against the criteria of 10CFR50.72(b)(1). PPM 1.10.1, Notifications and Reportable Events, implements this criteria. NUREG 1022 contains clarifying NRC guidance.

4.5 STATE AND COUNTY CLASSIFICATION SYSTEM

The States of Washington and Oregon have adopted a fixed nuclear facility emergency classification scheme with classification levels. Each State maintains individual emergency response plans with these classification levels and specific guidelines for responding to emergencies at Columbia Generating Station.

The Columbia Generating Station 10-Mile Emergency Planning Zone lies within two counties. These counties, Benton and Franklin, have agreed to use the emergency classification scheme used by Columbia Generating Station and the States.

As part of the annual EAL review process, Energy Northwest ensures that both the counties' emergency response plans and the State emergency response plan continue to use a classification scheme consistent with the Columbia Generating Station scheme.

4.6 NOTIFICATION METHODS AND PROCEDURES

The Energy Northwest notification process for activating the emergency organizations includes notification of emergency response personnel and assistance organizations, who are notified when an emergency is declared. Initial communication links between the Energy Northwest Emergency Director and the duty officers of Benton and Franklin Counties, and the State of Washington are available on a 24 hour per day basis. The extent of notification will depend upon the emergency classification. A means for verifying the authenticity of all initial offsite notifications is established.

Communication links are established among the various on-site and offsite emergency centers. Descriptions of the emergency response positions at each center include responsibilities for communications with specific positions or other emergency response facilities. Those communication responsibilities are further specified in the EPIPs.

4.6.1 Energy Northwest Emergency Organization Notification

The in-plant paging system, high noise area paging devices, a radio paging system, and an Automated Notification System will be used to notify Energy Northwest ERO personnel. Instructions will be provided if protective measures are required.

Activation of response teams during normal working hours will be via the telephone system, the inplant public address system, or the paging system. Activation during hours other than normal working hours will be accomplished by the paging system, public address and automatic notification system. The automatic notification system will be initiated by the Security Communication Center Duty Officer. The Duty Officer will be directed to make the notifications by the Emergency Director. The Duty Officer is able to manually activate the radio paging system, and this system will serve as a backup notification method.

On-duty Energy Northwest personnel will notify Washington Emergency Management, Benton County Emergency Management, Franklin County Emergency Management, and the Department of Energy.

The extent of the notification will depend upon the emergency classification. However, the Emergency Director may call anyone deemed necessary to support the emergency effort. Table 4-2 outlines the response organizations that will be notified by Energy Northwest for each emergency class. The above scheme is established in procedures.

4.6.2 Nearby Facilities Notification

Initial emergency notification to nearby facilities will be made. Instructions will be provided if protective measures are required.

The Department of Energy is responsible for notifying facilities on the Hanford Reservation during an Energy Northwest emergency; however, Energy Northwest will notify the Fast Flux Test Facility (FFTF) control room when an Exclusion Area evacuation is implemented. DOE notifies Energy Northwest in the event of a sodium oxide release from FFTF.

4.6.3 Support Organizations Notification

Initial notification to Benton County Emergency Management, Franklin County Emergency Management, Department of Energy, and Washington Emergency Management will be made from the Control Room, the Technical Support Center or the Emergency Operations Facility. The Nuclear Regulatory Commission Emergency Response Center will be notified. The Nuclear Regulatory Commission offices will patch the call through to the Nuclear Regulatory Commission offices in Region IV, Arlington, Texas. A means for verifying the authenticity of the notification is established.

4.6.4 General Public Notification

Emergency notification to both transients and residents is the responsibility of the County Emergency Chairman. Notification will be based on information received from Energy Northwest and, if time permits, consultation with the staffs of the Benton County Emergency Operations Center, Franklin County Emergency Operations Center, and Washington State Emergency Operations Center.

Transient and resident populations are advised in public information material to monitor the Emergency Alerting System (EAS) for emergency announcements and protective action instructions. The initial instructions will consist of prescribed emergency messages consistent with the Emergency Classification and will contain information such as:

a. Identification of agency/organization issuing information.

b. A statement that a facility has had an accident.

c. Identification of the communities or geographical areas affected by the emergency.

d. A brief description of the type of emergency and the nature of the hazard.

e. Specific protective measures such as sheltering or evacuation to be taken by residents of the affected areas.

f. A statement that further information will be given over the Emergency Alerting System (EAS).

Copies of the text of prerecorded EAS messages and the messages to be read over the siren system are provided in the Benton and Franklin Counties Emergency Response Plans.

Initial and follow-up notifications of an emergency at the plant are made to the County Emergency Dispatch Center, to the Department of Energy-Richland Operations, and to the State of Washington from the control room, the TSC or the EOF. Washington State is responsible for notifying Oregon DOE. The Benton County Emergency Operations Center is responsible for notifying the public in Benton County. The Franklin County Emergency Operations Center is responsible for notifying the public in Franklin County. Benton County is responsible for making Protective Action Decisions (PADs) in Benton County during the Plume phase of an emergency. Franklin County is responsible for making PADs in Franklin County during the Plume phase of an emergency. They will notify the public within fifteen minutes after a Protective Action Decision is made. The State of Washington is responsible for making PADs during the ingestion phase of an emergency. The Department of Energy has the responsibility to alert and provide information to its employees and contractors on the Hanford Reservation. The Joint Information Center will coordinate public news releases with responding agencies.

The Early Warning System is designed to alert and provide information to the population in the Ten-Mile Emergency Planning Zone.

Tone activated radios provide the primary means of notification. These radios are activated by the Emergency Alerting System signal and provide instructions for protective actions. Transient population along the Columbia River is notified by sirens within the 10-mile EPZ, a Coast Guard marine band broadcast and, if necessary, by Sheriffs Department. Transient population along the Yakima River and in the Horn Rapids area within the 10-mile EPZ are notified by sirens. In addition, Washington State Department of Fish and Wildlife may inform members of the public of protective response actions required.

4.6.5 Initial Messages to Offsite Response Organizations

Initial messages to response organizations will contain such information as:

a. Type of notification
b. Facility experiencing emergency
c. Time of incident
d. Emergency classification
e. Protective action recommendation

4.6.6 Follow-up Messages

Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as:

a. Name and telephone number of caller
b. Location of incident
c. Date/Time of incident
d. Classification of Emergency
e. Type of actual or projected release and estimated duration/impact times
f. Estimate of quantity of radioactive material released or being released, and the points of release
g. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
h. Meteorological conditions
i. Actual or projected dose rates at site boundary; projected integrated dose at site boundary
j. Projected dose rates and integrated dose at the projected peak and at 2 and 10 miles, including sector(s) affected
k. Estimate of any surface radioactive contamination; in-plant, onsite or offsite
l. Emergency response actions underway
m. Recommended emergency actions, including protective action recommendations
n. Request for offsite organization support needed onsite
o. Prognosis for worsening or termination of event based on plant information

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.1 Coolant Activity	Fuel Clad Degradation 1.1.U.1 1 2 3 4 RCS sample activity GT Technical Specification 3.4.8 for GT LCO Action Statement time.	Loss OR potential loss of fuel clad 1.1.A.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine.	Loss or potential loss of any two fission product barriers 1.1.S.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND ANY of the following: • Any RCS Loss Indicators, Table 1 • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Any PC Loss Indicators, Table 2 • Cannot maintain plant parameters within SRVTPLL, or PSP	A loss of any two fission product barriers and loss or potential loss of the third 1.1.G.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Drywell pressure response not consistent with LOCA conditions 1.1.G.2 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2, upscale high AND Any PC Loss Indicators, Table 2 1.1.G.3 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Any RCS Loss Indicators, Table 1 AND either of the following: Any PC Loss Indicators, Table 2 OR Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP

TABLE 1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.2 Radiation Monitors	Fuel Clad Degradation 1.2.U.1 1 2 3 SJAE CONDSR OUTLET RAD HI-HI alarm (P602)	Loss OR potential loss of RCS 1.2.A.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Loss or potential loss of any two fission product barriers 1.2.S.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr	A loss of any two fission product barriers and loss or potential loss of the third 1.2.G.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr 1.2.G.2 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr AND ANY of following: • Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP. • Drywell pressure response not consistent with LOCA conditions. • Any PC Loss Indicators, Table 2

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.3 Refueling Incidents	Unexpected decrease in water covering irradiated fuel assemblies 1.3.U.1 1 2 3 4 5 def Uncontrolled water level decrease in the reactor cavity or SFP below the level of the weirs with all irradiated fuel assemblies remaining covered by water	Major damage to irradiated fuel OR loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the RPV 1.3.A.1 1 2 3 4 5 def HIGH alarm on ARM-RIS-1 (Fuel Pool ARM) resulting from an uncontrolled irradiated fuel handling process		
		Loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel 1.3.A.2 1 2 3 4 5 def Water level, when not intentionally lowered, observed to be below the top of the gate sill separating the reactor cavity and the SFP 1.3.A.3 1 2 3 4 5 def Report of visual observation of irradiated fuel uncovered or uncovering imminent.		

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.1 RPV Water Level	RCS Leakage 2.1.U.1 1 2 3 Valid unidentified leakage GE 10 gpm or upscale high indicated on recorder EDR-FRS-623, Pen 1 (P632) (Non RCC) OR Valid identified leakage GE 25 gpm indicated on recorder EDR-FRS-623, Pen 2 (P632)	Loss OR potential loss of RCS 2.1.A.1 1 2 3 Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Loss or potential loss of any two fission product barriers 2.1.S.1 1 2 3 4 5 RPV level LT -161 inches (for ATWS conditions, RPV level LT -192") or cannot be determined	A loss of any two fission product barriers and loss of potential loss of the third 2.1.G.1 1 2 3 Entry into Severe Accident Guidelines 2.1.G.2 1 2 3 RPV level LT -161 inches, (for ATWS conditions, RPV level LT -192") or cannot be determined AND ANY of following: • Rapid unexplained decrease of PC pressure following an initial increase. • Drywell pressure response not consistent with LOCA conditions • Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2- RPV 2.2 Reactivity Control	Inadvertent Criticality 2.2.U.1 2 3 4 5 An extended and unplanned sustained positive period observed on NIs, while NOT performing a reactor startup.	Failure of Reactor Protection System (RPS) instrumentation to complete or initiate a reactor scram AND manual scram was successful. 2.2.A.1 1 2 <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Manual Actions (mode switch in shutdown, manual push buttons and ARI) result in reactor power LE 5%.	Failure of RPS instrumentation to complete or initiate an automatic reactor scram once a RPS setpoint has been exceeded AND manual scram was NOT successful 2.2.S.1 1 2 <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND either: Reactor power GT 5% or unknown OR Wetwell temperature GT 110°F	Failure of the RPS to complete an automatic scram AND manual scram was NOT successful AND there is indication of an extreme challenge to the ability to cool the core. 2.2.G.1 1 2 <u>Any</u> RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Wetwell temperature cannot be maintained LT the HCTL

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.1 Primary Containment Pressure	Loss or potential loss of primary containment 3.1.U.1 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase	Loss or potential loss of either fuel clad or RCS 3.1.A.1 1 2 3 Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	Loss or potential loss of any two fission product barriers 3.1.S.1 1 2 3 Drywell pressure response not consistent with LOCA conditions 3.1.S.2 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	A loss of any two fission product barriers and loss or potential loss of the third 3.1.G.1 1 2 3 PC pressure exceeds PCPL
3.2 Wetwell Temperature/ Level	Loss or potential loss of primary containment 3.2.U.1 1 2 3 Cannot maintain plant parameters within SRVTPLL		Loss or potential loss of any two fission product barriers 3.2.S.1 1 2 3 RPV pressure and wetwell temperature cannot be maintained below HCTL	

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.2 Wetwell Temperature/Pressure			Loss or potential loss of any two fission product barriers 3.2.S.2 1 | 2 | 3 | | | Cannot maintain plant parameters within SRVTPLL or PSP AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.3 Combustible Gas Concentration				A loss of any two fission product barriers and loss or potential loss of the third 3.3.G.1 1 2 3 PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
3.4 Containment Isolation Status	Loss or potential loss of primary containment 3.4.U.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists	Main steam line break outside containment with isolation 3.4.A.1 1 2 3 Indications of a MSL break AND MSIV closure <u>has isolated</u> the break	Loss or potential loss of any two fission product barriers 3.4.S.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists. AND ANY of following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell 3.4.S.2 1 2 3 Indications of a MSL break AND MSIV closure <u>has not isolated</u> the break	A loss of any two fission product barriers and loss or potential loss of the third 3.4.G.1 1 2 3 Intentional venting of Primary Containment to prevent failure.

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4 Secondary Containment 4.1 Reactor Building Temperature/ Radiation Levels			Loss or potential loss of any two fission product barriers 4.1.S.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures).	A loss of any two fission product barriers and loss of potential loss of the third 4.1.G.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures). AND ANY of the following: • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr • RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches) or cannot be determined • Coolant activity GT 300 μCi/gm dose equivalent iodine

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<u>EMERGENCY CLASSIFICATION INITIATING CONDITIONS</u>

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.1 Offsite Release	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times ODCM limits for 60 minutes or longer 5.1.U.1 1 2 3 4 5 def	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological specifications for 15 minutes or longer 5.1.A.1 1 2 3 4 5 def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release 5.1.S.1 1 2 3 4 5 def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the release using actual meteorology 5.1.G.1 1 2 3 4 5 def
	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "UE" for GT 60 minutes 5.1.U.2 1 2 3 4 5 def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Alert" for GT 15 minutes 5.1.A.2 1 2 3 4 5 def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Site Area" for GT 15 minutes 5.1.S.2 1 2 3 4 5 def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "General" for GT 15 minutes 5.1.G.2 1 2 3 4 5 def
	Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" OR Sample analysis indicates release GT 2 times ODCM 6.2.1.1 limits for GT 60 minutes	Offsite dose calculations indicate dose rates GT Table 4 column "Alert" OR Sample analysis indicates release GT 200 times ODCM 6.2.1.1 limits for GT 15 minutes	Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area"	Offsite dose calculations indicate doses or dose rates GT Table 4 column "General" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "General".

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.2 Area Radiation	Unexpected increase in plant radiation levels 5.2.U.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 5E3 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-20 thru ARM-RIS-30 • ARM-RIS-32 thru ARM-RIS-34 (High Range)	Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown 5.2.A.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 15 mR/hr on ARM-RIS-19 (CR) OR Valid reading GT 1E4 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-23 • ARM-RIS-24 • ARM-RIS-32 thru ARM-RIS-34 (High Range)		

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
6 Electrical Failures 6.1 AC Power Loss	Loss of all offsite power to critical AC busses for greater than 15 minutes 6.1.U.1 1 2 3 4 5 def Power is unavailable to SM-7 and SM-8 from offsite AC sources GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.A.1 4 5 def Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes Power capability to critical AC busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout. 6.1.A.2 1 2 3 Available emergency bus AC power has been reduced to only one of the following sources for GT 15 min • TR-N1 (SM-7 and/or SM-8) • TR-S (SM-7 and/or SM-8) • TR-B (SM-7 and/or SM-8) • DG-1 (SM-7) • DG-2 (SM-8)	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.S.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Prolonged loss of all offsite power and prolonged loss of all onsite power to critical AC busses 6.1.G.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 AND either of the following: In the judgement of the Emergency Director, AC power to either SM-7 or SM-8 is not likely to be restored within 4 hours OR RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
6.2 DC Power Loss	Degradation of all critical DC power for greater than 15 minutes. 6.2.U.1 4 5 def Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicated by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes		Degradation of all critical DC power for greater than 15 minutes 6.2.S.1 1 2 3 Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicted by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes	

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.1 System Failures	Inability to reach required shutdown within technical specification limits 7.1.U.1 1 | 2 | 3 | | | Plant is not brought to required operating mode within T.S. LCO action statement time 7.1.U.2 1 | 2 | 3 | 4 | 5 | def Uncontrolled flooding in a safe shutdown building, Table 5, that has the potential to affect safety related equipment needed for the current operating mode	Inability to maintain plant in cold shutdown 7.1.A.1 | | | 4 | 5 | Inability to restore and maintain reactor coolant temp LT 200°F 7.1.A.2 1 | 2 | 3 | 4 | 5 | def Report by plant personnel confirming the occurrence of plant uncontrolled internal flooding in a safe shutdown building, Table 5 AND Affected safe shutdown system parameters indicate degraded performance		
7.2 Control Room Evacuation		Control room evacuation has been initiated 7.2.A.1 1 | 2 | 3 | 4 | 5 | The decision to evacuate the Control Room has been made.	Control room evacuation has been initiated, but plant control CANNOT be established 7.2.S.1 1 | 2 | 3 | 4 | 5 | CR evacuation initiated AND Control of plant equipment needed to maintain adequate core cooling cannot be established at either the Remote Shutdown Panel or Alternate Remote Shutdown panel within 15 minutes of the SRO in charge of the CR physically leaving the CR	

TABLE 4-1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Unplanned loss of most or all safety system annunciators or indication in the control room for greater than 15 minutes 7.3.U.1 1 2 3 Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd. C associated with safety related equipment GT 15 minutes	Unplanned loss of most or all safety system annunciators or indications in the control room with EITHER: 1) a significant transient in progress; OR 2) Compensatory non-alarming indicators are unavailable 7.3.A.1 1 2 3 Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd C associated with safety related equipment GT 15 minutes AND either of the following: A significant plant transient is in progress OR Compensatory non-alarming indications are <u>not</u> available (plant computer system and GDS)	Inability to monitor a significant transient in progress. 7.3.S.1 1 2 3 Loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603 and Bd. C associated with safety related equipment AND Compensatory nonalarming indications are unavailable (process computer system and GDS) AND Significant transient in progress AND Loss of indications needed to monitor ANY of the following plant critical safety parameters: • Reactor power • RPV level • RPV pressure • Drywell pressure • Drywell temperature • Wetwell pressure • Wetwell/Drywell H2/O2 Concentrations • Wetwell level • Wetwell temperature • Radioactive Gaseous Effluents	
	Significant loss of onsite OR offsite communications capabilities 7.3.U.2 1 2 3 4 5 def Unplanned loss of ALL of the following onsite communications capability: • Plant Public Address (PA) System • Plant Telephone System • Plant Radio System Operations and Security Channels			

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Significant loss of onsite or offsite communications capabilities 7.3.U.3 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following offsite communications capability: • State/County Notification (CRASH) System • Offsite calling capability from the Control Room via direct telephone and fax lines • Long distance calling capability on the Plant ("2000") Switch and Kootenai (Plant Support Facility)/Deschutes (Plant Engineering Center) ("8000") Switch			

TABLE 4-1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.1 Security Threats	Confirmed security event which indicates a potential degradation in the level of safety of the plant 8.1.U.1 1 2 3 4 5 def Bomb device discovered within plant protected area <u>but</u> outside a Safe Shutdown Building, Table 5 OR Confirmed report of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes	Security event in a Plant Protected Area 8.1.A.1 1 2 3 4 5 def Confirmed report of an intrusion by a hostile force into the Plant Protected Area	Security event in a Plant Vital Area 8.1.S.1 1 2 3 4 5 def Bomb device discovered or detonated within a Safe Shutdown Building, Table 5 OR Confirmed report of intrusion by a hostile force into a Safe Shutdown Building, Table 5	Security event resulting in loss of ability to reach and maintain cold shutdown 8.1.G.1 1 2 3 4 5 def Loss of physical control of the CR due to security event OR Loss of physical control of the remote shutdown capability due to security event
8.2 Fire/Explosion Caused by Equipment Failure	Fire within the Protected Area Boundary not extinguished within 15 minutes of detection OR an explosion within Protected Area Boundary 8.2.U.1 1 2 3 4 5 def Fire within or adjacent to any Safe Shutdown Building, Table 5, which is <u>not</u> extinguished within 15 minutes of either CR notification by plant personnel or receipt of an alarm OR Report by plant personnel of an unplanned explosion within the Protected Area boundary resulting in visible damage to permanent structures or equipment	Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown 8.2.A.1 1 2 3 4 5 def Confirmed fire or explosion in a safe shutdown building, Table 5 AND either of the following: Affected safe shutdown system parameters indicate degraded performance OR Report by plant personnel of visible damage to the affected safe shutdown building or equipment contained within the affected safe shutdown building		

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.3 Man-Made Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.3.U.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash into or projectile which impacts a Safe Shutdown Building, Table 5 8.3.U.2 1 | 2 | 3 Turbine failure resulting in casing penetration or damage to turbine or generator seals	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.3.A.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash or projectile impact which impedes access to or damages equipment in a Safe Shutdown Building, Table 5 8.3.A.2 1 | 2 | 3 Missiles generated from a turbine failure have resulted in visible structural damage to or penetration of a safe shutdown building, Table 5		
	Release of toxic or flammable gases affecting the Protected Area Boundary deemed detrimental to safe operation of the plant. 8.3.U.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for evacuation or shelter of site personnel based on offsite event	Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. 8.3.A.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases within a safe shutdown building, Table 5, in concentrations that will be life threatening to plant personnel or impede access to equipment needed for safe plant operation.		

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary	Natural and destructive phenomena affecting Safe Shutdown Buildings		
	8.4.U.1 1 2 3 4 5 def	8.4.A.1 1 2 3 4 5 def		
	MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake	OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake		
	8.4.U.2 1 2 3 4 5 def	8.4.A.2 1 2 3 4 5 def		
	Weather Service projected winds GT 80 mph OR CR measured winds GT 66 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary	Weather Service projected winds GT 100 mph OR CR measured winds GT 76 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5		
	8.4.U.3 1 2 3 4 5 def	8.4.A.3 1 2 3 4 5 def		
	Range fires near the plant which threaten to reduce the level of safety	Ash fallout from volcanic activity is severe enough to warrant plant shutdown		

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.4 1 | 2 | 3 | 4 | 5 | def Visible ash fallout from volcanic activity 8.4.U.5 1 | 2 | 3 | 4 | 5 | def River level increase which threatens to flood the river pumphouse	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.4 1 | 2 | 3 | 4 | 5 | def Report by plant personnel of an event causing visible structural damage to a safe shutdown building, Table 5		

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Other 9.1 Other	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Unusual Event. 9.1.U.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Alert. 9.1.A.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred which indicate actual or potential substantial degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a Site Area Emergency 9.1.S.1 1 2 3 4 5 def In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a General Emergency 9.1.G.1 1 2 3 4 5 def In the judgement of the Emergency Director, other conditions exist which indicate either of the following: Actual or imminent substantial core degradation or melting with the potential for loss of containment integrity OR Potential for uncontrolled radionuclide releases which can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary
	Loss OR potential loss of Primary Containment 9.1.U.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment as indicted by Fission Product Barrier Degradation Table, Table 6	Loss OR potential loss of fuel clad or RCS 9.1.A.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier as indicted by Fission Product Barrier Degradation Table, Table 6	Loss or potential loss of any two fission product barriers 9.1.S.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of any two fission product barriers as indicted by Fission Product Barrier Degradation Table, Table 6	A loss of any two fission product barriers and loss or potential loss of the third 9.1.G.2 1 2 3 Any event, in the judgement of the Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third as indicated by Fission Product Barrier Degradation Table, Table 6

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

Table 1 RCS Barrier Loss Indicators
• Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr
• RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
• Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell

Table 2 PC Barrier Loss Indicators
• Rapid unexplained decrease of PC pressure following an initial increase
• Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND
downstream pathway outside primary containment

TABLE 3

Table 3 Effluent Monitor Classification Thresholds

Monitor	UE	Alert	Site Area	General
NOTE: If a dose projection cannot be performed, and the monitor reading is sustained for longer than the specified time then the declaration must be made based on the valid reading.				
	60 minutes	15 minutes	15 minutes	15 minutes
PRM-RE-1B Reactor Bldg. Exhaust Inter.	1.35E4 cps	N/A	N/A	N/A
PRM-RE-1C Reactor Bldg. Exhaust Hi	N/A	1.14E3 cps	9.65E3 cps	9.35E4 cps
TEA-RIS-13 Turbine Bldg. Exhaust. Low	1.7E4 cpm	4.4E4 cpm	4.4E5 cpm	N/A
TEA-RIS-13A Turbine Bldg. Exhaust, Int.	N/A	N/A	N/A	11 PMU
WEA-RIS-14 Rad Waste Bldg. Exhaust	1.2E5 cpm	1.7E5 cpm	1.7E6 cpm	N/A
WEA-RIS-14A Rad Waste Bldg. Int.	N/A	N/A	N/A	29 PMU
TSW-RIS-5 TSW Effluent	3.9E3 cpm	3.9E5 cpm	N/A	N/A
FDR-RIS-606 Rad. Waste Effluent	2 x Hi-Hi alarm	200 x Hi-Hi alarm	N/A	N/A
SW-RIS-604 SW 'A' Process	2.0E2 cps	2.0E4 cps	N/A	N/A
SW-RIS-605 SW 'B' Process	2.0E2 cps	2.0E4 cps	N/A	N/A

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

TABLES 4 & 5

cps = counts per second cpm = counts per minute PMU = panel meter units N/A = not applicable (outside of meter range)

Table 4 Offsite Dose Calculation/Field Survey Sample Analysis Classification Thresholds at 1.2 miles

	UE	Alert	Site Area	General
TEDE	N/A	N/A	100 mrem	1000 mrem
CDE Thyroid	N/A	N/A	500 mrem	5000 mrem
TEDE rate	0.1 mrem/hr	10 mrem/hr	100 mrem/hr (projected GT 60 min)	1000 mrem/hr (projected GT 60 min)
CDE Thyroid rate	0.3 mrem/hr	50 mrem/hr	500 mrem (for GT 1 hr inhalation)	5000 mrem (for GT 1 hr inhalation)

Table 5 Safe Shutdown Buildings
• Vital portions of the RadWaste/Control Building • Reactor Building • Vital portions of the Turbine Building • Standby Service Water Pump Houses • Diesel Generator Building • Diesel Generator Fuel Oil Storage Area

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

TABLE 4-2
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Energy Northwest:				
Technical Support Center	N,R	A	A	A
Operations Support Center	N,R	A	A	A
Security Communications Center	A	A	A	A
Emergency Operations Facility	N,R	A	A	A
Joint Information Center (Energy Northwest Richland Office Complex)	N,R	A	A	A
County:				
Benton Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
Benton and Franklin County Sheriffs[1]	N,R	A	A	A
County:				
Franklin Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
State:				
Washington State Emergency Management	N	A	A	A
Oregon State[2] Department of Energy	N	N	A	A

A = Activate N = Notify for information only R = Respond if requested

[1] Notified by Benton County or Franklin County, as appropriate, Emergency Dispatch
[2] Notified by Washington State

TABLE 4-2 (Cont'd.)
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Federal:				
Nuclear Regulatory Commission	N	N	A	A
U.S. Coast Guard		R	N,A	A
Federal Emergency Management Agency	N	N,R	A	A
Department of Energy Richland (will notify and activate DOE contractors)	N	N,R	A	A
Support Services:				
Siemens Corporation	R	R	N,R	N,R
General Electric	R	R	N,R	N,R
Institute of Nuclear Power Operations		N	N,R	N,R
American Nuclear Insurers		N	N,R	A
Northwest Health Services	R	R	N,R	N,R
Hospitals	R	R	R	R
BPA Substation	N	N	N	N

A = Activate N = Notify for information only R = Respond if requested

SECTION 5
ACCIDENT ASSESSMENT AND PROTECTIVE RESPONSE

5.1 ASSESSMENT ACTIONS, PLANT INSTRUMENTATION, AND RADIOLOGICAL MONITORING

Effective coordination and direction of all elements of the emergency response organization requires that accident assessment be continued throughout the emergency. Using plant instrumentation and radiological monitoring, each emergency class invokes similar assessment methods. The magnitude of the assessment actions posed by each classification varies. An important focus of assessment actions is to track the ability of plant systems to contain the core inventory of radioactive material (i.e., radionuclides) and to monitor whether the potential exists for accidental release of this material into the environment. Assessment actions also include determining the consequences of a radioactive material release on both a projected and actual basis.

For the Unusual Event classification level, assessment actions will generally involve situations that do not pose a threat to containment of the reactor core's radioactive material. Usually, declaration of an emergency classification will result from alarms, instrument readings, severe weather warnings, operating experience, or any combination thereof. Continuing assessment for an Unusual Event category of emergency will consist of the normal monitoring of Control Room and plant instrumentation and status. Tornado and severe weather assessment actions consist of keeping in contact with the load dispatcher and appropriate public authorities. If a fire prompted the declaration of an Unusual Event, the Fire Brigade Leader will go to the fire location, make continuing assessments, and report to the Shift Manager on whether offsite fire fighting support is required.

Once an incident has been classified as an Alert, assessment actions will include:

a. Increased surveillance of in-plant instrumentation.

b. If possible, the dispatching of shift personnel to the identified problem area to confirm and visually assess the problem.

c. The dispatching of personnel to monitor for possible releases, and to confirm the correct classification.

d. If a radiological incident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected offsite doses will occur. Dose assessment activity will continue until termination of the emergency so that assessment updates may be provided to all concerned offsite agencies and to the Emergency Director. Emergency Plan Implementing Procedures are provided to allow a rapid, consistent projection of offsite doses.

Assessment actions for the Site Area Emergency and General Emergency category are similar to the actions for an Alert. However, due to the increased magnitude of the possible release, assessment activity of greater scope will occur. The personnel necessary for this assessment effort will be provided by full mobilization of the onsite and offsite emergency response organizations. The assessment actions at these levels will include:

a. An increased amount of plant instrumentation will be monitored. (In particular, indications of core status, e.g., saturation temperature, core covery/uncovery indications etc.)

b. Radiation monitoring efforts will be greatly increased. Field Monitoring Teams will be available for dispatch. Beta-gamma field measurements will be performed; air sampling, environmental thermoluminescent dosimeter (TLD) change out, and collection of environmental media for assessment of material transport and deposition will be performed as necessary.

c. Dose assessment activities will be performed more frequently, with an increased emphasis on dose projection for use as a factor in determining necessary protective actions. Radiological and meteorological instrumentation readings will be used to project the dose rate at predetermined distances from the plant, and to project the potential integrated dose.

   In reporting the dose projections to the Emergency Director, the dose rate, dose, and basis for the time used for the dose estimate should be provided. Confirmation of dose rates by Field Monitoring Teams will be reflected in reports or revised dose estimate information provided to offsite agencies.

   All dose projections will be performed in accordance with the Emergency Plan Implementing Procedures which incorporate recommendations found in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." Reports to offsite authorities will include the relationship of dose to these guidelines. Emergency Plan Implementing Procedures provide for the recording of pertinent information.

Detailed plant operating procedures are available for use during emergencies, as well as during normal operations. Specific Emergency Operating Procedures and Abnormal Condition Procedures are provided to assist the Control Room operators in placing the plant in a safe condition and taking corrective actions.

5.1.1 Plant Instrumentation

Plant instrumentation measures appropriate parameters that are indicative of the status of various plant systems and the reactor. Instrumentation used to ensure safe reactor operation is deemed safety related. An important group of safety related parameters is commonly referred to as the Safety Parameter Display System (SPDS). The purpose of this system as outlined in NUREG-0696, is to help Control Room personnel make quick assessments of plant safety status. At Columbia Generating Station, the SPDS is made up of hard wired Control Room instrumentation. This instrumentation is sufficiently concentrated in the Main Control Room to allow rapid assessment of plant conditions. Additional information that is useful for emergency response is supplied by the Graphic Display System (GDS) which is part of SPDS. The SPDS provides information related to assessment of the following plant functions:

- Reactivity control,
- Reactor core cooling and heat removal,
- Reactor coolant system integrity,
- Radioactivity control, and
- Containment integrity.

The SPDS and other post-accident monitoring instrumentation provide the means to assess plant status during and following an accident. For more detailed information on plant instrumentation, refer to the Final Safety Analysis Report, Chapter 7.

The structures, systems, components and instrumentation important to safety at Columbia Generating Station are designed and located to minimize the probability and effect of fires and explosions, as well as to withstand the effects of natural phenomena such as earthquakes, tornadoes, and floods without the loss of capability to perform their safety functions.

Facilities and equipment for detecting, annunciating, and extinguishing fires are provided to protect both plant and personnel. These include fire detection and alarm systems, deluge water spray systems, dry and wet pipe sprinkler systems, carbon dioxide systems, hose stations, portable fire extinguishers, and halon flooding systems. In addition, noncombustible and heat resistant materials are used wherever practical throughout the Plant, particularly in locations such as the containment and Control Room. For more detailed information on the fire protection systems, refer to the Columbia Generating Station Fire Protection Evaluation.

The Plant site is near the Columbia River, which is the predominant hydrologic feature of the area. The elevations of safety related systems and components, however, are sufficient to protect the Plant against design basis flood conditions. All safety related structures, systems and components are also designed to withstand the effects of an earthquake, estimated as the maximum earthquake potential for this area. Instrumentation used to monitor earthquake seismic motion at Columbia Generating Station complies with Regulatory Guide 1.12 requirements and provides both a printout and an alarm annunciation if certain levels of seismic motion are detected. For more detailed information on tornado, flood and earthquake protection, refer to the Final Safety Analysis Report, Chapter 3. If needed as backup, flood information can be obtained from the U.S. Coast Guard and seismic information can be obtained from the Department of Energy, Richland Operations. Both agencies are listed in the Emergency Phone Directory.

5.1.2 Radiological Monitoring Instrumentation

The plant radiation monitoring instrumentation is used to provide information in regard to general area radiation levels as well as the radiation levels in process and effluent streams, i.e., fluids in piping systems or air in ventilation systems. The area radiation and airborne radioactivity monitoring systems are comprised of area monitoring components located throughout the plant. Under normal operating conditions, the area monitors warn personnel both locally and remotely of increasing radiation levels. These monitors provide information to assessment personnel so that decisions can be made with respect to deployment of personnel or initiation of protective actions in the event of a radiation accident. For more detailed information on the area radiation and airborne radioactivity monitoring systems, refer to the Final Safety Analysis Report, Chapter 12.

The process and effluent radiological monitoring and sampling systems provide the means for sampling and continuously monitoring paths by which significant amounts of radioactivity could be released to the environment during normal operation and anticipated operational occurrences. As part of the plant radiological monitoring program, the process and effluent radiological monitoring and sampling systems assist in limiting effluent radioactivity to within the limits of 10CFR 20 and 10CFR 50, Appendix I and provide measurement for reporting radioactivity released to the environs in compliance with Regulatory Guide 1.21. These systems also provide the accident radiation monitoring required for compliance with NUREG-0737. Portions of these systems are also employed during postulated accident conditions for monitoring effluent discharge paths, and initiating automatic control features. A detailed description of the process and effluent monitoring and sampling systems is included in the Final Safety Analysis Report, Chapter 11.

5.2 METEOROLOGICAL AND ENVIRONMENTAL MONITORING

5.2.1 Meteorological Monitoring System

The primary onsite meteorological equipment includes a 240-foot tower with a 5 ft. wind mast located approximately 1700 feet west of Columbia Generating Station and provides data to Columbia Generating Station. System measurements include wind speed, wind direction, sigma theta, temperature, dew point, barometric pressure, precipitation, and temperature differential. The Operational Meteorological Program is described in Chapter 2 of the Final Safety Analysis Report.

Wind speed, wind direction, and temperatures, except the temperature at 245 feet, are available in the control room as near real-time digital displays, (five-minute averages). The averaged data is sent via the supervisory system to the Control Room. The data is then sent to chart recorders and the PPCRS computer. The data is also accessible at the Emergency Operations Facility, the Technical Support Center, and the control room via the plant computer system.

Backup meteorological information is available. Wind speed and direction, temperature, dew points, and sigma theta parameters are available. This and other information is available from Pacific Northwest National Laboratory (PNNL) or the National Weather Service, for 15-minute averaging (manual) and input to the computer systems.

The outputs of the primary tower sensors are fed to the plant process computer for 15 minute averaging for input to the Emergency Dose Projection System (EDPS). Error diagnostics, simulated data entry, and archiving are performed concurrently. Near real time access for both emergency and routine operations is thus provided.

A procedure shall be available for the use of normal and backup meteorological data.

5.2.2 Radiological Environmental Monitoring Program

A routine radiological environmental monitoring program is established in accordance with the Offsite Dose Calculation Manual (ODCM) requirement. Energy Northwest activities include air, milk, water, garden produce, fish, soil and sediment sampling, and thermoluminescent dosimeter (TLD) placement. Energy Northwest environmental monitoring locations are similar to Figure 5-1 and are fully listed in Section 5.0 of Energy Northwest ODCM.

In case of an emergency at Columbia Generating Station, TLDs will provide a time integrated exposure record. Permanent TLD stations are located within the Ten-Mile Emergency Planning Zone, around the Exclusion Area Boundary, and at various points of interest around the Hanford Reservation and across the Columbia River in Franklin County. A control station is located near Grandview, approximately 30 miles southwest of the site. Exchange frequency during normal operations is quarterly; however, during an emergency the TLDs may be exchanged more frequently based on release conditions. In addition, continuous air samplers are located within the Ten-Mile Emergency Planning Zone. The air samplers collect airborne radioiodines and particulates on filters which are analyzed either in the field or at the radiological laboratory in the Emergency Operations Facility.

5.3 OFFSITE DOSE PROJECTIONS

5.3.1 Source Term Determinations

Release data, such as volumetric flow rates and gross radiation levels, in conjunction with calibration factors and time dependent nuclide ratios, will be utilized during an accident to assess the radiological source term. Capability exists on shift to perform dose assessment projections using real time meteorological and effluent monitor data at all times. Data from instrumentation in the airborne effluent release pathways are available to be entered into the Emergency Dose Projection System (EDPS) to calculate the source term. A more detailed assessment of the isotopic composition of the release will be determined by laboratory analysis of effluent and field sampling media. Methods for determining release rate in the event the instrumentation is offscale or inoperative are contained in the Emergency Plan Implementing Procedures.

5.3.2 Emergency Dose Projection System

The Emergency Dose Projection System (EDPS) consists of 2 programs, QEPDS and EDPS Main. Both programs are accessed via personal computer. Both programs rely on a precalculated, real time, site-specific relationship between effluent monitor readings and on-site and offsite dose rates.

QEDPS is designed for rapid evaluation of a release with restricted data input and a straight-line dispersion model. QEDPS provides incremental dose projections from the site boundary out to 10 miles. QEDPS is available in the Control Room, TSC, EOF, and Alternate EOF, and provides text and map output. Field Team data may be used to calculate dose projections or validate previous projections.

Having the QEDPS software loaded on multiple, stand-alone computers located in the Control Room and EOF ensures backup dose projection capability.

EDPS Main is designed to accept much more detailed inputs for a more thorough release evaluation with more extensive text and graphical output. EDPS Main has the choice of puff or straight-line dispersion models and incremental dose projections from the site boundary out to 10 or 50 miles. EDPS Main has a graphical map output as well as a text output of the dose projection. EDPS Main is available in the TSC and EOF.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

5.3.3 Total Population Exposure

The Columbia Generating Station plant data systems collect and maintain files of effluent flow, radiation monitor readings, and five minute average meteorology data. These data are manually input into a joint frequency program, into the XOQDOQ program, and then to the GASPAR II computer code to calculate total population dose for occupied areas. The GASPAR II code can be adapted to emergency operations by input of short term atmospheric dispersion factors and appropriate exposure pathway parameters out to 50 miles.

5.4 FIELD MONITORING

5.4.1 Environmental Field Teams

Field monitoring capabilities will be activated whenever an Alert classification occurs. Field monitoring will be performed by environmental field teams that have been selected and trained to perform these duties.

Sufficient personnel are identified within Energy Northwest and outside assistance agencies to maintain 24-hour shift coverage if needed for an extended period. Energy Northwest maintains sufficient dedicated equipment to adequately equip four Energy Northwest environmental field teams.

Field team members responding during offshift hours will report to their emergency duty station within 60 minutes. Field team deployment time from their emergency duty station will be as needed, and can be achieved in less than 30 minutes. This is based on the time necessary to brief the team, load equipment, and depart the staging area. This deployment time could be shorter during normal work hours when field team personnel are more available and could respond sooner than the 60 minute required response time.

Field monitoring will concentrate in the downwind area from the plant. Locations used during the normal environmental monitoring program will be used as preselected monitoring points when applicable (Figure 5-1).

5.4.2 Aerial Monitoring

Aerial monitoring may be used to locate a plume in a delayed or extended release, or to identify areas of radioactive deposition following a release. Aerial monitoring capability is available through federal emergency resources. The decision to employ aerial monitoring will be made by representatives of the Washington Department of Health, Oregon Department of Health, US Department of Energy, and Energy Northwest. Any request for federal resources to conduct aerial monitoring will be directed through the Washington State Emergency Operations Center (EOC).

5.4.3 Environmental Field Team Kits

Environmental field team monitoring kits are maintained in a state of readiness. Additional supplies and equipment are available to replace equipment out of service for repair and recalibration. Equipment in the calibration laboratory provides an additional resource. Appendix 3 provides lists of equipment and their location.

5.4.4 Radioiodine Determinations

Environmental air samples are analyzed for particulate and radioiodine concentrations. Analysis of particulate filters and iodine sampling cartridges are performed using a portable count rate meter. Procedures concerning sampling time and field analysis techniques are established to measure airborne radioiodine concentrations as low as 10^{-7} microcuries per cubic centimeter under field conditions.

5.4.5 Laboratory Capability

Laboratory analysis of environmental field samples can be conducted at Energy Northwest facilities as described in Section 6.2.8 of this Plan. In addition, the States of Oregon and Washington both maintain laboratories under the direction of their respective Departments of Health. These laboratories have the capability to identify, both qualitatively and quantitatively, the constituent elements that might be contained in radiological releases from Columbia Generating Station during a nuclear incident. Following such an event, samples of air, drinking water, milk, pasture and other agricultural products would be obtained by field teams and brought to the labs for analysis. The results of this analysis would then be used to determine the existence of radiological hazards in food products. The specific capabilities of the state laboratories are evaluated by FEMA.

5.5 PROTECTIVE ACTION AND RESPONSIBILITIES

The appropriate protective actions for an airborne release of radioactive material are evacuation and sheltering. The decision to evacuate or shelter is based on the dose to be avoided by the protective action relative to the risk associated with implementing a protective action. Dose to be avoided by a protective action can be affected by duration and quantity of radioactive release as well as time of release relative to time of implementation of the protective action. Protective Action Guides, discussed in Section 5.5.1, provide pre-planned guidance for making response decisions. When applied with professional judgement, they help to ensure rapid action to protect members of the public. Specifically:

a. Evacuation - Evacuation and control of access to an affected area can be the most effective protective action for reducing the dose to the public. However, constraints such as severe weather conditions, obstruction of roads, and limited time may impact the benefits of evacuation.

b. Sheltering - Sheltering in buildings with windows and doors closed and ventilation turned off can provide partial protection from a passing radioactive plume. The extent of the protection depends on the duration and isotopic mixture of the release and the type of building.

The provisions for relating measured parameters to dose rates for key isotopes and for estimating integrated dose from projected and actual dose rates shall be described in procedures.

5.5.1 Recommendations to Counties, States and Department of Energy-Richland Operations (RL)

Energy Northwest will make prompt recommendations for protective actions to state, county and DOE-RL officials. These officials will make decisions on the specific actions to be implemented in their jurisdiction.

Protective Action Recommendations (PARs) will be made based on plant or radiological conditions. Recommendations for evacuation and sheltering of certain areas are required upon classification of a General Emergency without regard to whether a radiological release is occurring. If plant conditions and a radiological release both warrant PARs, the most conservative recommendation will be made.

Shelter, evacuation or access control guidelines are based on the EPA Protective Action Guidelines and NUREG-0654 Supplement 3 recommendations.

The preferred initial action to protect the public from a severe reactor accident is to evacuate immediately about two miles around the plant and 10 miles downwind unless other conditions make evacuation dangerous. Persons in the remainder of the plume zone should be directed to stay indoors and listen to EBS/EAS broadcasts while the situation is evaluated further.

Travel conditions that may present extreme hazard may prompt offsite officials to recommend shelter until conditions improve. Shelter may also be appropriate for special, transit-dependent populations, or during controlled, short duration releases of radioactivity.

Plant and offsite officials will continue to assess plant conditions to determine additional protective actions. These protective actions should be based on field monitoring data and dose projections that indicate EPA PAGs may be exceeded in areas beyond those that have been evacuated.

5.5.2 Energy Northwest Responsibilities

Primary responsibilities of Energy Northwest associated with offsite area protective actions are to:

a. Provide the best possible effort to resolve the emergency onsite, thus alleviating the offsite condition.

b. Notify the affected county, DOE, and state officials responsible for Protective Action Decisions of the emergency condition and provide the best possible information, recommendations, and support services.

c. Coordinate Energy Northwest actions with those of federal, state, and local agencies involved in implementing protective actions.

d. Ensure that all required agencies are advised of the protective actions recommended and provided periodic updates.

5.6 POPULATION DISTRIBUTION

Figures 5-3 and 5-4 present the compass sector population estimates for the Columbia Generating Station site. Estimates for the Ten-Mile Emergency Planning Zone were acquired from population surveys conducted by the Benton and Franklin County Offices of Emergency Management. The transient industrial worker populations on the Hanford Site have been updated by the appropriate facilities. Transient recreationist figures for the Columbia River and Horn Rapids areas were updated through contacts with local representatives of the Washington Department of Fisheries and the Washington Department of Wildlife.

5.6.1 Permanent Residents

Permanent residents include all persons residing in the area. In 2000 an estimated 3,674 people were living within the Ten-Mile Emergency Planning Zone. The nearest inhabitants occupy farms which are located east of the Columbia River and are thinly spread over five compass sectors. There are no permanent residents located within three miles of the site. About 289 persons reside between the three-mile and the five-mile radii; these are all located east of the Columbia River. Of the 3,674 people residing in the Ten-Mile Emergency Planning Zone, about 2,524 live in Franklin County and about 1,150 in Benton County.

There are no significant changes in land use expected in Franklin County over the next several years. As it is currently irrigated to about the maximum amount practicable, little population increase is foreseen. No significant change in land use on the Hanford Reservation is expected, and no foreseeable population will reside there. The unincorporated area near the Horn Rapids Dam on the Yakima River in the SSW sector is expected to be the primary growth area within the Ten-Mile Emergency Planning Zone. Population growth within the Ten-Mile Emergency Planning Zone is projected to be about 6% per annum.

5.6.2 Transient Population

The transient population is divided into three main subgroups: 1) industrial employees, 2) migratory agricultural workers, and 3) recreationists. Figure 5-4 illustrates this population location graphically.

Industrial employees in the Ten-Mile EPZ total 7,017. Most are located in Benton County and form the main population to be evacuated. About 995 industrial employees work at Columbia Generating Station, and Energy Northwest Kootenai and Deschutes Buildings.

Industrial employment in the Ten-Mile Emergency Planning Zone includes:

WNP-1 (Energy Northwest & Non-Energy Northwest personnel) (12/00)	120
Ashe Substation (12/00)	21
Energy Northwest's Columbia Generating Station (12/00 Operational dayshift value)	560
Energy Northwest's Deschutes Building (12/00)	312
Energy Northwest's Kootenai Building (12/00)	123
DOE 400 Area (FFTF, Fast Flux Test Facility) (12/00)	371
Framatome ANP (12/00)	750
Allied Technology Group (12/00)	230
Hearth Melting (12/00)	75
Richland City Dump (12/00)	6
Hammer and Law Enforcement Training Center (12/00)	69
DOE 300 Area (12/00)	1,631
DOE 3000 Area, (Battelle and other contractors in POB area) (12/00)	486
Pacific Northwest National Laboratory (12/00)	2,263
TOTAL	7,017

The majority of these employees work day shift, but there may be some back-shift workers in the DOE figures. Credit is not deducted from the population values due to emergency personnel remaining in place. Therefore, the planning figure of 7,017 to be evacuated is conservatively high.

There are up to approximately 5,135 migrant farm workers in the Ten-Mile Emergency Planning Zone. This figure may be high due to the possibility of double counting during the different harvest periods. The peak season for these workers is May and June; the next highest employment season is during the fall harvest. These workers consist of both permanent and temporary residents of the Tri-Cities area, some living within the Ten-Mile Emergency Planning Zone. The numbers shown on Figure 5-4 and Table 5-1 reflect their work locations in Franklin County within the Ten-Mile Emergency Planning Zone, not their residences.

Recreationists, consisting of hunters, fishermen and boaters, enjoy activities mainly along the east bank of the Columbia river. The primary fishing season is from June through November; the main hunting season being October through January. The heaviest use of the area by recreationists is on weekends and holidays in the early morning hours. On the average, 52 fishermen and 80 hunters are present in Franklin County during the weekdays. This increases to about 155 fishermen and 200 hunters on weekends and holidays. Recreationists also use the Yakima River with an estimated maximum of 42 at any time in this area. During peak fishing or hunting times, up to 1,275 fishing and hunting recreationists may be located within the Ten-Mile Emergency Planning Zone. Of these, 1,233 are assigned to Franklin County and 42 to Benton County.

The main concentration of recreationists consists of fishermen located just south of the Ringold Fish Hatchery spillway on the Franklin County side of the Columbia River. Hunting consists of both water fowl, hunted at the Wahluke Hunting Area on the Franklin County side of the Columbia River, and upland game birds, hunted inland on the farm land of Franklin County. Up to 600 recreationists may be located around the Ringold Fish Hatchery and the Wahluke Hunting Area and the rest distributed inland.

An additional recreation attraction is in the south section of the Ten-Mile Emergency Planning Zone in Benton County as an Off-Road Vehicle Park (ORV). As many as 1,500 participants and spectators may be present during an event. Thus, a maximum total of 2,775 recreationists may be located within the Ten-Mile Emergency Planning Zone. Additional provisions have been made for the Horn Rapids housing development and golf course.

5.6.3 Special Facility Population

There are no individuals within the Ten-Mile Emergency Planning Zone confined to facilities such as hospitals, nursing homes, or penal institutions. There are four schools, the Edwin Markham Elementary School, the Country Haven Academy, the Country Christian Center, and the Big River Country School, with a total enrollment of approximately 575 (students and faculty). Most of the students live within the Ten-Mile Emergency Planning Zone.

5.7 EVACUATION ROUTES AND ASSISTANCE CENTERS

5.7.1 Public Evacuation Routes

The Benton County Fixed Nuclear Facility Response Plan and the Franklin County Radiological Columbia Generating Station Response Plan (referred to in Appendix 1) contain information concerning evacuation routes and assistance centers for personnel who would be evacuated from the Ten-Mile Emergency Planning Zone. See Figure 5-5 for Assistance Center locations.

5.7.2 Site Evacuation Routes

Several evacuation routes are available to site personnel. These are shown in Figure 5-5 and include:

a. Route 4 South - This four-lane road leads southeast from the site to Richland and is the main route from the plants.

b. Route 10 South - A two-lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads on into Richland.

c. Route 4 South - A two-lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.

d. Route 2 South - A two-lane road leading north from the plants, intersecting with Highway 240 and Highway 24 to Yakima.

All of these roads have an expected vehicle capacity of between 1200 and 1800 vehicles per lane per hour.

5.7.3 Plant and Nearby Facilities Evacuation

Radiological conditions may dictate evacuation of the plant and nearby facilities. If an evacuation of the plant is ordered by the Emergency Director, plant personnel, visitors, and contract personnel other than those with emergency functions will evacuate plant areas. Procedures and equipment are provided to immediately determine the habitability of the area. Preliminary surveys will also be made to determine the contamination or exposure status of personnel and identify those individuals needing decontamination.

For a Site Area Emergency or General Emergency, personnel within the Protected Area may be evacuated to the Kootenai Building (PSF) or the Energy Northwest Office Complex, for monitoring or decontamination as necessary. Procedures provide for personnel accountability and assessment of contamination/exposure status. Personnel that do have assigned emergency functions will proceed to their emergency center.

Non-essential personnel in the Exclusion Area will be evacuated as needed at a Site Area Emergency or General Emergency. They will be directed to go home if radiological contamination concerns do not exist, otherwise they will be directed to the Energy Northwest Office Complex (or other area as appropriate and designated by procedure). Personnel assigned emergency functions will proceed to their emergency center.

5.7.4 Radiological Monitoring and Decontamination of Personnel

Personnel will be monitored for contamination prior to leaving the plant if conditions permit. Whole body friskers and portable detectors are available at the plant exit. Personnel decontamination facilities in the plant include showers, sinks, and cleaning agents. Decontamination capabilities for emergency purposes are also available at the Kootenai Building, at remote decontamination locations, and for injured personnel at the Hanford Environmental Health Foundation Emergency Decontamination Facility in Richland.

For the general population, monitoring will be conducted under provisions of the Benton County Fixed Nuclear Facility Response Emergency Plan and the Franklin County Radiological Response: Energy Northwest plan. Emergency Worker/Assistance Centers (EWAC) are identified for the monitoring of personnel leaving the affected sectors of the 10 mile EPZ. Personnel evacuated from affected segments of the Columbia River will be monitored when necessary at a location along the river. The Washington State Department of Health will be in charge of the monitoring and decontamination effort.

5.7.5 Personnel Accountability

Personnel accountability will be conducted at predetermined locations. The Operations Support Center Manager is responsible for ensuring performance of accountability within the Protected Area and reporting the results to the TSC Manager or Shift Manager if the TSC is not activated. Non-essential personnel will be logged offsite utilizing the electronic access control system or personnel logs. The goal is to complete personnel accountability inside the Protected Area within 30 minutes. The last known location of unaccounted individuals will be obtained and search and rescue procedures initiated to locate the missing individuals.

For the Exclusion Area, personnel are alerted by the evacuation siren, public address announcement or telephones and will follow evacuation procedures. Energy Northwest personnel will be available to initiate the search and rescue procedures as needed.

5.8 EVACUATION TIME ESTIMATES

Evacuation time estimates for the Columbia Generating Station site have been developed in the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study, Revision 4, May, 2001. Table 5-1 of this section summarizes the results.

5.8.1 Emergency Planning Zone Sub-Areas

The Ten-Mile Emergency Planning Zone was divided into several sub-areas as follows:

0-2 miles	entire circumference
0-5 miles	four approximate 90° sections
2-10 miles	four approximate 90° sections
0-10 miles	entire EPZ

The two-mile radius was not subdivided because it contains no residential population and the only institution populations are transients all working on contiguous Energy Northwest properties. Only three of the four 5 and 10 mile sectors (about 90°) were examined because the fourth, entirely on the Hanford Reservation, contains no residential, transient or special population. These sectors are graphically shown on Figure 5-5. The Columbia River forms a natural border between Benton and Franklin Counties and was used to form the division between Sector 2 and Sector 3. Franklin County was divided, approximately in half, since it was assumed that those persons north of the plant location would evacuate north toward Mesa and Connell and those persons south of the plant would evacuate south towards Pasco. When making estimates for outer portions of the sectors it was assumed that the inner adjacent portions were being simultaneously evacuated.

5.8.2 Notification, Preparation, Response and Confirmation Times

The evacuation time estimates shown in Table 5-1 include preparation time and response time. Notification times and confirmation times are shown as separate items.

Energy Northwest has established procedures to notify officials of Washington State, Benton and Franklin Counties and the Department of Energy-Richland Operations within 15 minutes of a declaration of any emergency classification. The Energy Northwest early warning system was designed to enable the county to notify the permanent 10-mile population within 15 minutes from the time the decision to take a protective action is made by county officials. Therefore, a maximum of 30 minutes notification time is assumed.

In the event of an evacuation, residents needing transportation are instructed to call the respective county emergency management office to request transportation. The respective emergency management office will dispatch emergency workers to collect these residents. Energy Northwest will be responsible for personnel accountability at Energy Northwest facilities (estimated to take a maximum of 30 minutes). The calculated evacuation time estimates start at the time of the announcement over the Emergency Broadcast System (EBS) or Emergency Alerting System (EAS) station to begin evacuation and end when the evacuation is complete.

The Figure 5-6 series illustrates "S-curves" for various populations and conditions. In the congested traffic environment which is characteristic of an evacuation process, travel time on a roadway section is, to a large extent, determined by the capacity of that section. Roadway capacities were based upon the type of roadway considered and the presence of traffic control. The following table presents the per-lane capacities utilized:

Roadway Type	Per-lane Capacity (Veh/hr)
Freeway	1800
Arterial/Rural Road	1500
Local Street	1200

A vehicle occupancy of three persons per vehicle was generally used for residents and transients. Exceptions are the industrial plants for which 1.5 persons per vehicle was used, the schools for which 35 persons per school bus was used, and the Off-Road Vehicle Park for which 2 persons per vehicle was used.

5.8.3 Adverse Weather

Severe weather conditions such as blizzards, heavy rain storms, flooding, fog, or high winds could seriously hamper evacuation. However, historical records indicate that severe conditions of this nature have occurred rarely in the past. Because of the effect of weather on the capacity of roadway and the fact that capacity is a controlling factor in deriving evacuation times, it is necessary to adjust capacity figures to represent estimated road conditions during adverse weather. Based on limited empirical data, weather conditions such as heavy rain reduce the values of capacity for the highways utilized as evacuation routes by approximately 20 percent. For adverse conditions during the winter months, estimated capacity reductions and free-flow speed reductions of 30 percent each, relative to normal weather conditions are assumed.

5.8.4 Special Facilities

The only special facilities within the Ten-Mile Emergency Planning Zone are Edwin Markham Elementary School, Country Haven Academy, the Big River Country School, and the Country Christian Center, with a total enrollment of approximately 575 students and faculty. Because of the small size of this population, it was considered counted as part of the permanent population in making evacuation time estimates. Buses which could be used in the evacuation are located at the district bus lot in north Pasco during the day. The buses can be dispatched to the schools within the one hour preparation time assumed for this section.

Public transportation, although not specifically identified as being needed, is available to the public in a portion of the Ten-Mile Emergency Planning Zone and is not relied upon for evacuation. The sheriffs' departments will be patrolling the area during an emergency and could make transportation arrangements for anyone not already evacuated.

5.9 RADIOLOGICAL EXPOSURE CONTROL

Radiation exposure limits and guidelines have been established for the control of radiation exposure to workers during an emergency. Facilities are available and arrangements can be made for internal and external personnel dose assessment. The individual functioning as Emergency Director has the responsibility to authorize exposures in excess of 10CFR20 limits or EPA-400 guidance, but can delegate this responsibility if necessary to improve command and control operations.

5.9.1 ALARA Policy

ALARA is an acronym meaning As Low As Reasonably Achievable. Energy Northwest's ALARA policy states:

> "Energy Northwest shall conduct all operations involving radiation and radioactive material such that radiation exposures to employees, contractors and the general public are maintained as low as is reasonably achievable. "Reasonably achievable" takes into account the state of technology and the economics of exposure reduction in relationship to the benefits to health and safety."

The principles of ALARA will be considered during all phases of the emergency and applied where practical. Refer to Section 5.9.3.

5.9.2 Administrative Exposure Hold Points

Administrative exposure hold points are used during normal operations to bring exposures which are or could be significant to the attention of Plant Management. Energy Northwest administrative exposure hold points will be automatically waived upon declaration of an Alert or higher emergency classification. The Radiation Protection Manager (RPM), for onsite, and the Radiological Emergency Manager (REM), for offsite, are still responsible for limiting personnel exposures in keeping with the ALARA philosophy.

Whenever the administrative exposure hold points are waived, efforts shall be made to keep all exposures below 10 CFR 20 limits.

5.9.3 Protective Action Guides (PAGs)

The Environmental Protection Agency (EPA) has established Emergency Worker and Lifesaving Activity Protective Action Guides as follows:

PROTECTIVE ACTION GUIDES FOR EMERGENCY WORKERS		
DOSE LIMIT	ACTIVITY	PROTECTIVE ACTIONS
5 rem TEDE[1]	ALL	Emergency Workers continuously monitor and limit exposure.
10 rem TEDE	PROTECTING VALUABLE PROPERTY	Evaluate alternatives prior to granting authorization to exceed limits. Exposures above 5 rem require approval of the Emergency Director or designee.
25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Lower doses not practicable.
>25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Provide specific review and decision for each VOLUNTARY life-saving mission. Only volunteers fully aware of the risks should request exceeding this limit.

Energy Northwest will at all times attempt to keep exposures below EPA 400 Guidelines. However, situations such as the following may arise which could necessitate application of the above Protective Action Guides:

a. lifesaving activities
b. removal of injured persons
c. undertaking corrective actions
d. performing assessment actions
e. providing first aid
f. performing personnel decontamination
g. providing ambulance services
h. providing medical treatment services

Permission for emergency workers to receive additional radiation exposure is contained in procedures which includes expeditious decisions and comparison of relative risk.

[1]The total effective dose equivalent (TEDE) is the sum of the deep dose equivalent (DDE) resulting from exposure to external sources and the committed effective dose equivalent (CEDE) projected over 50 years for internal exposures. CEDE is the risk weighted sum of committed dose equivalents (CDE) to organs. CDE is the total dose from an internally deposited radionuclide over the subsequent 50 year period.

5.9.4 Contamination Control

5.9.4.1 Area Access

Controls have been established at Columbia Generating Station to ensure there is no detectable fixed or loose contamination (beta-gamma or alpha) outside of the Radiologically Controlled Area (RCA) under normal or emergency conditions. Energy Northwest policy is to minimize the potential for personnel contamination and to prevent the spread of contamination to uncontrolled areas at all times. Normally all personnel and equipment leaving the RCA are monitored to ensure the limits for contamination levels are met. However, normal in-plant contamination control procedures may be suspended during an emergency by the plant Radiation Protection Manager to allow for prompt emergency response and to minimize personnel exposure to other hazards. Contamination control measures intended to prevent transport of radioactive materials out of the plant or into continuously occupied areas such as the control room shall retain high priority.

5.9.4.2 Personnel

Personnel work practices within the RCA are controlled by Health Physics procedures. Upon leaving a radiologically contaminated area, each worker will normally proceed to the nearest personnel monitoring station which has a background count rate of less than 300 cpm and perform a personal survey. Individuals leaving the RCA are normally monitored for contamination before entering an uncontrolled area.

If survey of an individual indicates contamination levels in excess of established contamination limits, decontamination will be performed. Records will be maintained in accordance with established Health Physics procedures. Potassium Iodide, respirators and protective clothing can be distributed to plant personnel if needed.

5.9.4.3 Decontamination

Decontamination limits apply to personnel and equipment during routine and emergency operations. Only the Radiation Protection Manager or his delegate can waive these limits and then only on a case by case basis.

Normal personnel decontamination is accomplished in the 487′ elevation Radwaste Building decontamination facility. All drains lead to the Radwaste system where the liquid is processed and monitored prior to discharge. During site emergency evacuation conditions, personnel decontaminations can be accomplished at the Kootenai Building where a decontamination shower and supplies are maintained.

Energy Northwest policy requires decontamination of personnel, equipment, and material prior to release from a radiologically controlled area according to the criteria found in Chapter 12.5 of the FSAR.

If the contamination cannot be reduced to these limits by reasonable methods, such as with radioiodine skin contamination, the Radiation Protection Manager (for inside the Protected Area) and the Radiological Emergency Manager (for outside of that area) shall determine a further course of action. This may include referral to a local medical facility or placing the individual in an on-going exposure tracking program.

5.9.4.4 Drinking Water and Food Supplies

Radiological surveys will periodically be made in areas where food is stored onsite and isotopic analyses will periodically be made of the Columbia Generating Station drinking water supply. The primary source of potable water for Columbia Generating Station is the Columbia River. It is unlikely that an airborne release of radioactive material could affect this supply.

Offsite vegetation and milk samples are also analyzed routinely as part of the Radiological Environmental Monitoring Program (REMP). In the event of an airborne release of radioactive materials, environmental samples are collected and analyzed.

5.9.5 Personnel Dose Assessment

Routine and emergency personnel exposure monitoring and dose assessments are accomplished by issuing thermoluminescent dosimeters (TLDs), electronic or direct reading dosimeters and monitoring for airborne radioactivity. A twenty-four hour per day capability to analyze Energy Northwest issued dosimetry is available. Energy Northwest maintains a personnel monitoring program through the use of appropriate dosimetry and whole body counters.

5.9.5.1 Thermoluminescent Dosimeters

Issuance of personnel TLDs will be in accordance with established Health Physics procedures. Special provisions are included to increase the frequency of TLD processing, as necessary, during emergencies.

The measured dose as determined by TLDs shall serve as the permanent and official record of the individual's deep dose equivalent (DDE) and skin dose. Radiation dose to the hands, forearms, feet and ankles shall be obtained by placing additional TLDs in those locations when extremity exposure may be the controlling factor.

5.9.5.2 Direct Reading Dosimeters

Electronic or direct reading pocket dosimeters are issued to personnel entering radiologically controlled areas. Personnel shall be instructed to read these dosimeters frequently. Dosimeter readings provide an estimated record of external exposure received on a daily basis.

5.9.5.3 Issuance of Dosimetry to Offsite Emergency Personnel Responding Onsite

Offsite emergency personnel who respond onsite and do not have preassigned dosimetry will be issued the appropriate personnel dosimetry upon arrival at the site access point.

Emergencies requiring immediate response are characterized by the necessity for access by emergency response personnel with minimal or no delay. Examples include fire fighting teams, emergency medical personnel or bomb squads. In this situation, dosimetry will be dispensed by Security personnel at the access point. Procedures are established to ensure dosimeters are read at appropriate frequencies. Dosimetry and necessary personal and exposure information will be collected upon leaving the site. Energy Northwest Security will be provided with sufficient dosimetry devices, procedures, and data forms for this type of occurrence.

Offsite (State and County) personnel responding to the EOF will respond with their own dosimetry or will be provided dosimetry by Energy Northwest if necessary.

5.9.5.4 Airborne Radioactivity Monitoring

The primary method utilized to determine potential internal exposure of plant personnel is the measurement of airborne radioactivity. Standard Health Physics procedures describe the collection and analysis of air samples.

5.9.5.5 Whole Body Counting and In-Vitro Bioassays

Whole body counting and in-vitro bioassay will be available during and after an emergency to aid in determining the extent of an individual's internal exposure to radioactive materials. Measurements of radioactivity in the body (in-vivo), and/or radioactivity excreted from the body (in-vitro), will be performed as necessary. This will enable timely evaluation of uptakes of radioactive material whenever it is suspected that the individual has been exposed to airborne radioactivity above predetermined levels specified in established procedures.

5.9.5.6 Radiation Exposure Records

Exposure records are maintained by the Total Exposure System for external and internal radiation exposure for each person entering a radiologically controlled area at an Energy Northwest nuclear facility. These records include external dose [Deep Dose Equivalent (DDE)], skin and extremities dose [Skin Dose Equivalent (SDE)] and internal dose [Committed Dose Equivalents (CDE)] determined by dosimetry, whole body counting and/or in-vitro bioassay.

5.9.6 Respiratory Protection

Selected personnel assigned in-plant emergency response duties are trained in the use of respiratory protective equipment and qualified through quantitative respiratory fit testing. Respiratory protective equipment is maintained at strategic locations in the plant with backup supplies available. Respiratory protection under emergency conditions is administered in accordance with normal operating procedures with special provisions for prompt emergency action requirements.

Facilities and equipment are available to qualify outside response personnel on the use of respiratory protective equipment.

5.9.7 Thyroid Blocking Agent

Potassium Iodide (KI) is maintained for use by emergency workers at strategic locations.

In the event of a release involving radioiodine, the TSC Manager, in consultation with the Radiation Protection Manager, will issue instructions concerning the use of potassium iodide by in-plant emergency workers. The EOF Manager, in consultation with the Radiological Emergency Manager, will issue instructions to Energy Northwest environmental field teams and emergency workers in the Exclusion Area concerning the use of potassium iodide and will recommend that other offsite (State, County, etc.) emergency workers be issued instructions concerning use of potassium iodide. The EOF Manager will forward his recommendations to the appropriate offsite authorities. The thyroid blocking capability of KI is most effective when taken prior to or immediately after exposure to radioiodine. Therefore, a timely decision is necessary concerning this action.

Whenever offsite resources are expended, Energy Northwest will provide KI, along with personnel monitoring, dosimetry and decontamination services, when needed by offsite emergency workers.

Description	Total Within 2 Miles	Areas Within 5 Miles				Areas Within 10 Miles			
		I	II	III	Total	I	II	III	Total
Permanent Population	-	137	152	0	**289**	806	1429	1150	3385
Permanent Population Vehicles	-	63	32	0	**95**	421	420	342	1183
Transient Population	1136	1611	384	371	**2366**	828	5244	5881	11,953
Transient Population Vehicles	1018	629	236	155	**2038**	509	2397	910	3816
General Population	1136	1749	536	371	**2656**	1657	7217	7031	15,905
Total Vehicles	1018	692	268	155	**2133**	509	2817	1252	4999
Notification Time Minutes	15	30	30	30	**30**	30	30	30	30
Permanent Population Evac. Time Normal Conditions Hours Minutes	-	1:00	1:00	-	**1:00**	1:30	1:30	1:30	1:30
General Population Evac. Time Normal Conditions Hours Minutes	1:00	1:00	1:00	1:30	**1:30**	1:30	1:20	2:15	2:15
Permanent Population Evac. Time Adverse Conditions Hours Minutes	-	1:00	1:00	-	**1:00**	1:30	1:30	1:30	1:30
General Population Evac. Time Adverse Conditions Hours Minutes	1:30	1:00	1:00	2:00	**2:00**	1:30	1:30	2:30	2:30
Confirmation Time Minutes	30	60	60	60	**60**	60	60	60	60

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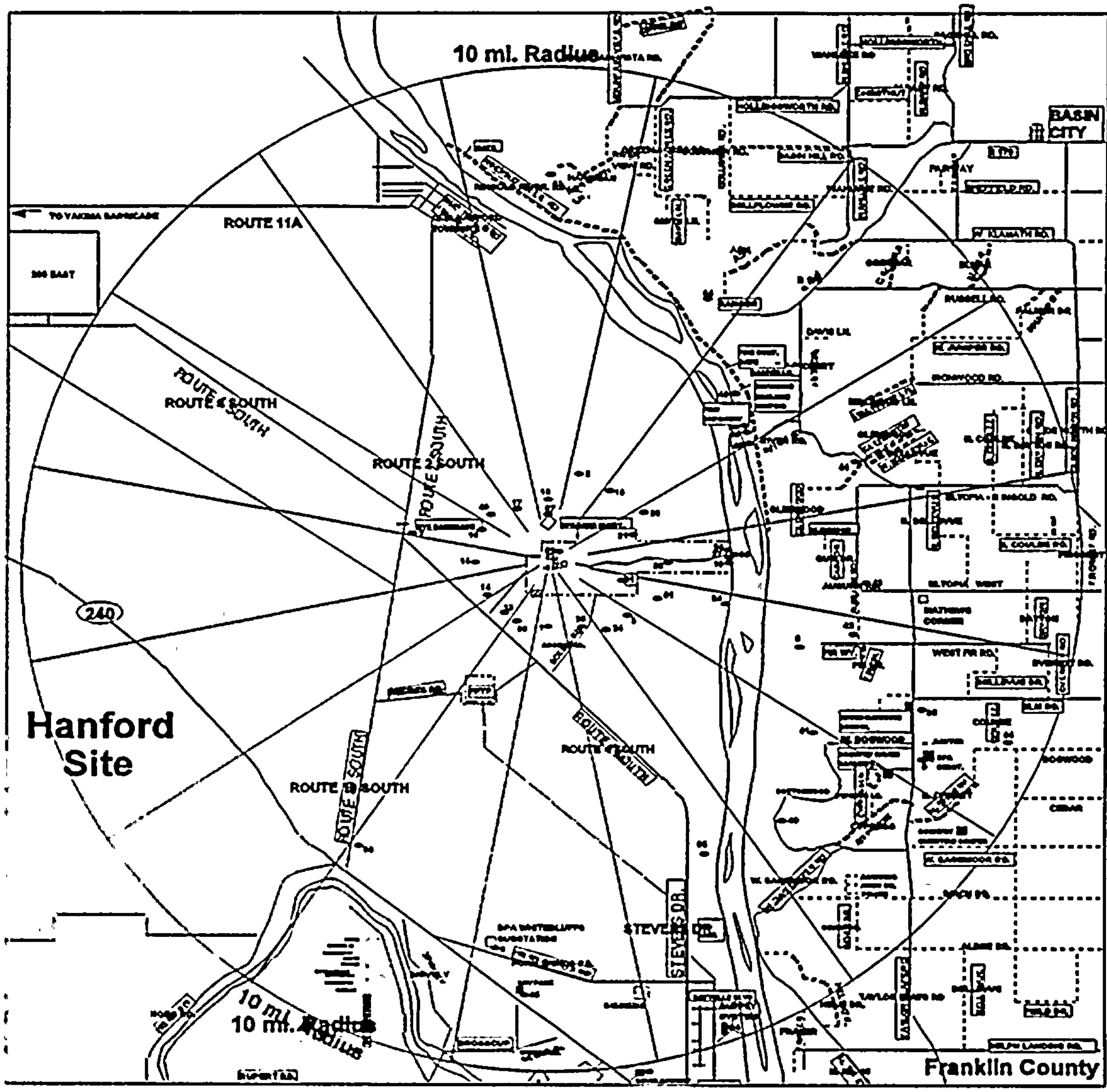
Table 5-1, Summary of Results of Evacuation Times Analysis



Station	Reactor Radial	Miles*	TLD	AP/AI	Station	Reactor Radial	Miles*	TLD	AP/AI	Station	Reactor Radial	Miles*	TLD	AP/AI
1	S	1.3	O	X	19	NE	1.8	O		40	SE	6.4	O	O
2	NNE	1.8	O		20	ENE	1.3	O		41	SE	6.8	O	
3	SE	2.0	X		21	ENE	1.5	X	X	42	ESE	6.8	O	
4	ESE	8.3	O	O	22	S	2.1	O		43	E	6.7	O	
5	ESE	7.7	O	X	23	ESE	3.0	X	X	44	ENE	6.7	O	
6	S	7.7	O	X	24	SE	1.9	O		45	ENE	4.2	O	
7	WNW	2.7	O	X	25	SSE	1.6	O		46	NE	4.7	X	
8	ESE	4.7	O	O	26*	E	3.2			47	N	8.5		O
9A*	WSW	30.0	O	O	27	E	3.2			48	NE	4.3	O	
9B*	WSW	36.0			29	SSE	11.0			49	NW	1.2	O	
9C*	WSW	33.0	O		30	E	3.5			50	SSW	1.2	O	
10	E	3.1	X		31	E	1.1			51	ESE	2.1	O	
11	ENE	3.1	X		32	E	1.2			52	N	6.1		
12	NNW	6.1	O		33	ENE	3.3			53	N	7.6	O	
13	SW	1.4	O		34	ESE	3.3			54	NNE	6.6	O	
14	WSW	1.4	O		35	ENE	10.5			55	SSE	7.0	O	
15	W	1.4	O		36	ESE	7.2			56	SSW	7.0	O	
16	WNW	1.4	O		37A	SSE	17.0			57	N	8.7		O
17	NNW	1.2	O		37B	SSE	16.0			65	S	8.7		X
18	N	1.1	O		38*	E	26.5 (95.0)							

960334.1 Map
960292
June 1996

LEGEND
PAVED ROAD
BOUNDARY LINES
SCALE

- Control location.
X Sample collected at station (non-ODCM)
O Offsite Dose Calculation Manual (ODCM) sample collected at station.
* Estimated from center at WNP-2 Containment from map position.
AP/AI Air Particulate and Iodine

Figure 5-1, Environmental Sampling Points

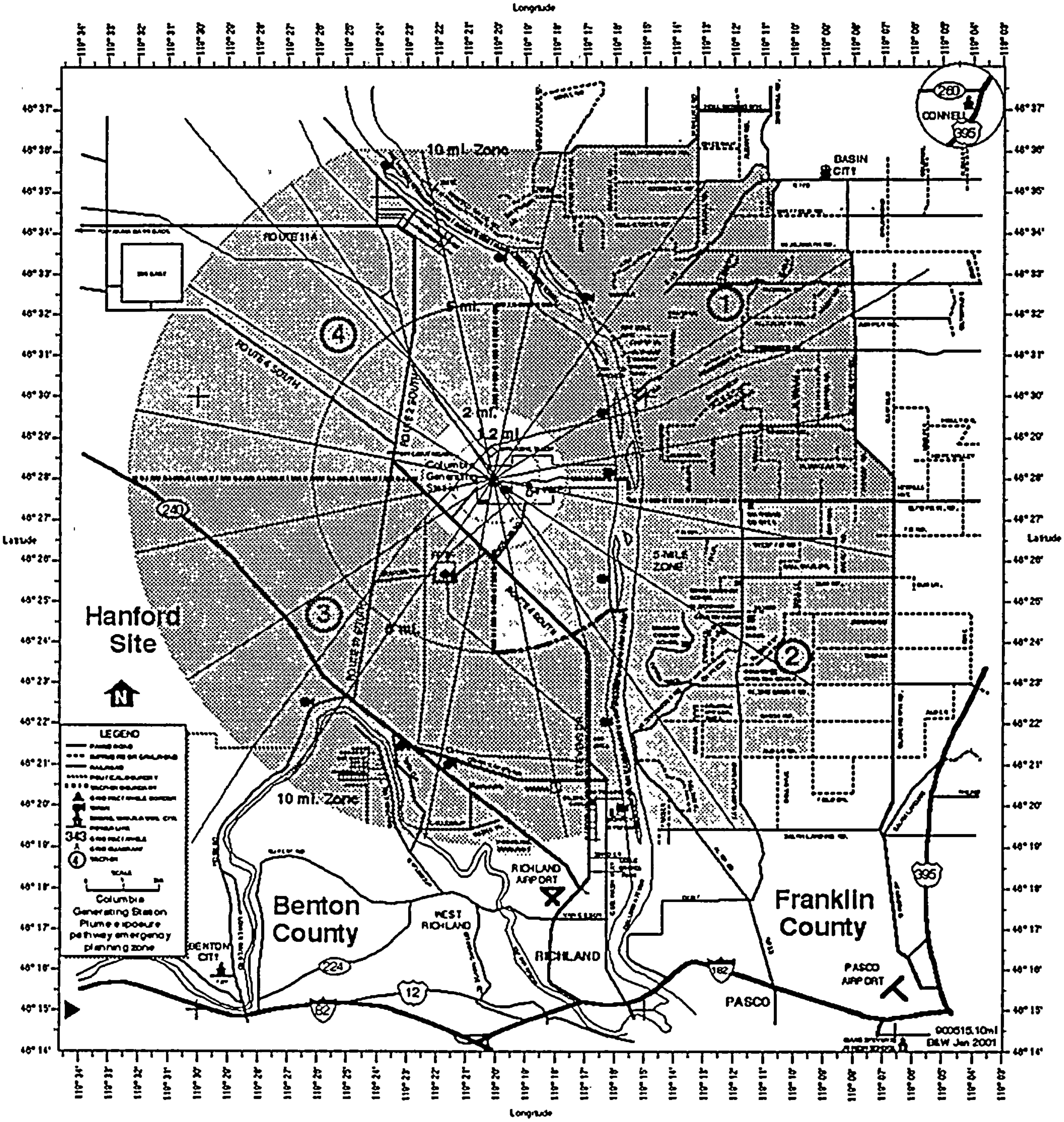
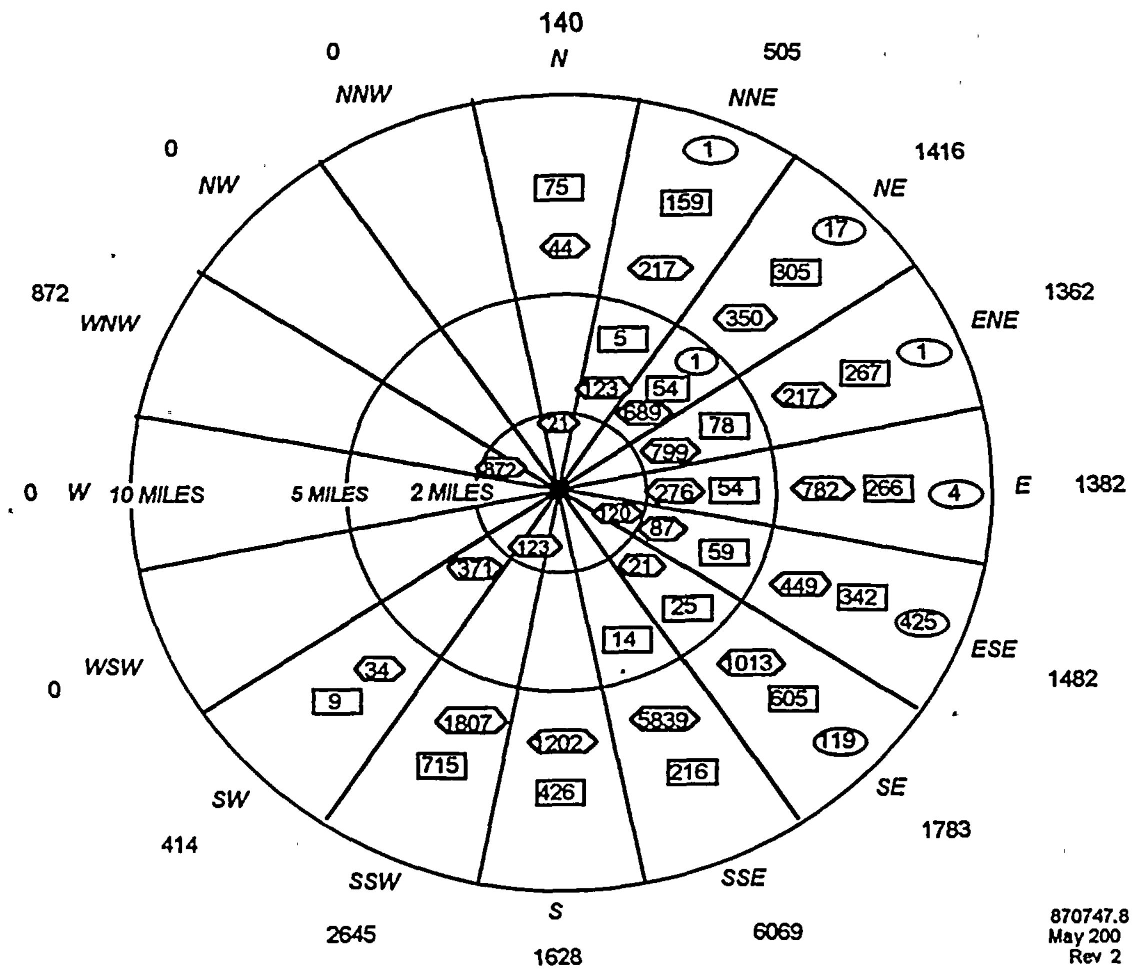


Figure 5-2, Ten Mile Grid Map



19,698 TOTAL SEGMENT POP ULATION 0 TO 10 MILES

Population Totals - PERMANENT			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	0	0-2	0
2-5	289	0-5	289
5-10	3385	0-10	3674

Population Totals - TRANSIENT			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	1136	0-2	1136
2-5	2366	0-5	3502
5-10	11,954	0-10	15456

Population Totals - SPECIAL			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	0	0-2	0
2-5	1	0-5	1
5-10	567	0-10	568

Population Totals			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	1136	0-2	1136
2-5	2656	0-5	3792
5-10	15,906	0-10	19,698

Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down Into Classifications

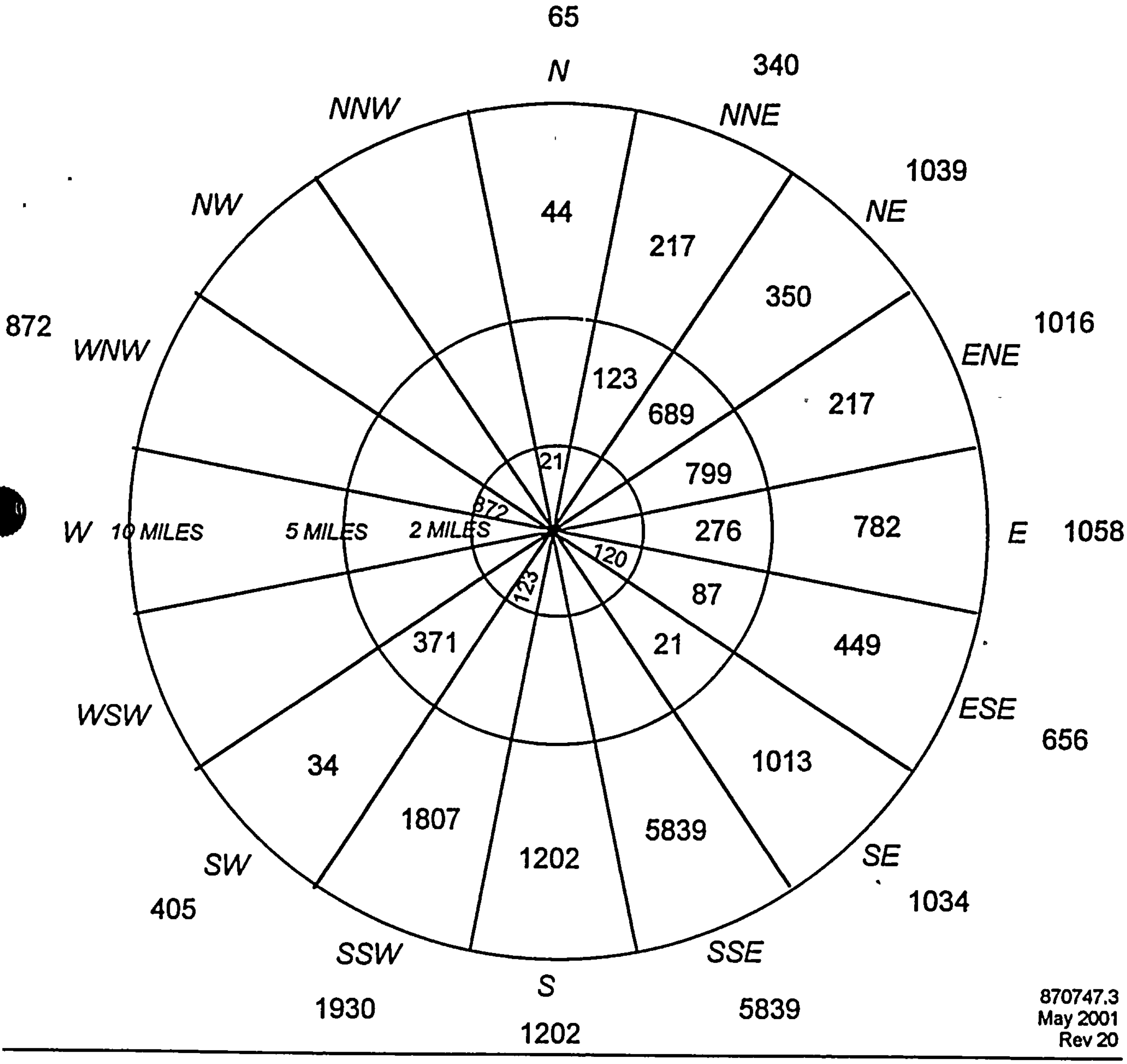


Figure 5-4, Distribution of Transient Population Within 10-Mile EPZ

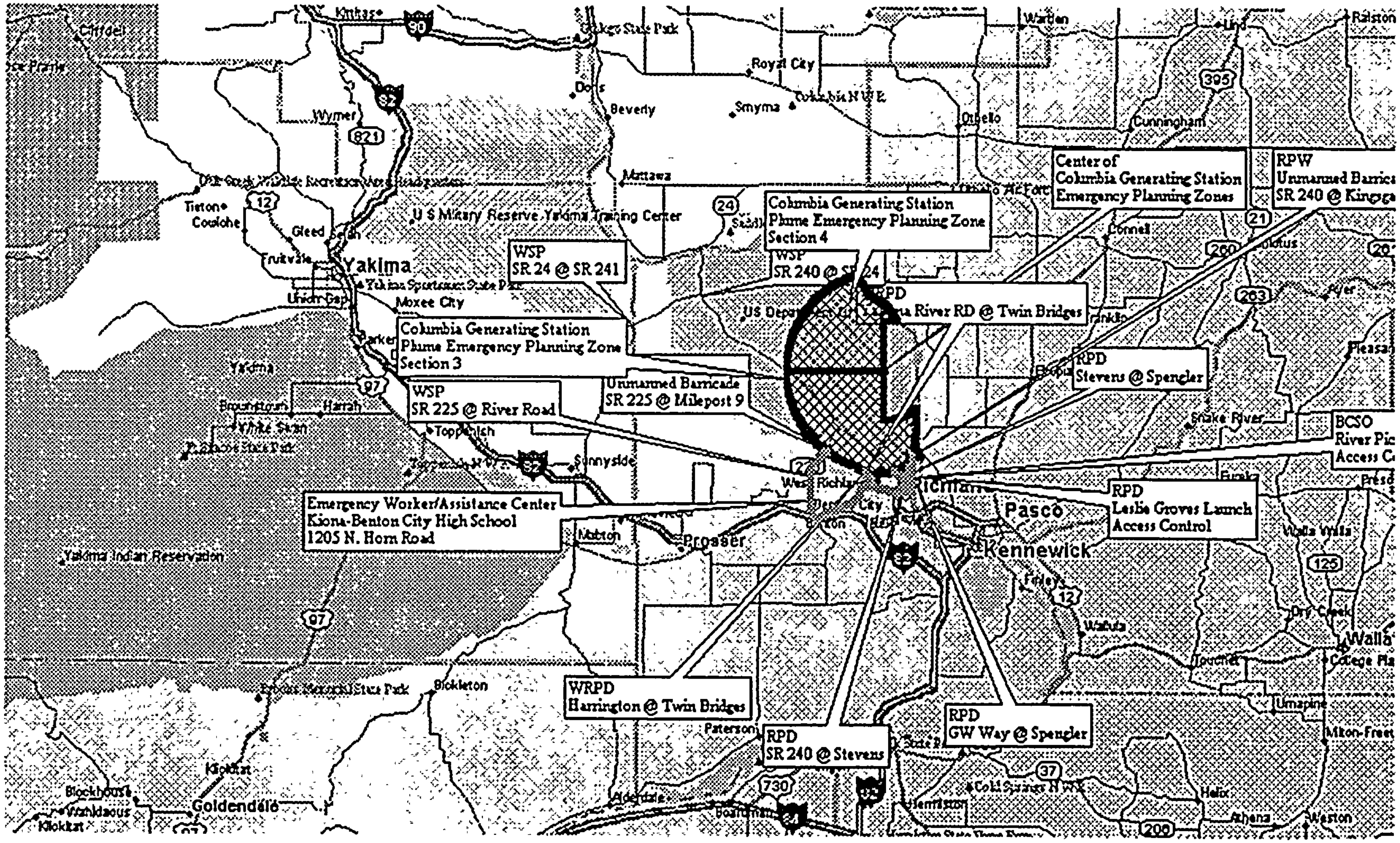


Figure 5-5, Benton County Evacuation Routes

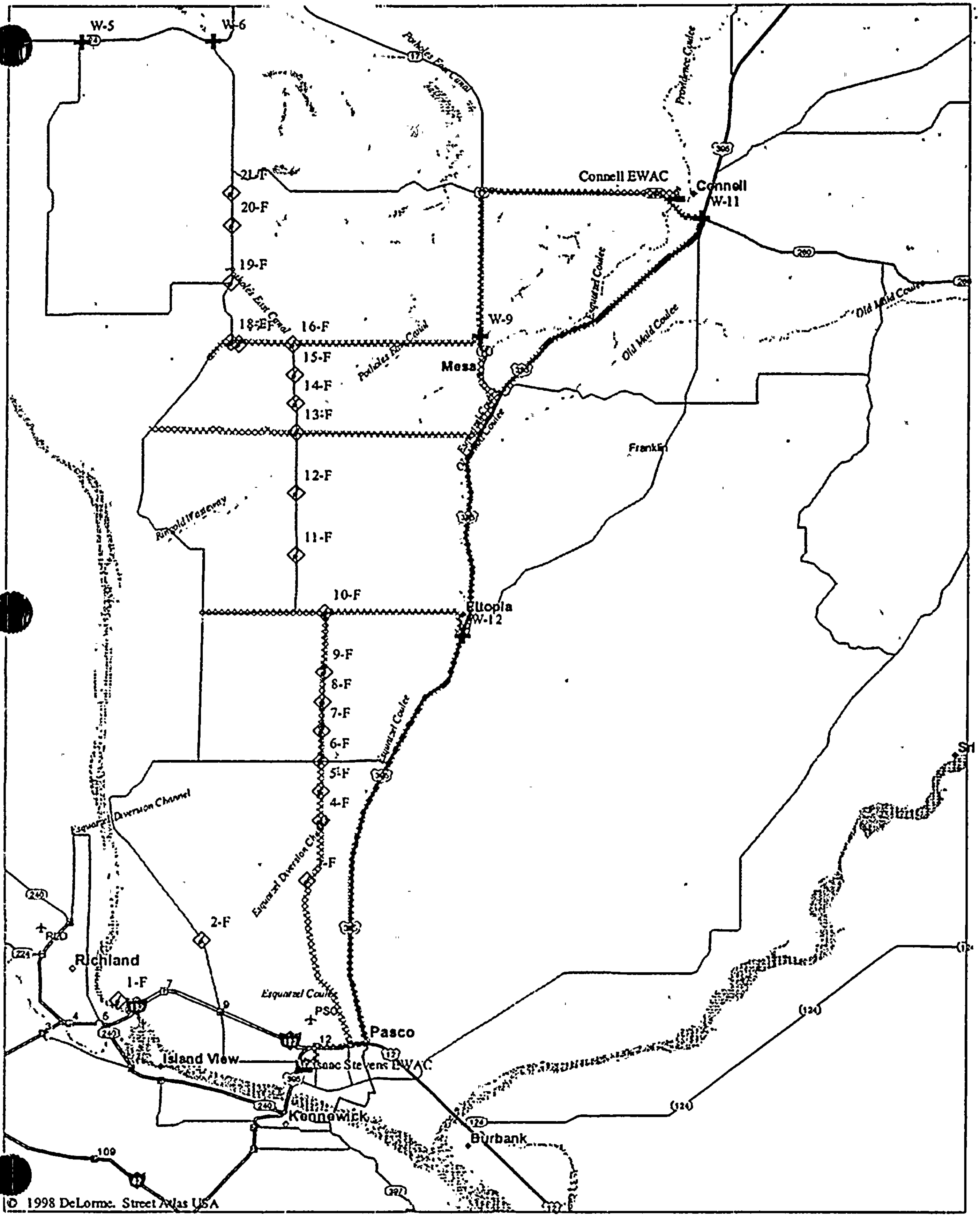


Figure 5-6, Franklin County Evacuation Routes

FRANKLIN COUNTY ACCESS CONTROL POINTS

ID #	LOCATION	RESPONSIBLE AGENCY
1-F	Road 68 @ Dent	Pasco PD
2-F	Dent Rd @ Court St	Pasco PD
3-F	Selph Landing @ Glade North	FC Sheriffs Office
4-F	Alder @ Glade North	FC Public Works *
5-F	Birch @ Glade North	FC Public Works *
6-F	West Sagemoor @ Glade North	FC Sheriffs Office
7-F	Cedar @ Glade North	FC Public Works *
8-F	Dogwood @ Glade North	FC Public Works *
9-F	Fir @ Glade North	FC Public Works *
10-F	Eltopia West @ Glade North	FC Sheriffs Office
11-F	Ringold @ Glade North	FC Public Works *
12-F	Ironwood @ Glade North	FC Public Works *
13-F	Russell @ Glade North	FC Public Works *
14-F	Klamath @ Glade North	FC Public Works *
15-F	Sheffield @ Glade North	FC Public Works *
16-F	SR 170 @ Glade North	FC Sheriffs Office
17-F	Fairway @ SR 170	FC Public Works *
18-F	SR 170 @ Sagehill	FC Sheriffs Office
19-F	Hollingsworth @ Sagehill	FC Public Works *
20-F	Fern @ Sagehill	FC Public Works *
21-F	North Wahluke @ Sagehill	FC Public Works *
W-5	Hwy 24 @ Mountain Vista	Washington State Patrol
W-6	Hwy 24 @ Sagehill	WSP
W-9	Hwy 17 @ Road 170	WSP
W-11	Hwy 395 @ Connell	WSP
W-12	Hwy 395 @ Eltopia West	WSP

Figure 5-7

NOTE: Asterisk (*) indicates Access Control Point is an unmanned barricade.

LEGEND:

- = EWAC
- = Evacuation Route
- = Franklin Co. ACP
- = WA State Patrol ACP

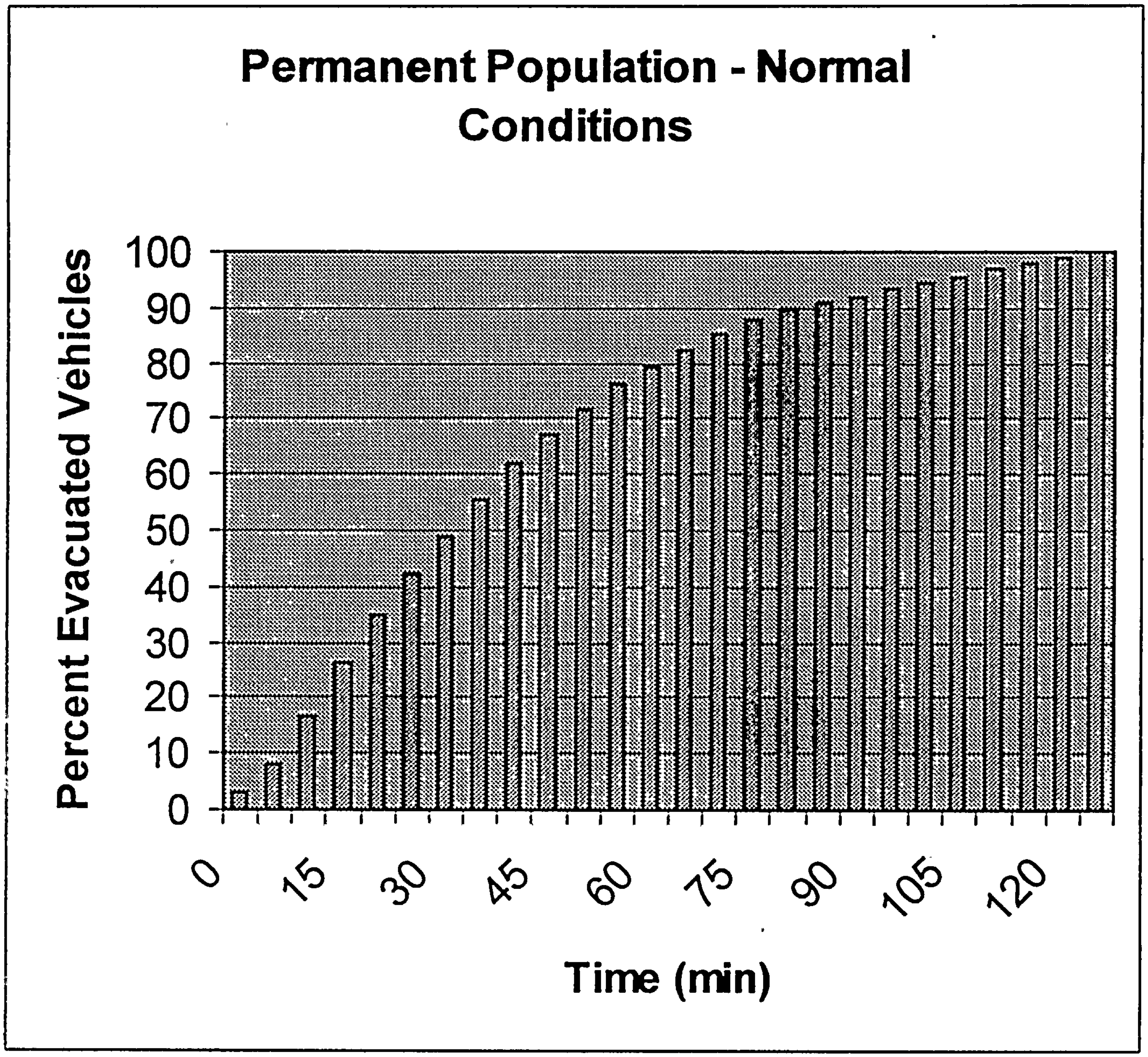


Figure 5-8.A Permanent Population-Normal Conditions

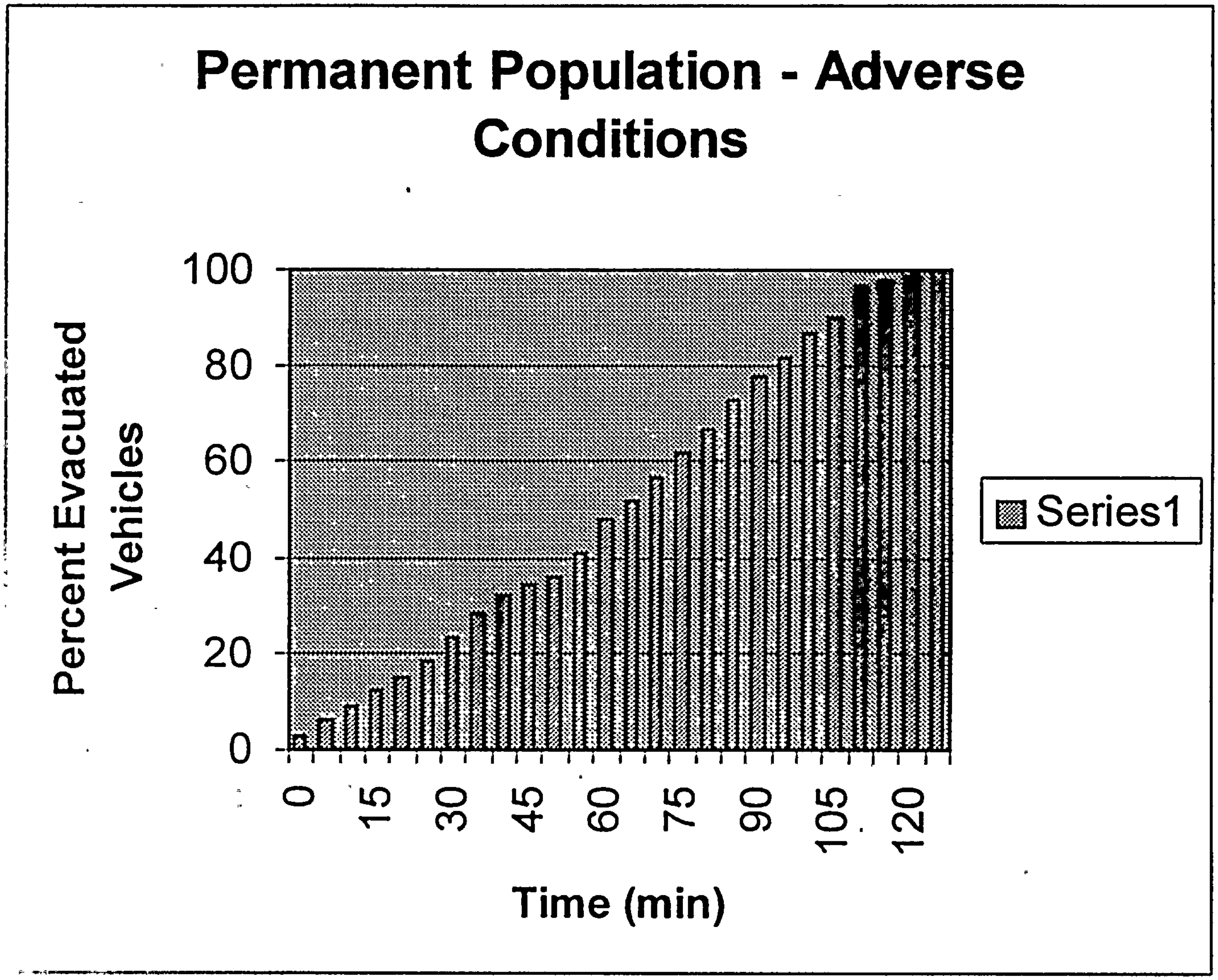


Figure 5-8.B Permanent Population-Adverse Conditions

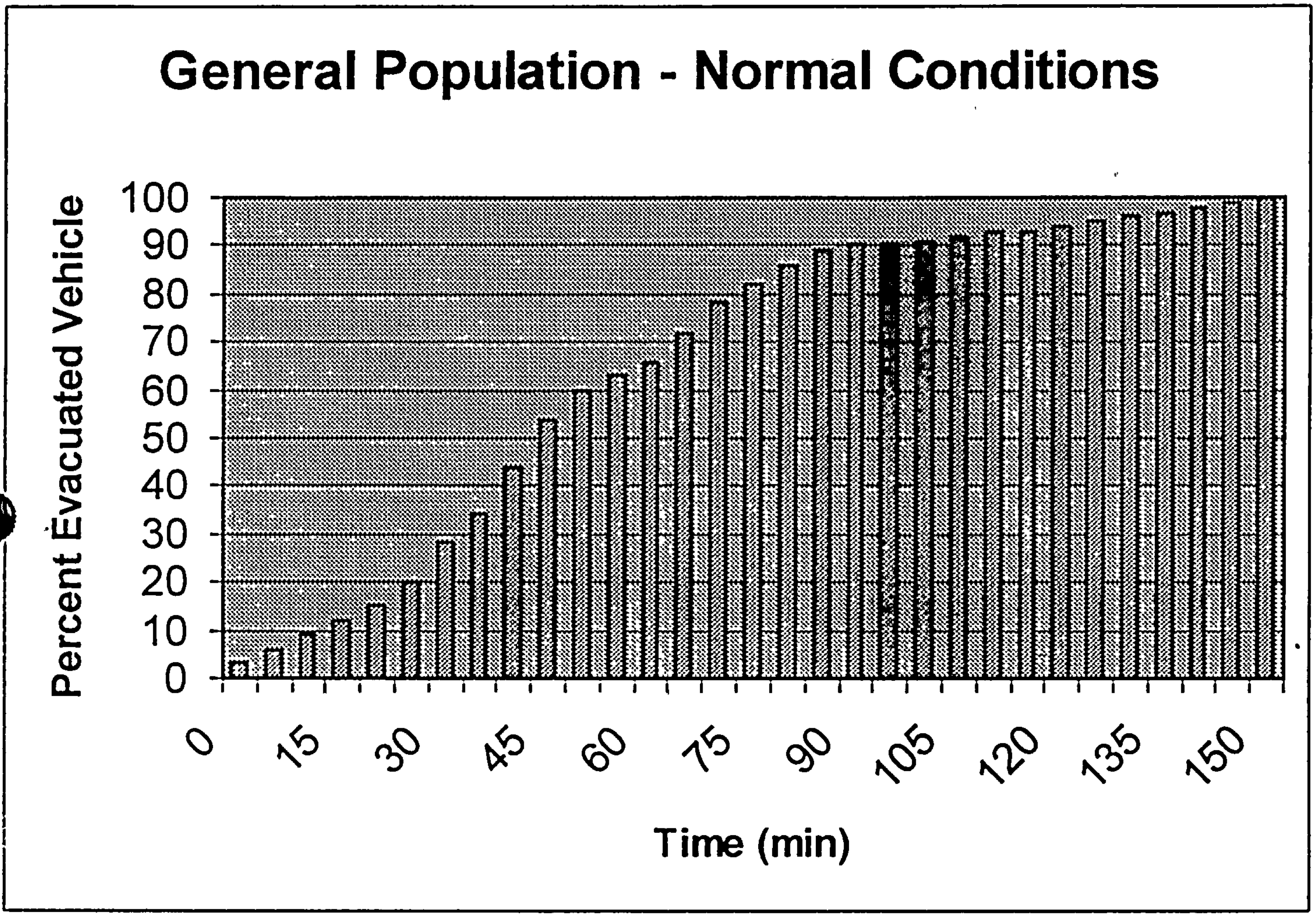


Figure 5-8.C General Population-Normal Conditions

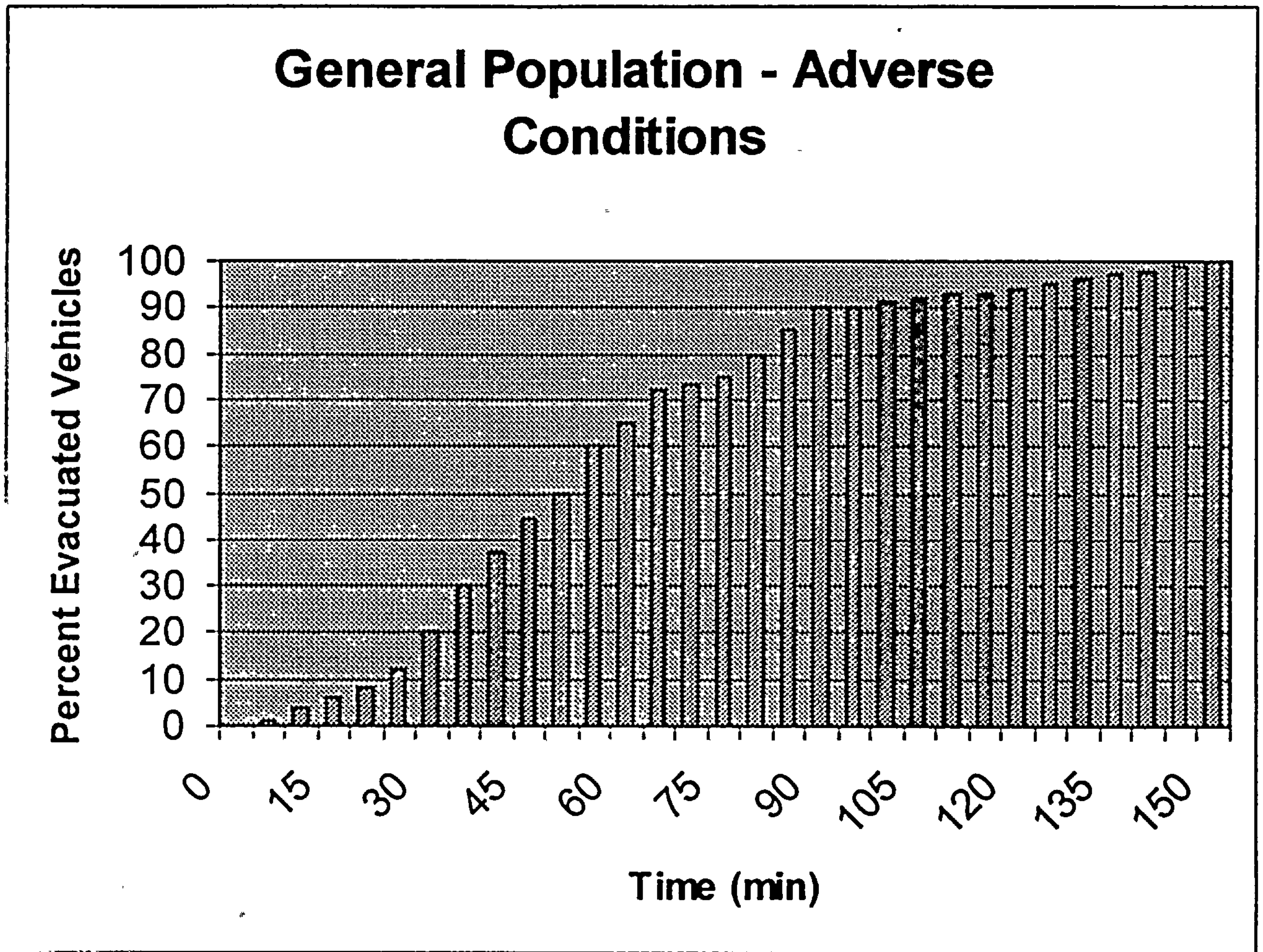


Figure 5-8.D General Population-Adverse Conditions

SECTION 6
EMERGENCY FACILITIES AND EQUIPMENT

6.1 PLANT FACILITIES

Located within the Columbia Generating Station facilities are several areas which will be used for evaluation and initiation of emergency actions. These facilities have the capability to manage the short term response and maintain plant control through sustained emergency and recovery operations.

6.1.1 Control Room

The Columbia Generating Station Control Room is located in the Radwaste Building, adjacent to the Reactor Building, as shown in Figure 6-1. Several entrance/exit points, each with airlocks, are provided. The Control Room contains instrumentation, controls and displays for the nuclear, reactor coolant, electrical, safety and accident monitoring systems and is where an emergency would be initially classified and declared.

The Control Room is staffed by licensed reactor operators and senior reactor operators and is under the direction of the plant Shift Manager twenty-four hours per day. Control Room personnel are responsible for coordinating all emergency response activities until other emergency facilities are activated. Control Room personnel are responsible to diagnose any abnormal plant conditions, perform corrective actions to mitigate the abnormal conditions, manage plant operations and perform initial emergency response activities.

Access to the Control Room during an emergency will be limited to essential personnel such as operators on duty or persons given specific permission for entry by the Technical Support Center Manager or the Shift Manager.

The Control Room has been designed for accessibility and habitability during the occurrences of postulated accidents that could result in the release of fission products and/or hazardous chemicals. To limit inward migration of hazardous materials the Control Room is maintained at a positive pressure with respect to adjacent areas using the pressurization mode of the control room ventilation system. The Control Room will be informed of a sodium oxide release from FFTF. Refer to FSAR section 6.4.4.2.2.

The system has been designed with both normal and remote sources of air to ensure the availability of uncontaminated air at all times. Both HEPA and charcoal filters are included. Shielding is provided to ensure that the combined radiation exposure of Control Room personnel during a postulated design-basis accident would remain within regulatory guidelines.

The Control Room communication system permits contact with the onsite Technical Support Center (TSC), the onsite Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the federal, state and local emergency response organizations on a twenty-four hour per day basis.

6.1.2 Technical Support Center

The Columbia Generating Station Technical Support Center (TSC) is a structure attached to the Radwaste Building on the west side of the plant (refer to Figure 6-1). A typical floor diagram is shown in Figure 6-2. The TSC is as habitable as the Control Room during accidents. The TSC ventilation HEPA filters and charcoal absorbers are the same type as those used for the Control Room System. The ventilation system normal air intake will automatically switch to the Control Room remote air intake upon receipt of an isolation signal. Should the TSC become uninhabitable, the TSC Manager in consultation with radiation protection personnel, will decide on an alternate TSC location and setup where the TSC functions can continue to be performed.

The TSC is activated during an Alert or higher emergency classification and is under the direction of the TSC Manager. The TSC Manager may assume the duties of Emergency Director from the Shift Manager if not transferred directly to the EOF Manager. Staffing includes designated technical, engineering and senior management personnel. Space is available for a small staff of Nuclear Regulatory Commission personnel during emergency conditions.

Functions of the TSC are to provide management and technical support to plant operations personnel during emergencies. This relieves the reactor operators of peripheral duties not directly related to reactor systems manipulation and prevents congestion in the Control Room. The TSC will perform Emergency Operations Facility functions during Alert, Site Area Emergency and General Emergency classifications until the Emergency Operations Facility becomes functional. TSC personnel have ready access to up-to-date plant documents needed to perform emergency functions.

The TSC is the primary onsite communications center for the plant during an emergency. It has reliable voice communications with the onsite Operations Support Center, Emergency Operation Facility, Energy Northwest Office Complex (ENOC), Control Room, NRC, and state and local Emergency Operations Centers.

Plant status, meteorological instrumentation, Plant Display and Information System (PDIS), display equipment and power supplies are provided in the TSC to support a comprehensive analysis of emergency conditions. A power circuit supplies the TSC from a Class 1E source located in the plant. This power source is backed by a diesel generator. Radiological monitoring equipment is available to continuously monitor dose rates and airborne radioactivity concentrations in the TSC. The TSC also assesses plant radiological conditions. In addition, protective equipment such as anti-contamination clothing, respirators and potassium iodide are provided in the TSC should conditions warrant their use.

6.1.3 Operations Support Center

A designated portion of the Yakima Building will serve as the Operations Support Center (OSC) for Columbia Generating Station and will be activated for an Alert or higher emergency classification. The location of this center is shown in Figure 6-1. If the primary OSC location becomes uninhabitable, the OSC Manager, in consultation with radiation protection personnel, will decide on an alternative OSC setup, and OSC personnel will be evacuated to an alternate location where OSC functions can continue to be performed.

The OSC will be under the control of the OSC Manager who is responsible for dispatching and coordinating in-plant team activities during emergencies. The OSC is activated during an Alert or higher emergency classification and provides a location for coordinated logistic support outside the Control Room.

The OSC Manager has communications necessary to dispatch and coordinate emergency team activities with the Shift Manager and TSC Manager, for other necessary onsite and offsite communication, and for emergency team communications (see Section 6.5). Equipment and supplies are available in the OSC for emergency team use. A list of emergency equipment kits is provided in Appendix 3.

6.1.4 Security Alarm Stations

Two security alarm stations are maintained at Columbia Generating Station. The Central Alarm Station (CAS) is the primary security center and is located in a separate building near the Yakima Building. The Secondary Alarm Station (SAS) is the backup security center located in the Control Room.

6.1.5 Protected Area Access Point

Persons requesting entrance to the plant will report to the Protected Area Access Point. Security will issue dosimeters as needed, maintain personnel accountability, and notify the onsite Operations Support Center of the arrival of persons and receive permission to allow entry. In situations which require immediate access by personnel and equipment, such as fire or medical emergencies, Security will be notified to permit immediate entry. The Security Shift Lieutenant will coordinate with the Technical Support Center Manager for implementation of the Safeguards Contingency Plan.

6.1.6 Personnel Decontamination and First Aid Facilities

First aid equipment kits required by the Washington Industrial Safety and Health Act are located as close as feasible to areas which have the heaviest concentration of workers. Designated locations are similar to those shown in Appendix 3.

Initial first aid for employees is provided by the Fire Brigade Team (FB) which is composed of first aid trained personnel who are designated FB members during each work shift.

Medical emergencies are reported via a special phone number that is posted throughout the plant. The special number rings into the Control Room where personnel can then dispatch FB members to an emergency by radio, telephone, or by the plant public address system.

Fire Brigade members receive initial and annual continuing education training in first aid from an in-house program that is certified as meeting "First Responder" requirements by the State of Washington.

A decontamination facility is provided on the 487′ elevation of the Radwaste Building (refer to Figure 6-3). The facility consists of a large shower area with drains connected to the radwaste effluent treatment system. First aid equipment and decontamination supplies are located nearby and will be used whenever a contamination incident is involved. Decontamination will also be implemented as necessary at the Energy Northwest Office Complex and Emergency Worker Assistance Centers (EWACs)

6.2 EMERGENCY OPERATIONS FACILITY (KOOTENAI BUILDING)

The Kootenai Building is located 0.75 miles southwest of Columbia Generating Station. This facility is used to support normal plant operations and includes a 20,000 square foot shielded area in the lower level which includes the 4,500 square foot Emergency Operations Facility (EOF).

A typical floor plan of the Kootenai Building is shown in Figure 6-4. The EOF contains several functional areas which are provided for various groups and will be activated as necessary for an Unusual Event and fully for an Alert, Site Area Emergency or General Emergency.

The EOF is under the direction of the Emergency Operations Facility (EOF) Manager and assists the plant by handling those functions associated with evaluating and minimizing the offsite effects of the accident, as well as supporting the TSC and Control Room with technical data analysis. This assistance includes such functions as field monitoring, dose projections, area security, interfacing with outside organizations, recommendation of protective actions for the public, assisting the plant technical staff, public information, administrative services, scheduling of personnel, and establishing a recovery program. If response to the primary EOF is hampered by radiological or other conditions, personnel unable to respond to the primary EOF will be directed to respond to the alternate EOF located at the Energy Northwest Richland Office Complex. Sufficient telephone links are available at the alternate EOF to communicate with the primary EOF and TSC. If the primary EOF location becomes uninhabitable, the EOF Manager in consultation with radiation protection personnel, will determine whether to evacuate the primary EOF, what equipment to take, and where to relocate. Select EOF staff will then evacuate and continue to perform the EOF functions.

The EOF will be used by representatives of the various offsite agencies to coordinate activities, resolve problems, maintain duty rosters, and make periodic status reports to their respective agencies. A close working relationship between these agencies and Energy Northwest is essential to the success of operations involving the general public. The personnel in the EOF receive information from all functional areas and provide clarifications to their respective agencies. Periodic briefings will be provided by Energy Northwest personnel to keep Energy Northwest and offsite agency personnel up-to-date on plant conditions and emergency measures underway.

The EOF is not used as a normal work location outside of drill and emergency use. It is subjected to periodic walkdowns by emergency preparedness personnel, as well as regularly scheduled inspections to ensure its readiness.

6.2.1 Emergency/Recovery Operations Area

The EOF Manager and his immediate staff will coordinate activities from the Emergency/Recovery Operations Area of the EOF. The EOF Manager is responsible for the overall emergency effort and provides the necessary support to the TSC Manager. The Emergency/Recovery Operations Area will maintain up-to-date information on plant and offsite status, recovery planning and scheduling, and will function as the designated area for periodic update briefings with selected personnel assigned to the EOF, including outside agency personnel.

6.2.2 Engineering Support Area

A segment of the EOF is designated as an Engineering Support Area which is established for use by Energy Northwest's engineering personnel, and architect/engineers, vendors, and contractors requested to assist Energy Northwest. A technical data information system including meteorological, radiological, and plant system status is available. Essential plant technical information is available in this area.

Using this area in the EOF, personnel from organizations outside the plant staff can provide needed technical assistance without responding directly to the plant. This provides technical personnel readily available to the plant if needed. The Engineering Support Area also provides a secondary location to track plant conditions and provides current and projected plant status reports to MUDAC and to the EOF Manager for inclusion in the formulation of Protective Action Recommendations.

6.2.3 Logistics Support Area

A designated portion of the EOF is established for logistics support functions which are provided by the Site Support Manager and staff. The Site Support Manager and his staff will provide general administrative support and logistical support to the EOF staff and as directed for other emergency centers.

6.2.4 Meteorology and Unified Dose Assessment Center

The Meteorology and Unified Dose Assessment Center (MUDAC) is utilized as a joint center by Energy Northwest, DOE-RL, and States of Washington and Oregon Departments of Health to coordinate field team operations, project dose rates, record actual measured dose rates during an emergency, and determine protective action recommendations. The computerized Emergency Dose Projection System as described in Section 5 is located in this center. Actual and projected doses obtained will be available for use in determining protective action recommendations for the general populations. From the MUDAC information can be sent by facsimile to the Benton and Franklin County Emergency Operations Centers, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and other Energy Northwest emergency centers. Communications with the field monitoring teams is provided in MUDAC. This capability allows for relaying instructions and receiving survey results.

6.2.5 Security Communications Center

The Security Communications Center is utilized in the notification process and has voice and hard copy transmission capabilities as detailed in Section 4.6. Any information received here will be delivered to the appropriate personnel.

6.2.6 News Release Preparation and Media Briefing

A news release preparation area is provided in the EOF for Energy Northwest's public relations personnel to develop public information status reports. These status reports will be updated and distributed to the Joint Information Center (JIC) located at the ENOC. Groups of media personnel may be escorted to the EOF, as conditions permit, for briefings and tours. This action will be taken under the direction of the EOF Public Information Officer (PIO), and with approval of the EOF Manager.

6.2.7 Work Areas

Several work areas are identified for Energy Northwest personnel as well as for Government agencies (DOE, FEMA, NRC, Washington and Oregon States, etc.), outside consultants, architect/engineers, contractors, and vendors in the EOF. Other general office or classrooms are available as needed.

6.2.8 Health Physics Center

The Health Physics Center consists of several areas in the protected Emergency Operations Facility and the non-protected Kootenai Building, a radiological laboratory, and counting lab. Energy Northwest contracts with a vendor to process thermoluminescent dosimeters and provide results to Energy Northwest in a timely manner. This vendor is certified to the standards of the National Voluntary Laboratory Accreditation Program (NVLAP). Results are recorded into a computerized Total Exposure System (TES) which can be accessed for information from the plant health physics areas as well as the Operations Support Center and Emergency Operations Facility.

A whole body counting, respiratory testing, and computerized internal dose assessment system is in use at Energy Northwest. The respiratory testing area consists of fitting and testing equipment. A large supply of respirators is available if required for emergency response or recovery operations.

The radiological laboratory and adjoining counting lab provide for radiological analysis of environmental samples as well as partial backup capability for plant laboratories. If plant analytical capabilities become unusable, plant samples can be transported to the Emergency Operations Facility or a support agency laboratory for chemical and/or radiological analysis. Energy Northwest contracts with outside laboratories for backup environmental sample analysis.

6.2.9 First Aid and Decontamination Area

A first aid facility is located near the Protected Area of the plant, and a decontamination facility is located in the unprotected portion of the Kootenai Building. The relative locations of these facilities provide for treatment and decontamination of injured personnel as well as independent operation of both facilities. Drains from the decontamination area are connected to an isolable tank. Energy Northwest contracts with HEHF for treatment of severely contaminated injured personnel. This first aid facility is staffed by qualified personnel and first aid equipment is available for normal first aid treatment.

6.2.10 Environmental Programs Area

The environmental programs area includes an environmental equipment area and biology lab. The environmental equipment area will be used to store any backlog of environmental samples. Additional storage is available in the biology lab. Provisions have been made for cataloging stored samples.

6.2.11 Habitability

The Emergency Operations Facility is a protected area in the Kootenai Building which has special shielding and ventilation to maintain habitability requirements. The ventilation system is designed to provide maximum habitability during an accidental radiological release. HEPA filters condition entering air during emergency conditions. Ion chambers are strategically located in the ventilation system to detect potential infiltration of contaminated air thus automatically allowing reconfiguration of airflows from replenishment to recirculation modes.

The EOF is designed to ensure that the total dose to occupying personnel is less than the Environmental Protection Agency Protective Action Guide limit of 5 rem TEDE for the duration of the postulated accident. Shielding requirements were determined using source terms from BWR/PWR accident scenarios described in the WASH 1400 Reactor Safety Study. Calculations considered worst case meteorology and assumed a 0.75 miles distance from the plant to the Emergency Operations Facility.

6.2.12 Emergency Power

A 365 kilowatt emergency power generator provides power to the Emergency Operations Facility during power loss. Vital equipment such as communication systems, counting equipment, dose assessment equipment, and lights are connected to the emergency power generator.

6.3 ALTERNATE EMERGENCY OPERATIONS FACILITY

The Alternate Emergency Operations Facility (EOF) is located approximately 10 miles south of the plant. This facility may be activated in the event of the primary EOF becoming uninhabitable, or inaccessible to offsite responders. The EOF Manager, in consultation with radiation protection personnel, will determine when to activate this facility, and appropriate staffing levels.

A Crash phone, dedicated facsimile machines, and a NRC Emergency Notification System phone are available to provide notifications to offsite agencies. The emergency functions for direction and control, emergency classification, notifications, protective action recommendations, dose projection operations, and field team dispatch and control may be provided from this facility. The Alternate EOF has sufficient communications capability to continue to communicate with the control room, TSC, primary EOF, field teams, and offsite agencies.

6.4 JOINT INFORMATION CENTER

The Energy Northwest Joint Information Center, (JIC), located approximately 10 miles south of the plant, integrates emergency response/recovery public information functions with the resources normally available to upper management personnel. Figure 6-5 shows the typical floor plan for the JIC.

Designated staff may support the EOF Manager and the emergency effort from the JIC.

Dedicated phones provide continuous contact with the plant and Emergency Operations Facility. Facsimile is available for the exchange of the latest data with other emergency centers. Access to certain areas are controlled when emergency centers are activated. The JIC will function as a joint news release center for Energy Northwest, county, state, DOE-RL and other federal agencies to facilitate consistent media releases. Areas will be set up to provide work space for the various media personnel.

Emergency power is provided for the JIC and telephone system.

6.5 EMERGENCY EQUIPMENT AND SUPPLIES

Appendix 3 identifies the emergency equipment staged for Fire Brigade Response at Columbia Generating Station. In addition to the Fire Brigade turnout stations, other equipment is staged throughout the plant for use by the Fire Brigade. This includes fire fighting hose stations, foam kits for Class B fires, and smoke removal.

Equipment is stored for field team use at the Emergency Operation Facility and at an offsite location. Vehicles and survey equipment kits are available for use by the field teams.

An inspection, inventory, and operational check of emergency equipment/instruments in each emergency cabinet or kit is conducted at least quarterly and after each drill which utilized that particular cabinet and kit. The equipment designated for emergency use will be calibrated at the intervals recommended by the manufacturer. Sufficient reserves of instruments and equipment are maintained to replace instruments removed from kits for repair or calibration. Emergency respiratory equipment will be inspected monthly. Required quantities in each cabinet or kit are established by procedure.

6.6 COMMUNICATION SYSTEMS

The Rolm phone system and the 300 dial-up system may be used as a backup to the Crash system for notification of offsite agencies. The Emergency Director will notify the SCC Duty Officer and offsite agency representatives using one or more of the following systems:

6.6.1 Radio Network

The radio system consists of radio channels covering several different radio bands. The Emergency Operations Facility is the primary facility for communication with emergency responders and offsite response organizations.

Limited radio capability is available in the Central Alarm Station, the Secondary Alarm Station (in the Control Room), the Technical Support Center, and the Operations Support Center. Mobile and portable radios are provided for selected vehicles and plant personnel.

Field monitoring teams will utilize the state sanctioned common emergency radio channel of 46.00 MHz. This system has a mountaintop base station that provides communications with field monitoring teams.

The mountaintop radio repeaters and 46.00 MHz base station are powered by a battery and charger system to provide communications capability during a loss of power.

Radio communication with the Department of Energy and the Benton and Franklin County Emergency Operations Centers is also available. The Department of Energy Communications Center and the Benton County Emergency Dispatch Center provide 24-hour monitoring of these radio links. See Table 6-1 for a listing of available radio channels.

6.6.2 Company Telephone System

Energy Northwest's Richland phone system is a computer based, software controlled telephone exchange (Computerized Branch Exchange). It is equipped with redundant computerized processor units and is served by an uninterruptible power supply.

The direct-dial private telephone system provides communication between the Hanford Energy Northwest facilities. The phone system is arranged such that plant telephones can reach other Energy Northwest facilities by direct-dialing and without the need of an operator. Telephones are at various strategic locations throughout the plants, including the Control Room, the remote shutdown panel, the Technical Support Center and Operations Support Center.

There are multiple direct inward dialing trunks to the Computerized Branch Exchange. Columbia Generating Station is connected to this exchange via company owned tie trunk lines. The Emergency Operations Facility has tie trunk lines connected to the Energy Northwest Office Complex (ENOC) Computerized Branch Exchange. The Computerized Branch Exchange in the plant is connected to the outside public telephone system via a minimum of 15 central office trunks. Each plant also has access to a number of long distance State Controlled Automatic Network Circuit (SCAN) trunks. Energy Northwest headquarters also has access to long distance SCAN lines. These SCAN lines are wired direct to Spokane and bypass the local toll centers. This allows bypassing of the local central office in the event of congestion.

6.6.3 Dedicated Telephone Circuits

The following dedicated phone networks are available for emergency communications in addition to the normal Energy Northwest phone network:

a. Energy Northwest Emergency Center Network,
b. Response Agency Network, and
c. NRC Emergency Notification System.

The Energy Northwest Emergency Center Network interconnects the plant and emergency centers. The network uses a push button system in which the caller selects the area to be called, pushes the appropriate button which in turn automatically rings into the selected area.

The Response Agency Network connects the Energy Northwest emergency centers with State and local emergency centers. Lines to the Washington State Emergency Operations Center are routed through the local State Patrol Office switchgear and transmitted via the state microwave system to Camp Murray. By dialing a unique series of numbers the user is able to reach a specific agency. Facilities serviced by these dedicated lines are Columbia Generating Station, the Benton and Franklin County Emergency Operations Centers in Richland and Pasco, the Department of Energy Patrol Occurrence Notification Center on the Hanford site, and the Washington State Emergency Operations Center in Camp Murray. In addition, the network has a crash function, which is why it is referred to as the Crash line or Crash Notification System. This feature of the system operates by dialing a unique activator number that automatically rings all the phones on the system. The Crash line is available in the Alternate EOF.

A federal telephone system (FTS 2000) connects Energy Northwest emergency centers to the Nuclear Regulatory Commission. The Emergency Notification Network (ENS) and the Health Physics Network (HPN) are included in this system. ENS is available in the Control Room, the Technical Support Center and the Emergency Operations Facility. The HPN, ENS, and Crash are available in the Technical Support Center, the Emergency Operations Facility, and the Alternate EOF.

Call list telephone numbers associated with activation of the Emergency Plan are updated at least quarterly by the Emergency Preparedness section.

6.6.4 Sound Powered Phone System

The plant Sound Powered System, designed to provide communications without the use of batteries or other outside power sources, is powered by voice sound energy. This system is completely separate and distinct from the computerized Branch Exchange telephone system.

The Sound Powered System has separate communications loops which are arranged by building and elevation. All sound powered jacks in each loop are wired in parallel and terminated on a switching device. This device provides the capability to merge and isolate various combinations of loops for maintenance and testing activities. Extension cords, handsets, and sound powered head or head-chest sets are provided for use with the jack stations.

6.6.5 In-Plant Public Address System

The Public Address System (PA) is composed of separate public address zones, each accessible through the Plant Computerized Branch Exchange telephone system. An additional phone number accesses all zones for group paging. Paging microphones located in the Control Room, Central Alarm Station, Secondary Alarm Station, Technical Support Center (TSC) and other areas override telephonic paging and transmit to all zones simultaneously. Tone generators operated from the Control Room or the TSC allow an alerting tone to be broadcast over the PA system. The paging microphones have priority over all other functions of the Public Address System.

Portable high noise evacuation devices, each composed of a radio-controlled siren and strobe light, are located in selected areas throughout the plant. These devices are activated by the PA alerting tone.

6.6.6 Area Wide Radio Paging

A Radio Paging System is used to alert on-call members of Energy Northwest's emergency response organization of an emergency.

6.6.7 Facsimile System

Various locations such as the Control Room, Technical Support Center, Emergency Operations Facility, Joint Information Center, Department of Energy-RL, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and the Benton and Franklin County Emergency Operations Centers have facsimile transceivers. The facsimile transceivers enable the transmission and receipt of printed material. The facsimile system which connects the Energy Northwest emergency centers with the county and state emergency centers uses dedicated phone lines.

6.6.8 Early Warning System

Tone activated radios are made available to all households within the Ten-Mile Emergency Planning Zone. These radios monitor the local Emergency Alerting System. If an Emergency Alerting System signal is received, a light is activated and an audible tone is heard. The radio then broadcasts the message. The radios contain a battery backup.

In addition to the tone activated radios, sirens located on the Columbia and Yakima Rivers, and in the Horn Rapids area are provided to assist in notifying sportsmen, boaters, and other recreationists that may be present. The Department of Energy also maintains a system for alerting its employees and its contractor's employees.

6.6.9 Automatic Dialer

An automatic dialing system is used similarly to and at times in conjunction with the area wide radio paging system as a means to notify Energy Northwest emergency personnel.

6.6.10 Emergency Response Data System

The Emergency Response Data System (ERDS) has been established to transmit raw reactor parametric data to the NRC when an Alert or higher emergency is declared. The data is conveyed over an FTS 2000 phone circuit.

6.7 COMMUNICATION SYSTEMS TESTS

The following test schedule of the communication system is established to ensure operability. This test schedule includes:

a. Communications with Emergency Dispatch Center and Department of Energy-RL

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

b. Communications with Washington State Emergency Operation Center

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

c. Communications with Nuclear Regulatory Commission Headquarters

   1. Dedicated telephone lines -- tested monthly.
   2. ERDS - tested quarterly.

d. Communications among Energy Northwest Emergency Facilities

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.
3. Data circuits -- tested monthly.
4. Installed Radio links -- tested monthly.
5. Environmental Field Team radios -- tested quarterly.

e. Notification System

1. Siren system

   a) status test -- monthly documentation of status tests conducted at least bi-weekly.
   b) complete system test -- annually.

2. EAS Radio receivers test

   a) operability -- weekly (performed by the Emergency Alerting System).
   b) coverage -- annually (performed by Energy Northwest and Benton and Franklin counties).

3. Automatic Dialer

   Perform pager activation test/notification drill -- quarterly.

f. Emergency communications equipment (not covered above)

1. Area Wide Radio Paging -- operational test quarterly.

g. Fire Brigade Equipment

1. Replace batteries and perform operational tests monthly on portable radios (OSC).
2. Perform annual FCC checks on portable radios.

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

I. Emergency Facility Radio Channel Availability

A. Control Room

- In-Plant Operations Channel
- Area Wide Security Channel (Secondary Alarm Station)

B. Technical Support Center (TSC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Field Team - 46.00 MHz

C. Operations Support Center (OSC)

- In-Plant Operations Channel

D. Central Alarm Station (CAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

E. Secondary Alarm Station (SAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

F. Security Communications Center (SCC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel
- LERN (Law Enforcement Radio Network)

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

G. Emergency Operations Facility

- Area Wide Security Channel Link
  1. Franklin County Sheriff
  2. Emergency Dispatch Center
  3. Department of Energy Patrol Emergency Office
- Field Team - 46.00 MHz Channel
- Department of Energy Emergency Response Channel
- LERN Channel (Law Enforcement Radio Network)

H. Department of Energy

- Area Wide plant Security Channel

I. Benton County Emergency Dispatch Center

- Area Wide Security Channel

K. Franklin County Emergency Dispatch Center

- Area Wide Security Channel

J. Benton and Franklin Counties Emergency Operations Centers

- Area Wide Security Channel

II. Energy Northwest Emergency Center Telephone Capability

A. Technical Support Center (TSC) dedicated phone system interconnects with:

- Control Room
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Emergency Operations Facility
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System

B. Operations Support Center (OSC) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Emergency Operations Facility
- Central Alarm Station/Secondary Alarm Station
- Facsimile System

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

C. Control Room dedicated phone system interconnects with:

- Technical Support Center
- Operations Support Center
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System
- Emergency Operations Facility

D. Emergency Operations Facility (EOF) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

E. Alternate Emergency Operations Facility (EOF) phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

F. Joint Information Center (JIC) dedicated phone system interconnects with:

- Crash Notification System
- EOF
- Facsimile System

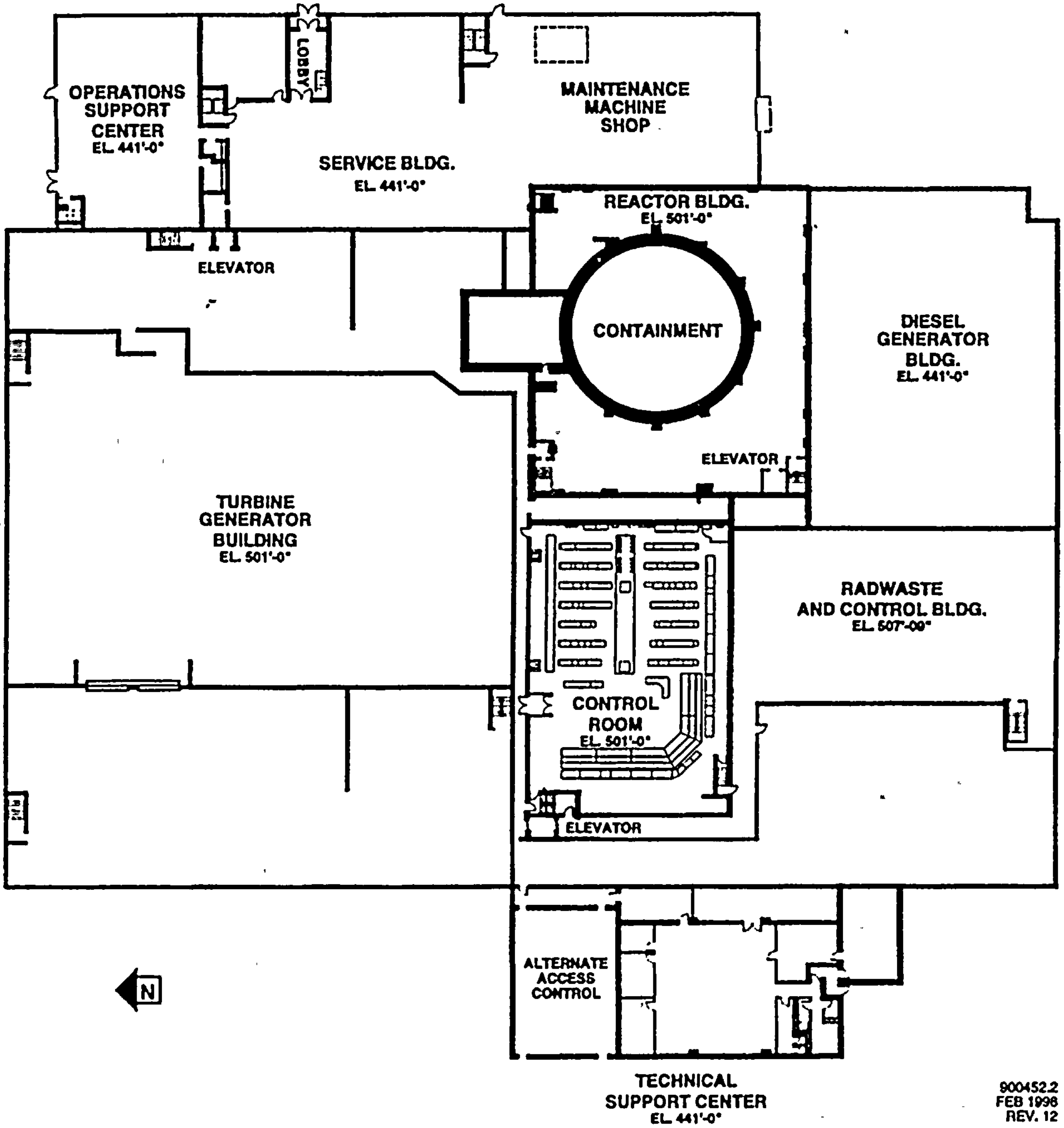


Figure 6-1, Columbia Generating Station Control Room, Technical Support Center and Operations Support Center Locations (Typical Arrangement)

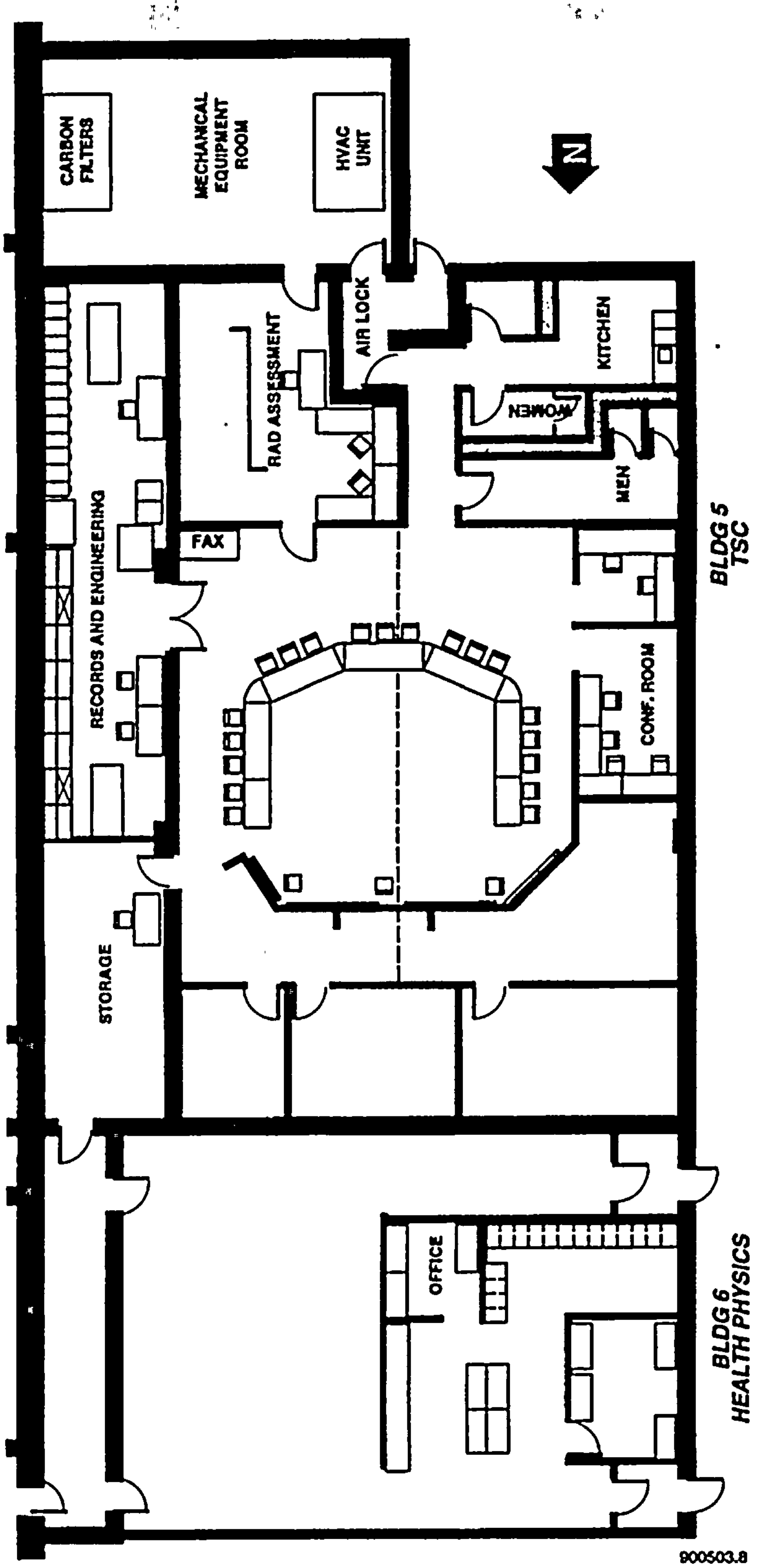


Figure 6-2, Columbia Generating Station Technical Support Center
(Typical Arrangement)

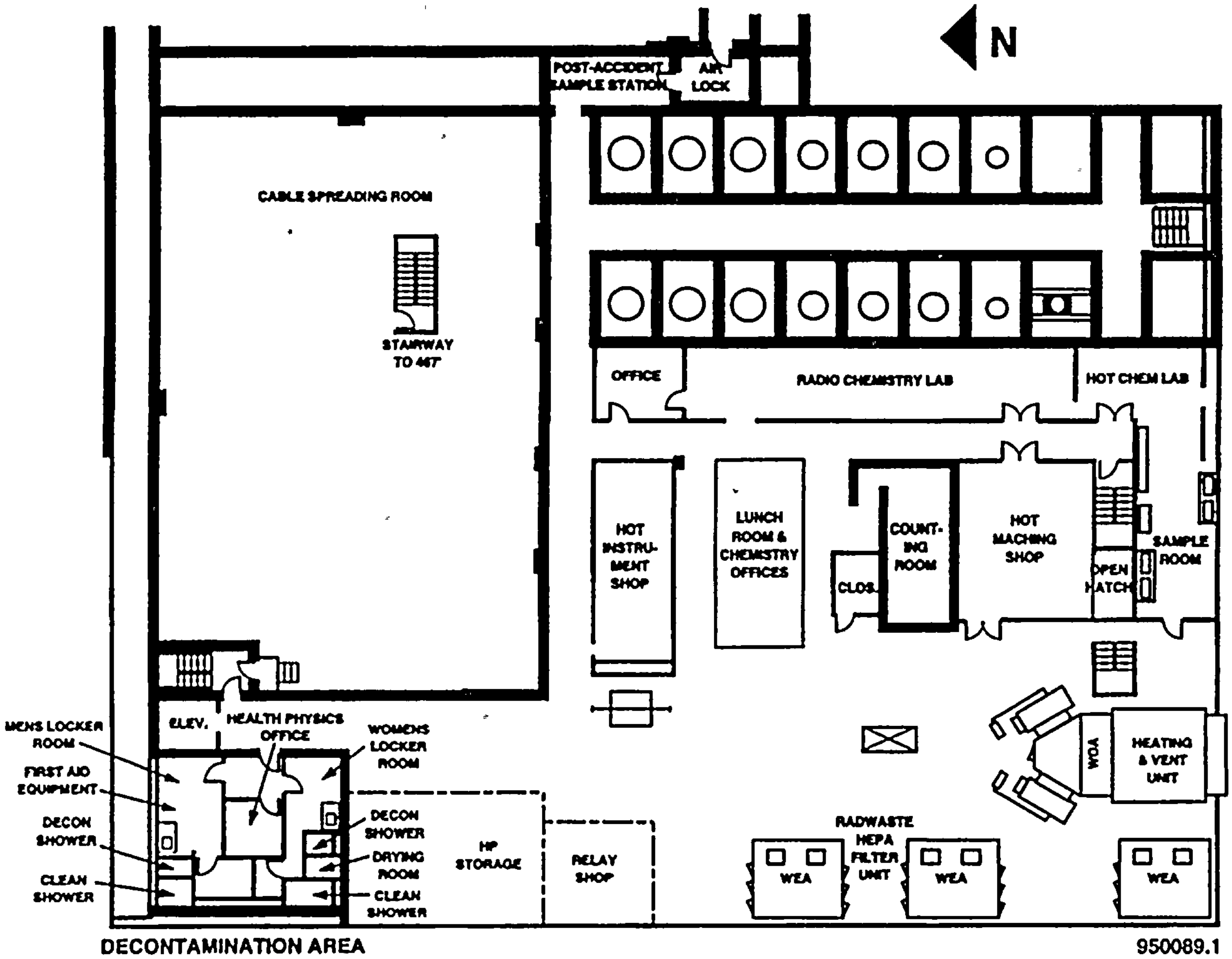


Figure 6-3, Columbia Generating Station Decontamination Area
(Typical Arrangement)

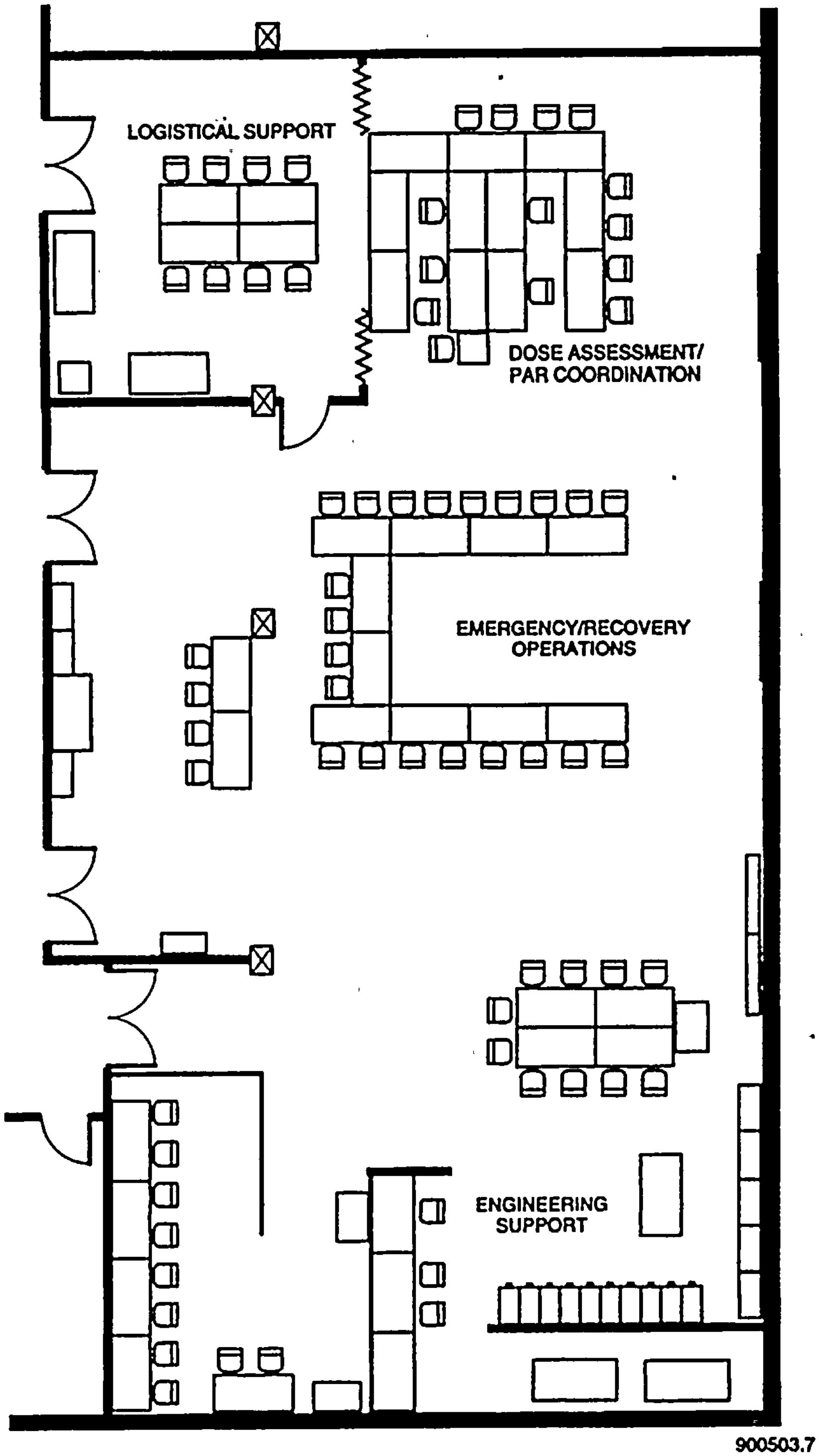


Figure 6-4, Kootenai Building
Emergency Operations Facility (EOF)
(Typical Arrangement)

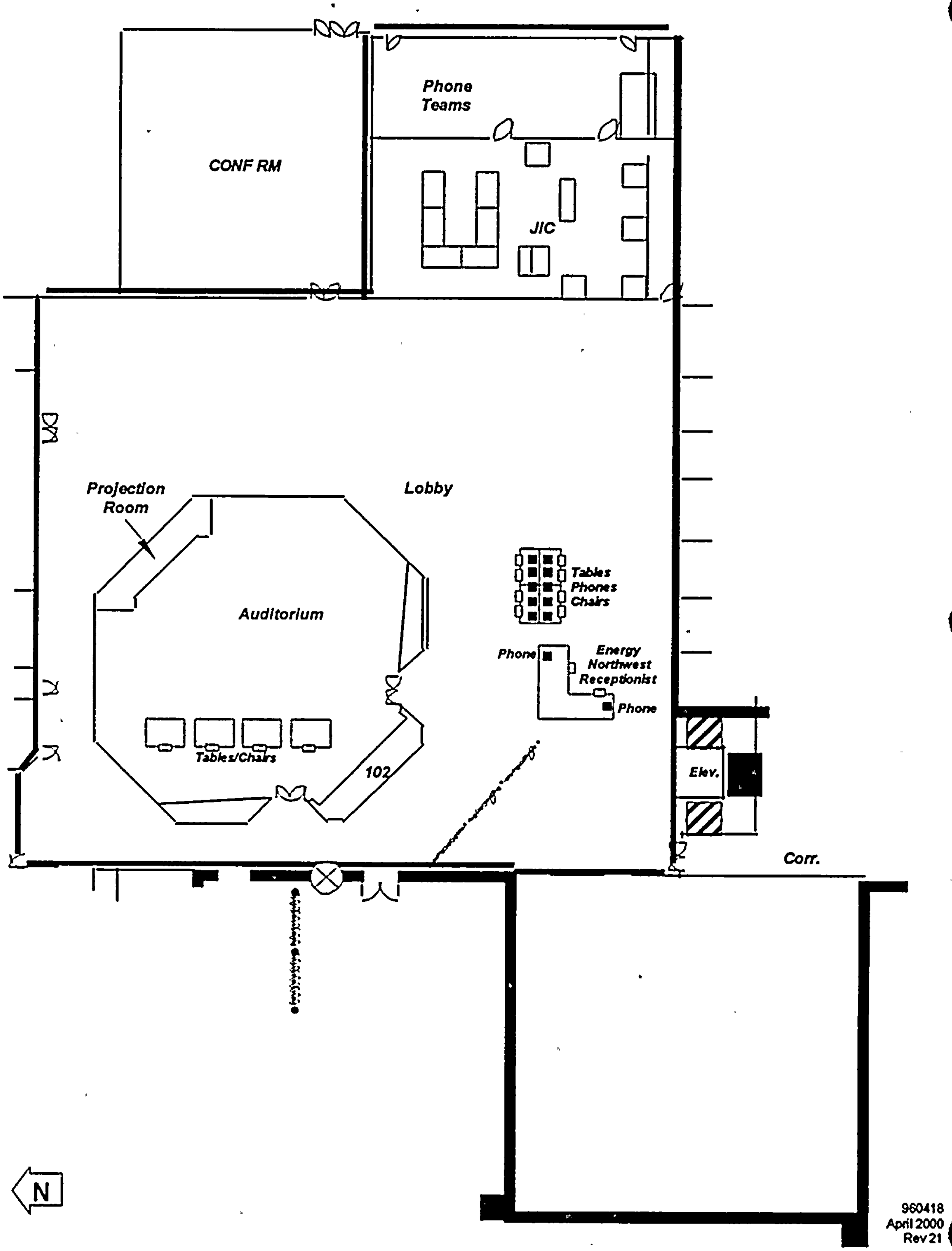


Figure 6-5, Joint Information Center - Typical Arrangement

SECTION 7
REENTRY AND RECOVERY OPERATIONS

7.1 REENTRY AND RECOVERY OPERATIONS

Emergency actions will shift to the recovery phase once the immediate corrective and protective actions have established effective control over the incident. Onsite reentry and recovery operations are addressed in 7.2 and 7.3. Offsite reentry and recovery operations are discussed in 7.4.

7.2 REENTRY INTO ONSITE AREAS

Reentry into evacuated onsite areas may be required during and after an emergency. This could include search and rescue, actions to minimize further accident consequence, or assessment of plant conditions to determine the scope of recovery operations. Exposure guidelines, as outlined in Section 5 of this plan, should not be relaxed without sufficient justification.

Prior to reentry, the Radiation Protection Manager or his representative shall:

a. Review all available radiation survey data and determine plant areas with high radiation exposure and/or contamination potential,

b. Review the radiation exposure records of personnel participating in the reentry operation and determine the need for additional personnel,

c. Review the adequacy of the radiological sampling and survey instrumentation to be used by the team (type, ranges, number, calibration etc.),

d. Review protective clothing, dosimetry, and respiratory protection requirements,

e. Ensure that appropriate communications are available, and

f. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry.

The initial recovery efforts should encompass the following actions:

a. Conduct comprehensive radiation surveys of the plant facilities and define all radiological problem areas;

b. Isolate and post all radiation and contamination areas with appropriate warning signs as conditions and available time allow, and

c. Identify potential hazards that may impact recovery operations.

During the reentry activities immediately following an accident, initial radiation monitoring functions involve only gross hazard evaluations, isolation of the hazard, and the definition of radiological problem areas. This immediate radiation surveillance activity is used to provide the basic information for the development of recovery operations.

7.3 ONSITE RECOVERY OPERATIONS

The EOF Manager and TSC Manager have the joint responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. A Recovery Manager will be appointed and a Recovery Organization will be established to develop and coordinate plans and schedules for the recovery operations. Following a Site Area Emergency or General Emergency, the Corporate Nuclear Safety Review Board (CNSRB) will review and comment on the recovery planning effort to assure that all nuclear safety aspects of the recovery are satisfied. (The CNSRB will report their findings to the Recovery Manager, who shall take the actions deemed appropriate for safe recovery operations.) Refer to Figure 7-1 for key positions and responsibilities of the recovery organization.

7.3.1 Initiating the Recovery Phase

Prior to terminating an emergency and entering the recovery phase, the EOF Manager will coordinate with the TSC Manager to ensure that the following criteria have been considered:

a. The conditions which caused the emergency have stabilized, are under control, and are unlikely to deteriorate further.

b. Plume tracking is no longer required. The only environmental assessment activities in progress may be those necessary to assess the extent of deposition resulting from passage of the plume.

c. In-plant radiation levels are stable or decreasing.

d. Radioactive releases are under control.

e. The potential for an uncontrolled radioactive release is acceptably low.

f. Containment pressure is within technical specifications.

g. The reactor is in a stable safe shutdown condition and long-term core cooling is available as required.

h. Any fire, flood, earthquake or similar emergency conditions no longer exist.

i. Offsite conditions will not limit access of personnel and support resources to the site.

j. Discussions have been held with DOE-RL, Washington, Oregon, affected counties and select regulatory agencies, and agreement has been reached to begin the recovery phase.

The extent of recovery activities will dictate the precise framework of the Recovery Organization:

a. For events of a minor nature, the normal onshift organization should be adequate to perform necessary close-out actions (e.g., for UNUSUAL EVENT classifications).

b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization, or portions thereof, should be adequate to coordinate the necessary recovery actions (e.g., for ALERT classifications).

c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, a formal Recovery Organization will be established to manage the recovery actions. Specific members of the Recovery Organization will be selected based upon the sequence of events that preceded the recovery activities.

7.3.2 Conducting Recovery Operations

Recovery operations will be performed in accordance with written procedures developed by the Recovery Manager and staff prior to implementation of any recovery action. These procedures shall be based upon information collected by the initial reentry team(s) and any subsequent updates. Special precautions will be identified for any potentially hazardous conditions. If radiological hazards exceed the boundaries of the radiation access controlled areas, the security access lists should be reviewed and revised to prevent unauthorized or unintentional entry into hazardous areas.

The Recovery Manager is responsible for directing the activities of the Recovery Organization and should:

a. Ensure that sufficient personnel from Columbia Generating Station and other organizations are available to support recovery.

b. Direct the development of a recovery plan and implementing procedures, as required.

c. Coordinate with the CNSRB to ensure adequate review of engineering activities and proper review and approval of the recovery plan and implementing procedures.

d. Coordinate the deactivations of emergency response facilities and personnel as appropriate.

e. Coordinate the integration of available state and federal assistance into recovery activities.

f. Coordinate with offsite authorities, and provide support as required for offsite recovery activities.

g. Approve all technically oriented recovery information released by the Public Information Organization.

h. Periodically estimate total population exposure.

When criteria to enter the recovery phase are met, the Recovery Manager will inform emergency centers and offsite agencies by crash call of the transition to recovery. The Recovery Manager then initiates a discussion of recovery items with the Recovery Task Force members to develop a shutdown safety plan focusing on procedurally defined priorities.

The Recovery Task Force will produce initial plans to cope with near and long term activities, provide direct input to the maintenance organization for an integrated outage plan, and provide assistance to the Recovery Manager to transition from a recovery phase to an outage, as appropriate.

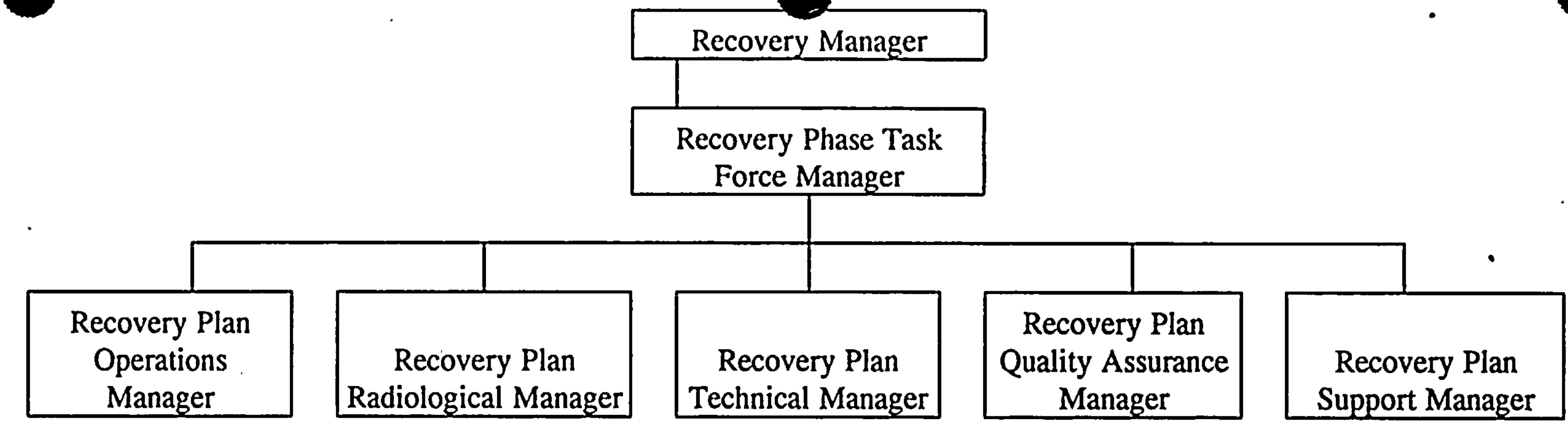
During the recovery operations, particular attention should be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine the extent of any equipment damage and to determine the sequence of events that led up to the accident for event reporting and lessons learned findings.

The Recovery Manager will ensure that onsite ERO and appropriate offsite agencies are notified prior to initiating any recovery operation with a potential for a radiological release. The ERO and offsite agencies will also be notified of any changes in the key positions of the recovery organizational structure.

All recovery operations are considered to be terminated when the plant has returned to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.4 OFFSITE REENTRY AND RECOVERY OPERATIONS

A Reentry and Recovery Task Force is established by the State and County emergency response plans and is responsible for coordinating offsite recovery following radiological incidents including the requirements for reentry conditions for any offsite evacuated areas. Energy Northwest will provide a representative and additional assistance to this Task Force, as requested. Specific details of offsite reentry and recovery operations can be found in the State and County emergency response plans and implementing procedures.



<u>Areas of Oversight Responsibilities:</u>

Production Scheduling	Environmental	Fuels	Commitments	Procedures
Safety	Decon	Licensing	Reviews	Scheduling
Maintenance	Restoration HP	Vendors	Oversight	Finance
Security (Plant)	Radwaste	Analysis	Qualifications	Public Relations
OPS	Surveys	Plant Support		Legal
Shutdown Safety				Site Support
				Procurement
				Add'l Staffing

<u>NOTE</u>: The NRC will be invited to participate in this task force as deemed appropriate.

Figure 7-1

SECTION 8
MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES FOR THE PLANNING EFFORT

Overall responsibility and authority for emergency planning lies with the Vice President, Operations Support/Public Information Officer. The Manager, Resource Protection, reports directly to this Vice President, and has emergency preparedness as one of his general areas of responsibility. Reporting to the Manager, Resource Protection, is the Corporate Emergency Preparedness, Safety and Health Officer, who has specific responsibility for the Emergency Preparedness organization, and implementation of the program itself. Formal position descriptions specify minimum qualifications for the emergency planning personnel. Professional qualifications are maintained by periodic attendance at industry seminars and short courses, through observation of and participation in radiological emergency exercises conducted at other nuclear facilities, and through job-related in-house topical training sessions.

Specific responsibilities for the Corporate Emergency Preparedness, Safety and Health Officer include, but are not necessarily limited to, the following:

a. Ensure that the information, data, and procedures detailed in the Emergency Plan Implementing Procedures are consistent with the Columbia Generating Station Emergency Plan.

b. Ensure that the Emergency Plan Implementing Procedures and other procedures are coordinated and interface properly (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

c. Ensure the coordination of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures with the State, County and DOE-RL Plans.

d. Ensure an adequate staffing of the ERO.

e. Ensure emergency preparedness related training documentation is sent to Records Management.

f. Ensure emergency preparedness related drills and exercises are coordinated as described in this Plan.

g. Ensure periodic review and update of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures occurs as described in this Plan.

h. Ensure the maintenance and inventory of emergency facilities, equipment and supplies as described in this Plan.

i. Maintain knowledge current with respect to changes in the federal regulations and guidance that impact emergency preparedness activities.

j. Public information and education on emergency preparedness issues.

8.2 EMERGENCY PREPAREDNESS PLAN REVIEW

The Emergency Plan and the Agreements which support the plan are reviewed annually and updated as necessary. Critiques of past exercises, changes in company organizational structure, and issuance of new regulations provide the primary input to plan review. The Corporate Emergency Preparedness, Safety and Health Officer is responsible for developing and updating the Emergency Plan and coordinating the plan with other response organizations. The Plant Operations Committee is responsible for reviewing any proposed changes and submittal of the proposed revision to the Corporate Nuclear Safety Review Board.

The Corporate Emergency Preparedness, Safety and Health Officer provides a distribution list of all organizations and individuals with responsibility for implementation of the Emergency Plan. The Emergency Plan and all subsequent revisions are then distributed through a manuals control system which verifies receipt of the revisions by the implementing organization or individual. Revised pages are dated and marked to indicate where changes have occurred. If no revisions have occurred, the Corporate Emergency Preparedness, Safety and Health Officer will certify by letter to all Emergency Plan manual holders that the plan and supporting agreements have been reviewed and are current.

8.3 INDEPENDENT AUDIT OF THE EMERGENCY PREPAREDNESS PROGRAM

Either of two types of audit groups may be employed to ensure an adequate Emergency Preparedness Program. Audits may be performed by an outside organization with technical expertise in emergency planning or by an organization within Energy Northwest which is independent of the emergency preparedness program.

An audit will be conducted in accordance with 10 CFR 50.54(t) and the OQAPD. The review shall include the Emergency Plan, the Emergency Plan Implementing Procedures, training, readiness testing, equipment, and interfaces with state and local governments. The results of the audit, along with recommendations for improvement, shall be documented and reported to the Chief Executive Officer, the Plant General Manager, Vice President, Operations Support/PIO, and appropriate corporate and plant management. In addition, involved federal, state, and local organizations will receive results of the audit. The report and recommendations will be retained for a minimum period of five years.

The Corporate Nuclear Safety Review Board has the responsibility to review the Emergency Preparedness Program audit findings to determine if the conduct is adequate, and if the audit responses are appropriate and timely. The Board may expand these audit activities if necessary.

8.4 FACILITIES AND EQUIPMENT MAINTENANCE

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for ensuring that the facilities and equipment specified in Section 6 of this Plan are maintained in operational readiness. In addition to the routine tests and scheduled maintenance evolutions, the Emergency Preparedness staff members conduct periodic facility walk-downs of the on-site emergency response facilities. Various departments within Energy Northwest share the responsibility for performing maintenance and calibration on the equipment necessary to implement the provisions of the Emergency Plan, including survey meter calibration and testing, backup power source maintenance and testing (e.g., uninterruptible power supply batteries, diesel generators, etc.), emergency ventilation system maintenance and operational checks, field team vehicle maintenance, communications systems maintenance and testing, and tone alert radio and siren maintenance and periodic testing.

8.5 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The radiological emergency response training program is one of the most important aspects of the emergency preparedness effort. This training is intended to keep an adequate number of emergency personnel sufficiently familiar with the Emergency Plan and procedures to perform effectively in an emergency. Fire Brigade personnel are trained per FSAR 13.2. Security personnel are trained per the Physical Security Plan.

8.5.1 Emergency Training Program Description

Initial training for emergency responders is provided to all new Energy Northwest emergency response organization candidates. Refresher training is provided to the emergency response organization on an annual basis.

Personnel from local, state, and federal organizations who may be requested to assist during an emergency will be invited to participate in the site specific training program which may include tours to gain familiarization with the facilities. Support organization personnel will be provided qualified escorts if they enter the Plant Site during an emergency.

a. The Emergency Preparedness Training Program will include, but is not limited to the following:

- Applicable Emergency Plan Implementing Procedures
- Location of emergency equipment and supplies
- Names, locations, and functions of the emergency response facilities
- Use of plant communication systems
- Personnel accountability, assembly, and evacuation

b. As a minimum, all Emergency Response Organization personnel shall receive Emergency Preparedness Initial training. Emergency Plan training program lesson plans are developed using applicable guidance from the systematic approach to training process.

c. Initial training for Emergency Response Organization personnel shall include formalized classroom training, and examinations. Additionally, "hands on" training with completion of performance evaluation sign off forms may be used, as appropriate. It is the intent of this training program to qualify Emergency Response Organization personnel in the requirements of the Emergency Plan Implementing Procedures applicable to their emergency positions.

The training courses will provide the necessary information to enable each member of the emergency organization to perform assigned emergency tasks. Selected emergency personnel will attend specialized classes related to particular emergency assignments. Specific training course assignments for members of the emergency organization, and overall training responsibilities, may be found in the Qualification Directory. Detailed training responsibilities may be found in the Site Wide Procedures. The training course descriptions are found in the specific qualification directories.

8.5.1.1 Emergency Training for Essential Personnel

The emergency organization positions which are essential to implementation of this Emergency Plan are identified in Table 2-1. The individuals identified to function in these emergency organization positions will receive appropriate specialized initial training in the duties and responsibilities of the position and the applicable procedures. This training will consist of formal classroom instruction, written examination to verify a satisfactory level of comprehension, and where appropriate will include "hands-on" training with completion of performance evaluation sign off forms.

a. In addition to Emergency Center Overview training, essential personnel receive the following training:

- Emergency Director (Shift Manager, TSC Manager, EOF Manager)
    - > Protective Action Recommendations
    - > Emergency Classification
- Control Room Staff (Shift Manager, Control Room Supervisor, Control Room Operators, Emergency Response SRO, STA)
    - > Protective Action Recommendations (except Control Room Operators)
    - > Emergency Classification

  - > Dose Projection (except Control Room Operators)
  - > Emergency Notification

- Accident Assessment and Rad Monitoring Teams (RPM, Chemistry/Effluent Manager, REM, Dose Projection HP, Field Team Members, Field Team Coordinator)
  - > Protective Action Recommendations (RPM and REM only)
  - > Dose Projection (Chemistry/Effluent Manager, REM and Dose Projection HP only)
  - > Field Team Overview and Operations (FT members and FT Dispatcher only)
- Fire Brigade
  - > Trained per the requirements of FSAR Chapter 13.2
- Repair Teams (HP, Mechanic, Electrician, I&C, Chemistry)
  - > OSC Maintenance Craft Overview
- First Aid/Rescue teams
  - > Equivalent to Red Cross standard First Aid

8.5.1.2 Emergency Training for Augmenting and Support Personnel

Individuals assigned to emergency organization augmenting and support positions (not identified in Table 2-1) will receive training as described in the Qualification Directory.

8.5.2 Training for Offsite Agencies

Orientation and training of state and county agencies and personnel involved in the Columbia Generating Station emergency preparedness efforts will be made available by Columbia Generating Station, as follows:

a. The offsite organizations listed below will be invited, on at least an annual basis, to participate in a training program. The invitation will provide a schedule of drills and exercises to enable offsite agencies to request participation.

   - Washington Emergency Management
   - Washington Department of Health
   - Benton County Emergency Management
   - Franklin County Emergency Management
   - Oregon Office of Energy
   - Oregon State Health Division
   - Local media personnel (newspapers, radio, tv, etc.)

b. The program will cover the basics of emergency preparedness as it relates to regulations and public safety. The program will include a review of select Emergency Plan Implementing Procedures with particular emphasis given to:

   - Classification of emergencies,
   - Reporting requirements,
   - Assessments,
   - Corrective and protective actions, and
   - Communications networks.

Training for local services personnel includes, but is not necessarily limited to, procedures for notification and, where applicable, site access procedures, onsite contact identity, basic radiation protection and emergency response functions. This training is provided to the following organizations:

- Richland, Kennewick, and Pasco Fire Departments

  Initial and annual retraining is provided to the local fire department personnel concerning response requirements for accidents involving a threat of radiological contamination.

- Richland, Kennewick, and Pasco Hospitals

  Hospital personnel who may be involved in response to an emergency involving a potential of radiological contamination receive initial and annual retraining. Training covers how to deal with radiation accident cases.

8.5.3 Frequency of Training

Training for all individuals assigned to emergency organization positions will be successfully completed prior to their initial assignment to the emergency organization. Continuing training will also be administered to insure retention and familiarity with the subjects covered in the initial training. The continuing training will be administered annually.

The annual retraining program for ERO personnel is accomplished using classroom instruction and drill performance with immediate on the spot correction. Completion of self study information or examinations may be used to maintain qualifications of personnel unable to attend classroom sessions or drills.

Classroom instruction is used to refresh ERO personnel on information such as industry events, lesson learned from the past year's experience, significant procedure changes, and a review of response requirements.

Self guided performance evaluations may be used to refresh specific skills necessary for adequate emergency response skills. Written examinations may be used to evaluate comprehension and retention for refresher training.

Drills are used to provide practical experience to enhance information gained in the classroom. During the year, as many emergency response personnel as possible participate in scheduled drills, exercises and team training drills to broaden their experience base and that of the entire emergency organization.

When used, self-study by reading and acknowledgement is used to make responsible emergency response personnel aware of important changes to procedures. This method is primarily used when such information should not be delayed until classroom training can be provided.

8.5.4 Training Records

Responsibility for maintaining documentation of the training program is described in the Site Wide Procedures. Formal lesson plans for each course, including instructor qualifications and performance objectives will be maintained. Attendance records for all courses will also be maintained.

8.6 DRILLS AND EXERCISES

Periodic drills and exercises will be conducted in order to test the overall state of emergency preparedness. The prime objective of this form of training is to determine the level of emergency preparedness of all participating personnel, organizations, and agencies. More specifically, each drill or exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their duties and responsibilities.

b. Verify the adequacy of timing of drills and exercises and content of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures.

c. Test communications networks and systems.

d. Check the availability of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

Remedial exercises will be conducted if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot determine "reasonable assurance" that adequate protective measures can be taken in the event of a radiological emergency.

8.6.1 Drill and Exercise Responsibilities

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for the planning, scheduling, and coordination of all emergency preparedness related drills and exercises. All exercises are subject to the approval of the Manager, Resource Protection, and the Plant General Manager.

When a drill or exercise is to be conducted, the Corporate Emergency Preparedness, Safety and Health Officer will:

a. Schedule a date for and assign a drill or exercise coordinator.

b. Assign personnel to prepare a scenario and to act as controllers.

c. Coordinate efforts with other participating emergency personnel, organizations, and agencies.

d. Oversee conduct of the drill or exercise.

e. Critique the results of the drill or exercise.

f. Assign personnel to correct any deficiencies.

Combined functional drills and exercises will involve onsite as well as offsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted simulating, as closely as possible, actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Whenever practical this will incorporate provisions for "free play" on the part of the participants. Drill scenarios will be prepared that involve the participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations. This may include varying degrees of participation of state, county, and federal organizations and agencies, and local service support personnel and organizations. The Corporate Emergency Preparedness, Safety and Health Officer will make every effort to notify the offsite emergency response organizations and agencies at least 180 days in advance of the scheduled date of the drill or exercise.

Drills will involve on-the-spot correction of erroneous performance and a demonstration of the proper performance for the evaluator. During the conduct of exercises, the controllers are restricted in their ability to correct erroneous performance, and may only intercede to prevent damage to equipment or assure safety of personnel.

Recommendations for revisions to the Emergency Plan, Emergency Plan Implementing Procedures, and/or the upgrading of emergency equipment and supplies as a result of a drill or exercise are forwarded to the Corporate Emergency Preparedness, Safety and Health Officer by observers or participants for appropriate disposition.

8.6.2 Drill/Exercise Package

A drill/exercise package is the controlling document for each drill or exercise. It includes, as a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s) and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
- A description of the arrangements for and advance materials to be provided to official observers.

8.7 TYPES OF DRILLS

This section gives details of some of the types of drills which will be conducted periodically. Other types of drills may be developed as needed to test various portions of the emergency support organization.

8.7.1 Communication Drills

Communication drills are conducted in the following manner:

- Operability of the various communications systems is tested by two-way communication. See Section 6 for a detailed list of the systems tested. These tests may be included as part of a scheduled drill or exercise.
- Communication drills involving the field assessment teams are conducted as a part of the radiological monitoring drills.

- Communication drills with Washington State and local governments, (Benton and Franklin Counties), and DOE-RL are conducted to evaluate the message distribution process, including the ability of participants to understand the content of example messages.

8.7.2 Fire Drills

The Fire Brigade will be activated for response to a simulated fire or may respond to a training area to actually fight a fire under the supervision of the Fire Brigade Leader.

8.7.3 Medical Emergency Drills

This drill involves a simulated injury with contamination and will include provisions for participation by ambulance personnel and offsite medical treatment facilities. This drill shall occur annually. The offsite and onsite portions may be performed out of sequence and at different times. The onsite portion of the medical emergency drill should involve evaluation, packaging, and transport of the simulated victim to the ambulance pickup point.

8.7.4 Radiological Monitoring Drills

These drills involve the Environmental Field Teams. Plant and field activities may involve conducting surveys, tracking radiological plume(s) and deposition, and collecting and analyzing various samples such as water, soil, air, and vegetation. Provisions for communications and record keeping will also be tested.

8.7.5 Health Physics Drills

- The first type of health physics drill involves response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- The second type of health physics drill requires analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system.

8.8 FREQUENCY OF DRILLS AND EXERCISES

Scenarios will be varied from year to year so that all major elements of the plan and preparedness organizations are tested within a six-year period. Drills and exercises will be conducted under various weather conditions and may be unannounced. Provisions will be made to demonstrate an off hours drill between 6:00 P.M. and 4:00 A.M., at least once each six years. Additional drills may be conducted to provide practical training to emergency organization members. These drills may include components that satisfy the required drill elements in Table 8-1.

8.9 DRILL/EXERCISE PREPARATIONS AND CONDUCT

The Emergency Preparedness organization is responsible for initiating and coordinating the development of the drills and exercises necessary to meet the requirements of the Emergency Plan. The drill/exercise coordinator is responsible for overall development of the drill/exercise package and to ensure all preparatory activities between departments and agencies are coordinated (see Section 8.10.1). The minimum necessary actions to be taken in preparation for a drill or exercise are as follows:

a. Develop the drill/exercise scenario including:

   1. The objectives and evaluation criteria;

   2. The desired participants (i.e., response agencies);

   3. The primary actions/plans expected to be implemented, activated; and

   4. The tentative date.

b. Distribute the scenario to the desired participants for review and concurrence.

c. For all exercises, Federal, State, and local government agencies will be invited to observe, evaluate, and critique the exercise.

The use of the Columbia Generating Station Probabilistic Safety Assessment (PSA) should be considered when constructing drill and exercise scenarios. The use of PSA allows efforts to be directed at the most likely accident scenarios. Planning efficiency may therefore be increased by allowing the available resources to be directed at the most likely events. The Columbia Generating Station PSA considers both the likelihood and consequences of severe accidents possible at Columbia Generating Station and thus can be utilized to ensure the drill and exercise scenarios are more realistic to the players.

One of the major objectives of drills and exercises is to test the ability of emergency response organization personnel to utilize the emergency response procedures and to make effective and timely decisions based on available data. To effectively accomplish this objective, the drill/exercise controllers will provide the players with any data which the player would have available to them under the conditions being simulated by the drill or exercise.

Facilitative critique session(s) will be held as soon as practicable after each drill/exercise. The comments of the evaluators, controllers, players and observers including federal and state observers or evaluators, will be discussed and the significant comments will be identified. As a part of the critique report, deficiencies (involving needed plan/procedure changes) will be identified. The Emergency Preparedness Section will be responsible for tracking Energy Northwest corrective actions to completion and maintaining sufficient records to document correction of the deficiencies.

TABLE 8-1

REQUIRED DRILL ELEMENTS

	Drill/Exercise	Frequency
a.	Communications Tests	(As described in Section 6. Can be performed as part of drills or exercises.)
b.	Communications Drills	Monthly (with WA State, DOE RL, and Benton and Franklin County Response Agencies) Quarterly (with state and federal response agencies) Annually (with Columbia Generating Station, state and local field monitoring teams)
c.	Fire Brigade Drills	As described in FSAR Section 13.2 (See Note 1)
d.	Medical Emergency Drills	Annually (See Note 2)
e.	Radiological Monitoring Drills	Annually
f.	Health Physics Drills	
	1. Analysis of simulated samples and measurements in the environment	Semi-Annually
	2. Analysis of in plant liquid samples with actual elevated radiation levels	Annually
g.	Major Exercises, including tests of Public Notification System	Biennially (See Note 3)
h.	Combined Functional Drills	Biennially (See Note 4)

NOTE 1: One of the fire drills may be conducted as a portion of the major exercise or combined functional drill.

NOTE 2: The portion of the medical emergency drill involving offsite support agencies may be performed as a portion of the radiological monitoring, major exercise or combined functional drill.

NOTE 3: Department of Energy - Richland Operations, Benton and Franklin County and Washington State Emergency Management will be afforded the opportunity to participate biennially or more frequently if they so request.

NOTE 4: Performed during the alternating years from the major exercises, and testing a major portion of the basic elements of the plans and organizations.

SECTION 9
PUBLIC EDUCATION AND INFORMATION

9.1 PUBLIC EDUCATION AND INFORMATION PROGRAM

Energy Northwest has developed a public education and information program with the purpose of educating the public concerning power plant safety, expected effects of a reactor accident, and actions which should be taken by the public in the unlikely event of a release of radioactive material. This program is targeted for the transients and residents within the Ten-Mile Emergency Planning Zone (EPZ), as well as other interested members of the general public. Special programs have also been designed to address the special needs of the news media.

9.1.1 Annual Public Information Program

In coordination with the Department of Energy - Richland Operations, State of Washington and Benton and Franklin Counties, Energy Northwest provides information to permanent and transient populations within the Ten-Mile EPZ on such topics as radiation, recommended protective measures, selected evacuation routes and assistance centers, sheltering, respiratory protection, thyroid blocking agents, special needs for the handicapped, tone activated radio operation and contacts for additional information. This program includes written material updated and distributed annually to residences within the Ten-Mile EPZ for reference during an emergency.

Brochures at designated recreational facilities are available to transient populations within the 10-Mile EPZ.

9.1.2 Media Information Program

In addition to Energy Northwest's ongoing media program, special presentations coordinated with county and state emergency management offices are made annually to acquaint the news media with emergency preparedness, radiation hazards, and points of contact for release of public information during an emergency.

9.1.3 Warning Signs

Warning signs are posted and maintained at selected areas frequented by sportsmen within the Ten-Mile EPZ.

The signs inform the transients that upon hearing a steady siren tone to leave the area immediately and tune to the local Emergency Broadcast System frequency.

9.2 PUBLIC INFORMATION DURING EMERGENCIES

9.2.1 Emergency Public Information

During an emergency the Joint Information Center (JIC) Manager is responsible for ensuring an accurate and reliable flow of information. Emergency public information procedures are activated during an emergency and will include provisions for exchange of information between Energy Northwest, the public, and outside agencies.

It is likely that the perceived threat, hence media interest and public concern, will be greater than that actually associated with the emergency. The degree to which the emergency public information program is activated by the JIC Manager will depend upon the classification of the emergency and upon the public perception of the event. Therefore, accelerated operations beyond the requirements expected for the declared class of emergency may be implemented.

9.2.2 Emergency Operations Facility Public Information Operations

The Emergency Operations Facility (EOF) Public Information Officer and news writing staff are responsible for developing media release information, and will work closely with technical personnel in the EOF to assure accurate information.

9.2.3 Public Information Operations

The Joint Information Center, located outside the 10-mile EPZ, can accommodate a large number of media personnel and is activated automatically at an alert or higher classification or at the direction of the JIC Manager.

A News Coordination Team, chaired by the JIC Manager, will be established to issue accurate, coordinated and timely information to the media by conducting media briefings and preparing news releases. This team is composed of representatives from Energy Northwest, the Nuclear Regulatory Commission, the Department of Energy-RL, the Federal Emergency Management Agency (coordinating the rest of the federal agencies), and state and local officials. The team will assure that the spokepersons designated from each group have access to all necessary information, opportunity to exchange information, and have the opportunity to participate in media briefings.

Media briefings will be held at regular intervals. The Joint Information Center has space for briefing over 150 members of the media. Areas in the center will be provided for media work space. Copies of news releases and other support materials will be made available for media use.

A media briefing area is available in the Kootenai Building outside of the EOF. The main media center is located at the Energy Northwest Richland Office Complex in Richland.

9.2.4 Media Telephone Team Operations

A Media Phone Team can be activated and remain operational twenty-four hours per day until the emergency is terminated. This team will respond to incoming media calls with the latest available information. This team may be manned jointly by Energy Northwest, federal, local, and state representatives.

9.2.5 Public Information Telephone Team Operations

Public Information Phone Team operations will begin as directed by JIC Manager. This Team will respond to calls and correct misinformation distributed by the media or other groups. This team may be manned jointly by Energy Northwest, Federal, Local and State Representatives. The Public Information Phone Team, combined with the Media Phone Team, will ensure a comprehensive rumor control effort.

APPENDIX 1

SUPPORTING PLANS AND CONTRACTS

Annually Energy Northwest will review the supporting plans and/or contracts listed below to ensure they remain accurate and applicable relative to Columbia Generating Station activities. The results of this review may be communicated informally, but some form of record will be maintained.

Plan	Source
Washington State Fixed Nuclear Facility Emergency Response Plan	Washington Emergency Management
Benton County Fixed Nuclear Facility Response Plan	Benton County Emergency Management
Franklin County Radiological Emergency Response: Energy Northwest	Franklin County Emergency Management
Oregon Columbia Generating Station Emergency Response Plan	Oregon Office of Energy
Hanford Emergency Management Plan	Department of Energy, Richland Operations
Siemens Pre Emergency Plan Manual	Siemens Power Corporation
INPO 86-032, Emergency Resources Manual	Institute of Nuclear Power Operations
Federal Radiological Emergency Response Plan (FRERP)	Federal Emergency Management Agency
NUREG-0845, Agency Procedures for NRC Incident Response Plan (and supplements)	United States Nuclear Regulatory Commission

APPENDIX 2

EMERGENCY PLAN IMPLEMENTING PROCEDURES
Index for Implementation of
Emergency Plan Sections

Procedure	Title	Section of Plan Implemented
	13.1 Emergency Classification	
13.1.1	Classifying the Emergency	4.1 thru 4.4
13.1.1A	Classifying the Emergency - Technical Bases	4.2
	13.2 Protective Measures	
13.2.1	Emergency Exposure Level/Protective Action Guides	5.9
13.2.2	Determining Protective Action Recommendations	5.5
	13.3 Natural Emergency Actions	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.1.1 and the Abnormal Condition Procedures, Section 4.12, of the Plant Procedures Manual.	
	13.4 Notifications	
13.4.1	Emergency Notifications	4.6
	13.5 Evacuation and Accountability	
13.5.1	Localized and Protected Area Evacuations	5.7.2, 5.7.3
13.5.3	Evacuation of Exclusion Area and/or Nearby Facilities	1.6.2 5.7.2, 5.7.3
13.5.5	Personnel Accountability/ Search and Rescue	5.7.5
	13.6 Emergency Security Procedures	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.10.8 and other Security Plan Implementing Procedures.	

Procedure	Title	Section of Plan Implemented
	13.7 Personnel Monitoring, Decontamination, First Aid	
13.7.5	Offsite Assembly Area Operations	5.7.3
	13.8 Offsite Dose Calculations	
13.8.1	Computerized Emergency Dose Projection System Operations	5.3
	13.9 Environmental Field Monitoring	
13.9.1	Environmental Field Monitoring Operations	2.3.3.3, 2.4.4.16, 5.4, 6.2.4
13.9.5	Environmental Sample Collection	5.2.2, 5.4
13.9.8	River Evacuation Monitoring	5.7.4
	13.10 Plant Emergency Facilities	
13.10.1	Control Room Operations and Shift Manager Duties	2.3.1.1 thru 2.3.1.3, 2.3.1.6
13.10.2	TSC Manager Duties	2.3.2.1
13.10.3	Technical Manager and Staff Duties	2.3.2.4, 2.3.2.7
13.10.4	Radiation Protection Manager Duties	2.3.2.2
13.10.5	Operations Manager Duties	2.3.2.8
13.10.6	Plant/NRC Liaison Duties	2.3.2.3
13.10.7	Plant Administrative Manager Duties	2.4.1.1
13.10.8	Security Lieutenant Duties	2.3.1.4
13.10.9	OSC Manager and Staff Duties	2.3.1.8, 2.3.1.9 2.4.1.6, 2.4.1.7 2.10, 2.5.2-11

Procedure	Title	Section of Plan Implemented
13.10.14	Maintenance Manager Duties	2.4.1.2
13.10.16	Chemistry/Effluent Manger Duties	2.14.1.4
	13.11 Emergency Operations Facility	
13.11.1	EOF Manager Duties	2.3.3.1
13.11.2	Assistant EOF Manager Duties	2.4.2.1
13.11.3	Site Support Manager and Staff Duties	2.4.2.8
13.11.7	Radiological Emergency Manager Duties	2.3.3.2
13.11.8	Licensing Manager Duties	2.4.4.18
13.11.10	Security Manager Duties	2.4.2.7
13.11.12	EOF Engineering Manager and Staff Duties	2.4.2.4, 2.4.2.6
13.11.18	Information Coordinator Duties	2.4.1.3
	13.12 Headquarters Emergency Centers	
13.12.19	JIC Management	2.3.4.1
13.12.20	Media and Information Management	6.3
13.12.21	JIC Support Services	6.3
	13.13 Reentry/Recovery	
13.13.1	Reentry	7.2
13.13.2	Recovery Operations	7.3
13.13.3	Intermediate Phase MUDAC Operations	7.3.2
13.13.4	After Action Reporting	4.4

Procedure	Title	Section of Plan Implemented
	13.14 Supporting Information Procedures	
13.14.1	Nearby Nuclear Facility Emergencies/ Requests for Assistance	4.1
13.14.4	Emergency Equipment	6.4, 8.4
13.14.8	Drills and Exercises Program	8.6
13.14.9	Emergency Program Maintenance	8.1 thru 8.4
SWP-EPP-01	Emergency Response Organization and Training	8.5

APPENDIX 3

EMERGENCY KITS

Columbia Generating Station Fire Brigade Stations

Fire Brigade turnout stations are strategically located inside and outside the Radiologically Controlled Area (RCA). Contents include fire fighter protective equipment, self-contained breathing apparatus (SCBA) units, radios, fire fighter tools and equipment, First Responder medical kits, hazardous materials response kits, and radiological monitoring equipment.

Columbia Generating Station Decontamination Kits

Two decontamination kits are located in the Radwaste Building decontamination area, and one is located in the Yakima Building (GSB) Emergency Equipment Area.

Columbia Generating Station Protective Equipment Kit

A kit containing protective equipment and radiological monitoring equipment is located in the Technical Support Center.

Energy Northwest Field Monitoring Kits

Kits containing protective equipment, radiological monitoring equipment, communications equipment, and emergency supplies for Environmental Monitoring Field Teams are located at the Kootenai Building and Energy Northwest's Office Complex (ENOC). Kits located at ENOC also include a River Evacuation Monitoring Kit.

Hospital Radiological Emergency Kits

Kits containing protective equipment, radiological monitoring equipment, and emergency supplies are located at Kadlec Medical Center in Richland, Our Lady of Lourdes Hospital in Pasco, and Kennewick General Hospital in Kennewick.

APPENDIX 4

AGREEMENT LETTERS

This appendix refers to signed letters of agreement which formalize commitments between Energy Northwest and outside organizations to provide or receive mutual aid and support during emergency conditions.

Listed below are the outside agencies Energy Northwest has agreements with. Agreements are maintained in files by Energy Northwest's Emergency Preparedness Group.

Agreements already in place or provided for in existing response plans provide detailed, formalized commitments to provide or receive mutual aid or support during emergency conditions. These plans are referenced in Appendix 1 of this plan.

In addition, Federal commitment to support Columbia Generating Station is provided in Federal response plans maintained by Nuclear Regulatory Commission and Federal Emergency Management Agency. These plans are listed in section 3.6.1 and 3.6.3, as well as Appendix 1.

Annually, Energy Northwest will review the agreements listed below to ensure they remain accurate and applicable. The results of this review will be communicated to the affected organizations. Acknowledgements for this annual review are requested and maintained in the agreement file. Records of verbal acknowledgements are acceptable and will be maintained.

1. Agreement Letter With Our Lady of Lourdes Hospital

2. Agreement Letter With Kennewick General Hospital

3. Agreement Letter With Kadlec Medical Center

4. (Memorandum of Understanding Between) Department of Energy Richland Operations Office, Hanford Environmental Health Foundation, Emergency Response At the Hanford Site - Use of the Emergency Decontamination Facility

5. Law Enforcement Agency Agreement - Benton County

6. Hanford Site Support Services, Fire and Ambulance

APPENDIX 5

NUREG-0654

CROSS-REFERENCE

NUREG-0654 CROSS-REFERENCE

II. Planning Standards and Evaluation Criteria

A. Assignment of Responsibility (Organizational Control)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.a.	Each plan shall identify organizations that are intended to be part of the overall response. (See Appendix 5)	Sect. 2 X Sect. 3	X	X
b.	Specify its concept of operations, and its relationship to the total effort.	X Sect. 3	X	X
c.	Illustrate these interrelationships in a block diagram.	1.6.5 X Table 1-1	X	X
d.	Identify a specific individual by title who shall be in charge of the emergency response.	X 2.1	X	X
e.	Provide for 24-hour per day emergency response, including manning of communications links	X 2.2, 2.3	X	X
2.a.	Specify the functions and responsibilities for major elements and key individuals by title. (See Section B for licensee.)		X	X
b.	The legal basis for such authorities.		X	X
3.	Include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations.	X App. 4	X	X
4.	Shall be capable of continuous (24-hour) operations for a protracted period.	X 2.1	X	X

B. Onsite Emergency Organization

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1. Specify the onsite emergency organization of plant staff personnel.	2.2 X 2.3		
2. Designate an individual as emergency coordinator who shall be on shift at all times.	X 2.2		
3. Identify a line of succession for the emergency coordinator.	X 2.1		
4. Establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated.	X 2.11		
5. Specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1.	Sect. 2, Table 2-1		
6. Specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram.	X Sect. 3, Figure 21		
7. Specify the corporate management, administrative, and technical support personnel who will augment the plant staff.	X 2.4		
a. logistics support for emergency personnel;	2.4.1.1, X 2.4.2.8		

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
B. Onsite Emergency Organization (Cont'd.)	Licensee	State	Local
b. technical support for planning and reentry/recovery operations;	X 2.3.3.1		
c. management level interface with governmental authorities; and	X 2.3.3.1		
d. release of information to news media during an emergency.	X 2.3.3.1		
8. Specify the contractor and private organizations who may be requested to provide technical assistance	X 3.3		
9. Identify the services to be provided by local agencies for handling emergencies. Provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan.	3.2 X App. 4		

C. Emergency Response Support and Resources

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Make provisions for incorporating the Federal response capability into its operation plan, including the following:			
a. specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.	2.3.3.2, X 3.6.2	X	

C. Emergency Response Support and Resources (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and	X 3.6.2	X	
c. specific licensee, State and local resources available to support the Federal response.	X 3.6.2	X	X
2.a. Each principal offsite organization may dispatch representatives to the licensee's near-site Emergency Operations Facility.		X	X
b. Prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.	X 3.1		
3. Identify radiological laboratories and their general capabilities and expected availability.	3.3.1 3.3.2 3.3.3 X 3.6.2	X	
4. Shall identify nuclear and other facilities, organizations or individuals which can be relied upon.	3.3 X App. 4	X	X

D. Emergency Classification System

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee.	X 4.1, 4.2, 4.4		
2. The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the FSAR.	X 4.1		

D. Emergency Classification System (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
3. Establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.		X	X
4. Have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility.		X	X

E. Notification Methods and Procedures

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish procedures which describe mutually agreeable bases for notification of response organizations.	4.6 X Table 4-2	X	X
2. Establish procedures for alerting, notifying, and mobilizing emergency response personnel.	X 4.6.1	X	X
3. Establish the contents of the initial emergency messages to be sent from the plant.	X 4.6.5		
4. Make provisions for followup messages from the facility.	X 4.6.6		
5. Establish a system for disseminating to the public appropriate information.		X	X
6. Establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public.	X 4.6.4	X	X

E. Notification Methods and Procedures (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide written messages intended for the public, consistent with the licensee's classification scheme.	X 4.6.5	X	X

F. Emergency Communications

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish reliable primary and backup means of communication.			
a. provision for 24-hour per day notification to and activation of the State/local emergency response network;	X 4.6	X	X
b. provision for communications with contiguous State/local governments within the Emergency Planning Zones;	X 4.6.3	X	X
c. provision for communications as needed with Federal emergency response organizations;	X 4.6	X	X
d. provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations centers, and radiological monitoring teams;	X Table 6-1	X	X
e. provision for alerting or activating emergency personnel in each response organization; and	X 4.6.1	X	X

F. Emergency Communications (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
f. provision for communication with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.	4.6.3 X 6.5.3		
2. Ensure that a coordinated communication link for fixed and mobile medical support facilities exists.	X 3.2.2	X	X
3. Conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).	X 6.6	X	X

G. Public Education and Information

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide a coordinated periodic (at least annually) dissemination of information to the public.	X 9.1.1	X	X
2. Provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material. Shall also be used to disseminate to any transient population appropriate information that would be helpful if an emergency or accident occurs.	X 9.1.1, 9.1.3	X	X
3.a. Designate the points of contact and physical locations for use by news media during an emergency.	X 9.2.3	X	X

G. Public Education and Information (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	Provide space which may be used for a limited number of the news media at the nearsite Emergency Operations Facility.	X 9.2.3		
4.a.	Designate a spokesperson who should have access to access to all necessary information.	X 9.2.3	X	X
b.	Establish arrangements for timely exchange of information among designated spokespersons.	X 9.2.3	X	X
c.	Establish coordinated arrangements for dealing with rumors.	X 9.2.5	X	X
5.	Conduct coordinated programs at least annually to acquaint news media with the emergency plans	X 9.1.2	X	X

H. Emergency/Facilities and Equipment

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish a Technical Support Center and an onsite operations support center	6.1.2 X 6.1.3		
2.	Establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out.	X 6.2		
3.	Establish an emergency operations center for use in directing and controlling response functions.		X	X

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
4.	Provide for timely activation and staffing of the facilities and centers described in the plan.	6.5.6 X 6.5.9	X	X
5.	Identify and establish onsite monitoring systems that are to be used to initiate emergency measures, as well as those to be used for conducting assessment.	5.1, X 5.2		
	The equipment shall include:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	5.1 X 5.2		
b.	radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	5.1.2 X App. 3		
c.	process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and	6.3 X 5.1.1		
d.	fire and combustion products detectors.	X 5.1.1		
6.	Make provisions to acquire data from or for emergency access to offsite monitoring and analysis equipment including:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1.1		
b.	radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided; and	X 5.2.2		
c.	laboratory facilities, fixed or mobile.	X 5.4.5		

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.	X 5.4.3	X	X
8.	Provide meteorological instrumentation and procedures, and provisions to obtain representative current meteorological information from other sources.	X 5.2.1		
9.	Provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies.	X 6.1.3		
10.	Make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use.	6.4 X 8.4	X	X
11.	Each plan shall, in an appendix, include identification of emergency kits by general category.	X App. 3	X	X
12.	Establish a central point for the receipt and analysis of all field monitoring data and coordination of sample media.	6.2.4 6.2.8 X 6.2.10	X	X

I. Accident Assessment

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents	Table 4-1 X 5.1		

I. Accident Assessment (Cont'd)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
2.	Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident.	X 5.1 thru 5.3		
3.	Establish methods and techniques to be used for determining:			
a.	the source term of releases of radio-active material within plant systems.	X 5.3.1		
b.	the magnitude of the release of radio-active materials.	X 5.3.2		
4.	Establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.	X 5.3.2		
5.	Have the capability of acquiring and evaluating meteorological information.	X 5.2.1 6.2.4		
6.	Establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.	X 5.3.1		
7.	Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone.	X 5.4	X	X
8.	Provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.	X 5.1 5.3 5.4	X	X

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
9.	Have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uCi/cc.	X 5.4.4	X	
10.	Establish means for relating the various measured parameters and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.	5.9.3 X 5.5	X	
11.	Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.		X	

J. Protective Response

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish the means and time required to warn or advise:			
a.	Employees not having emergency assignments;	X 5.7.3		
b.	Visitors;	X 5.7.3		
c.	Contractor and construction personnel; and	X 5.7.3		
d.	Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.	3.2.3 X 5.7.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
2. Make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.	5.7.2 X 5.7.3		
3. Provide for radiological monitoring of people evacuated from the site.	X 5.7.4		
4. Provide for the evacuation of onsite non-essential personnel and shall provide a decontamination capability at or near the monitoring point specified in J.3.	X 5.7.3		
5. Provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.	X 5.7.5		
6. Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:			
a. Individual respiratory protection;	X 5.9.6		
b. Use of protective clothing; and	X 5.9.4.2		
c. Use of radioprotective drugs, (e.g., individual thyroid protection).	X 5.9.7		
7. Establish a mechanism for recommending protective actions to the appropriate State and local authorities.	X 5.9.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
8. Contain time estimates for evacuation within the plume exposure EPZ.	Table 5-1 X 5.8		
9. Establish a capability for implementing protective measures based upon protective action guides and other criteria.		X	X
10. The organization's plans to implement protective measures for the plume exposure pathway shall include:			
a. Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	Fig. 5-1 Fig. 5-2 X Fig. 5-5	X	X
b. Maps showing population distribution around the nuclear facility;	Fig. 5-3 X Fig. 5-4	X	X
c. Means for notifying all segments of the transient and resident population;	X 5.8.2	X	X
d. Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;		X	X
e. Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.		X	X

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
f. Include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;		X	X
g. Means of relocation;		X	X
h. Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone;		X	X
i. Projected traffic capacities of evacuation routes under emergency conditions;		X	X
j. Control of access to evacuated area and organization responsibilities for such control;		X	X
k. Identification of and means for dealing with potential impediments to use of evacuation routes, and contingency measures;		X	X
l. Time estimates for evacuation of various sectors and distances; and		X	X
m. The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions.	X 5.5.1	X	

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
11. Specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food-stuffs. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained.		X	
12. Describe the means for registering and monitoring of evacuees at relocation centers in host areas.		X	

K. Radiological Exposure Control

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish onsite exposure guidelines for:			
a. removal of injured persons;	X 5.9.3		
b. undertaking corrective actions;	X 5.9.3		
c. performing assessment actions;	X 5.9.3		
d. providing first aid;	X 5.9.3		
e. performing personnel decontamination;	X 5.9.3		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	providing ambulance service; and	X 5.9.3		
g.	providing medical treatment services.	X 5.9.3		
2.	Provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.	X 5.9		
3.a.	Make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X 5.9.5	X	X
b.	Ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records.	X 5.9.5.2	X	X
4.	Establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides.		X	X
5.a.	Specify action levels for determining the need for decontamination.	X 5.9.4.2	X	X
b.	Establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.	X 5.9.4.3	X	X
6.	Provide onsite contamination control measures including:			
a.	area access control;	X 5.9.4.1		

K. Radiological Exposure Control (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	drinking water and food supplies;	X 5.9.4.4		
c.	criteria for permitting return of areas and items to normal use.	X 7.1		
7.	Provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.	X 5.9.4.3		

L. Medical and Public Health Support

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X 3.2.2	X	X
2.	Provide for onsite first aid capability.	6.1.5 X 6.2.9		
3.	Develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities		X	
4.	Arrange for transporting victims of radiological accidents to medical support facilities.	X 3.2.2.3	X	X

M. Recovery and Reentry Planning and Postaccident Operations

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Develop general plans and procedures for reentry and recovery.	X Sect. 7	X	X
2. Plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization.	X 7.3		
3. Specify means for informing members of the response organizations that a recovery operation is to be initiated.	X 7.3.2	X	
4. Establish a method for periodically estimating total population exposure.	X 5.3.3	X	

N. Exercises and Drills

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1.a. Exercises shall be conducted as set forth in NRC and FEMA rules.	X 8.9	X	X
b. Provide for a critique of the evaluated exercise by Federal and State observers/ evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once each six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.	8.6.1 X 8.8	X	X

N. Exercises and Drills (Con'td.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
2.	Conduct drills, in addition to the annual exercise at the frequencies indicated below.	X Table 8-1		
a.	Communication Drills			
	Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually.	X Table 8-1	X	X
b.	Fire Drills			
	Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.	8.7.2 X Table 8-1		
c.	Medical Emergency Drills			
	A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies shall be conducted annually.	8.7.3 X Table 8-1		X
d.	Radiological Monitoring Drills			
	Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually.	8.7.4 X Table 8-1	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
e. Health Physics Drills			
(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	X 8.7.5 Table 8-1	X	
(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.	X 8.7.5 Table 8-1		
3. Describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.			
a. The basic objective(s) of each drill and and exercise and appropriate evaluation criteria;	X 8.6.2	X	X
b. The date(s), time period, place(s) and participating organizations;	X 8.6.2	X	X
c. The simulated events;	X 8.6.2	X	X
d. A time schedule of real and simulated initiating events;	X 8.6.2	X	X
e. A narrative summary describing the conduct of the exercises or drills;	X 8.6.2	X	X
f. A description of the arrangements for and advance materials to be provided to official observers.	X 8.6.2	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
4. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.	X 8.6.1	X	X
5. Each organization shall establish means for evaluating observer and participant comments on areas needing improvement.	X 8.6.1	X	X

O. Radiological Emergency Response Training

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
1. Each organization shall assure the training of appropriate individuals.	X 8.5	X	X
a. Provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.	X 8.5.1		
b. Each offsite response organization shall participate in and receive training.		X	X
2. The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills.	X 8.5.1		
3. Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.	6.1.6 X 8.5.1.1		

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
4.	Establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs shall be provided in the following categories:			
a.	Directors or coordinators of the response organizations;	X 8.5.1.1	X	X
b.	Personnel responsible for accident assessment;	X 8.5.1.1	X	*
c.	Radiological monitoring teams and radiological analysis personnel;	X 8.5.1.1	X	*
d.	Police, security and fire fighting personnel;	X 8.5.2	*	X
e.	Repair and damage control/correctional action teams (onsite);	X 8.5.1.1		
f.	First aid and rescue personnel;	X 8.5.1.1	*	X
g.	Local support services personnel including Civil Defense/Emergency Service personnel;	X 8.5.2		X
h.	Medical support personnel;	X 8.5.2	X	X
i.	Licensee's headquarters support personnel;	X 8.5.1.2		
j.	Personnel responsible for transmission of emergency information and instructions.	X 8.5.1.1	X	X

*NRC and FEMA encourage State and Local Governments which have these capabilities to continue to include them in their training programs.

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
5. Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.	X 8.5.2	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide for the training of individuals responsible for the planning effort.	X 8.1	X	X
2. Identify by title the individual with the overall authority and responsibility for radiological emergency response training.	X 8.1	X	X
3. Designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X 8.1	X	X
4. Update its plan and agreements as needed, review and certify it to be current on an annual basis.	X 8.2	X	X
5. Changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans.	X 8.2	X	X
6. Each plan shall contain a detailed listing of supporting plans and their source.	X App. 1	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Each plan shall contain as an appendix listing, by title, procedures required to implement the plan.	X App. 2	X	X
8.	Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.	Table of Contents X App. 5	X	X
9.	Arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.	X 8.3		
10.	Provide for updating telephone numbers in emergency procedures at least quarterly.	X 6.5.3	X	X

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Superseded pages per Rev 31 to Emergency Plan dtd. 12/3/01
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ENERGY NORTHWEST

EMERGENCY PLAN

COLUMBIA GENERATING STATION

Revision 30

APPROVALS: PRIOR NRC APPROVAL REQUIRED: __ Yes _X_ No

RECEIVED: __________ Date Correspondence No.: __________

Corporate Emergency Preparedness, Safety and Health Officer	8/9/01 Date
Manager, Resource Protection	8/10/01 Date
for WSO Plant Operations Committee Chairman	8-22-01 Date
for WSO Plant General Manager	8-22-01 Date

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ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 30 - SYNOPSIS OF CHANGES

Summary

In revision 30, Section 5.6 is updated with current population figures as a result of an updated Evacuation Time Estimate Study (Revision 4, May 2001) performed to reflect the changing population demographics within the 10 Mile Emergency Planning Zone (EPZ). Population has increased within the 10 Mile EPZ by about 25%, but evacuation time estimates remain bounded by previous evacuation times.

Affected Pages	Description of Changes
EP 2.5	The reference to procedure 1.3.1 in the position title of Emergency Response SRO in 2.3.1.7 was deleted. Because this change corrects the licensing basis - procedure hierarchy and directs licensing document requirement implementation in appropriate procedures, no reduction of effectiveness occurs with this change.
EP 5.10	This was changed to update population values in Section 5.6.1, Permanent Residents, as well as the reference date, due to a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes. Also, this change updates population values in Section 5.6.2, Transient Population, due to a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.
EP 5.11	This change updates the population values for Industrial Employment within the 10 mile EPZ as a result of a revised Evacuation Time Estimate Study. New businesses are also included within the 10 mile EPZ. Additionally, updated population values for migrant farm workers are included in this Section. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.
EP 5.12	This change updates the population value for Section 5.6.3, Special Facility Population, as a result of a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.

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REVISION 30 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 5.14	This change updates the revision and reference date for the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study in Section 5.8, Evacuation Time Estimates, due to a revised Evacuation Time Estimate Study. This change is at the editorial level and no reduction of effectiveness occurs as a result of this change.
EP 5.16	This change updates the population value for Section 5.8.4, Special Facilities, for the schools within the ten mile EPZ, as a result of a revised Evacuation Time Estimate Study. Because evacuation time estimates remain bounded by previous evacuation times, no reduction of effectiveness occurs as a result of these changes.
EP 5.23	This change updates Table 5-1, Summary of Results of Evacuation Times Analysis, to reflect the revised population figures identified in the updated Evacuation Time Estimate Study. The revised population values do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously, so no reduction of effectiveness occurs as a result of these changes.
EP 5.26	This change updates Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down into Classifications, to reflect the revised population figures identified in the updated Evacuation Time Estimate Study. The revised population values do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously, so no reduction of effectiveness occurs as a result of these changes.
EP 5.27	This change updates Figure 5-4, Distribution of Transient Population Within the 10-Mile EPZ, to reflect the revised population figures identified in the updated Evacuation Time Estimate Study. The revised population values do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously, so no reduction of effectiveness occurs as a result of these changes.

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REVISION 30 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 5.28	This change updates Figure 5-8.A, Permanent Population-Normal Conditions, to reflect the revised percentage of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 5.32	This change updates Figure 5-8.B, Permanent Population-Adverse Conditions, to reflect the revised number of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 5.33	This change updates Figure 5-8.C, General Population-Normal Conditions, to reflect the revised percentage of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 5.34	This change updates Figure 5-8.D, General Population-Adverse Conditions, to reflect the revised percentage of evacuated vehicles identified in the updated Evacuation Time Estimate Study. The revised population values (and vehicle numbers) do not affect evacuation times as the evacuation times remain bounded with respect to the actual time estimated for evacuation previously. Therefore, no reduction of effectiveness occurs as a result of these changes.
EP 6.14	This change corrects "activation test" to "pager activation test/notification drill" in Section 6.7.e.3, Automatic Dialer, to clearly reflect regulatory requirement concerning notification drills. Because this is at the editorial level and more accurately describes regulatory requirements, no reduction of effectiveness occurs as a result of this change.

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SECTION 1
INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

The Energy Northwest Emergency Plan (or Plan) was written to address emergencies at the Columbia Generating Station located on the Hanford Reservation and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations as required by Title 10, Code of Federal Regulations, Part 50. It was developed in conjunction with the Washington State and the Benton County Fixed Nuclear Facility Emergency Response Plan and the Franklin County Radiological Response: Energy Northwest plan. All plans were developed to meet the intent of NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2 PURPOSE OF THE EMERGENCY PREPAREDNESS PROGRAM

The emergency preparedness program provides concepts and protective actions that are necessary to limit the consequences of radiation accidents and other emergencies. The primary objectives include the necessary arrangements, procedures and organizations necessary to effectively resolve any plant emergency to ensure the safety of the general public and to safeguard plant personnel and property.

1.3 ENERGY NORTHWEST COMMITMENT TO SAFETY

Energy Northwest is committed to the safe operation of its nuclear project. The commitment begins at the highest level of management and is reflected in the day-to-day activities of all employees. In addition to meeting, or in many cases exceeding, regulatory requirements, Energy Northwest is committed to providing a comprehensive program of personnel safety and corporate loss prevention. This Plan is a description of the comprehensive preparedness exhibited by Energy Northwest and its employees.

A trained staff of emergency response personnel is available, equipped and ready to respond to any emergency at Energy Northwest's nuclear project. Arrangements have been made with federal, state, and local response organizations and other nuclear facilities for assistance, if needed, during an emergency. Together these organizations can quickly implement a unified effort to assess the hazards, make the necessary decisions, and initiate actions to protect the health and safety of both emergency workers and the general population.

Energy Northwest works closely with all involved agencies. A coordinated training program between Energy Northwest and the Department of Energy in Richland provides emergency personnel from Benton and Franklin counties and the State of Washington with the training needed to assist during an emergency. Participation by Energy Northwest in joint programs with the Department of Energy to upgrade county and state emergency response capabilities is an example of the commitment to safety which Energy Northwest recognizes as its responsibility.

1.4 SITE CHARACTERISTICS

Energy Northwest leases 1089 acres of land on the Hanford Reservation, located north of Richland, Washington, and controlled by the Department of Energy. The land leased by Energy Northwest is approximately three miles west of the Columbia River and 12 miles north of the populated area of Richland. Figures 1-1 and 1-2, the Plume Exposure and Ingestion Exposure Emergency Planning Zone maps, show the location of the facilities on the Hanford Reservation.

1.4.1 Plant Design

Columbia Generating Station is a boiling water reactor (BWR-5) with the reactor system supplied by the General Electric Company. This plant has an approximate electrical output of 1250 megawatts (MWe). Fuel for the reactor consists of slightly enriched uranium dioxide pellets sealed in Zircaloy-2 fuel rods. These fuel rods are assembled into individual fuel assemblies. Control of the core is achieved by movable, bottom-entry control rods.

The principal structures located on the plant site are shown in Figure 1-3 and include:

a. Reactor Building - envelopes the Mark II primary containment and provides a secondary containment structure. It also contains the new and spent fuel storage, refueling equipment, emergency core cooling systems and auxiliary equipment.

b. Radwaste and Control Building - houses the liquid and solid radwaste system, components of the off-gas system, and the main control room.

c. Turbine Building - houses the turbine-generator consisting of one high pressure and three low pressure turbines connected to a single generator.

d. Diesel Generator Building - location of the standby diesel generators and associated controls and instrumentation.

e. Yakima Building (GSB) - houses the makeup water treatment system, machine shop, and office area.

f. Technical Support Center - this emergency response facility is utilized by the plant staff during an emergency. A more detailed description is provided in Section 6, "Emergency Facilities and Equipment."

g. Wind River Building (Circulating Water Pumphouse) - houses the circulating water pumps, plant service water pumps, and fire pumps.

h. Spray Ponds - the ultimate heat sink providing cooling water to the reactor for emergency shutdown.

i. Cooling Towers - six mechanical draft cooling towers used to dissipate the main condenser cooling water heat to the atmosphere.

1.4.2 Kootenai Buidling (PSF)

The Kootenai Building is used for support of the plant site and the interface with off-site support agencies. It houses the Plant Simulator, the Site Training Center, and the Emergency Operations Facility. Its location is shown in Figure 1-4. See Section 6 for a detailed description of the emergency centers located in this facility.

1.5 ACTIVATION OF THE EMERGENCY PLAN AND PROCEDURES

This Emergency Plan provides the basis for classifying emergencies according to severity, assigning responsibilities, and outlining the most effective course of action to safeguard the public and plant personnel in the event of an incident. Detailed emergency procedures required to implement the Emergency Plan are listed in Appendix 2. The Emergency Plan Implementing Procedures prescribe the appropriate course of action necessary to activate the emergency response organizations and minimize the consequences of an incident.

The Emergency Plan Implementing Procedures (EPIPs) are used when an emergency is declared in accordance with Section 4 of this plan. In the absence of other controlling procedures, EPIPs are used as appropriate. The section of EPIPs designated as "Supporting Information Procedures" are implemented on a continuing basis and are used to ensure long term program maintenance.

1.6 ASSIGNED AUTHORITIES

1.6.1 Hanford Reservation

The 570 square mile Hanford Reservation is under the control of the Department of Energy - Richland Operations. The Department of Energy maintains a well-trained and qualified organization capable of responding to emergencies on the Hanford Reservation. The Department of Energy maintains responsibility for response actions on the Hanford Reservation outside the exclusion area boundaries.

Representatives from the Department of Energy will coordinate their response efforts to an Energy Northwest emergency with Energy Northwest, State, and County organizations from Energy Northwest's Emergency Operations Facility. Communications will be maintained with the Department of Energy's Occurrence Notification Center in Richland, Washington.

An Energy Northwest emergency may require response by local, state and federal organizations. Because of the unique siting of Energy Northwest facilities on a federal reservation, several areas of responsibility must be defined. A coordinated effort by the response organizations will be jointly conducted from Energy Northwest's Emergency Operations Facility. Responsibilities concerning jurisdictional areas are defined in the following sections. Statements made within this document are not intended to exclude one agency from providing assistance to another agency upon request.

1.6.2 Exclusion Area

The exclusion area for Columbia Generating Station consists of a 1.2 mile radius around the plant. The exclusion area will be monitored by teams from Energy Northwest during an emergency and access will be controlled under the direction of Energy Northwest's Security Force. Coordination of activities within the exclusion area will be under the control of Energy Northwest and directed by the individual serving as the Emergency Director.

Energy Northwest has the authority to control and coordinate all activities within this exclusion area, as granted by Title 10 of the Code of Federal Regulations, Part 100.3. The agreement between Energy Northwest and the Department of Energy concerning the site lease on the Hanford Reservation includes provision for this authority.

1.6.3 Plume Exposure Pathway Emergency Planning Zone

The response to an emergency will usually require actions only within the site boundary; however, accidents are possible that may affect areas several miles from the facility. The planning basis for Energy Northwest's Emergency Preparedness Plan utilizes the emergency planning zone concept as first outlined in NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, dated December, 1978. The emergency planning zones are designated as areas for planning to assure that prompt and effective actions shall be taken to protect the public in the event of an accident. The emergency planning zone concept establishes two zones, a ten-mile Plume Exposure Pathway Emergency Planning Zone and an approximately 50-mile Ingestion Exposure Pathway Emergency Planning Zone.

In the Plume Exposure Pathway (Ten-Mile) Emergency Planning Zone (EPZ) the principal exposure sources are:

a. Whole body external exposure to beta/gamma radiation from the plume and from deposited radioactive material.

b. Inhalation exposure from the passing radioactive plume.

The Plume Exposure Pathway EPZ includes parts of the Hanford Reservation and Benton and Franklin Counties. Response actions will be coordinated between the two counties from their respective County Emergency Operations Centers.

The counties will coordinate all activities off the Hanford Reservation during the initial phases of the emergency. The Benton and Franklin County Emergency Operations Centers will coordinate activities with Energy Northwest and Department of Energy through county representatives at Energy Northwest's Emergency Operations Facility. Energy Northwest will provide dose assessment and protective action recommendations to state and local governments.

The Director for the Washington State Military Department, Emergency Management Division, is responsible for ensuring that the State maintains the capability to protect the public health and safety in the event of a fixed nuclear facility incident.

The Washington State Department of Health (DOH) is responsible for safeguarding the health of the public. Coordination of monitoring activities will be provided from Energy Northwest's Emergency Operations Facility.

1.6.4 Ingestion Exposure Pathway Emergency Planning Zone

The Ingestion Exposure Pathway Emergency Planning Zone (EPZ) as shown in Figure 1-2 extends into the Yakama Indian Nation, eight counties within the State of Washington, and two counties in the State of Oregon. These are Benton, Franklin, Yakima, Kittitas, Grant, Adams, Walla Walla, and Klickitat in the State of Washington[1], and Morrow and Umatilla Counties in the State of Oregon. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The State of Washington maintains communication with the Washington counties in the Ingestion Exposure Pathway EPZ. The State of Oregon does the same for Morrow and Umatilla Counties. Communications with the Yakama Indian Nation are handled by Yakima County. Dose projections and environmental sampling are also the responsibility of the States and will be coordinated from Energy Northwest's Emergency Operations Facility by State representatives. Support to the States of Washington and Oregon is provided by Energy Northwest through the sharing of field team data and other resources.

1.6.5 Emergency Plan Interrelationships

Interrelationships of this plan with procedures, other plans, and emergency arrangements are summarized as follows:

- Detailed actions to be taken by individuals in response to onsite emergency conditions are described in the Emergency Plan Implementing Procedures.
- The Columbia Generating Station Physical Security Plan and Procedures and this plan are coordinated to ensure that appropriate emergency actions can be taken. For example, the Physical Security Plan and Procedures contain provisions for emergency response personnel and vehicle access when required by the Emergency Plan Procedures.

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[1]Kittitas and Klickitat Counties do not actively participate in radiological emergency preparedness efforts. The State of Washington has established measures to ensure that appropriate actions will be taken for these two counties. Refer to the State of Washington Emergency Response Plan.

- Site construction groups at WNP-1 and the maintenance contractors at Columbia Generating Station that develop emergency procedures for their personnel are tasked with coordinating their procedures with this plan.

- The Columbia Generating Station Plant Procedure Manual, Radiological Protection Procedures Section defines administrative controls and procedures such as radiological control limits and precautions, use of personnel monitoring devices, use of protective clothing and equipment, personnel decontamination, etc. Additionally, the Chemistry Procedure Section and Radiation Protection Procedure Section provide instructions for conducting surveys, analyzing samples, operating health physics/radiation protection equipment, etc. Information and details provided in these documents have either been incorporated into the Plan or Emergency Plan Implementing Procedures, or have been appropriately referenced.

- Columbia Generating Station has formulated Abnormal Condition Procedures, as part of the Plant Procedure Manual, which discuss generic emergencies such as floods, volcanic ash, and other severe weather conditions. The methods and equipment developed for such emergencies are available for use in concert with emergency actions described in this plan.

- Formal agreements have been negotiated to define the coordination and interface between onsite and offsite organizations and agencies having related radiological emergency planning responsibilities. Continuing liaison with the offsite organizations ensures compatibility and proper interfacing with this plan. Section 3 of this plan further describes those agencies' activities with respect to an emergency at Columbia Generating Station.

- Other offsite organizations, not within the immediate area, may also be requested to offer technical assistance (e.g., Institute of Nuclear Power Operations, General Electric, NPS Energy Services, etc.).

1.7 DEFINITIONS

1.7.1	Activated	-	An Emergency Center may be activated when all appropriate personnel are present and capable of appropriately addressing the emergency condition.
1.7.2	ALARA	-	As Low as Reasonably Achievable.
1.7.3	Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.
1.7.4	Annually, or Annual	-	Performed or executed at anytime during a calendar year.
1.7.5	Augmenting Emergency Organization Personnel	-	Emergency Response Organization personnel not designated as essential, but are desired for efficient operation of emergency centers.
1.7.6	Columbia Generating Station	-	Columbia Generating Station is an operational General Electric boiling water reactor rated at approximately 3486 MWth.
1.7.7	Drill	-	A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise and is supervised and evaluated by qualified drill controller(s) and/or evaluator(s).
1.7.8	Early Warning System	-	A system designed to alert all residents and transients within the Ten-Mile Emergency Planning Zone. This system will include sirens for areas along the Columbia River and the Horn Rapids area, and tone alert radios for residents within the ten mile Emergency Planning Zone.
1.7.9	Emergency Action Level	-	Plant-specific indications, conditions or instrument readings which are utilized to determine emergency classifications.

1.7.10	Emergency Decontamination Facility	-	A facility located adjacent to Kadlec Medical Center in Richland to be used for decontamination and emergency medical care of contaminated persons.
1.7.11	Emergency Director	-	This functional position is responsible for all emergency activities at the plant and coordination of outside assistance as needed. The position will be held by either the Shift Manager, the TSC Manager or the EOF Manager.
1.7.12	Emergency Operations Facility (EOF)	-	An area located within the Kootenai Building which is equipped to facilitate command and control decision-making for the coordination of emergency activities and environmental assessments.
1.7.13	EOF Manager	-	This position is responsible for overall management of Energy Northwest resources and will oversee all activities related to the plant emergency response effort when the EOF is activated.
1.7.14	Emergency Response Organization (ERO)	-	Employees designated as emergency response personnel.
1.7.15	Essential ERO Personnel	-	Emergency response positions designated as essential to coordinate a response to a Columbia Generating Station emergency.
1.7.16	Exercise	-	An exercise is an event that tests the integrated capability and a major portion of the Columbia Generating Station emergency preparedness plans and response organizations. It will consist of a simulated emergency that results in offsite radiological releases and may include mobilization of state and local personnel and resources adequate to verify their capability to respond to a Columbia Generating Station accident. Federal and State agencies will be invited to participate as observers/evaluators in exercises.
1.7.17	Exclusion Area	-	An area extending out to a radius of 1.2 miles from the Columbia Generating Station reactor.

1.7.18	Fixed Nuclear Facility	-	A permanent facility (plant) with an operable nuclear reactor.
1.7.19	General Emergency	-	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
1.7.20	Hanford Reservation	-	A federally owned reservation under the control of the Department of Energy, Richland Operations, Richland, Washington. The reservation covers 570 square miles and is located north of the City of Richland in Benton County.
1.7.21	Ingestion Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions for the public is based on potential ingestion of contaminated water and/or foods. This zone consists of the area within a 50-mile radius of Columbia Generating Station including a portion of the State of Oregon. The boundaries of the zone are shown in Figure 1-2.
1.7.22	Monthly	-	Performed or executed at any time during a calendar month.
1.7.23	Nonessential Personnel	-	Personnel not designated as Emergency Response Personnel.
1.7.24	Owner Controlled Area	-	That area that Energy Northwest maintains industrial and process control of.
1.7.25	Onsite Emergency Centers	-	Includes the Control Room, Technical Support Center, and Operations Support Center. Plant personnel will implement emergency actions and make decisions to support plant operations and repair activities from these centers.

1.7.26	Plant	-	That area containing the Columbia Generating Station reactor and certain support structures within the Protected Area.
1.7.27	Kootenai Building	-	A facility located approximately 0.75 miles southwest of Columbia Generating Station. The structure includes a shielded area designated as the Emergency Operations Facility.
1.7.28	Plume Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions by the public are based on potential exposure to or inhalation of materials carried by a passing radioactive plume released during an accident. This zone consists of the area within an approximate 10-mile radius of Columbia Generating Station, including portions of Benton and Franklin Counties.
1.7.29	Protected Area	-	An area located within the Owner-Controlled Area which contains the Columbia Generating Station power block and is surrounded by chain link fence.
1.7.30	Protective Action Guides	-	Numerical doses and concentrations which act as trigger points to initiate protective actions such as sheltering, evacuation, or placement of dairy herds on stored feed. These guides are established by the States of Washington and Oregon, and take the Environmental Protection Agency Protective Action Guides into consideration.
1.7.31	Quarterly	-	Performed or executed at any time during a calendar quarter.
1.7.32	Recovery Manager	-	This position is responsible for overall management of Energy Northwest's resources and will be in charge of all activities related to the recovery operations following a plant emergency.
1.7.33	Release in Progress	-	Any radioactive release that exceeds the Emergency Action Levels for an Unusual Event.

1.7.34	SE Comm	-	South East Communications, the 911 answering division of Benton County Emergency Services.
1.7.35	Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guides exposure levels except near the site boundary.
1.7.36	Energy Northwest	-	Energy Northwest is a "Joint Operating Agency" incorporated under the laws of the State of Washington. Its members include public utility districts and municipalities. Energy Northwest holds the license to operate Columbia Generating Station.
1.7.37	Support Emergency Response Organization	-	Consists of personnel that perform limited support functions, or may only be needed under certain conditions.
1.7.38	Thermoluminescent Dosimeter (TLD)	-	A device for measuring gamma, neutron and some beta radiation exposure.
1.7.39	Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

1.8 ACRONYMS

AMS	Aerial Measuring System
ARC	American Red Cross
ARM	Area Radiation Monitor
ATWS	Anticipated Transient Without Scram
BOP	Balance of Plant
BPA	Bonneville Power Administration
CAS	Central Alarm Station
Ci	Curie
CR	Control Room
CRS/SM	Control Room Supervisor/Shift Manager
DAC	Derived Air Concentration
DBA	Design Basis Accident
DEM	Department of Emergency Management
DG	Diesel Generator
DIL	Derived Intervention Level
DOE-RL	Department of Energy - Richland Operations
DOH	Department of Health
DW	Drywell
EAL	Emergency Action Level
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ED	Emergency Director
EDPS	Emergency Dose Projection System
EFPD	Effective Full Power Days
EFSEC	Energy Facility Site Evaluation Council, Washington State
EMD	Emergency Management Division
EMT	Emergency Medical Technician
EO	Equipment Operator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data Systems
ERO	Emergency Response Organization
ERP	Elevated Release Point
EWAC	Emergency Worker/Assistance Center
FAX	Facsimile
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRERP	Federal Radiological Emergency Response Plan
GPM	Gallons Per Minute
HP	Health Physics
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning

I&C	Instrumentation and Control
JIC	Joint Information Center
KI	Potassium Iodide (Thyroid Blocking Agent)
KV	Kilovolt
LERN	Law Enforcement Radio Network
LLEA	Local Law Enforcement Agency
LOCA	Loss of Cooling Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
mREM	Millirem
MPF	Multipurpose Facility
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Safety/Relief Valve
MUDAC	Meteorology and Unified Dose Assessment Center
NPRDS	Nuclear Plant Reliability Data System
NRC	Nuclear Regulatory Commission
OAC	Offsite Agency Coordinator
OSC	Operations Support Center
PAD	Protective Action Decision
PAG	Protective Action Guide
PAAP	Protected Area Access Point
PAR	Protective Action Recommendation
PASS	Post-Accident Sampling System
PIO	Public Information Officer
PSIG	Pounds Per Square Inch Gauge
RACES	Radio Amateur Civil Emergency Service
RB	Reactor Building
RCIC	Reactor Core Isolation Cooling
REM	Radiological Emergency Manager
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RW	Radioactive Waste

SAS	Secondary Alarm Station
SC	Suppression Chamber
SCC	Security Communications Center
SE COMM	South East Communications
SECON	Security Condition
SFP	Spent Fuel Pool
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SM	Shift Manager
SP	Suppression Pool
SSW	Standby Service Water
TGB	Turbine Generator Building
TSC	Technical Support Center
USCG	United States Coast Guard
WEIC	Washington Emergency Information Center
WSDA	Washington State Department of Agriculture
WSP	Washington State Patrol
WW	Wetwell

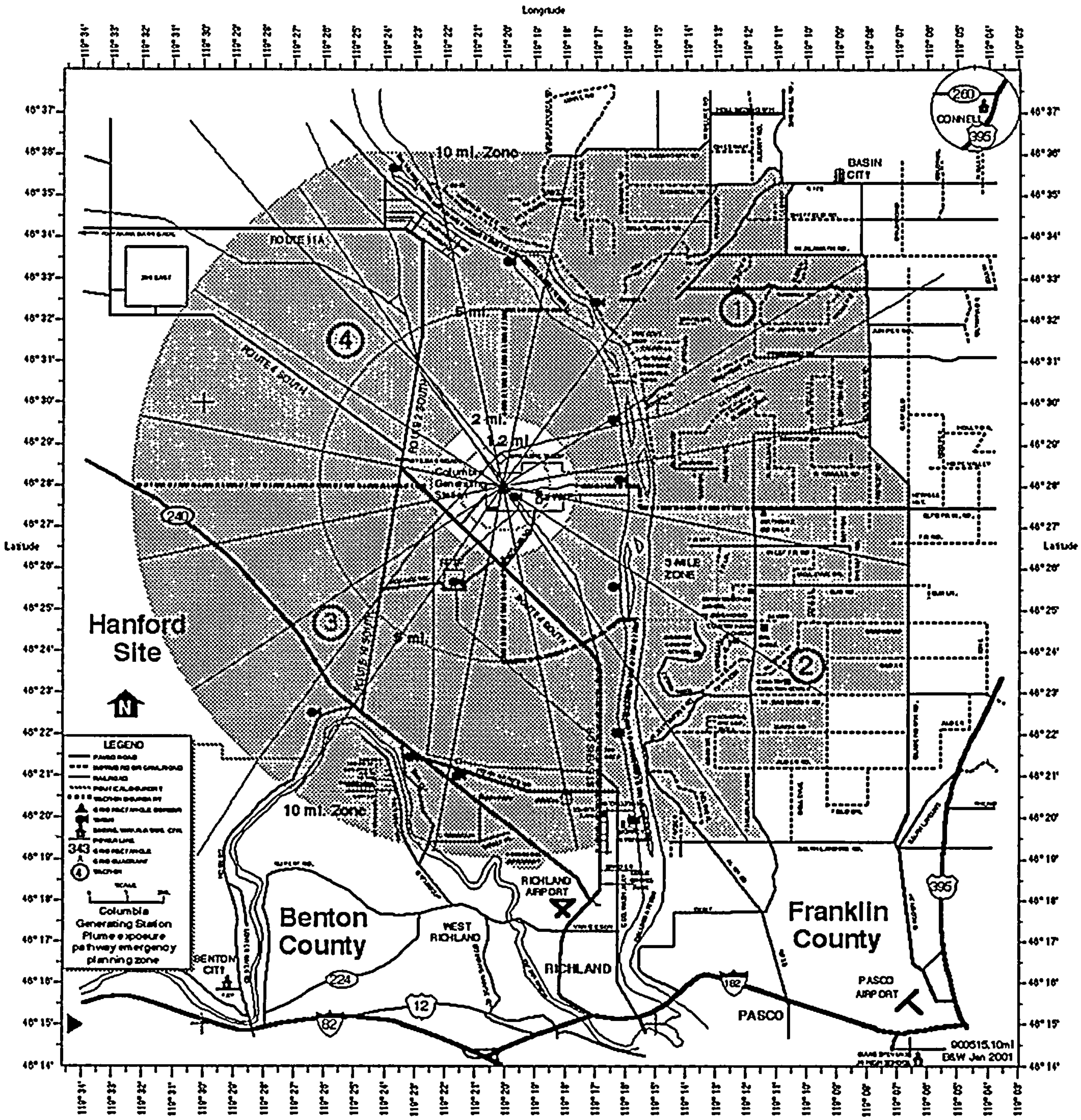
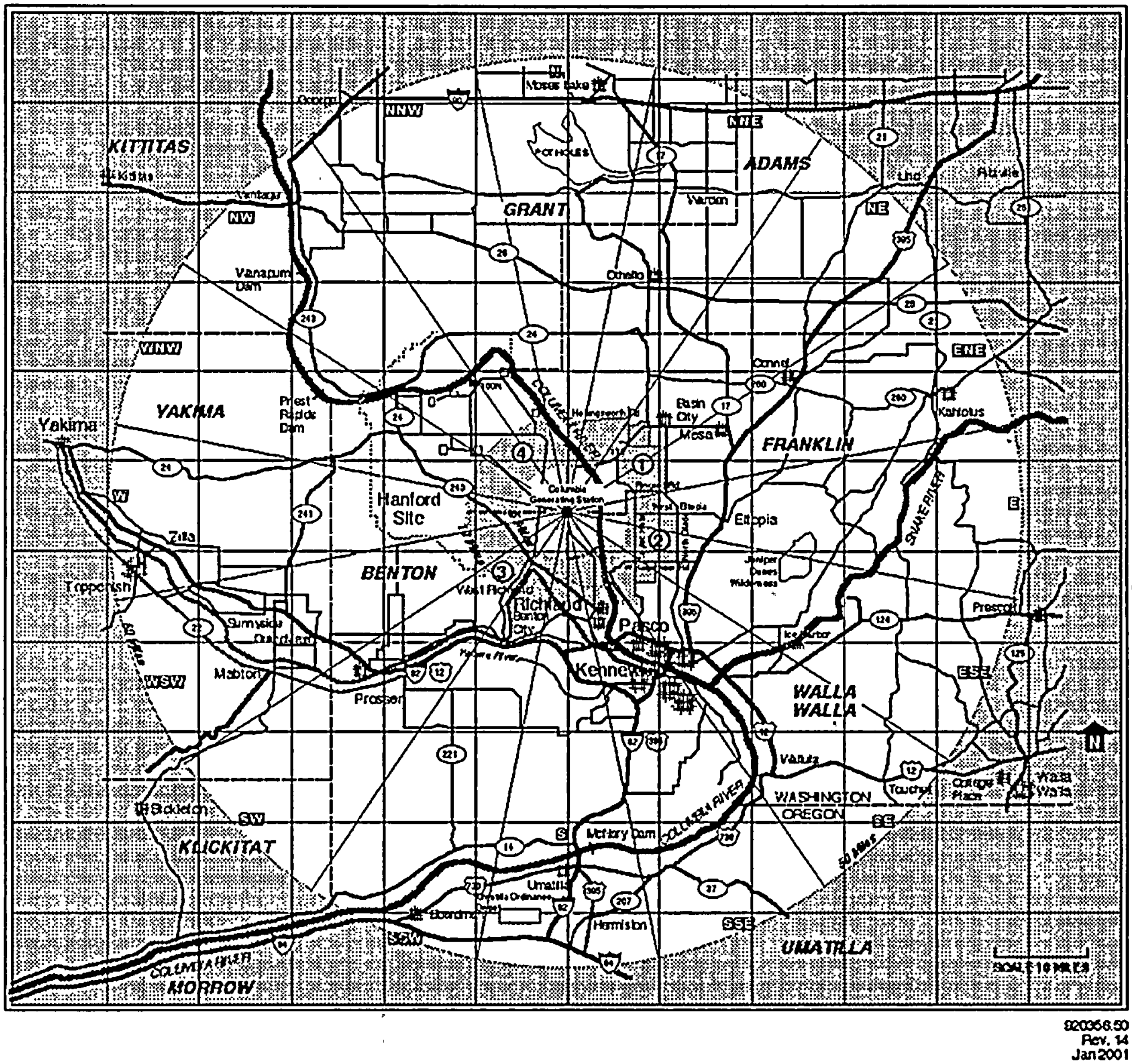


Figure 1-1, Ten-Mile Emergency Planning Zone (EPZ)



50 Mile Map

Figure 1-2, Fifty-Mile Emergency Planning Zone (EPZ)

Site Plan

Bldg No.	Building Description
2	Reactor Building
3	Radwaste Building
4	Turbine Generator Building
5	Technical Support Building
6	Health Physics Access Point
7	Diesel Generator Building
8	ASD Building
9	Palouse - Engineering
11	Chelan - Facilities
12	Heavy Equip. Maintenance
13	Cowlitz - Facilities
15	Laborers Storage
17	Wenatchee - Site Maintenance
19	Battery Storage
21	Backflow Preventer Building
22	Service Substation
23	Diesel Fuel Polishing Building
24	Visitor Center
25	Protected Area Access Point (P.A.A.P.)
26	Deschutes - Plant Engineering Center
30	Wind River Bldg. - Circ Water Pumphouse
32	Colville - Site Contractor Fab Shop
47	Document Storage
62	Primary Access Point (P.A.P.) (Security)
64	Willamette - Site Support Contractor/Records Mgmt.
75	Warehouse /Painters
88	Okanogan - Site Cafeteria/NDE/I&C Security
94	Laborers/Procedures
100	Fitness for Duty Facility/First Aid

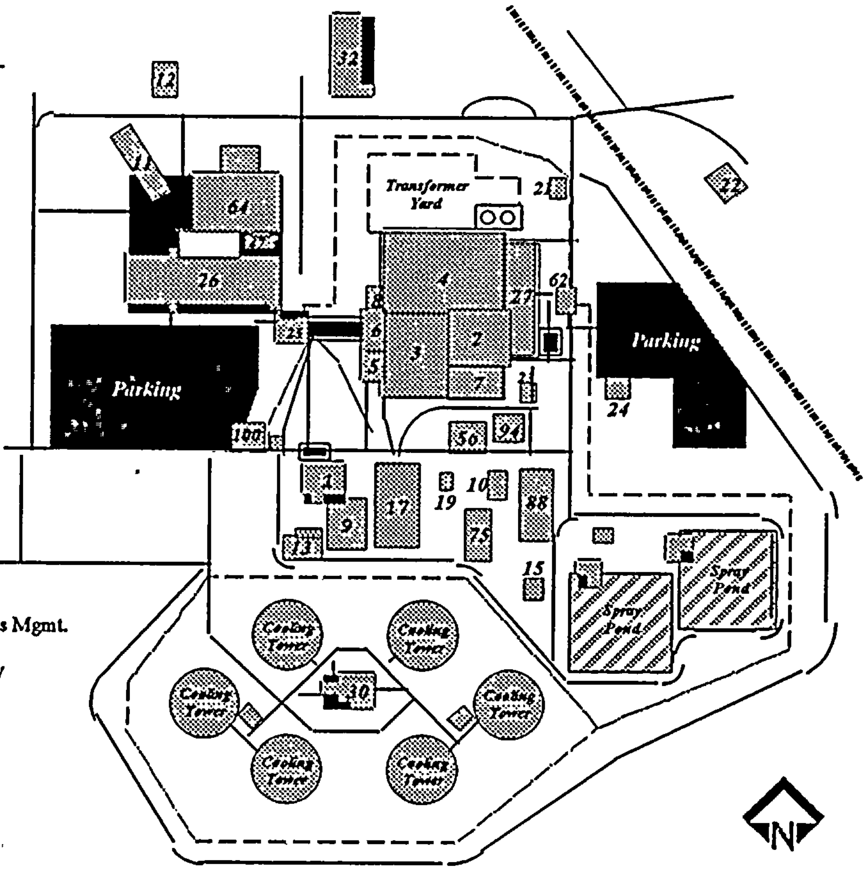


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Figure 1-3, Columbia Generating Station Site

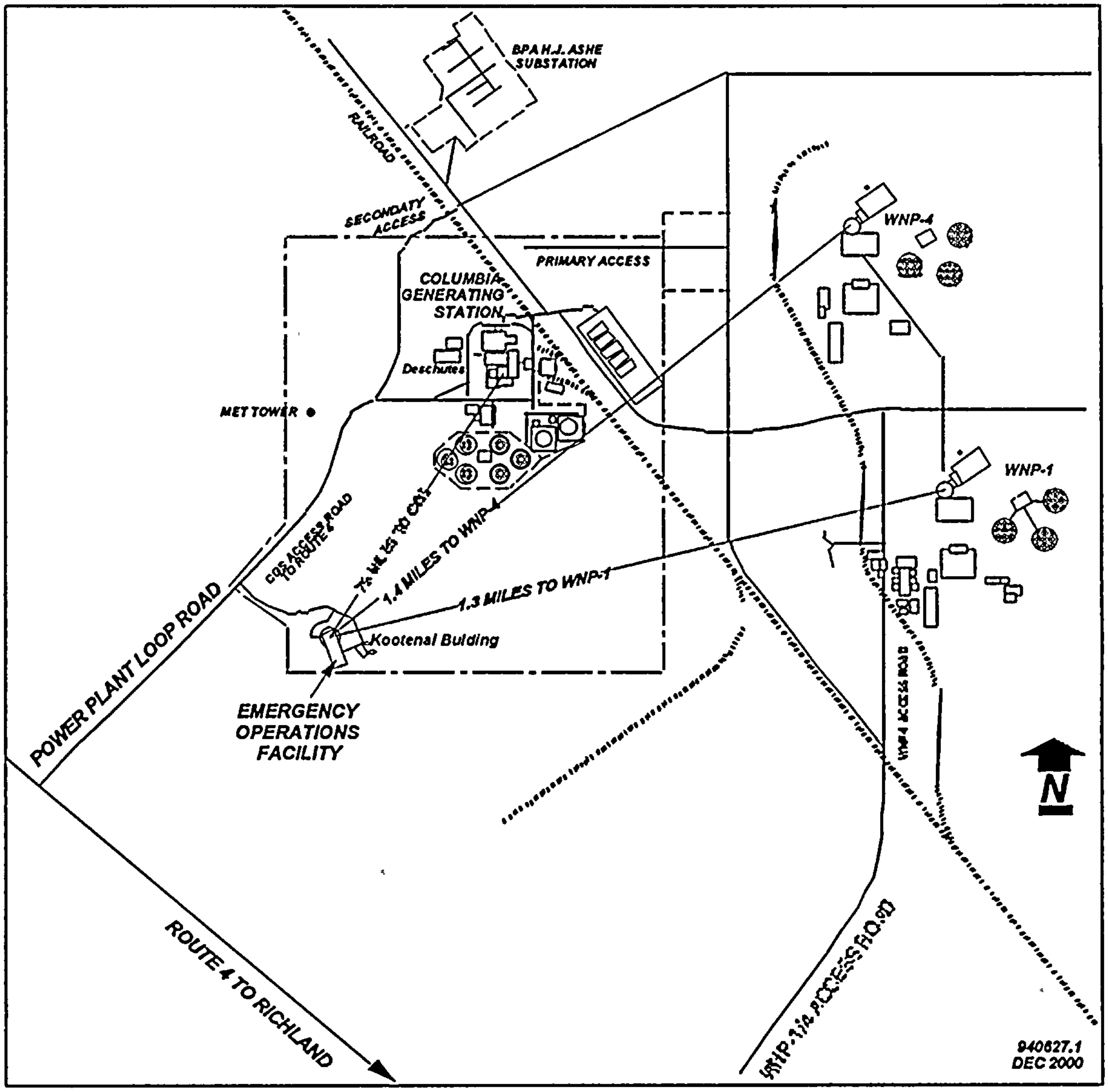

Figure 1-4, Emergency Operations Facility Location

SECTION 2
ENERGY NORTHWEST EMERGENCY ORGANIZATION

2.1 ORGANIZATIONAL CONCEPTS

This section of the Plan describes the emergency response organization at Energy Northwest. The normal plant operating organization serves as a foundation for the emergency organization and is augmented by the on-call Emergency Response Organization (ERO) at an Alert or higher emergency class. The normal organization is described in the corporate organization charts. An overview of the emergency organization is shown in Figure 2-1.

Energy Northwest's Emergency Response Organization consists of positions that satisfy requirements for initial and augmented staffing during declared emergency as well as positions that may be summoned as needed. The members of the emergency organization which are essential to implementation of the Plan and the augmenting organization which supports the essential personnel are shown in Figure 2-1. The Emergency Organization Assignment List contains a listing of the personnel assigned to the ERO. The title of Shift Technical Advisor (STA) describes a function, and the responsibility for implementing that function may be performed by other on-shift personnel qualified to perform the STA function for purposes of NUREG-0737 and NUREG-0654.

Responsibility for emergency direction and control (i.e., overall direction of the plant's emergency response which must include the non-delegable responsibilities for emergency classification, the decision to notify, and to recommend protective actions to authorities responsible for offsite emergency measures) is normally transferred from the Shift Manager to the TSC Manager to the EOF Manager. However, if the situation dictates, the responsibilities may be transferred from the Shift Manager directly to the EOF Manager. The transfer of responsibilities only takes place when the individual relieving the Shift Manager is at his assigned location, has minimum staffing level or greater in place, and has received a formal turnover.

2.2 SHIFT ORGANIZATION

The operating crew for each shift at the plant normally consists of a Shift Manager, to whom reports a Control Room Supervisor, Shift Support Supervisor, Shift Technical Advisor or Emergency Response SRO as required, licensed reactor operators, equipment operators, health physics technicians, chemistry technicians, and Security Force personnel. Operations personnel are trained to perform emergency maintenance functions in the absence of on shift maintenance personnel. The Shift Manager on duty has the immediate responsibility for the plant at all times, and has full authority and responsibility for recognizing and declaring emergencies. Each shift is provided with a complement of qualified individuals who have specialized training in notifications, the operation of the reactor and other plant systems, plant instrumentation, radiation safety, and maintenance.

Security force personnel and the control room have 24 hour communications capability with the ERO and offsite response agencies.

Plant Technical Specifications and 10 CFR 50.54 (m) provide for reduced staffing in reactor operational modes 4 and 5. Energy Northwest recognizes that these are minimum staffing levels and that additional personnel are necessary to perform emergency functions. On shift staffing, in all modes, includes adequate numbers of qualified personnel to perform classification, notification, and dose assessments within time requirements.

The Plant General Manager has full authority and responsibility for the overall supervision and administration of the nuclear plant. Technical support is provided by a staff experienced in reactor physics, nuclear power plant systems technology and operation and health physics and chemistry. The normal plant operating organizations are complemented by a group of specialists available from other departments of Energy Northwest and are identified in the corporate organization charts.

2.3 EMERGENCY RESPONSE ORGANIZATION

Energy Northwest's Emergency Response Organization (ERO) consists of positions that satisfy requirements for initial and augmented staffing during a declared emergency as well as positions that may be summoned as needed. This organization has the capability of continuous (24 hour) operations for a protracted period. The ERO is arranged in the following response categories:

On Shift:

On shift positions consist of the Shift Manager, Control Room Supervisor, Reactor Operators, Shift Technical Advisor (not required in Mode 4 and 5, thus can't provide initial response in these modes), Equipment Operators, HP Technicians, Chemistry Technicians, I&C Technicians, Electrical and Mechanical Craft, and Security. In addition, if the Shift Technical Advisor providing the engineering expertise on-shift is filling a dual role as the Control Room Supervisor or the Shift Manager, an SRO dedicated to supporting the Shift Manager in emergency response functions shall be on-shift. This position is designated as the Emergency Response SRO and is filled by an on-shift SRO.

Essential:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means at any time to respond within a specified time. Essential ERO personnel will normally assist on shift personnel to provide assessment and mitigation of accident conditions, notifications to offsite agencies, or provide overall direction, control and logistical support for emergency operations.

Augmenting:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means to respond at any time within a specified time. Augmenting personnel provide additional emergency assessment, accident mitigation and logistics support to on shift and essential personnel.

Support:

Consists of positions which may or may not be designated on a rotating on-call list or ERO assignment list, but may be summoned by electronic or manual means when needed to support emergency operations.

The essential emergency organization has the capability to provide manpower and other resources to assist the normal plant organization within approximately one hour if an emergency situation arises. The essential organization has been established with responders designated on a rotating on call list. The emergency duties of the normal plant staff are transferred to the ERO as the corresponding members arrive on site and the emergency centers are activated.

If an emergency situation arises, the Shift Manager will activate the ERO to supplement the normal operating staff. Those members of the ERO who are not on site at the time of the emergency will be able to respond within about one hour of the emergency. In addition, designated members of the Emergency Preparedness department are available to assist with Emergency Operation Facility activation.

Following are general descriptions of the Essential Emergency Response Organization. Duties are discussed in more detail in the Emergency Plan Implementing Procedures. Table 2-1 demonstrates how these positions align with NUREG-0654/FEMA-REP-1, Rev. 1, Table B-1 requirements.

2.3.1 On Shift Emergency Organization

2.3.1.1 Shift Manager

Basic Emergency Function: The Shift Manager reports to the Operations Manager and is responsible for overall plant control. The Shift Manager assumes the Emergency Director duties and responsibilities upon initial emergency classification until relieved by the TSC Manager or EOF Manager. Once an emergency classification is declared, the Shift Manager, as the Emergency Director, is responsible for activation and direction of the emergency response organization to the extent required by the emergency.

NOTE: The Shift Manager is responsible for ensuring safe operation of the plant under all conditions. The Shift Manager, as the Emergency Director, ensures necessary protective actions are carried out. The priority of actions shall be in the following order:

- Public Safety
- On Site Personnel Safety
- Equipment Protection
- Plant Reliability

The Senior Reactor Operator (SRO) license holders on shift and the STAs are available to perform offsite dose assessment at all times when required.

2.3.1.2 Control Room Supervisor (On shift as required by Technical Specifications)

Basic Emergency Function: The Control Room Supervisor (CRS) is the senior individual responsible for plant control actions during both normal and emergency operations. The Control Room Supervisor will assume Shift Manager responsibilities, including emergency direction and control authority, in the absence of the Shift Manager.

2.3.1.3 Reactor (Control Room) Operators

Basic Emergency Function: The Reactor Operators (RO) are responsible for the day to day operations of the reactor and implement necessary actions under the direction of the Control Room Supervisor to terminate the condition causing the emergency and place the plant in a safe condition.

2.3.1.4 Security Communication Center Staff

Basic Emergency Function: The Security Communication Center (SCC) Staff will assist with notifications to Energy Northwest ERO personnel and to offsite agencies during both the emergency and recovery phases. The SCC staff reports to the Security Manager.

2.3.1.5 Equipment Operators

Basic Emergency Function: The Equipment Operators (EO) are responsible for responding to the emergency as directed by the Control Room Supervisor or Fire Brigade (FB) Leader. The location of the Equipment Operators is assigned by the Control Room Supervisor/FB Leader. Control and accountability of Equipment Operators may, after discussion between the Shift Manager and OSC Manager, be transferred to the OSC.

2.3.1.6 Shift Technical Advisor (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Shift Technical Advisor (STA) qualified individual should keep abreast of plant activities and status. The STA qualified individual evaluates the risk associated with planned plant activities and advises shift management on actions to be taken to minimize the associated risk. When appropriate, the STA qualified individual should advise shift management on technical matters.

An STA qualified individual shall be on shift in Modes 1, 2, or 3, per FSAR requirements.

When the STA qualified individual is performing a dual role as the Shift Manager or Control Room Supervisor, another SRO (Emergency Response SRO) shall be on shift to provide independent oversight of plant activities and status, and to assist the Shift Manager in emergency response activities. This individual may be the Shift Support Supervisor (SSS), if SRO qualified.

2.3.1.7 Emergency Response SRO

Basic Emergency Function: The Emergency Response SRO shall be on shift in all modes when the STA function is provided by the Shift Manager or Control Room Supervisor. The Emergency Response SRO is another SRO present to advise and assist the Shift Manager on emergency response actions such as emergency classifications and notifications, protective action recommendations, and off-site dose assessment.

2.3.1.8 Fire Brigade

Basic Emergency Function: The Fire Brigade (FB) is responsible for fire fighting, first aid and search and rescue operations. The team will perform radiological surveys and contamination control as necessary. Members of the FB may also perform plant systems manipulation tasks to mitigate consequences of an accident. The FB is under the direction of the Shift Manager until directed to report to the OSC Manager.

2.3.1.9 Health Physics, Chemistry, and Maintenance Support Personnel

Basic Emergency Function: Health Physics, Chemistry, and Maintenance Support personnel are responsible for providing radiation surveillance, chemistry analyses, and maintenance operations as repair or reentry and recovery team members. These support staff will report to the OSC Manager for in plant team activities.

2.3.2 Essential Plant Emergency Organization

Figure 2-1 identifies the key shift personnel who are sufficiently trained to perform all necessary duties until relief personnel arrive. Figure 2-1 provides a diagram of the ERO showing the reporting chain within the ERO. The following sections detail duties of the essential emergency response organization.

2.3.2.1 TSC Manager

Basic Emergency Function: The Technical Support Center Manager (TSC Manager) is responsible for the coordination of onsite response efforts during an emergency. This position is also responsible for the overall development and implementation of accident mitigation and repair/damage control efforts. In some cases the TSC Manager may assume the responsibility for emergency direction and control until the EOF Manager assumes this responsibility at the Emergency Operations Facility. The TSC Manager initiates evacuation and onsite recovery actions as necessary. The TSC Manager is also responsible for ensuring plant security is maintained and provisions are made for immediate entry of necessary emergency assistance such as ambulance or fire equipment.

The Maintenance Manager, Operations Manager, Technical Manager, Radiation Protection Manager, Plant Admin Manager, Plant/NRC Liaison, and OSC Manager report to the TSC Manager.

2.3.2.2 TSC Radiation Protection Manager

Basic Emergency Function: The Radiation Protection Manager (RPM) is responsible for directing the health physics staff, assessing radiological conditions, reviewing radiological data received, ensuring personnel exposures are maintained As Low As is Reasonably Achievable (ALARA), and providing recommendations concerning radiation safety matters to the TSC Manager.

The Radiation Protection Manager will also assess offsite doses and make recommendations concerning protective actions to the TSC Manager until the Radiological Emergency Manager at the EOF takes over this function.

2.3.2.3 TSC Plant/NRC Liaison

Basic Emergency Function: The Plant/NRC Liaison is the primary plant interface with the NRC Headquarters concerning emergency matters and will coordinate commitments made to the NRC. He will keep the TSC Manager advised of NRC activities and, as necessary, will staff the NRC/ENS phone. The Plant/ NRC Liaison is responsible for ensuring activation of the Emergency Response Data System (ERDS) for an Alert or higher classification.

2.3.2.4 TSC Technical Manager

Basic Emergency Function: The Technical Manager is responsible for analysis of plant data and the development of plans and procedures in direct support of plant operations personnel. The primary objective is to achieve a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This position supervises the analysis of plant safety parameters by the plant technical and operations staff.

2.3.2.5 TSC Core Thermal Engineer

Basic Emergency Function: Provides information on reactor water pressures and temperature distribution, heat transfer and fluid flow rates, and performs core damage assessments.

2.3.2.6 TSC Electrical Engineer

Basic Emergency Function: Provides information and recommendations about plant and offsite electrical power sources and distribution.

2.3.2.7 TSC Mechanical Engineer

Basic Emergency Function: Provides information and recommendations on mechanical systems and hardware modifications.

2.3.2.8 TSC Operations Manager

Basic Emergency Function: The Operations Manager will assist the TSC Manager by providing oversight and direction to Control Room operations. He provides the interface between the TSC and Control Room. The Operations Manager keeps the TSC Manager informed of plant status and provides input concerning plant operations necessary for the accident and recovery process.

2.3.2.9 OSC Manager

Basic Emergency Function: The Operations Support Center (OSC) Manager is responsible for assigning and dispatching Repair Teams. This individual provides updates to the TSC Manager via the Maintenance Manager on team activities. The OSC Manager is also responsible for ensuring plant personnel accountability is performed. The Fire Brigade reports to the OSC Manager once it is released by the Shift Manager.

2.3.2.10 HP Lead

Basic Emergency Function: The HP Lead identifies hazardous areas within the plant, provides repair team HP briefings and assigns HP resources to repair teams. The HP Lead communicates with the OSC Manager and TSC RPM.

2.3.2.11 Repair Team

Basic Emergency Function: The Repair Teams provide the necessary manpower to perform tasks throughout the plant involving investigation of the accident, repair of equipment or taking actions to minimize the extent of damage. The Repair Teams report to the OSC Manager.

2.3.3 Essential Emergency Operations Facility Emergency Organization

The Emergency Operations Facility (EOF) is activated at the Alert classification and will be utilized by the EOF Manager and his staff to implement necessary actions during an Alert, Site Area or General Emergency. The EOF Manager normally assumes responsibility for emergency direction and control within approximately one hour of the declaration of an Alert or higher emergency. He normally receives a turnover from the TSC Manager but in some cases may receive a turnover from the Shift Manager. The EOF Manager is responsible for the overall management of Energy Northwest emergency resources and has full authority to make commitments for the company. The basic functions which will be directed from the Emergency Operations Facility are:

a. Manage the overall Energy Northwest emergency effort.

b. Evaluate the magnitude and consequences of actual or potential radiological releases.

c. Coordinate field sampling and analysis of radioactive material released from the plant.

d. Coordinate emergency response activities with local, state, and federal agencies and provide recommendations concerning appropriate offsite protective measures.

e. Provide technical support to the plant.

f. Provide necessary security controls.

g. Provide decontamination and medical assistance for personnel evacuated from the plant.

h. Secure necessary supplies and equipment.

i. Develop public information reports for the Joint Information Center concerning plant status, emergency actions underway, and hazards to the public.

j. Advise upper management concerning plant conditions.

k. Coordinate the overall recovery effort including the development of procedures and schedules, procurement of equipment, and identification of necessary licensing actions.

l. Provide for adequate work area for the recovery effort.

2.3.3.1 EOF Manager

Basic Emergency Function: The Emergency Operations Facility (EOF) Manager is responsible for the overall management of Energy Northwest resources and will be in charge of activities related to plant emergency and recovery operations. The EOF Manager has the authority to request outside assistance, including resources available from the federal government, and will assume the responsibility for emergency direction and control. The decision to request outside assistance, change emergency classifications, approve offsite protective action recommendations and make decisions concerning the notification of offsite authorities cannot be delegated once the EOF Manager has assumed the Emergency Director duties.

The Engineering Manager, Site Support Manager, Offsite Agency Coordinator, EOF Public Information Officer, Radiological Emergency Manager, TSC Manager, Security Manager, Licensing Manager, and Joint Information Center Manager report to the EOF Manager.

At his discretion, the EOF Manager may request one or more assistants. The assistant(s) perform duties as assigned by the EOF Manager.

2.3.3.2 EOF Radiological Emergency Manager

Basic Emergency Function: The Radiological Emergency Manager (REM) reports to the EOF Manager. The REM is responsible for managing radiological dose assessment and field monitoring activities. The REM assists in development of Protective Action Recommendations and, during the late phases of the response, coordinates this activity with the States of Washington and Oregon and the US DOE and provides offsite radiological Protective Action Recommendations to the EOF Manager. The REM also coordinates Energy Northwest offsite radiological monitoring effort with the States of Washington and Oregon and the US DOE.

2.3.3.3 EOF Field Team Coordinator

Basic Emergency Function: The Field Team Coordinator provides overall management of field teams, identifies plume path and areas requiring survey; directs the Field Team Dispatcher, and makes field teams available for river evacuation; communicates field team summary information to the REM.

2.3.3.4 Environmental Field Teams

Basic Emergency Function: The Environmental Field Teams are responsible for determining offsite radiological hazards and for conducting the required offsite surveys, monitoring and sampling. Field team activities are coordinated by the Field Team Coordinator. At least three teams will be available to conduct environmental sampling in the field.

2.3.3.5 EOF Telecommunications Manager

Basic Emergency Function: Provide for the operability of Energy Northwest communications systems. Will direct and dispatch Telecommunications Technicians to areas requesting assistance with phones or other telecommunications equipment.

2.3.4 Essential Joint Information Center Emergency Organization

The essential Joint Information Center emergency organization consists of the Joint Information Center Manager. This function ensures timely, accurate releases of information and assists offsite organizations in developing coordinated information for release to the public.

2.3.4.1 Joint Information Center Manager

Basic Emergency Function: The Joint Information Center (JIC) Manager will ensure timely and accurate releases of information to the media and public and will monitor and respond to misinformation. The JIC Manager will also coordinate Energy Northwest's emergency public information activities with those of Benton and Franklin counties, Washington State, Oregon State, and the Federal Government. The JIC Manager reports to the EOF Manager.

2.4 AUGMENTING EMERGENCY ORGANIZATION

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential Energy Northwest emergency organization described in Section 2.3. In addition to the positions described in this section, other augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures are listed in the Emergency Response Organization List.

2.4.1 Augmenting Plant Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential plant emergency organization described in Section 2.3.1. These positions will be filled by activating previously selected personnel who can respond as required.

2.4.1.1 TSC Plant Administrative Manager

Basic Emergency Function: The Plant Administrative Manager is responsible for providing the TSC Manager with the necessary administrative services including accountability, requests for additional personnel and office services support. The TSC Administrative staff reports to the Plant Administrative Manager.

2.4.1.2 TSC Maintenance Manager

Basic Emergency Function: The Maintenance Manager is responsible for assigning tasks to be performed by the Operations Support Center (OSC) teams, determining the priority to be assigned for each task, and acting as the focal point between the TSC and OSC for the work control process.

2.4.1.3 Information Coordinators

Basic Emergency Function: Provide information and plant status updates to the center manager and staff. Communicate pertinent emergency related information from their assigned center to the other information coordinators. Information Coordinators are assigned to the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

2.4.1.4 TSC Chemistry/Effluent Manager

Basic Emergency Function: The Chemistry/Effluent Manager is responsible for monitoring the Plant effluent and ARM monitors. Changes in radiological conditions are reported to the Radiation Protection Manager. The Chemistry/Effluent Manager may also perform emergency dose projections. In addition, the Chemistry/ Effluent Manager advises the TSC Manager of chemistry concerns.

2.4.1.5 OSC Team Tracker

Basic Emergency Function: The OSC Team Tracker is responsible for maintaining communications with in-plant Repair Teams performing actions during the event following dispatch from the OSC. The Team Tracker is responsible for keeping the OSC Manager informed of team status and location. The Team Tracker also is responsible for coordination of site personnel accountability.

2.4.1.6 Repair Team Coordinator

Basic Emergency Function: Communicates maintenance tasks from the TSC and relays information about actions taken to the TSC. Responsible for directing repair team activities.

2.4.1.7 OSC Craft Leads

Basic Emergency Function: The Craft Leads will assist the OSC Manager in briefing and debriefing Repair Teams. They will also assist the Team Tracker in tracking of teams and personnel as required. Craft leads respond for Electrical, Mechanical, I&C and Health Physics disciplines.

2.4.2 Augmenting Emergency Operations Facility Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Emergency Operations Facility essential organization which is described in Section 2.3.2. These positions will be filled by activating previously selected personnel.

2.4.2.1 Assistant EOF Manager

Basic Emergency Function: The Assistant EOF Manager will assist the EOF Manager in the overall management of Energy Northwest resources and will assume the EOF Manager duties including Emergency Director responsibilities if the EOF Manager is not available at the EOF.

2.4.2.2 EOF Manager Secretary

Basic Emergency Function: The responsibilities of the EOF Manager Secretary include maintaining a log of EOF Manager actions, monitoring EOF Manager's phones, initiating Crash calls and performing other EOF administrative support duties as requested by the EOF Manager.

2.4.2.3 Dose Projection Health Physicist

Basic Emergency Function: The Dose Projection Health Physicist is responsible for completing dose projections, providing input to Protective Action Recommendations, and keeping the Radiological Emergency Manager informed of radiological release status. Refer to Section 6.4.2 for a description of the Meteorology and Unified Dose Assessment Center (MUDAC).

2.4.2.4 EOF Engineering Manager

Basic Emergency Function: The Engineering Manager and staff members are responsible for analyzing plant information and for developing plans and procedures in direct support of plant.

2.4.2.5 Emergency Operations Facility Public Information Officer

Basic Emergency Function: The Emergency Operations Facility Public Information Officer (EOF PIO) will prepare and transmit news releases to the Joint Information Center which can be used by Energy Northwest and offsite agencies. The EOF PIO keeps the EOF Manager up-to-date on public relations matters.

2.4.2.6 EOF Radiation Detection Systems Engineer

Basic Emergency Function: Analyzes radiation detection systems and assists in location of radiation source.

2.4.2.7 EOF Security Manager

Basic Emergency Function: The Security Manager is responsible for ensuring that security is maintained at all Energy Northwest facilities and security support groups are fully operational. This individual provides information and advice to the EOF Manager concerning the coordination of Energy Northwest Security and local law enforcement agency (LLEA) response actions. The Security Manager reports to the EOF Manager and supervises the Security staff.

2.4.2.8 EOF Site Support Manager

Basic Emergency Function: The Site Support Manager is responsible for coordinating requests for administrative and technical support to the plant and EOF. He also makes provisions to secure necessary supplies and equipment requested. The Site Support Manager reports to the EOF Manager and supervises the Offsite Agency Coordinator, EOF Information Coordinator, Telecommunications Manager, Manpower Scheduler and Admin Support staff.

2.4.2.9 Energy Northwest Representatives to County Emergency Operation Centers

Basic Emergency Function: Energy Northwest representatives will keep the staff members at the Benton and Franklin Counties Emergency Operations Center (EOCs) informed of the emergency conditions and Energy Northwest responses. The offsite representative will report to the Site Support Manager, normally through the EOF Offsite Agency Coordinator.

2.4.3 Augmenting Joint Information Center Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Joint Information Center Manager described in Section 2.3.3. In addition to the positions described below, other administrative augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures will be filled by personnel who can respond as required.

2.4.3.1 Assistant JIC Manager

Basic Emergency Function: The Assistant JIC Manager manages the preparation of Energy Northwest news releases, coordinates the process for news releases prepared by agencies and jurisdictions represented in the JIC, manages the team responsible for distribution of news releases to the media and other emergency centers and assumes the duties of JIC Manager, if requested. The Assistant JIC Manager supervises the Distribution Team Supervisor and News Release Editor and reports to the JIC Manager.

2.4.3.2 JIC Media Manager

Basic Emergency Function: The Media Manager will address the information needs of media representatives at the Energy Northwest JIC. The Media Manager supervises the JIC Receptionist and reports to the JIC Manager.

2.4.4 Support Emergency Organization

2.4.4.1 Administrative Support Staff

Basic Emergency Function: Performs duplication and facsimile services, record searches, verification of document revision.

2.4.4.2 TSC Manager Secretary

Basic Emergency Function: Maintains a log of activities for the TSC Manager, initiates and monitors crash calls, and screens phone calls.

2.4.4.3 TSC/OSC Communicator:

Basic Emergency Function: Communicates maintenance tasks to the OSC and relays OSC information about actions taken to the TSC staff.

2.4.4.4 TSC Computer Engineer

Basic Emergency Function: The Computer Engineer is responsible for ensuring that the computer systems available in the TSC are operating as required. The Computer Engineer will troubleshoot system problems and assist TSC Engineering staff in obtaining information from the various Plant computers.

2.4.4.5 TSC Trending Forecaster

Basic Emergency Function: Trend plant parameters and forecast plant status.

2.4.4.6 EOF Plant Systems Assessment Engineer

Basic Emergency Function: Analyzes plant systems and provides technical input to the INPO Network Coordinator

2.4.4.7 EOF Fuels Assessment Engineer

Basic Emergency Function: Evaluates core damage, interfaces with the TSC Core Thermal Engineer and EOF Engineering Manager to provide results and projections of core damage. Provides input for PAR determinations to the Radiological Emergency Manager.

2.4.4.8 EOF PDIS Analyst

Basic Emergency Function: Provides technical data for EOF engineering and monitors the information network for problems.

2.4.4.9 EOF Manpower Scheduler

Basic Emergency Function: Coordinates the preparation of overall shift staffing rosters.

2.4.4.10 EOF State/County Technical Liaison

Basic Emergency Function: Informs Energy Northwest representatives to the state and counties of plant conditions.

2.4.4.11 EOF Offsite Agency Coordinator

Basic Emergency Function: Coordinates requests from offsite agencies for information and keeps the EOF Manager informed of those requests. Coordinates airspace or airport closure requests with the Federal Aviation Agency.

2.4.4.12 EOF INPO Network Coordinator

Basic Emergency Function: Prepares and transmits technical descriptions of major events during an emergency to INPO.

2.4.4.13 Health Physics Center Staff

Basic Emergency Function: Prepares the Health Physics Center for use by setting up tables, lanes, and signs.

2.4.4.14 EOF Electrical/I&C Engineer

Basic Emergency Function: Analyzes plant electrical and I&C systems and provides information to the Emergency Manager.

2.4.4.15 EOF PIO Technical Support

Basic Emergency Function: Provides technical interpretations of information for the EOF PIO to formulate accurate news releases for the JIC.

2.4.4.16 EOF Field Team Dispatcher

Basic Emergency Function: Dispatch of field teams and log keeping.

2.4.4.17 Energy Northwest Representative to the State

Basic Emergency Function: Dispatched to Washington State EOC, provides technical expertise to EOC personnel.

2.4.4.18 EOF Licensing Manager

Basic Emergency Function: Interface with onsite NRC response team and communicates with the NRC on licensing issues.

2.4.4.19 JIC Information Manager

Basic Emergency Function: The Information Manager coordinates response to telephone requests for information from news media representatives or the general public. The Information Manager coordinates responses to rumors and public concerns and insures timely and accurate information is provided. This individual directs activities of the Media and Public Phone Team Supervisors and reports to the JIC Manager.

2.4.4.20 JIC Offsite Agency Representatives

Basic Emergency Function: The Offsite Agency Representatives reporting to the JIC will coordinate the emergency public information activities of the organizations they represent. The representatives report to their parent agencies. Their activities are coordinated by the JIC Manager or the Assistant JIC Manager.

2.4.4.21 JIC Phone Team Supervisor

Basic Emergency Function: The Phone Team Supervisor, Public Phone Teams and Media Phone Teams will respond to incoming calls from the public and media, provide information updates as necessary, and make efforts to correct misinformation as necessary. The Public Phone Team Supervisor supervises the Public and Media Phone Teams and reports to the Information Manager.

2.4.4.22 JIC Support Manager

Basic Emergency Function: Provides administrative support and procurement of supplies for JIC personnel.

2.4.4.23 JIC Spokesperson

Basic Emergency Function: Conducts news conferences at the JIC and provides timely information during the conferences.

2.4.4.24 JIC Technical Spokesperson

Basic Emergency Function: Provides technical information in an easy to understand format.

2.4.4.25 JIC Health Physics Spokesperson

Basic Emergency Function: Provides health physics information in an easy to understand format.

2.4.4.26 JIC News Release Editor

Basic Emergency Function: Assists in preparing news releases for dissemination to the media.

2.4.4.27 JIC Public and Media Phone Teams

Basic Emergency Function: Answer phone calls made by the public and media to disseminate correct information and dispel rumors.

2.4.4.28 JIC Audio/Visual

Basic Emergency Function: Coordinates operation of A/V equipment during news conferences at the JIC.

2.4.4.29 JIC Distribution Team Supervisor

Basic Emergency Function: Supervises the JIC Distribution Team.

2.4.4.30 JIC Distribution Team

Basic Emergency Function: Distributes faxes, news releases, and makes copies for the JIC staff.

2.4.4.31 JIC Receptionist

Basic Emergency Function: Provides receptionist duties for the JIC

2.4.4.32 JIC Secretary

Basic Emergency Function: Provides secretarial duties for the JIC staff.

ENERGY NORTHWEST EMERGENCY RESPONSE ORGANIZATION
MINIMUM STAFFING REQUIREMENTS

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Senior Management	Emergency Operations Facility Mgr[3]		1
	Technical Support Center Mgr[3]		1
	Joint Information Center Mgr		1
Operations	Shift Manager[3]	1	
	Control Room Supervisor	1[1]	
	Reactor Operator	2	
	Equipment Operator	2	
	Operations Manager[5]		1
	STA Function	1[1]	
	Emergency Response SRO	1[6]	
Notification/Communication	Control Room ENS Communicator[4]	1	
	SCC Duty Officer	1	
	Security Responder	1[2]	
	Telecom Manager		1
	Plant/NRC Liaison		1
Health Physics	Radiation Protection Manager		1
	HP Technicians (In Plant Surveys)	1	2
	HP Technicians (Protective Actions)	2	4
	Field Team Coordinator[5]		1
	Environmental Field Teams (Offsite Surveys)		4
	Environmental Field Teams (Onsite Surveys Out of Plant)		2
	Radiological Emergency Manager (Offsite Dose Assessment)		1

Table 2-1

MINIMUM STAFFING REQUIREMENTS(Continued)

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Nuclear Chemistry	Chemistry Technicians	1	1
Maintenance	Operations Support Center Mgr[5]		1
	Electrical Maintenance/	1[2]	2
	I/C Support		1
	Mechanical Maintenance/Radwaste	1[2]	1
	Operator		1
Engineering	Core/Thermal Hydraulics		1
	Electrical		1
	Mechanical		1
	Technical Manager[5]		1
Security	Per Security Plan		
Firefighting	Fire Brigade	Fire Brigade per FSAR Section 13	Local Support
First Aid and Rescue Operations	Fire Brigade	2[2]	Local Support

[1] On Shift as required by Technical Specifications in Modes 1, 2, and 3. Available within 60 minutes for call in for Modes 4 and 5. The STA qualified individual may be an individual staffing the CRS, SM or SSS position. When the STA is filling a dual role as the CRS or SM, another SRO is required to be on shift to perform duties as the Emergency Response SRO in all modes.

[2] May be provided by shift personnel assigned other functions

[3] Shift Manager initially assumes the responsibility for emergency direction and control, then is relieved by the TSC Manager or EOF Manager

[4] Duties of ENS Communicator are assumed by an individual designated by Shift Manager

[5] Not identified as a Table B-1, NUREG 0654 requirement

[6] Position may be filled by STA qualified individual or designated on shift SRO. This position may not be filled by the CRS or SM when they are also fulfilling the STA function.

Table 2-1

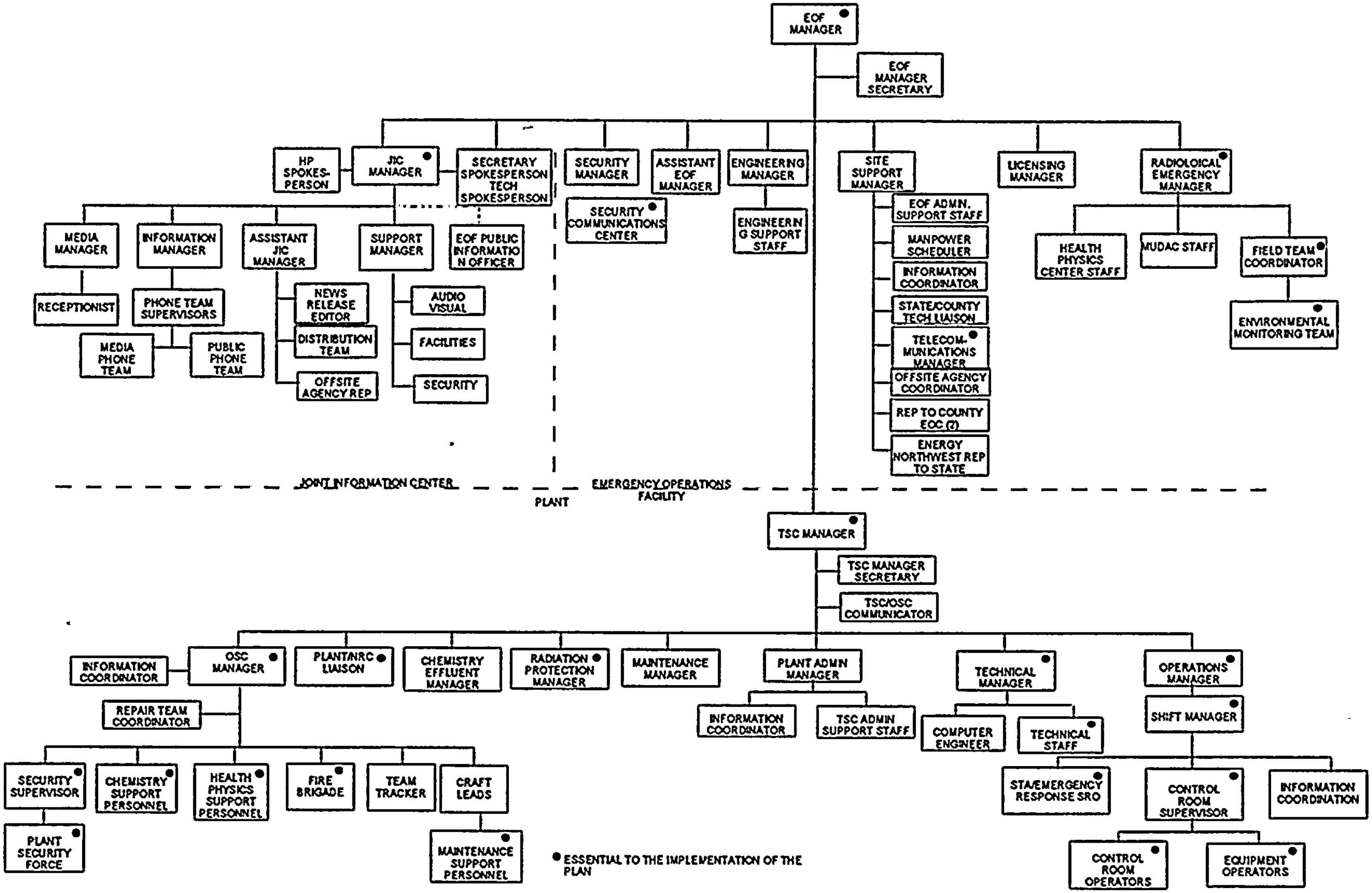

Figure 2-1, Emergency Response Organization Chart

SECTION 3
EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.1 COORDINATION OF SUPPORT ORGANIZATIONS

The Energy Northwest individual assigned the Emergency Director function is responsible for coordinating the use of emergency response resources available from outside Energy Northwest. These external resources are available through formal agreements referenced in Appendix 4 or in the emergency plans referenced in Appendix 1. Figure 3-1 shows the relationship between Energy Northwest emergency centers and the various outside response agencies. The Shift Manager/Emergency Director can call on any or all of these resources for support during an emergency.

The Energy Northwest Emergency Operations Facility contains provisions for outside organizations to coordinate actions with Energy Northwest. Specific areas in the Emergency Operations Facility and Energy Northwest Office Complex (ENOC) are designated in the Emergency Plan Implementing Procedures to be utilized by various offsite response organizations.

Energy Northwest representatives will normally be dispatched to the Benton and Franklin County Emergency Operations Centers at the Alert or higher emergency classification. The Energy Northwest representative to the state will normally report to the EOF at the Alert level, and be dispatched to the Washington State Emergency Operations Center at Site Area Emergency to assist. Energy Northwest representatives will assist in providing clarification of information and data.

The Offsite Agency Coordinator in the EOF will provide necessary support to responding agencies.

Figure 3-1 illustrates the various assistance organizations which may respond to the Emergency Operations Facility.

3.2 LOCAL SUPPORT SERVICES

A rapid response is available to Energy Northwest from local fire, medical, law enforcement, and radiological organizations. Agreements have been made with response agencies either through agreement letters or through their emergency plans. In cooperation with Energy Northwest and Benton and Franklin Counties Emergency Management, a training program has been established to familiarize responding agencies with their role at the plant site during an emergency. Energy Northwest will provide escorts, assistance, and dosimetry for all persons entering the plant protected areas, as requested.

3.2.1 Fire

Agreements established between the Department of Energy and Energy Northwest provide for Hanford Contract Fire Department response to all Energy Northwest facilities on the Hanford Reservation. Additional fire department response, if needed, is available through mutual aid agreements between county and municipal fire departments. The Hanford Contract Fire Department personnel are specifically trained to handle nuclear facility fire incidents and have specially equipped vehicles and personnel for rescue and other emergencies. Fire organizations performing functions onsite will interface directly with the Fire Brigade Leader.

3.2.2 Medical

The Emergency Director or designee is responsible for notifying the medical facility and providing qualified health physics personnel to assist. Communications with medical response agencies is coordinated through the radio network described in Section 6.5.1 of this Plan. The fixed medical facilities (i.e., hospitals) can also be reached by telephone using the numbers provided in the Emergency Phone Directory.

3.2.2.1 Local Hospitals

Kennewick General Hospital in Kennewick, Washington; Our Lady of Lourdes Hospital in Pasco, Washington; and Kadlec Medical Center in Richland, Washington, provide hospital and medical services. Any combinations of these three hospitals serves as the primary and backup medical facility. These hospitals have emergency room coverage twenty-four hours per day. The State of Washington also maintains agreements for handling contaminated patients with other hospitals in the State of Washington.

Energy Northwest has placed and maintains kits containing radiological monitoring equipment and decontamination supplies for use in the care of radiation accident patients at these hospitals. Energy Northwest also assists each hospital in developing procedures for the care of radiation accident patients as requested. Training and assistance on radiological decontamination procedures is offered by Energy Northwest to these hospitals when requested. Drills are periodically conducted to evaluate hospital proficiency for handling contaminated victims

3.2.2.2 Special Medical Facilities

The Emergency Decontamination Facility (EDF), located next to Kadlec Medical Center, can be used for handling highly contaminated patients.

If high levels of radioactive contamination or exposure are involved, injuries will be pre-treated at the specially equipped EDF. The EDF is a sophisticated unit specifically designed for handling and treatment of radiation/contamination accident victims. Provisions include decontamination equipment, shielded surgery tables, remote TV viewing, contaminated water retention, air filtration, radiation monitoring instrumentation, whole body counting, and communications equipment.

The EDF is operated by the Hanford Environmental Health Foundation (HEHF) for the Department of Energy in support of nuclear activities on the Hanford Reservation. The physicians responding to the EDF are prepared and qualified to make radiation exposure and uptake evaluations.

3.2.2.3 Medical Transportation

Medical emergency transportation will be provided by the Department of Energy - Richland Operations (DOE-RL). If additional assistance is required, local ambulance services may be used. An Energy Northwest employee knowledgeable in health physics will accompany contaminated patients to the hospital or meet the ambulance at the hospital to assist in the emergency. Additional health physics assistance may be requested from DOE-RL, or Washington State Department of Health.

3.2.3 Law Enforcement

The Benton County Sheriff has jurisdiction on the Hanford Reservation highways. Arrangements have been made for this organization to provide traffic control in order to limit access to the Hanford Reservation during an Energy Northwest emergency.

The Sheriff has jurisdiction at the Energy Northwest site for all civil disturbances or threats. Request for assistance to the Benton County Sheriff can be made directly to the Sheriff's office or through the 24 hour Emergency Dispatch Center (SE COMM) located in Richland. The Energy Northwest communications centers are capable of communicating with responding law enforcement agencies.

The Security Manager is the main interface with local law enforcement personnel and administers the agreement for law enforcement services. Activation of this support is under the direction of the Emergency Director.

In the event that evacuation is needed for areas off the Hanford Reservation, the Emergency Director, or designee, will notify the County Emergency Chairman or designee, at the Benton and Franklin County Emergency Operations Centers and provide available information concerning the nature of releases. Within the guidelines established by Washington State, a recommendation concerning necessary protective actions to be taken by the general public will be made by Energy Northwest. Following receipt of a protective action decision by an appropriate county authority, the Sheriffs of Benton and Franklin Counties will be responsible for implementing evacuation, traffic control, community security and search and rescue activities in their respective jurisdictions.

The Washington State Patrol provides assistance to the Sheriff concerning traffic control and area access. The local State Patrol headquarters has direct radio communications with the Benton and Franklin County sheriffs and the Emergency Dispatch Center (SE COMM).

3.2.4 Radiological

The Department of Energy (see Section 3.6.2) and Siemens Power Corporation (see Section 3.3.1) can provide a large number of trained personnel capable of assisting during a radiological emergency. Additionally, a training program for local support organizations (i.e., hospital, ambulance and fire companies) developed jointly by Energy Northwest and Benton and Franklin Counties, provides information on proper actions to take during a radiological emergency. Supporting emergency plans for this service are listed in Appendix 1.

3.3 PRIVATE RESPONSE ORGANIZATIONS

3.3.1 Framatome ANP

The Framatome facility, located just outside the Southern boundary of the Hanford Reservation, approximately 8 miles south of Columbia Generating Station, maintains 24-hour health physics coverage of operations. As provided for in their Emergency Plan, listed in Appendix 1, assistance can be quickly provided during an Energy Northwest emergency to monitor radiological conditions along the southern Hanford Site boundary. Assistance will be provided upon request of the Emergency Operations Facility Manager and will be coordinated from the Emergency Operations Facility.

3.3.2 Environmental Sample Analysis

Service contracts are currently maintained with appropriate vendors by Energy Northwest's Radiological Environmental Monitoring Program group for environmental sample analytical services.

3.3.3 General Electric Company

The General Electric Company, suppliers of the Columbia Generating Station nuclear steam supply system, provides a support program utilizing the resources of their Nuclear Energy Group in San Jose, California. An emergency response team can be dispatched to the Emergency Operations Facility within twenty-four hours to provide technical assistance. A technical support team with experts in appropriate technical disciplines will be activated at General Electric Headquarters and will establish telephone communications with the onsite General Electric Emergency Response Team. The response team, dispatched to Energy Northwest, will be provided work space in the Emergency Operations Facility and will coordinate efforts with the EOF Engineering Manager. General Electric personnel may be used in the plant as needed. When in the plant, the TSC Technical Manager will be the primary interface.

3.3.4 Institute of Nuclear Power Operations

The Institute of Nuclear Power Operations (INPO) will provide assistance in identifying and mobilizing the resources of the nuclear industry in the event of an emergency. INPO will be notified of any emergency at the alert or greater classification.

INPO will provide the following assistance, if requested:

a. Designated INPO representatives who can be dispatched to the utility.

b. Dedicated 24-hour emergency notification system.

c. Ability to locate personnel with specific technical expertise.

d. Obtaining industry experience regarding plant equipment through NPRDS.

3.3.5 American Nuclear Insurers

American Nuclear Insurers (ANI) provides insurance coverage for Energy Northwest's nuclear facilities. If an accident occurs which involves the general public, ANI will provide financial assistance and reimbursement of reasonable expenses to persons required to relocate. Within 24 hours of the declaration of the emergency, ANI will dispatch a representative to the local area and will coordinate with the Emergency Response Team.

3.3.6 Hanford Environmental Health Foundation

The Hanford Environmental Health Foundation provides physicians trained in the treatment of radiation accident patients and for response and consultation services to the plant and to the hospitals which have agreements with Energy Northwest. Refer to Appendix 4.

3.3.7 Dosimetry

Energy Northwest has provisions for thermoluminescent dosimeters and related services.

3.4 COUNTY ORGANIZATIONS

3.4.1 Benton and Franklin Counties

The Benton and Franklin County plans for responding to a nuclear emergency, referenced in Appendix 1, provides for a coordination of effort, resources, and facilities. Mitigation and preparedness responsibilities include coordinating local radiological emergency response planning, exchanging emergency preparedness information and, along with Energy Northwest assisting local agencies and officials in developing appropriate emergency capabilities, establishing a radiological emergency response program, emergency response training, and promoting the development of effective communications and other emergency resources. Local law enforcement agencies provide access control services for the Hanford reservation.

Emergency response activities of the Benton and Franklin Counties emergency organizations include implementing local emergency public information and instruction activities, establishment of emergency worker and assistance centers and the Benton and Franklin County Emergency Operations Centers, making protective action decisions, activation of the early warning system, and coordination of local protective action implementation and support. County officials are notified of an emergency through the Emergency Dispatch Centers, and also receive any recommendations provided by Energy Northwest in this manner. When activated, the county staff in the Emergency Operations Centers will communicate with the staff at the Emergency Operations Facility over Energy Northwest dedicated communications systems. Activation of the county plans is automatic for an Alert, a Site Area Emergency, or General Emergency and county representatives will be dispatched to the Emergency Operations Facility and the Joint Information Center.

Benton and Franklin Counties will also play an active role during recovery operations and will work closely with the State of Washington and Energy Northwest to ensure appropriate measures are taken for affected members of the public within their jurisdiction.

3.4.2 Counties Within the Ingestion Exposure Pathway Emergency Planning Zone

Six Washington counties (in addition to Benton and Franklin Counties) as well as two Oregon counties are located within the Ingestion Exposure Pathway Emergency Planning Zone (EPZ). A portion of the Yakama Indian Nation also falls within the Ingestion Exposure EPZ. The State of Washington will provide notification to these counties and the Yakama Indian Nation will be notified by Yakima County. This will be coordinated through the Washington State Emergency Management, or the Oregon Department of Energy, by the EOF Radiological Emergency Manager. Local governments will be kept informed regarding the status of the plant and recommended protective actions by the state(s).

3.5 STATE ORGANIZATIONS

3.5.1 State of Washington

The Washington State Plan referenced in Appendix 1 describes the detailed response which will be given during an emergency. Responsibilities are outlined for all state agencies which have a response role. The following list outlines the response actions of several of the state agencies which would respond during an Energy Northwest emergency. A Washington State Representative will proceed to the Emergency Operations Facility during a Site Area or General Emergency, and if conditions warrant during an Alert, to coordinate State resources. The Offsite Agency Coordinator will provide support and function as a working liaison with the State Representative when in the Emergency Operations Facility. Response time is estimated to be less than 6 hours.

3.5.1.1 Washington Emergency Management

Washington Emergency Management is the State agency responsible for radiological response planning and coordination of operations. The responsibility of this agency includes the following items:

a. Develop and maintain the Washington State Fixed Nuclear Facility Emergency Response Plan and assist the counties in developing their individual emergency response plans.

b. Arrange training programs for state and local agencies designed to promote effective response to radiological incidents.

c. Provide affected communities with warning confirmation, upon request.

d. Coordinate communications and other available support to affected local governments.

e. Coordinate the support of other state agencies and political subdivisions near the affected area and obtain assistance of federal agencies as required.

Dedicated communications with the State Emergency Operation Center are available. Representatives from Washington Emergency Management will have access to the Emergency Operations Facility (EOF) and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.5.1.2 Department of Health

The Department of Health (DOH) is responsible for administering and directing radiation control program activities within the State. DOH provides local authorities with technical guidance, assistance in establishing monitoring and decontamination programs, and recommending appropriate emergency countermeasures and recovery actions offsite. Responding at an Alert or higher classification, DOH provides representatives to support the emergency response as follows:

a. To the Meteorology and Unified Dose Assessment Center (MUDAC) for joint control of environmental field monitoring teams, assessment of dose projection information, preparation of protective action recommendations for the plume exposure pathway and ingestion zones, and estimation of total dose exposure. Also, DOH provides Radiation Control (Radcon) monitoring teams that perform radiological monitoring, collect samples and provide limited field analysis and monitoring and decontamination support to the counties at emergency worker and assistance centers.

b. Outside of the EOF, DOH normally furnishes a representative to the Joint Information Center (JIC) for the coordination of public information. At the State Emergency Operations Center (EOC), DOH representatives furnish guidance on implementation of protective actions and assist local health officials with the implementation of protective actions. Agency response times to the Richland area are expected to be less than six hours.

3.5.1.3 Washington State Patrol

The Washington State Patrol (WSP) will assist each affected county and provide, upon request from either state or county officials law enforcement functions, communications support, and transportation assistance to other agencies when the WSP's law enforcement commitment is not jeopardized. Energy Northwest has space available in the Emergency Operations Facility for a representative from the WSP to coordinate their activities with Energy Northwest Security Manager as needed.

3.5.1.4 Energy Facility Site Evaluation Council

The Energy Facility Site Evaluation Council (EFSEC) is the lead state organization for siting of power generating facilities in the State of Washington. EFSEC is responsible for assessing compliance with the Site Certification Agreement and administering contracts with state agencies and local governments for emergency preparedness services in support of the Columbia Generating Station Emergency Plan.

The council is periodically apprised of Energy Northwest's emergency preparedness per section V.A.2 of the Columbia Generating Station Site Certification Agreement.

3.5.1.5 Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for the control and protection of agricultural products within the boundaries of Washington State. This is accomplished by implementing agricultural protection measures in coordination with other participating agencies and local jurisdictions. These measures include preparing and issuing agricultural advisories to protect the public; preparing and implementing plans in coordination with affected agencies and jurisdictions to reduce the Food Control Area, release food, dispose of contaminated food and conduct embargoes. They will also provide input, as requested by other agencies, in the areas of soil, water and crop decontamination; claims procedures; reduction of Food Control Area and public information.

3.5.2 State of Oregon

The State of Oregon has the responsibility to protect the health and safety of Oregon residents during a radiological emergency at Columbia Generating Station. The Oregon Office of Energy has prepared a Columbia Generating Station Emergency Response Program for that purpose.

A major emergency at Columbia Generating Station is not expected to have immediate, life-threatening radiological impacts on Oregon. During the emergency phase, Oregon's involvement will be limited to maintaining communications and monitoring the emergency. If the emergency involves ingestion exposure considerations, however, Oregon will be involved in a cooperative effort with Energy Northwest, Washington State, and federal response agencies to assess conditions within the state boundaries, initiate necessary public protective measures, and provide public information (e.g., news releases) as may be required. Upon declaration of a Site Area Emergency, Oregon will begin a limited activation of the Oregon EOC in Salem. They will also send representatives to Energy Northwest EOF, JIC, and the Washington EOC. In addition, they will send one or more field teams to Morrow and Umatilla Counties and will provide field team assistance to Washington State as requested.

The Governor or designee will make protective action decisions for Oregon. During ingestion pathway events, Oregon will coordinate protective actions with other members of the protective action recommendation/decision group at the EOF and the Washington EOC.

Communications with the State Emergency Operations Center in Salem are available. Representatives from Oregon Office of Energy will have access to the EOF and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.6 FEDERAL ORGANIZATIONS

3.6.1 Nuclear Regulatory Commission

Personnel from the Nuclear Regulatory Commission (NRC), including Resident Inspectors, may elect to respond to any emergency. The NRC Resident Inspectors assigned to Energy Northwest facilities will be notified of any emergency condition on-site by pager and/or by phone contact and may proceed to the control room or any other areas. Facilities are available for NRC personnel in the Technical Support Center, Joint Information Center, and the Emergency Operations Facility. Dedicated communications are available between these facilities and the NRC. Additionally, the NRC duty officer in White Flint, Maryland is notified of the emergency by the Emergency Notification System (a dedicated phone circuit provided by NRC) of every emergency condition and will adapt their response to the situation as it evolves. If the dedicated phone circuit fails, the NRC duty officer can be reached by commercial phone lines using the numbers provided in the Emergency Phone Directory.

The role of NRC personnel during incidents at nuclear power plants is to monitor actions by the licensee to ensure that people in the vicinity of the plant are adequately protected and to provide any assistance requested by the licensee or offsite officials. NRC's principal role in the event of a power plant emergency is to ensure that appropriate protective actions are being taken. If it appears that warranted protective actions are not being recommended by the licensee or are not being taken by offsite officials, NRC representatives will contact the licensee or offsite officials and present their concerns.

NRC is the lead federal agency concerned with technical aspects of an accident at one of its licensed facilities (e.g., nuclear power plants). The specific NRC response roles are to:

a. monitor the licensee to ensure that appropriate protective action recommendations are being made off site:

b. support offsite authorities, including confirming the licensee's recommendation to offsite authorities, if requested;

c. support the licensee;

d. keep other federal agencies and entities (e.g., Congress and the White House) informed of the status of the incident;

e. keep the media informed of NRC's knowledge of the status of the incident, including coordination with other public affairs groups; and

f. intervene in a limited fashion to direct the licensee's on-site response in some unusual and very rare situations.

3.6.2 Department of Energy

Assistance from of the Department of Energy can be requested by the Emergency Director. The Department of Energy-Richland Operations office located in Richland, Washington, is capable of providing radiological response, such as field monitoring teams, within two hours. The Department of Energy will provide additional federal field monitoring and dose assessment capability when requested. Coordination with Energy Northwest will be through the Offsite Agency Coordinator or the Radiological Emergency Manager. A representative from the Department of Energy may proceed to the Emergency Operations Facility to coordinate the effort.

The Department of Energy-Richland Operations (RL) has large resources of equipment and manpower available. Technical personnel and laboratory facilities can quickly be made available. RL will provide support for the alerting of personnel, and establishment of a safety zone on the portion of the Columbia River within the Columbia Generating Station Ten-Mile Emergency Planning Zone. Also, RL will coordinate and implement protective actions for portions of the 10-mile Emergency Planning Zone on Hanford outside of the Columbia Generating Station Exclusion Area.

Assistance which can be requested via the Department of Energy includes:

a. Emergency Decontamination Facility staffed by qualified radiological emergency personnel able to treat contaminated patients.

b. Hanford contractor ambulances with qualified EMT support personnel.

c. Hanford contractor Fire Department resources to respond to fires on the Hanford Reservation.

d. Hanford contractors with additional respirators, protective clothing and equipment for personnel decontamination.

e. Hanford contractors that can assist with field monitoring, dose assessment, meteorological data and laboratory analysis.

Eight DOE Regional Coordinating Offices for Radiological Assistance provide radiological assistance on request in any region of the country. The radiological assistance teams are the front lines of Federal assistance under the Federal Radiological Emergency Response Plan (FRERP). RAP teams will generally be requested quite early in an event by the State and/or the NRC. RAP teams typically are composed of four to six people. They are capable of conducting gross gamma, alpha, and beta monitoring. They will require only one half to two hours to prepare for a response. Response time will depend on travel time to the location of the accident. The RAP team will also act as an advance team for coordination of further DOE assistance such as the Federal Radiological Monitoring and Assessment Center (FRMAC) or the Aerial Measuring System (AMS).

When assistance is requested, DOE coordinates the monitoring and assessment efforts of all Federal agencies. The FRMAC is usually established near the site of the accident as part of or in conjunction with the Federal Response Center established by the Federal Emergency Management Agency (refer to Section 3.6.3). The size and complexity of the assistance effort will depend on the incident. DOE can provide the most extensive monitoring and assessment capabilities available in the United States. It will require about 24 hours for a fully operational unit to be established. DOE has delegated the responsibility for establishing this service to the DOE Nevada Operations Office.

The AMS is an airborne radiological detection system that can respond to radiological incidents and perform plume tracking, radiation surveys, and radiation mapping over large areas around the site of an incident. Most of the aerial monitoring assets are located in Las Vegas, Nevada, but there are also some capabilities based at Andrews Air Force Base, near Washington, D.C. The AMS will be integrated into the assistance effort once it is established.

3.6.3 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) coordinates federal responses to nuclear facilities for both radiological and non-radiological emergencies. In the event of a radiological emergency a number of federal agencies can be activated through FEMA to support State and County activities. FEMA would coordinate these activities through provisions of the Federal Radiological Emergency Response Plan (FRERP). For a Site Area or General Emergency, FEMA would normally establish a Federal Response Center (FRC) in the Tri-Cities area. Space would also be made available at the Energy Northwest Emergency Operations Facility (EOF) for representatives of responding federal agencies. If resources are needed from FEMA to support offsite emergency activities, the State has the authority to request offsite assistance. Energy Northwest will coordinate with the FEMA representative concerning field response activities.

3.6.4 U.S. Coast Guard

The U.S. Coast Guard, through the Thirteenth District Commander in Seattle, Washington, and the Captain of the Port in Portland, Oregon, regulates activities on navigable waters. For Site Area or General Emergencies, the Coast Guard may establish a safety zone on the Columbia River and broadcast a river closure notice to mariners.

U.S. Coast Guard assistance is a special case which, by virtue of pre-coordination with Benton and Franklin Counties, is automatically provided or may be made directly. Coast Guard Officers of authority may establish the "Safety Zone" within the 10-Mile Emergency Planning Zone (EPZ) for the Columbia River when notified of a Site Area or General Emergency. This Safety Zone provides authority for DOE and Sheriff's Office patrol craft to control river access within the EPZ. This service is provided for by the plan and procedures maintained by Benton and Franklin Counties, via the Fixed Nuclear Facility Response Plans referenced in Appendix 1.

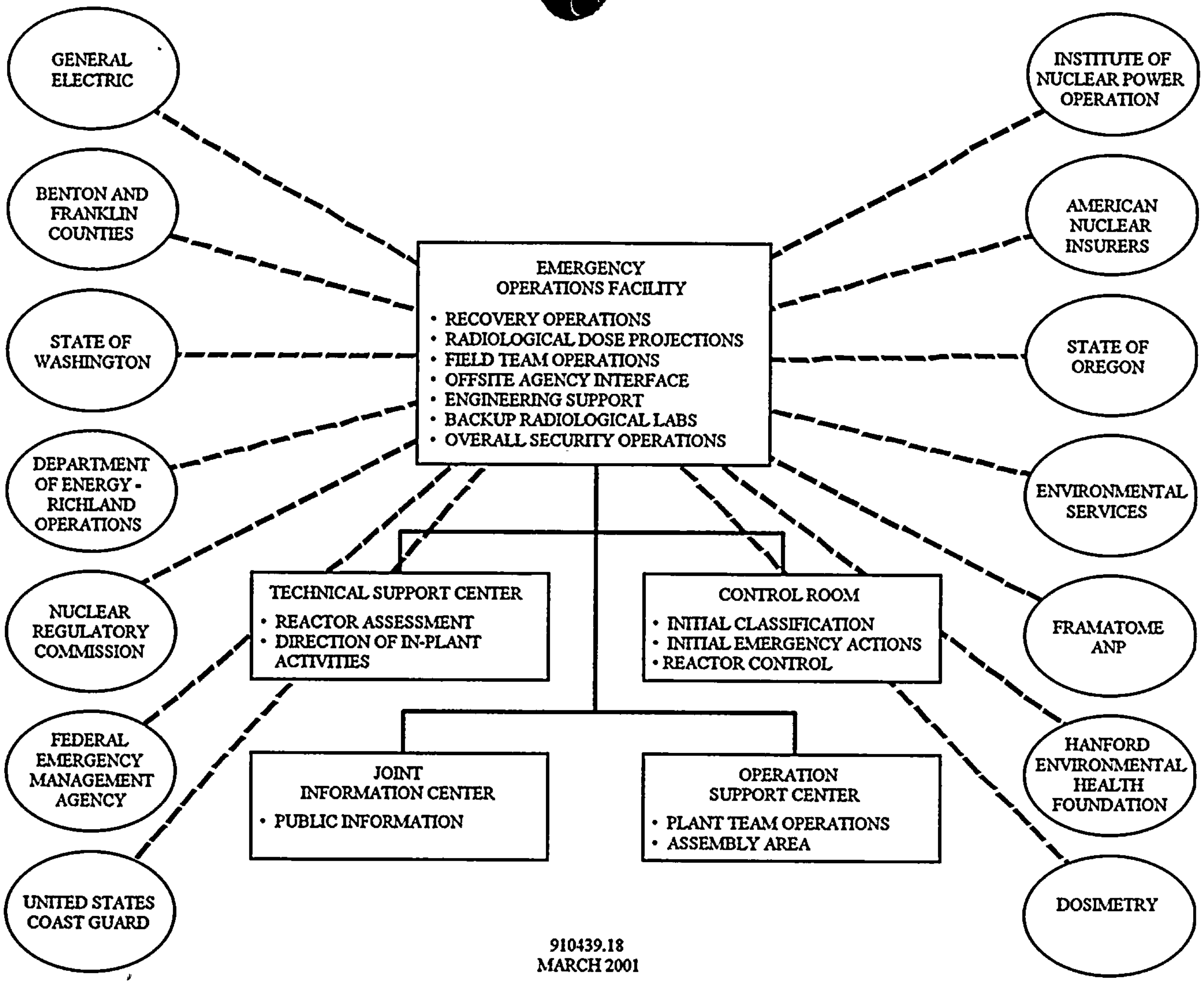

Figure 3-1, Outside Response Agency Resources

SECTION 4
EMERGENCY CLASSIFICATION AND NOTIFICATION

4.1 EMERGENCY CLASSIFICATION

The Emergency Plan provides for four classes of emergency to cover a spectrum of plant events that could lead to a loss of control over radioactive materials which could result in the need to initiate protective measures for the public. These four classes, in order of increasing severity of plant conditions, are Unusual Event, Alert, Site Area Emergency, and General Emergency. The basic regulatory premise for these classifications is found in 10 CFR 50 Part 47, with further guidance in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1, where example initiating conditions are provided for each emergency classification.

The initiating conditions (ICs) form the basis for establishing specific indications, i.e., plant instrument readings or personal observations, which would indicate that a given initiating condition had been met and thus an emergency classification must be declared. These instrument readings and personal observations are known as Emergency Action Levels (EALs).

Classifying an event based on plant abnormal conditions is the responsibility of the Emergency Director. Initiating events or conditions are included in this section, and implemented by Emergency Plan Implementing Procedure EPIP 13.1.1, Classifying the Emergency.

A conservative philosophy for emergency classification is used to declare the highest category for which an EAL has been met. For example, a Site Area Emergency would be declared directly if a Site Area Emergency EAL is met. This would be done without having first declared the Unusual Event or Alert emergency classifications. Also, if two or more EALs have been met, the EAL representing the highest emergency classification would be used to declare the emergency to ensure that appropriate notifications and actions are taken.

The initiating conditions presented in Table 4-1 are all inclusive of EALs and demonstrate how the EPIP 13.1.1 EALs are arranged. Due to the comprehensive nature of the initiating conditions, however, all postulated accidents in the Final Safety Analysis Report (FSAR) for Columbia Generating Station are fully covered and could be classified, when necessary, by using this scheme. Since some FSAR accidents are not representative of a significant plant event and do not pose a challenge to the fission product barriers, not all FSAR accidents would require declaration of an emergency classification.

Events occurring offsite at nearby nuclear facilities or transportation accidents involving hazardous materials, such as chemicals or nuclear fuel, will only be classified under the Columbia Generating Station EALs when conditions onsite are changed by the event to where they meet the criteria in EPIP 13.1.1. Columbia Generating Station actions will be based on the significance of these events. A transportation accident that does not directly impact the Plant site will be categorized as a Transportation Emergency.

4.2 EMERGENCY ACTION LEVEL CRITERIA

The Columbia Generating Station EAL criteria is based on a combination of methods. The combination ranges from primarily event-based EALs for Unusual Events, to primarily symptom-based or barrier-based EALs for General Emergencies. This type of an approach to EAL development ensures that timely recognition and notification occurs, that events occurring during refueling and cold shutdown are appropriately covered, and that multiple events can be effectively classified.

The symptom-based and barrier-based parameters used in the EALs are consistent with the parameters used in the Plant Emergency Operating Procedures, which are derived from accident analysis done by General Electric and the Boiling Water Reactor (BWR) Owner's Group after the Three Mile Island-2 accident. Symptom-based parameter examples are provided in EPIP 13.1.1, and represent conditions of plant system malfunctions or failures. Some of the parameters are linked to an electronic system which displays an alarm on the Computerized Graphic Display System (GDS) in the Control Room whenever certain abnormal conditions are met.

Situation-based parameters used in the EALs define other abnormal conditions which cannot be easily computerized or quantitatively defined and for which classification may require some judgement. In these cases, personnel are instructed to make decisions based on conservative principles and the definitions and purposes for event classification. Further guidance and justification for the Columbia Generating Station EALs is provided in a technical bases document, EPIP 13.1.1.A, Classifying the Emergency Technical Bases.

4.3 OFFSITE AGENCY REVIEW OF EMERGENCY ACTION LEVELS

EPIP 13.1.1 is the document provided to the NRC, the states, the US Department of Energy, Richland Operations, and the local government agencies to use for review and comment on emergency classification criteria.

A major revision of EPIP 13.1.1 EALs were discussed and agreed upon with state and local governments, and approved by the NRC on December 9, 1994. On at least an annual basis, the most recent revision to EPIP 13.1.1 is reviewed with state and local government representatives.

4.4 CLASSIFICATION DEFINITIONS AND PURPOSES

The conditions for event classification presented here are not intended to cover all situations. Other events and combinations of situations can warrant conservative action and emergency classifications. Classifications shall be made utilizing conservative principles and in situations not covered by examples. The Emergency Director shall declare an appropriate emergency classification where, in his judgement, plant status warrants such a declaration.

4.4.1 Unusual Event

a. Definition

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Purpose

To bring the plant operating staff to a heightened state of readiness, provide for a more systematic handling of information and decision making, and to ensure that notification is made to the emergency response organization, including all offsite emergency authorities.

c. Rationale

The rationale for the Unusual Event classification is to provide early notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. Emergency response organizations are typically not activated for an Unusual Event declaration.

d. Actions:

(1) Promptly inform states and/or local offsite authorities of the nature of the unusual condition as soon as discovered.

(2) Augment on shift resources as needed.

(3) Assess and respond.

(4) Escalate to a higher classification, if appropriate, or

(5) Close out with verbal summary to offsite authorities, followed by written summary within 24 hours.

4.4.2 Alert

a. Definition

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

b. Purpose

To provide additional help in responding to the situation and provide systematic handling of information and decision making. Declaring an Alert will provide additional manpower in the Technical Support Center to help the normal operating crew in those duties not directly related to plant control, such as offsite dose assessment, technical problem evaluation, and communications with outside organizations. It will also activate the Operations Support Center, which will provide additional manpower to respond to plant conditions, and the Emergency Operations Facility and Joint Information Center to improve offsite communications and the ability to relay information to the news media and the public.

c. Rationale

The rationale for the Alert classification is to provide prompt notification of minor events of more significance than the Unusual Event category and to ensure fuller response preparations are performed. The Columbia Generating Station emergency response organization is activated for an Alert declaration.

d. Actions:

(1) Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered.

(2) Augment resources and activate on-site Technical Support Center, on-site Operations Support Center near site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site monitoring teams and associated communications.

(5) Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

(6) Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases, from the appropriate emergency center.

(7) Escalate to a more severe class, if appropriate.

(8) Close out or recommend reduction in emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction.

4.4.3 Site Area Emergency

a. Definition

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

b. Purpose

To assure that all emergency response centers are activated, field monitoring teams dispatched, evacuation coordinators readied, predetermined protective actions issued for the public, and to keep the public informed.

c. Rationale

The rationale for the Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring but where a fuel failure situation is not indicated based on current information. In this situation full mobilization of emergency personnel, and the assembly, accountability and evacuation of non-essential personnel in the near site environs is indicated, as well as associated offsite communications, and the dispatch of radiation monitoring personnel.

d. Actions:

(1) Promptly inform State and/or local offsite authorities of site area emergency status and reason for emergency as soon as discovered.

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provided meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Escalate to general emergency class, if appropriate

or

(10) Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.4 General Emergency

a. Definition

Events are in progress or have occurred which involve actual or imminent substantial fuel degradation or failure with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite at distances more than the immediate site area.

b. Purpose

To initiate predetermined actions for the public, provide for continuous offsite assessment, initiate additional measures, as indicated by radiological releases or plant conditions, and to provide for consultation and flow of information to and from the various offsite authorities.

c. Rationale

The rationale for the General Emergency classification reflects conditions where actual or imminent substantial fuel degradation or failure with the potential for loss of containment are occurring. In this situation, evacuation becomes the preferred immediate action.

d. Actions:

(1) Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local).

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF), and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Close out or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.5 One-Hour Reportability

Events are evaluated against the criteria of 10CFR50.72(b)(1). PPM 1.10.1, Notifications and Reportable Events, implements this criteria. NUREG 1022 contains clarifying NRC guidance.

4.5 STATE AND COUNTY CLASSIFICATION SYSTEM

The States of Washington and Oregon have adopted a fixed nuclear facility emergency classification scheme with classification levels. Each State maintains individual emergency response plans with these classification levels and specific guidelines for responding to emergencies at Columbia Generating Station.

The Columbia Generating Station 10-Mile Emergency Planning Zone lies within two counties. These counties, Benton and Franklin, have agreed to use the emergency classification scheme used by Columbia Generating Station and the States.

As part of the annual EAL review process, Energy Northwest ensures that both the counties' emergency response plans and the State emergency response plan continue to use a classification scheme consistent with the Columbia Generating Station scheme.

4.6 NOTIFICATION METHODS AND PROCEDURES

The Energy Northwest notification process for activating the emergency organizations includes notification of emergency response personnel and assistance organizations, who are notified when an emergency is declared. Initial communication links between the Energy Northwest Emergency Director and the duty officers of Benton and Franklin Counties, and the State of Washington are available on a 24 hour per day basis. The extent of notification will depend upon the emergency classification. A means for verifying the authenticity of all initial offsite notifications is established.

Communication links are established among the various on-site and offsite emergency centers. Descriptions of the emergency response positions at each center include responsibilities for communications with specific positions or other emergency response facilities. Those communication responsibilities are further specified in the EPIPs.

4.6.1 Energy Northwest Emergency Organization Notification

The in-plant paging system, high noise area paging devices, a radio paging system, and an Automated Notification System will be used to notify Energy Northwest ERO personnel. Instructions will be provided if protective measures are required.

Activation of response teams during normal working hours will be via the telephone system, the inplant public address system, or the paging system. Activation during hours other than normal working hours will be accomplished by the paging system, public address and automatic notification system. The automatic notification system will be initiated by the Security Communication Center Duty Officer. The Duty Officer will be directed to make the notifications by the Emergency Director. The Duty Officer is able to manually activate the radio paging system, and this system will serve as a backup notification method.

On-duty Energy Northwest personnel will notify Washington Emergency Management, Benton County Emergency Management, Franklin County Emergency Management, and the Department of Energy.

The extent of the notification will depend upon the emergency classification. However, the Emergency Director may call anyone deemed necessary to support the emergency effort. Table 4-2 outlines the response organizations that will be notified by Energy Northwest for each emergency class. The above scheme is established in procedures.

4.6.2 Nearby Facilities Notification

Initial emergency notification to nearby facilities will be made. Instructions will be provided if protective measures are required.

The Department of Energy is responsible for notifying facilities on the Hanford Reservation during an Energy Northwest emergency; however, Energy Northwest will notify the Fast Flux Test Facility (FFTF) control room when an Exclusion Area evacuation is implemented. DOE notifies Energy Northwest in the event of a sodium oxide release from FFTF.

4.6.3 Support Organizations Notification

Initial notification to Benton County Emergency Management, Franklin County Emergency Management, Department of Energy, and Washington Emergency Management will be made from the Control Room, the Technical Support Center or the Emergency Operations Facility. The Nuclear Regulatory Commission Emergency Response Center will be notified. The Nuclear Regulatory Commission offices will patch the call through to the Nuclear Regulatory Commission offices in Region IV, Arlington, Texas. A means for verifying the authenticity of the notification is established.

4.6.4 General Public Notification

Emergency notification to both transients and residents is the responsibility of the County Emergency Chairman. Notification will be based on information received from Energy Northwest and, if time permits, consultation with the staffs of the Benton County Emergency Operations Center, Franklin County Emergency Operations Center, and Washington State Emergency Operations Center.

Transient and resident populations are advised in public information material to monitor the Emergency Alerting System (EAS) for emergency announcements and protective action instructions. The initial instructions will consist of prescribed emergency messages consistent with the Emergency Classification and will contain information such as:

a. Identification of agency/organization issuing information.

b. A statement that a facility has had an accident.

c. Identification of the communities or geographical areas affected by the emergency.

d. A brief description of the type of emergency and the nature of the hazard.

e. Specific protective measures such as sheltering or evacuation to be taken by residents of the affected areas.

f. A statement that further information will be given over the Emergency Alerting System (EAS).

Copies of the text of prerecorded EAS messages and the messages to be read over the siren system are provided in the Benton and Franklin Counties Emergency Response Plans.

Initial and follow-up notifications of an emergency at the plant are made to the County Emergency Dispatch Center, to the Department of Energy-Richland Operations, and to the State of Washington from the control room, the TSC or the EOF. Washington State is responsible for notifying Oregon DOE. The Benton County Emergency Operations Center is responsible for notifying the public in Benton County. The Franklin County Emergency Operations Center is responsible for notifying the public in Franklin County. Benton County is responsible for making Protective Action Decisions (PADs) in Benton County during the Plume phase of an emergency. Franklin County is responsible for making PADs in Franklin County during the Plume phase of an emergency. They will notify the public within fifteen minutes after a Protective Action Decision is made. The State of Washington is responsible for making PADs during the ingestion phase of an emergency. The Department of Energy has the responsibility to alert and provide information to its employees and contractors on the Hanford Reservation. The Joint Information Center will coordinate public news releases with responding agencies.

The Early Warning System is designed to alert and provide information to the population in the Ten-Mile Emergency Planning Zone.

Tone activated radios provide the primary means of notification. These radios are activated by the Emergency Alerting System signal and provide instructions for protective actions. Transient population along the Columbia River is notified by sirens within the 10-mile EPZ, a Coast Guard marine band broadcast and, if necessary, by Sheriffs Department. Transient population along the Yakima River and in the Horn Rapids area within the 10-mile EPZ are notified by sirens. In addition, Washington State Department of Fish and Wildlife may inform members of the public of protective response actions required.

4.6.5 Initial Messages to Offsite Response Organizations

Initial messages to response organizations will contain such information as:

a. Type of notification
b. Facility experiencing emergency
c. Time of incident
d. Emergency classification
e. Protective action recommendation

4.6.6 Follow-up Messages

Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as:

a. Name and telephone number of caller
b. Location of incident
c. Date/Time of incident
d. Classification of Emergency
e. Type of actual or projected release and estimated duration/impact times
f. Estimate of quantity of radioactive material released or being released, and the points of release
g. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
h. Meteorological conditions
i. Actual or projected dose rates at site boundary; projected integrated dose at site boundary
j. Projected dose rates and integrated dose at the projected peak and at 2 and 10 miles, including sector(s) affected
k. Estimate of any surface radioactive contamination; in-plant, onsite or offsite
l. Emergency response actions underway
m. Recommended emergency actions, including protective action recommendations
n. Request for offsite organization support needed onsite
o. Prognosis for worsening or termination of event based on plant information

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.1 Coolant Activity	Fuel Clad Degradation 1.1.U.1 1 2 3 4 RCS sample activity GT Technical Specification 3.4.8 for GT LCO Action Statement time.	Loss OR potential loss of fuel clad 1.1.A.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine.	Loss or potential loss of any two fission product barriers 1.1.S.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND ANY of the following: • <u>Any</u> RCS Loss Indicators, Table 1 • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • <u>Any</u> PC Loss Indicators, Table 2 • Cannot maintain plant parameters within SRVTPLL, or PSP	A loss of any two fission product barriers and loss or potential loss of the third 1.1.G.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Drywell pressure response not consistent with LOCA conditions 1.1.G.2 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2, upscale high AND <u>Any</u> PC Loss Indicators, Table 2 1.1.G.3 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND <u>Any</u> RCS Loss Indicators, Table 1 AND either of the following: <u>Any</u> PC Loss Indicators, Table 2 OR Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP

TABLE 1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.2 Radiation Monitors	Fuel Clad Degradation 1.2.U.1 1 | 2 | 3 SJAE CONDSR OUTLET RAD HI-HI alarm (P602)	Loss OR potential loss of RCS 1.2.A.1 1 | 2 | 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Loss or potential loss of any two fission product barriers 1.2.S.1 1 | 2 | 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr	A loss of any two fission product barriers and loss or potential loss of the third 1.2.G.1 1 | 2 | 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr 1.2.G.2 1 | 2 | 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr AND ANY of following: • Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP. • Drywell pressure response not consistent with LOCA conditions. • Any PC Loss Indicators, Table 2

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.3 Refueling Incidents	Unexpected decrease in water covering irradiated fuel assemblies 1.3.U.1 1 2 3 4 5 def Uncontrolled water level decrease in the reactor cavity or SFP below the level of the weirs with all irradiated fuel assemblies remaining covered by water	Major damage to irradiated fuel OR loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the RPV 1.3.A.1 1 2 3 4 5 def HIGH alarm on ARM-RIS-1 (Fuel Pool ARM) resulting from an uncontrolled irradiated fuel handling process		
		Loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel 1.3.A.2 1 2 3 4 5 def Water level, when not intentionally lowered, observed to be below the top of the gate sill separating the reactor cavity and the SFP 1.3.A.3 1 2 3 4 5 def Report of visual observation of irradiated fuel uncovered or uncovering imminent.		

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EMERGENCY CLASSIFICA[illegible] INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.1 RPV Water Level	RCS Leakage 2.1.U.1 1 2 3 Valid unidentified leakage GE 10 gpm or upscale high indicated on recorder EDR-FRS-623, Pen 1 (P632) (Non RCC) OR Valid identified leakage GE 25 gpm indicated on recorder EDR-FRS-623, Pen 2 (P632)	Loss OR potential loss of RCS 2.1.A.1 1 2 3 Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Loss or potential loss of any two fission product barriers 2.1.S.1 1 2 3 4 5 RPV level LT -161 inches (for ATWS conditions, RPV level LT -192") or cannot be determined	A loss of any two fission product barriers and loss of potential loss of the third 2.1.G.1 1 2 3 Entry into Severe Accident Guidelines 2.1.G.2 1 2 3 RPV level LT -161 inches, (for ATWS conditions, RPV level LT -192") or cannot be determined AND ANY of following: • Rapid unexplained decrease of PC pressure following an initial increase. • Drywell pressure response not consistent with LOCA conditions • Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.2 Reactivity Control	Inadvertent Criticality 2.2.U.1 2 3 4 5 An extended and unplanned sustained positive period observed on NIs, while NOT performing a reactor startup.	Failure of Reactor Protection System (RPS) instrumentation to complete or initiate a reactor scram AND manual scram was successful. 2.2.A.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Manual Actions (mode switch in shutdown, manual push buttons and ARI) result in reactor power LE 5%.	Failure of RPS instrumentation to complete or initiate an automatic reactor scram once a RPS setpoint has been exceeded AND manual scram was NOT successful 2.2.S.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND either: Reactor power GT 5% or unknown OR Wetwell temperature GT 110°F	Failure of the RPS to complete an automatic scram AND manual scram was NOT successful AND there is indication of an extreme challenge to the ability to cool the core. 2.2.G.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Wetwell temperature cannot be maintained LT the HCTL

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EMERGENCY CLASSIFICA[illegible]INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.1 Primary Containment Pressure	Loss or potential loss of primary containment 3.1.U.1 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase	Loss or potential loss of either fuel clad or RCS 3.1.A.1 1 2 3 Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	Loss or potential loss of any two fission product barriers 3.1.S.1 1 2 3 Drywell pressure response not consistent with LOCA conditions 3.1.S.2 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	A loss of any two fission product barriers and loss or potential loss of the third 3.1.G.1 1 2 3 PC pressure exceeds PCPL
3.2 Wetwell Temperature/ Level	Loss or potential loss of primary containment 3.2.U.1 1 2 3 Cannot maintain plant parameters within SRVTPLL		Loss or potential loss of any two fission product barriers 3.2.S.1 1 2 3 RPV pressure and wetwell temperature cannot be maintained below HCTL	

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.2 Wetwell Temperature/Pressure			Loss or potential loss of any two fission product barriers 3.2.S.2 1 | 2 | 3 Cannot maintain plant parameters within SRVTPLL or PSP AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.3 Combustible Gas Concentration				A loss of any two fission product barriers and loss or potential loss of the third 3.3.G.1 1 2 3 PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
3.4 Containment Isolation Status	Loss or potential loss of primary containment 3.4.U.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists	Main steam line break outside containment with isolation 3.4.A.1 1 2 3 Indications of a MSL break AND MSIV closure <u>has isolated</u> the break	Loss or potential loss of any two fission product barriers 3.4.S.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists. AND ANY of following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell 3.4.S.2 1 2 3 Indications of a MSL break AND MSIV closure <u>has not isolated</u> the break	A loss of any two fission product barriers and loss or potential loss of the third 3.4.G.1 1 2 3 Intentional venting of Primary Containment to prevent failure.

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4 Secondary Containment 4.1 Reactor Building Temperature/ Radiation Levels			Loss or potential loss of any two fission product barriers 4.1.S.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures).	A loss of any two fission product barriers and loss of potential loss of the third 4.1.G.1 1 2 3 Unisolable primary system discharging outside PC <u>resulting in</u> any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures). AND ANY of the following: • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr • RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches) or cannot be determined • Coolant activity GT 300 μCi/gm dose equivalent iodine

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.1 Offsite Release	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times ODCM limits for 60 minutes or longer 5.1.U.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "UE" for GT 60 minutes 5.1.U.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" OR Sample analysis indicates release GT 2 times ODCM 6.2.1.1 limits for GT 60 minutes	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological specifications for 15 minutes or longer 5.1.A.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Alert" for GT 15 minutes 5.1.A.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate dose rates GT Table 4 column "Alert" OR Sample analysis indicates release GT 200 times ODCM 6.2.1.1 limits for GT 15 minutes	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release 5.1.S.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Site Area" for GT 15 minutes 5.1.S.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area"	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the release using actual meteorology 5.1.G.1 1 | 2 | 3 | 4 | 5 | def A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "General" for GT 15 minutes 5.1.G.2 1 | 2 | 3 | 4 | 5 | def Offsite dose calculations indicate doses or dose rates GT Table 4 column "General" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "General".

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.2 Area Radiation	Unexpected increase in plant radiation levels 5.2.U.1 1 2 3 4 5 def Valid reading GT 5E3 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-20 thru ARM-RIS-30 • ARM-RIS-32 thru ARM-RIS-34 (High Range)	Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown 5.2.A.1 1 2 3 4 5 def Valid reading GT 15 mR/hr on ARM-RIS-19 (CR) OR Valid reading GT 1E4 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-23 • ARM-RIS-24 • ARM-RIS-32 thru ARM-RIS-34 (High Range)		

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EMERGENCY CLASSIFICA[illegible]N INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
6 Electrical Failures 6.1 AC Power Loss	Loss of all offsite power to critical AC busses for greater than 15 minutes 6.1.U.1 1 | 2 | 3 | 4 | 5 | def Power is unavailable to SM-7 and SM-8 from offsite AC sources GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.A.1 | | | 4 | 5 | def Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.S.1 1 | 2 | 3 | | | Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Prolonged loss of all offsite power and prolonged loss of all onsite power to critical AC busses 6.1.G.1 1 | 2 | 3 | | | Complete loss of <u>all</u> AC power to SM-7 and SM-8 AND either of the following: In the judgement of the Emergency Director, AC power to either SM-7 or SM-8 is not likely to be restored within 4 hours OR RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
		Power capability to critical AC busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout. 6.1.A.2 1 | 2 | 3 | | | Available emergency bus AC power has been reduced to only one of the following sources for GT 15 min • TR-N1 (SM-7 and/or SM-8) • TR-S (SM-7 and/or SM-8) • TR-B (SM-7 and/or SM-8) • DG-1 (SM-7) • DG-2 (SM-8)		
6.2 DC Power Loss	Degradation of all critical DC power for greater than 15 minutes. 6.2.U.1 | | | 4 | 5 | def Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicated by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes		Degradation of all critical DC power for greater than 15 minutes 6.2.S.1 1 | 2 | 3 | | | Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicted by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes	

TABLE 4-1

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.1 System Failures	Inability to reach required shutdown within technical specification limits 7.1.U.1 1 2 3 Plant is not brought to required operating mode within T.S. LCO action statement time 7.1.U.2 1 2 3 4 5 def Uncontrolled flooding in a safe shutdown building, Table 5, that has the potential to affect safety related equipment needed for the current operating mode	Inability to maintain plant in cold shutdown 7.1.A.1 4 5 Inability to restore and maintain reactor coolant temp LT 200°F 7.1.A.2 1 2 3 4 5 def Report by plant personnel confirming the occurrence of plant uncontrolled internal flooding in a safe shutdown building, Table 5 AND Affected safe shutdown system parameters indicate degraded performance		
7.2 Control Room Evacuation		Control room evacuation has been initiated 7.2.A.1 1 2 3 4 5 The decision to evacuate the Control Room has been made.	Control room evacuation has been initiated, but plant control CANNOT be established 7.2.S.1 1 2 3 4 5 CR evacuation initiated AND Control of plant equipment needed to maintain adequate core cooling cannot be established at either the Remote Shutdown Panel or Alternate Remote Shutdown panel within 15 minutes of the SRO in charge of the CR physically leaving the CR	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Unplanned loss of most or all safety system annunciators or indication in the control room for greater than 15 minutes 7.3.U.1 1 | 2 | 3 | | | Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd. C associated with safety related equipment GT 15 minutes	Unplanned loss of most or all safety system annunciators or indications in the control room with EITHER: 1) a significant transient in progress; OR 2) Compensatory non-alarming indicators are unavailable 7.3.A.1 1 | 2 | 3 | | | Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd C associated with safety related equipment GT 15 minutes AND either of the following: A significant plant transient is in progress OR Compensatory non-alarming indications are <u>not</u> available (plant computer system and GDS)	Inability to monitor a significant transient in progress. 7.3.S.1 1 | 2 | 3 | | | Loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603 and Bd. C associated with safety related equipment AND Compensatory nonalarming indications are unavailable (process computer system and GDS) AND Significant transient in progress AND Loss of indications needed to monitor ANY of the following plant critical safety parameters: • Reactor power • RPV level • RPV pressure • Drywell pressure • Drywell temperature • Wetwell pressure • Wetwell/Drywell H2/O2 Concentrations • Wetwell level • Wetwell temperature • Radioactive Gaseous Effluents	
	Significant loss of onsite OR offsite communications capabilities 7.3.U.2 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following onsite communications capability: • Plant Public Address (PA) System • Plant Telephone System • Plant Radio System Operations and Security Channels			

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Significant loss of onsite or offsite communications capabilities 7.3.U.3 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following offsite communications capability: • State/County Notification (CRASH) System • Offsite calling capability from the Control Room via direct telephone and fax lines • Long distance calling capability on the Plant ("2000") Switch and Kootenai (Plant Support Facility)/Deschutes (Plant Engineering Center) ("8000") Switch			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.1 Security Threats	Confirmed security event which indicates a potential degradation in the level of safety of the plant 8.1.U.1 1 2 3 4 5 def Bomb device discovered within plant protected area but outside a Safe Shutdown Building, Table 5 OR Confirmed report of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes	Security event in a Plant Protected Area 8.1.A.1 1 2 3 4 5 def Confirmed report of an intrusion by a hostile force into the Plant Protected Area	Security event in a Plant Vital Area 8.1.S.1 1 2 3 4 5 def Bomb device discovered or detonated within a Safe Shutdown Building, Table 5 OR Confirmed report of intrusion by a hostile force into a Safe Shutdown Building, Table 5	Security event resulting in loss of ability to reach and maintain cold shutdown 8.1.G.1 1 2 3 4 5 def Loss of physical control of the CR due to security event OR Loss of physical control of the remote shutdown capability due to security event
8.2 Fire/Explosion Caused by Equipment Failure	Fire within the Protected Area Boundary not extinguished within 15 minutes of detection OR an explosion within Protected Area Boundary 8.2.U.1 1 2 3 4 5 def Fire within or adjacent to any Safe Shutdown Building, Table 5, which is not extinguished within 15 minutes of either CR notification by plant personnel or receipt of an alarm OR Report by plant personnel of an unplanned explosion within the Protected Area boundary resulting in visible damage to permanent structures or equipment	Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown 8.2.A.1 1 2 3 4 5 def Confirmed fire or explosion in a safe shutdown building, Table 5 AND either of the following: Affected safe shutdown system parameters indicate degraded performance OR Report by plant personnel of visible damage to the affected safe shutdown building or equipment contained within the affected safe shutdown building		

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.3 Man-Made Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.3.U.1 1 | 2 | 3 | 4 | 5 | def	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.3.A.1 1 | 2 | 3 | 4 | 5 | def		
	Vehicle crash into or projectile which impacts a Safe Shutdown Building, Table 5 8.3.U.2 1 | 2 | 3	Vehicle crash or projectile impact which impedes access to or damages equipment in a Safe Shutdown Building, Table 5 8.3.A.2 1 | 2 | 3		
	Turbine failure resulting in casing penetration or damage to turbine or generator seals	Missiles generated from a turbine failure have resulted in visible structural damage to or penetration of a safe shutdown building, Table 5		
	Release of toxic or flammable gases affecting the Protected Area Boundary deemed detrimental to safe operation of the plant. 8.3.U.3 1 | 2 | 3 | 4 | 5 | def	Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. 8.3.A.3 1 | 2 | 3 | 4 | 5 | def		
	Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for evacuation or shelter of site personnel based on offsite event	Report or detection of toxic or flammable gases within a safe shutdown building, Table 5, in concentrations that will be life threatening to plant personnel or impede access to equipment needed for safe plant operation.		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.1 1 2 3 4 5 def	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.1 1 2 3 4 5 def		
	MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake 8.4.U.2 1 2 3 4 5 def	OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake 8.4.A.2 1 2 3 4 5 def		
	Weather Service projected winds GT 80 mph OR CR measured winds GT 66 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary 8.4.U.3 1 2 3 4 5 def	Weather Service projected winds GT 100 mph OR CR measured winds GT 76 mph (5 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5 8.4.A.3 1 2 3 4 5 def		
	Range fires near the plant which threaten to reduce the level of safety	Ash fallout from volcanic activity is severe enough to warrant plant shutdown		

TABLE 4-1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.4 1 2 3 4 5 def Visible ash fallout from volcanic activity 8.4.U.5 1 2 3 4 5 def River level increase which threatens to flood the river pumphouse	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.4 1 2 3 4 5 def Report by plant personnel of an event causing visible structural damage to a safe shutdown building, Table 5		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Other 9.1 Other	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Unusual Event. 9.1.U.1 [1][2][3][4][5][def] In the judgement of the Emergency Director, events are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Alert. 9.1.A.1 [1][2][3][4][5][def] In the judgement of the Emergency Director, events are in progress or have occurred which indicate actual or potential substantial degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a Site Area Emergency 9.1.S.1 [1][2][3][4][5][def] In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a General Emergency 9.1.G.1 [1][2][3][4][5][def] In the judgement of the Emergency Director, other conditions exist which indicate either of the following: Actual or imminent substantial core degradation or melting with the potential for loss of containment integrity OR Potential for uncontrolled radionuclide releases which can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary
	Loss OR potential loss of Primary Containment 9.1.U.2 [1][2][3][ ][ ][ ] __Any__ event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment as indicted by Fission Product Barrier Degradation Table, Table 6	Loss OR potential loss of fuel clad or RCS 9.1.A.2 [1][2][3][ ][ ][ ] __Any__ event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier as indicted by Fission Product Barrier Degradation Table, Table 6	Loss or potential loss of any two fission product barriers 9.1.S.2 [1][2][3][ ][ ][ ] __Any__ event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of any two fission product barriers as indicted by Fission Product Barrier Degradation Table, Table 6	A loss of any two fission product barriers and loss or potential loss of the third 9.1.G.2 [1][2][3][ ][ ][ ] __Any__ event, in the judgement of the Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third as indicated by Fission Product Barrier Degradation Table, Table 6

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

Table 1 RCS Barrier Loss Indicators
• Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr
• RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
• Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell

Table 2 PC Barrier Loss Indicators
• Rapid unexplained decrease of PC pressure following an initial increase
• Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND
downstream pathway outside primary containment

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 3

Table 3 Effluent Monitor Classification Thresholds

Monitor	UE	Alert	Site Area	General
NOTE: If a dose projection cannot be performed, and the monitor reading is sustained for longer than the specified time then the declaration must be made based on the valid reading.				
	60 minutes	15 minutes	15 minutes	15 minutes
PRM-RE-1B Reactor Bldg. Exhaust Inter.	1.35E4 cps	N/A	N/A	N/A
PRM-RE-1C Reactor Bldg. Exhaust Hi	N/A	1.14E3 cps	9.65E3 cps	9.35E4 cps
TEA-RIS-13 Turbine Bldg. Exhaust. Low	1.7E4 cpm	4.4E4 cpm	4.4E5 cpm	N/A
TEA-RIS-13A Turbine Bldg. Exhaust, Int.	N/A	N/A	N/A	11 PMU
WEA-RIS-14 Rad Waste Bldg. Exhaust	1.2E5 cpm	1.7E5 cpm	1.7E6 cpm	N/A
WEA-RIS-14A Rad Waste Bldg. Int.	N/A	N/A	N/A	29 PMU
TSW-RIS-5 TSW Effluent	3.9E3 cpm	3.9E5 cpm	N/A	N/A
FDR-RIS-606 Rad. Waste Effluent	2 x Hi-Hi alarm	200 x Hi-Hi alarm	N/A	N/A
SW-RIS-604 SW 'A' Process	2.0E2 cps	2.0E4 cps	N/A	N/A
SW-RIS-605 SW 'B' Process	2.0E2 cps	2.0E4 cps	N/A	N/A

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

TABLES 4 & 5

cps = counts per second   cpm = counts per minute   PMU = panel meter units   N/A = not applicable (outside of meter range)

Table 4 Offsite Dose Calculation/Field Survey Sample Analysis Classification Thresholds at 1.2 miles

	UE	Alert	Site Area	General
TEDE	N/A	N/A	100 mrem	1000 mrem
CDE Thyroid	N/A	N/A	500 mrem	5000 mrem
TEDE rate	0.1 mrem/hr	10 mrem/hr	100 mrem/hr (projected GT 60 min)	1000 mrem/hr (projected GT 60 min)
CDE Thyroid rate	0.3 mrem/hr	50 mrem/hr	500 mrem (for GT 1 hr inhalation)	5000 mrem (for GT 1 hr inhalation)

Table 5 Safe Shutdown Buildings

- Vital portions of the RadWaste/Control Building
- Reactor Building
- Vital portions of the Turbine Building
- Standby Service Water Pump Houses
- Diesel Generator Building
- Diesel Generator Fuel Oil Storage Area

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines
					Loss of pressure suppression function
					Cannot maintain plant parameters within HCTL or SRVTPLL
					Wetwell pressure exceeds PSP
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

TABLE 4-2
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Energy Northwest:				
Technical Support Center	N,R	A	A	A
Operations Support Center	N,R	A	A	A
Security Communications Center	A	A	A	A
Emergency Operations Facility	N,R	A	A	A
Joint Information Center (Energy Northwest Richland Office Complex)	N,R	A	A	A
County:				
Benton Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
Benton and Franklin County Sheriffs[1]	N,R	A	A	A
County:				
Franklin Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
State:				
Washington State Emergency Management	N	A	A	A
Oregon State[2] Department of Energy	N	N	A	A

A = Activate N = Notify for information only R = Respond if requested

[1] Notified by Benton County or Franklin County, as appropriate, Emergency Dispatch
[2] Notified by Washington State

TABLE 4-2 (Cont'd.)
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Federal:				
Nuclear Regulatory Commission	N	N	A	A
U.S. Coast Guard		R	N,A	A
Federal Emergency Management Agency	N	N,R	A	A
Department of Energy Richland (will notify and activate DOE contractors)	N	N,R	A	A
Support Services:				
Siemens Corporation	R	R	N,R	N,R
General Electric	R	R	N,R	N,R
Institute of Nuclear Power Operations		N	N,R	N,R
American Nuclear Insurers		N	N,R	A
Northwest Health Services	R	R	N,R	N,R
Hospitals	R	R	R	R
BPA Substation	N	N	N	N

A = Activate   N = Notify for information only   R = Respond if requested

SECTION 5
ACCIDENT ASSESSMENT AND PROTECTIVE RESPONSE

5.1 ASSESSMENT ACTIONS, PLANT INSTRUMENTATION, AND RADIOLOGICAL MONITORING

Effective coordination and direction of all elements of the emergency response organization requires that accident assessment be continued throughout the emergency. Using plant instrumentation and radiological monitoring, each emergency class invokes similar assessment methods. The magnitude of the assessment actions posed by each classification varies. An important focus of assessment actions is to track the ability of plant systems to contain the core inventory of radioactive material (i.e., radionuclides) and to monitor whether the potential exists for accidental release of this material into the environment. Assessment actions also include determining the consequences of a radioactive material release on both a projected and actual basis.

For the Unusual Event classification level, assessment actions will generally involve situations that do not pose a threat to containment of the reactor core's radioactive material. Usually, declaration of an emergency classification will result from alarms, instrument readings, severe weather warnings, operating experience, or any combination thereof. Continuing assessment for an Unusual Event category of emergency will consist of the normal monitoring of Control Room and plant instrumentation and status. Tornado and severe weather assessment actions consist of keeping in contact with the load dispatcher and appropriate public authorities. If a fire prompted the declaration of an Unusual Event, the Fire Brigade Leader will go to the fire location, make continuing assessments, and report to the Shift Manager on whether offsite fire fighting support is required.

Once an incident has been classified as an Alert, assessment actions will include:

a. Increased surveillance of in-plant instrumentation.

b. If possible, the dispatching of shift personnel to the identified problem area to confirm and visually assess the problem.

c. The dispatching of personnel to monitor for possible releases, and to confirm the correct classification.

d. If a radiological incident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected offsite doses will occur. Dose assessment activity will continue until termination of the emergency so that assessment updates may be provided to all concerned offsite agencies and to the Emergency Director. Emergency Plan Implementing Procedures are provided to allow a rapid, consistent projection of offsite doses.

Assessment actions for the Site Area Emergency and General Emergency category are similar to the actions for an Alert. However, due to the increased magnitude of the possible release, assessment activity of greater scope will occur. The personnel necessary for this assessment effort will be provided by full mobilization of the onsite and offsite emergency response organizations. The assessment actions at these levels will include:

a. An increased amount of plant instrumentation will be monitored. (In particular, indications of core status, e.g., saturation temperature, core covery/uncovery indications etc.)

b. Radiation monitoring efforts will be greatly increased. Field Monitoring Teams will be available for dispatch. Beta-gamma field measurements will be performed; air sampling, environmental thermoluminescent dosimeter (TLD) change out, and collection of environmental media for assessment of material transport and deposition will be performed as necessary.

c. Dose assessment activities will be performed more frequently, with an increased emphasis on dose projection for use as a factor in determining necessary protective actions. Radiological and meteorological instrumentation readings will be used to project the dose rate at predetermined distances from the plant, and to project the potential integrated dose.

   In reporting the dose projections to the Emergency Director, the dose rate, dose, and basis for the time used for the dose estimate should be provided. Confirmation of dose rates by Field Monitoring Teams will be reflected in reports or revised dose estimate information provided to offsite agencies.

   All dose projections will be performed in accordance with the Emergency Plan Implementing Procedures which incorporate recommendations found in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." Reports to offsite authorities will include the relationship of dose to these guidelines. Emergency Plan Implementing Procedures provide for the recording of pertinent information.

Detailed plant operating procedures are available for use during emergencies, as well as during normal operations. Specific Emergency Operating Procedures and Abnormal Condition Procedures are provided to assist the Control Room operators in placing the plant in a safe condition and taking corrective actions.

5.1.1 Plant Instrumentation

Plant instrumentation measures appropriate parameters that are indicative of the status of various plant systems and the reactor. Instrumentation used to ensure safe reactor operation is deemed safety related. An important group of safety related parameters is commonly referred to as the Safety Parameter Display System (SPDS). The purpose of this system as outlined in NUREG-0696, is to help Control Room personnel make quick assessments of plant safety status. At Columbia Generating Station, the SPDS is made up of hard wired Control Room instrumentation. This instrumentation is sufficiently concentrated in the Main Control Room to allow rapid assessment of plant conditions. Additional information that is useful for emergency response is supplied by the Graphic Display System (GDS) which is part of SPDS. The SPDS provides information related to assessment of the following plant functions:

- Reactivity control,
- Reactor core cooling and heat removal,
- Reactor coolant system integrity,
- Radioactivity control, and
- Containment integrity.

The SPDS and other post-accident monitoring instrumentation provide the means to assess plant status during and following an accident. For more detailed information on plant instrumentation, refer to the Final Safety Analysis Report, Chapter 7.

The structures, systems, components and instrumentation important to safety at Columbia Generating Station are designed and located to minimize the probability and effect of fires and explosions, as well as to withstand the effects of natural phenomena such as earthquakes, tornadoes, and floods without the loss of capability to perform their safety functions.

Facilities and equipment for detecting, annunciating, and extinguishing fires are provided to protect both plant and personnel. These include fire detection and alarm systems, deluge water spray systems, dry and wet pipe sprinkler systems, carbon dioxide systems, hose stations, portable fire extinguishers, and halon flooding systems. In addition, noncombustible and heat resistant materials are used wherever practical throughout the Plant, particularly in locations such as the containment and Control Room. For more detailed information on the fire protection systems, refer to the Columbia Generating Station Fire Protection Evaluation.

The Plant site is near the Columbia River, which is the predominant hydrologic feature of the area. The elevations of safety related systems and components, however, are sufficient to protect the Plant against design basis flood conditions. All safety related structures, systems and components are also designed to withstand the effects of an earthquake, estimated as the maximum earthquake potential for this area. Instrumentation used to monitor earthquake seismic motion at Columbia Generating Station complies with Regulatory Guide 1.12 requirements and provides both a printout and an alarm annunciation if certain levels of seismic motion are detected. For more detailed information on tornado, flood and earthquake protection, refer to the Final Safety Analysis Report, Chapter 3. If needed as backup, flood information can be obtained from the U.S. Coast Guard and seismic information can be obtained from the Department of Energy, Richland Operations. Both agencies are listed in the Emergency Phone Directory.

5.1.2 Radiological Monitoring Instrumentation

The plant radiation monitoring instrumentation is used to provide information in regard to general area radiation levels as well as the radiation levels in process and effluent streams, i.e., fluids in piping systems or air in ventilation systems. The area radiation and airborne radioactivity monitoring systems are comprised of area monitoring components located throughout the plant. Under normal operating conditions, the area monitors warn personnel both locally and remotely of increasing radiation levels. These monitors provide information to assessment personnel so that decisions can be made with respect to deployment of personnel or initiation of protective actions in the event of a radiation accident. For more detailed information on the area radiation and airborne radioactivity monitoring systems, refer to the Final Safety Analysis Report, Chapter 12.

The process and effluent radiological monitoring and sampling systems provide the means for sampling and continuously monitoring paths by which significant amounts of radioactivity could be released to the environment during normal operation and anticipated operational occurrences. As part of the plant radiological monitoring program, the process and effluent radiological monitoring and sampling systems assist in limiting effluent radioactivity to within the limits of 10CFR 20 and 10CFR 50, Appendix I and provide measurement for reporting radioactivity released to the environs in compliance with Regulatory Guide 1.21. These systems also provide the accident radiation monitoring required for compliance with NUREG-0737. Portions of these systems are also employed during postulated accident conditions for monitoring effluent discharge paths, and initiating automatic control features. A detailed description of the process and effluent monitoring and sampling systems is included in the Final Safety Analysis Report, Chapter 11.

5.2 METEOROLOGICAL AND ENVIRONMENTAL MONITORING

5.2.1 Meteorological Monitoring System

The primary onsite meteorological equipment includes a 240-foot tower with a 5 ft. wind mast located approximately 1700 feet west of Columbia Generating Station and provides data to Columbia Generating Station. System measurements include wind speed, wind direction, sigma theta, temperature, dew point, barometric pressure, precipitation, and temperature differential. The Operational Meteorological Program is described in Chapter 2 of the Final Safety Analysis Report.

Wind speed, wind direction, and temperatures, except the temperature at 245 feet, are available in the control room as near real-time digital displays, (five-minute averages). The averaged data is sent via the supervisory system to the Control Room. The data is then sent to chart recorders and the PPCRS computer. The data is also accessible at the Emergency Operations Facility, the Technical Support Center, and the control room via the plant computer system.

Backup meteorological information is available. Wind speed and direction, temperature, dew points, and sigma theta parameters are available. This and other information is available from Pacific Northwest National Laboratory (PNNL) or the National Weather Service, for 15-minute averaging (manual) and input to the computer systems.

The outputs of the primary tower sensors are fed to the plant process computer for 15 minute averaging for input to the Emergency Dose Projection System (EDPS). Error diagnostics, simulated data entry, and archiving are performed concurrently. Near real time access for both emergency and routine operations is thus provided.

A procedure shall be available for the use of normal and backup meteorological data.

5.2.2 Radiological Environmental Monitoring Program

A routine radiological environmental monitoring program is established in accordance with the Offsite Dose Calculation Manual (ODCM) requirement. Energy Northwest activities include air, milk, water, garden produce, fish, soil and sediment sampling, and thermoluminescent dosimeter (TLD) placement. Energy Northwest environmental monitoring locations are similar to Figure 5-1 and are fully listed in Section 5.0 of Energy Northwest ODCM.

In case of an emergency at Columbia Generating Station, TLDs will provide a time integrated exposure record. Permanent TLD stations are located within the Ten-Mile Emergency Planning Zone, around the Exclusion Area Boundary, and at various points of interest around the Hanford Reservation and across the Columbia River in Franklin County. A control station is located near Grandview, approximately 30 miles southwest of the site. Exchange frequency during normal operations is quarterly; however, during an emergency the TLDs may be exchanged more frequently based on release conditions. In addition, continuous air samplers are located within the Ten-Mile Emergency Planning Zone. The air samplers collect airborne radioiodines and particulates on filters which are analyzed either in the field or at the radiological laboratory in the Emergency Operations Facility.

5.3 OFFSITE DOSE PROJECTIONS

5.3.1 Source Term Determinations

Release data, such as volumetric flow rates and gross radiation levels, in conjunction with calibration factors and time dependent nuclide ratios, will be utilized during an accident to assess the radiological source term. Capability exists on shift to perform dose assessment projections using real time meteorological and effluent monitor data at all times. Data from instrumentation in the airborne effluent release pathways are available to be entered into the Emergency Dose Projection System (EDPS) to calculate the source term. A more detailed assessment of the isotopic composition of the release will be determined by laboratory analysis of effluent and field sampling media. Methods for determining release rate in the event the instrumentation is offscale or inoperative are contained in the Emergency Plan Implementing Procedures.

5.3.2 Emergency Dose Projection System

The Emergency Dose Projection System (EDPS) consists of 2 programs, QEPDS and EDPS Main. Both programs are accessed via personal computer. Both programs rely on a precalculated, real time, site-specific relationship between effluent monitor readings and on-site and offsite dose rates.

QEDPS is designed for rapid evaluation of a release with restricted data input and a straight-line dispersion model. QEDPS provides incremental dose projections from the site boundary out to 10 miles. QEDPS is available in the Control Room, TSC, EOF, and Alternate EOF, and provides text and map output. Field Team data may be used to calculate dose projections or validate previous projections.

Having the QEDPS software loaded on multiple, stand-alone computers located in the Control Room and EOF ensures backup dose projection capability.

EDPS Main is designed to accept much more detailed inputs for a more thorough release evaluation with more extensive text and graphical output. EDPS Main has the choice of puff or straight-line dispersion models and incremental dose projections from the site boundary out to 10 or 50 miles. EDPS Main has a graphical map output as well as a text output of the dose projection. EDPS Main is available in the TSC and EOF.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

5.3.3 Total Population Exposure

The Columbia Generating Station plant data systems collect and maintain files of effluent flow, radiation monitor readings, and five minute average meteorology data. These data are manually input into a joint frequency program, into the XOQDOQ program, and then to the GASPAR II computer code to calculate total population dose for occupied areas. The GASPAR II code can be adapted to emergency operations by input of short term atmospheric dispersion factors and appropriate exposure pathway parameters out to 50 miles.

5.4 FIELD MONITORING

5.4.1 Environmental Field Teams

Field monitoring capabilities will be activated whenever an Alert classification occurs. Field monitoring will be performed by environmental field teams that have been selected and trained to perform these duties.

Sufficient personnel are identified within Energy Northwest and outside assistance agencies to maintain 24-hour shift coverage if needed for an extended period. Energy Northwest maintains sufficient dedicated equipment to adequately equip four Energy Northwest environmental field teams.

Field team members responding during offshift hours will report to their emergency duty station within 60 minutes. Field team deployment time from their emergency duty station will be as needed, and can be achieved in less than 30 minutes. This is based on the time necessary to brief the team, load equipment, and depart the staging area. This deployment time could be shorter during normal work hours when field team personnel are more available and could respond sooner than the 60 minute required response time.

Field monitoring will concentrate in the downwind area from the plant. Locations used during the normal environmental monitoring program will be used as preselected monitoring points when applicable (Figure 5-1).

5.4.2 Aerial Monitoring

Aerial monitoring may be used to locate a plume in a delayed or extended release, or to identify areas of radioactive deposition following a release. Aerial monitoring capability is available through federal emergency resources. The decision to employ aerial monitoring will be made by representatives of the Washington Department of Health, Oregon Department of Health, US Department of Energy, and Energy Northwest. Any request for federal resources to conduct aerial monitoring will be directed through the Washington State Emergency Operations Center (EOC).

5.4.3 Environmental Field Team Kits

Environmental field team monitoring kits are maintained in a state of readiness. Additional supplies and equipment are available to replace equipment out of service for repair and recalibration. Equipment in the calibration laboratory provides an additional resource. Appendix 3 provides lists of equipment and their location.

5.4.4 Radioiodine Determinations

Environmental air samples are analyzed for particulate and radioiodine concentrations. Analysis of particulate filters and iodine sampling cartridges are performed using a portable count rate meter. Procedures concerning sampling time and field analysis techniques are established to measure airborne radioiodine concentrations as low as 10^{-7} microcuries per cubic centimeter under field conditions.

5.4.5 Laboratory Capability

Laboratory analysis of environmental field samples can be conducted at Energy Northwest facilities as described in Section 6.2.8 of this Plan. In addition, the States of Oregon and Washington both maintain laboratories under the direction of their respective Departments of Health. These laboratories have the capability to identify, both qualitatively and quantitatively, the constituent elements that might be contained in radiological releases from Columbia Generating Station during a nuclear incident. Following such an event, samples of air, drinking water, milk, pasture and other agricultural products would be obtained by field teams and brought to the labs for analysis. The results of this analysis would then be used to determine the existence of radiological hazards in food products. The specific capabilities of the state laboratories are evaluated by FEMA.

5.5 PROTECTIVE ACTION AND RESPONSIBILITIES

The appropriate protective actions for an airborne release of radioactive material are evacuation and sheltering. The decision to evacuate or shelter is based on the dose to be avoided by the protective action relative to the risk associated with implementing a protective action. Dose to be avoided by a protective action can be affected by duration and quantity of radioactive release as well as time of release relative to time of implementation of the protective action. Protective Action Guides, discussed in Section 5.5.1, provide pre-planned guidance for making response decisions. When applied with professional judgement, they help to ensure rapid action to protect members of the public. Specifically:

a. Evacuation - Evacuation and control of access to an affected area can be the most effective protective action for reducing the dose to the public. However, constraints such as severe weather conditions, obstruction of roads, and limited time may impact the benefits of evacuation.

b. Sheltering - Sheltering in buildings with windows and doors closed and ventilation turned off can provide partial protection from a passing radioactive plume. The extent of the protection depends on the duration and isotopic mixture of the release and the type of building.

The provisions for relating measured parameters to dose rates for key isotopes and for estimating integrated dose from projected and actual dose rates shall be described in procedures.

5.5.1 Recommendations to Counties, States and Department of Energy-Richland Operations (RL)

Energy Northwest will make prompt recommendations for protective actions to state, county and DOE-RL officials. These officials will make decisions on the specific actions to be implemented in their jurisdiction.

Protective Action Recommendations (PARs) will be made based on plant or radiological conditions. Recommendations for evacuation and sheltering of certain areas are required upon classification of a General Emergency without regard to whether a radiological release is occurring. If plant conditions and a radiological release both warrant PARs, the most conservative recommendation will be made.

Shelter, evacuation or access control guidelines are based on the EPA Protective Action Guidelines and NUREG-0654 Supplement 3 recommendations.

The preferred initial action to protect the public from a severe reactor accident is to evacuate immediately about two miles around the plant and 10 miles downwind unless other conditions make evacuation dangerous. Persons in the remainder of the plume zone should be directed to stay indoors and listen to EBS/EAS broadcasts while the situation is evaluated further.

Travel conditions that may present extreme hazard may prompt offsite officials to recommend shelter until conditions improve. Shelter may also be appropriate for special, transit-dependent populations, or during controlled, short duration releases of radioactivity.

Plant and offsite officials will continue to assess plant conditions to determine additional protective actions. These protective actions should be based on field monitoring data and dose projections that indicate EPA PAGs may be exceeded in areas beyond those that have been evacuated.

5.5.2 Energy Northwest Responsibilities

Primary responsibilities of Energy Northwest associated with offsite area protective actions are to:

a. Provide the best possible effort to resolve the emergency onsite, thus alleviating the offsite condition.

b. Notify the affected county, DOE, and state officials responsible for Protective Action Decisions of the emergency condition and provide the best possible information, recommendations, and support services.

c. Coordinate Energy Northwest actions with those of federal, state, and local agencies involved in implementing protective actions.

d. Ensure that all required agencies are advised of the protective actions recommended and provided periodic updates.

5.6 POPULATION DISTRIBUTION

Figures 5-3 and 5-4 present the compass sector population estimates for the Columbia Generating Station site. Estimates for the Ten-Mile Emergency Planning Zone were acquired from population surveys conducted by the Benton and Franklin County Offices of Emergency Management. The transient industrial worker populations on the Hanford Site have been updated by the appropriate facilities. Transient recreationist figures for the Columbia River and Horn Rapids areas were updated through contacts with local representatives of the Washington Department of Fisheries and the Washington Department of Wildlife.

5.6.1 Permanent Residents

Permanent residents include all persons residing in the area. In 2000 an estimated 3,674 people were living within the Ten-Mile Emergency Planning Zone. The nearest inhabitants occupy farms which are located east of the Columbia River and are thinly spread over five compass sectors. There are no permanent residents located within three miles of the site. About 289 persons reside between the three-mile and the five-mile radii; these are all located east of the Columbia River. Of the 3,674 people residing in the Ten-Mile Emergency Planning Zone, about 2,524 live in Franklin County and about 1,150 in Benton County.

There are no significant changes in land use expected in Franklin County over the next several years. As it is currently irrigated to about the maximum amount practicable, little population increase is foreseen. No significant change in land use on the Hanford Reservation is expected, and no foreseeable population will reside there. The unincorporated area near the Horn Rapids Dam on the Yakima River in the SSW sector is expected to be the primary growth area within the Ten-Mile Emergency Planning Zone. Population growth within the Ten-Mile Emergency Planning Zone is projected to be about 6% per annum.

5.6.2 Transient Population

The transient population is divided into three main subgroups: 1) industrial employees, 2) migratory agricultural workers, and 3) recreationists. Figure 5-4 illustrates this population location graphically.

Industrial employees in the Ten-Mile EPZ total 7,017. Most are located in Benton County and form the main population to be evacuated. About 995 industrial employees work at Columbia Generating Station, and Energy Northwest Kootenai and Deschutes Buildings.

Industrial employment in the Ten-Mile Emergency Planning Zone includes:

WNP-1 (Energy Northwest & Non-Energy Northwest personnel) (12/00)	120
Ashe Substation (12/00)	21
Energy Northwest's Columbia Generating Station (12/00 Operational dayshift value)	560
Energy Northwest's Deschutes Building (12/00)	312
Energy Northwest's Kootenai Building (12/00)	123
DOE 400 Area (FFTF, Fast Flux Test Facility) (12/00)	371
Framatome ANP (12/00)	750
Allied Technology Group (12/00)	230
Hearth Melting (12/00)	75
Richland City Dump (12/00)	6
Hammer and Law Enforcement Training Center (12/00)	69
DOE 300 Area (12/00)	1,631
DOE 3000 Area, (Battelle and other contractors in POB area) (12/00)	486
Pacific Northwest National Laboratory (12/00)	2,263
TOTAL	7,017

The majority of these employees work day shift, but there may be some back-shift workers in the DOE figures. Credit is not deducted from the population values due to emergency personnel remaining in place. Therefore, the planning figure of 7,017 to be evacuated is conservatively high.

There are up to approximately 5,135 migrant farm workers in the Ten-Mile Emergency Planning Zone. This figure may be high due to the possibility of double counting during the different harvest periods. The peak season for these workers is May and June; the next highest employment season is during the fall harvest. These workers consist of both permanent and temporary residents of the Tri-Cities area, some living within the Ten-Mile Emergency Planning Zone. The numbers shown on Figure 5-4 and Table 5-1 reflect their work locations in Franklin County within the Ten-Mile Emergency Planning Zone, not their residences.

Recreationists, consisting of hunters, fishermen and boaters, enjoy activities mainly along the east bank of the Columbia river. The primary fishing season is from June through November; the main hunting season being October through January. The heaviest use of the area by recreationists is on weekends and holidays in the early morning hours. On the average, 52 fishermen and 80 hunters are present in Franklin County during the weekdays. This increases to about 155 fishermen and 200 hunters on weekends and holidays. Recreationists also use the Yakima River with an estimated maximum of 42 at any time in this area. During peak fishing or hunting times, up to 1,275 fishing and hunting recreationists may be located within the Ten-Mile Emergency Planning Zone. Of these, 1,233 are assigned to Franklin County and 42 to Benton County.

The main concentration of recreationists consists of fishermen located just south of the Ringold Fish Hatchery spillway on the Franklin County side of the Columbia River. Hunting consists of both water fowl, hunted at the Wahluke Hunting Area on the Franklin County side of the Columbia River, and upland game birds, hunted inland on the farm land of Franklin County. Up to 600 recreationists may be located around the Ringold Fish Hatchery and the Wahluke Hunting Area and the rest distributed inland.

An additional recreation attraction is in the south section of the Ten-Mile Emergency Planning Zone in Benton County as an Off-Road Vehicle Park (ORV). As many as 1,500 participants and spectators may be present during an event. Thus, a maximum total of 2,775 recreationists may be located within the Ten-Mile Emergency Planning Zone. Additional provisions have been made for the Horn Rapids housing development and golf course.

5.6.3 Special Facility Population

There are no individuals within the Ten-Mile Emergency Planning Zone confined to facilities such as hospitals, nursing homes, or penal institutions. There are four schools, the Edwin Markham Elementary School, the Country Haven Academy, the Country Christian Center, and the Big River Country School, with a total enrollment of approximately 575 (students and faculty). Most of the students live within the Ten-Mile Emergency Planning Zone.

5.7 EVACUATION ROUTES AND ASSISTANCE CENTERS

5.7.1 Public Evacuation Routes

The Benton County Fixed Nuclear Facility Response Plan and the Franklin County Radiological Columbia Generating Station Response Plan (referred to in Appendix 1) contain information concerning evacuation routes and assistance centers for personnel who would be evacuated from the Ten-Mile Emergency Planning Zone. See Figure 5-5 for Assistance Center locations.

5.7.2 Site Evacuation Routes

Several evacuation routes are available to site personnel. These are shown in Figure 5-5 and include:

a. Route 4 South - This four-lane road leads southeast from the site to Richland and is the main route from the plants.

b. Route 10 South - A two-lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads on into Richland.

c. Route 4 South - A two-lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.

d. Route 2 South - A two-lane road leading north from the plants, intersecting with Highway 240 and Highway 24 to Yakima.

All of these roads have an expected vehicle capacity of between 1200 and 1800 vehicles per lane per hour.

5.7.3 Plant and Nearby Facilities Evacuation

Radiological conditions may dictate evacuation of the plant and nearby facilities. If an evacuation of the plant is ordered by the Emergency Director, plant personnel, visitors, and contract personnel other than those with emergency functions will evacuate plant areas. Procedures and equipment are provided to immediately determine the habitability of the area. Preliminary surveys will also be made to determine the contamination or exposure status of personnel and identify those individuals needing decontamination.

For a Site Area Emergency or General Emergency, personnel within the Protected Area may be evacuated to the Kootenai Building (PSF) or the Energy Northwest Office Complex, for monitoring or decontamination as necessary. Procedures provide for personnel accountability and assessment of contamination/exposure status. Personnel that do have assigned emergency functions will proceed to their emergency center.

Non-essential personnel in the Exclusion Area will be evacuated as needed at a Site Area Emergency or General Emergency. They will be directed to go home if radiological contamination concerns do not exist, otherwise they will be directed to the Energy Northwest Office Complex (or other area as appropriate and designated by procedure). Personnel assigned emergency functions will proceed to their emergency center.

5.7.4 Radiological Monitoring and Decontamination of Personnel

Personnel will be monitored for contamination prior to leaving the plant if conditions permit. Whole body friskers and portable detectors are available at the plant exit. Personnel decontamination facilities in the plant include showers, sinks, and cleaning agents. Decontamination capabilities for emergency purposes are also available at the Kootenai Building, at remote decontamination locations, and for injured personnel at the Hanford Environmental Health Foundation Emergency Decontamination Facility in Richland.

For the general population, monitoring will be conducted under provisions of the Benton County Fixed Nuclear Facility Response Emergency Plan and the Franklin County Radiological Response: Energy Northwest plan. Emergency Worker/Assistance Centers (EWAC) are identified for the monitoring of personnel leaving the affected sectors of the 10 mile EPZ. Personnel evacuated from affected segments of the Columbia River will be monitored when necessary at a location along the river. The Washington State Department of Health will be in charge of the monitoring and decontamination effort.

5.7.5 Personnel Accountability

Personnel accountability will be conducted at predetermined locations. The Operations Support Center Manager is responsible for ensuring performance of accountability within the Protected Area and reporting the results to the TSC Manager or Shift Manager if the TSC is not activated. Non-essential personnel will be logged offsite utilizing the electronic access control system or personnel logs. The goal is to complete personnel accountability inside the Protected Area within 30 minutes. The last known location of unaccounted individuals will be obtained and search and rescue procedures initiated to locate the missing individuals.

For the Exclusion Area, personnel are alerted by the evacuation siren, public address announcement or telephones and will follow evacuation procedures. Energy Northwest personnel will be available to initiate the search and rescue procedures as needed.

5.8 EVACUATION TIME ESTIMATES

Evacuation time estimates for the Columbia Generating Station site have been developed in the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study, Revision 4, May, 2001. Table 5-1 of this section summarizes the results.

5.8.1 Emergency Planning Zone Sub-Areas

The Ten-Mile Emergency Planning Zone was divided into several sub-areas as follows:

0-2 miles	entire circumference
0-5 miles	four approximate 90° sections
2-10 miles	four approximate 90° sections
0-10 miles	entire EPZ

The two-mile radius was not subdivided because it contains no residential population and the only institution populations are transients all working on contiguous Energy Northwest properties. Only three of the four 5 and 10 mile sectors (about 90°) were examined because the fourth, entirely on the Hanford Reservation, contains no residential, transient or special population. These sectors are graphically shown on Figure 5-5. The Columbia River forms a natural border between Benton and Franklin Counties and was used to form the division between Sector 2 and Sector 3. Franklin County was divided, approximately in half, since it was assumed that those persons north of the plant location would evacuate north toward Mesa and Connell and those persons south of the plant would evacuate south towards Pasco. When making estimates for outer portions of the sectors it was assumed that the inner adjacent portions were being simultaneously evacuated.

5.8.2 Notification, Preparation, Response and Confirmation Times

The evacuation time estimates shown in Table 5-1 include preparation time and response time. Notification times and confirmation times are shown as separate items.

Energy Northwest has established procedures to notify officials of Washington State, Benton and Franklin Counties and the Department of Energy-Richland Operations within 15 minutes of a declaration of any emergency classification. The Energy Northwest early warning system was designed to enable the county to notify the permanent 10-mile population within 15 minutes from the time the decision to take a protective action is made by county officials. Therefore, a maximum of 30 minutes notification time is assumed.

In the event of an evacuation, residents needing transportation are instructed to call the respective county emergency management office to request transportation. The respective emergency management office will dispatch emergency workers to collect these residents. Energy Northwest will be responsible for personnel accountability at Energy Northwest facilities (estimated to take a maximum of 30 minutes). The calculated evacuation time estimates start at the time of the announcement over the Emergency Broadcast System (EBS) or Emergency Alerting System (EAS) station to begin evacuation and end when the evacuation is complete.

The Figure 5-6 series illustrates "S-curves" for various populations and conditions. In the congested traffic environment which is characteristic of an evacuation process, travel time on a roadway section is, to a large extent, determined by the capacity of that section. Roadway capacities were based upon the type of roadway considered and the presence of traffic control. The following table presents the per-lane capacities utilized:

Roadway Type	Per-lane Capacity (Veh/hr)
Freeway	1800
Arterial/Rural Road	1500
Local Street	1200

A vehicle occupancy of three persons per vehicle was generally used for residents and transients. Exceptions are the industrial plants for which 1.5 persons per vehicle was used, the schools for which 35 persons per school bus was used, and the Off-Road Vehicle Park for which 2 persons per vehicle was used.

5.8.3 Adverse Weather

Severe weather conditions such as blizzards, heavy rain storms, flooding, fog, or high winds could seriously hamper evacuation. However, historical records indicate that severe conditions of this nature have occurred rarely in the past. Because of the effect of weather on the capacity of roadway and the fact that capacity is a controlling factor in deriving evacuation times, it is necessary to adjust capacity figures to represent estimated road conditions during adverse weather. Based on limited empirical data, weather conditions such as heavy rain reduce the values of capacity for the highways utilized as evacuation routes by approximately 20 percent. For adverse conditions during the winter months, estimated capacity reductions and free-flow speed reductions of 30 percent each, relative to normal weather conditions are assumed.

5.8.4 Special Facilities

The only special facilities within the Ten-Mile Emergency Planning Zone are Edwin Markham Elementary School, Country Haven Academy, the Big River Country School, and the Country Christian Center, with a total enrollment of approximately 575 students and faculty. Because of the small size of this population, it was considered counted as part of the permanent population in making evacuation time estimates. Buses which could be used in the evacuation are located at the district bus lot in north Pasco during the day. The buses can be dispatched to the schools within the one hour preparation time assumed for this section.

Public transportation, although not specifically identified as being needed, is available to the public in a portion of the Ten-Mile Emergency Planning Zone and is not relied upon for evacuation. The sheriffs' departments will be patrolling the area during an emergency and could make transportation arrangements for anyone not already evacuated.

5.9 RADIOLOGICAL EXPOSURE CONTROL

Radiation exposure limits and guidelines have been established for the control of radiation exposure to workers during an emergency. Facilities are available and arrangements can be made for internal and external personnel dose assessment. The individual functioning as Emergency Director has the responsibility to authorize exposures in excess of 10CFR20 limits or EPA-400 guidance, but can delegate this responsibility if necessary to improve command and control operations.

5.9.1 ALARA Policy

ALARA is an acronym meaning As Low As Reasonably Achievable. Energy Northwest's ALARA policy states:

> "Energy Northwest shall conduct all operations involving radiation and radioactive material such that radiation exposures to employees, contractors and the general public are maintained as low as is reasonably achievable. "Reasonably achievable" takes into account the state of technology and the economics of exposure reduction in relationship to the benefits to health and safety."

The principles of ALARA will be considered during all phases of the emergency and applied where practical. Refer to Section 5.9.3.

5.9.2 Administrative Exposure Hold Points

Administrative exposure hold points are used during normal operations to bring exposures which are or could be significant to the attention of Plant Management. Energy Northwest administrative exposure hold points will be automatically waived upon declaration of an Alert or higher emergency classification. The Radiation Protection Manager (RPM), for onsite, and the Radiological Emergency Manager (REM), for offsite, are still responsible for limiting personnel exposures in keeping with the ALARA philosophy.

Whenever the administrative exposure hold points are waived, efforts shall be made to keep all exposures below 10 CFR 20 limits.

5.9.3 Protective Action Guides (PAGs)

The Environmental Protection Agency (EPA) has established Emergency Worker and Lifesaving Activity Protective Action Guides as follows:

PROTECTIVE ACTION GUIDES FOR EMERGENCY WORKERS		
DOSE LIMIT	ACTIVITY	PROTECTIVE ACTIONS
5 rem TEDE[1]	ALL	Emergency Workers continuously monitor and limit exposure.
10 rem TEDE	PROTECTING VALUABLE PROPERTY	Evaluate alternatives prior to granting authorization to exceed limits. Exposures above 5 rem require approval of the Emergency Director or designee.
25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Lower doses not practicable.
>25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Provide specific review and decision for each VOLUNTARY life-saving mission. Only volunteers fully aware of the risks should request exceeding this limit.

Energy Northwest will at all times attempt to keep exposures below EPA 400 Guidelines. However, situations such as the following may arise which could necessitate application of the above Protective Action Guides:

a. lifesaving activities
b. removal of injured persons
c. undertaking corrective actions
d. performing assessment actions
e. providing first aid
f. performing personnel decontamination
g. providing ambulance services
h. providing medical treatment services

Permission for emergency workers to receive additional radiation exposure is contained in procedures which includes expeditious decisions and comparison of relative risk.

[1]The total effective dose equivalent (TEDE) is the sum of the deep dose equivalent (DDE) resulting from exposure to external sources and the committed effective dose equivalent (CEDE) projected over 50 years for internal exposures. CEDE is the risk weighted sum of committed dose equivalents (CDE) to organs. CDE is the total dose from an internally deposited radionuclide over the subsequent 50 year period.

5.9.4 Contamination Control

5.9.4.1 Area Access

Controls have been established at Columbia Generating Station to ensure there is no detectable fixed or loose contamination (beta-gamma or alpha) outside of the Radiologically Controlled Area (RCA) under normal or emergency conditions. Energy Northwest policy is to minimize the potential for personnel contamination and to prevent the spread of contamination to uncontrolled areas at all times. Normally all personnel and equipment leaving the RCA are monitored to ensure the limits for contamination levels are met. However, normal in-plant contamination control procedures may be suspended during an emergency by the plant Radiation Protection Manager to allow for prompt emergency response and to minimize personnel exposure to other hazards. Contamination control measures intended to prevent transport of radioactive materials out of the plant or into continuously occupied areas such as the control room shall retain high priority.

5.9.4.2 Personnel

Personnel work practices within the RCA are controlled by Health Physics procedures. Upon leaving a radiologically contaminated area, each worker will normally proceed to the nearest personnel monitoring station which has a background count rate of less than 300 cpm and perform a personal survey. Individuals leaving the RCA are normally monitored for contamination before entering an uncontrolled area.

If survey of an individual indicates contamination levels in excess of established contamination limits, decontamination will be performed. Records will be maintained in accordance with established Health Physics procedures. Potassium Iodide, respirators and protective clothing can be distributed to plant personnel if needed.

5.9.4.3 Decontamination

Decontamination limits apply to personnel and equipment during routine and emergency operations. Only the Radiation Protection Manager or his delegate can waive these limits and then only on a case by case basis.

Normal personnel decontamination is accomplished in the 487′ elevation Radwaste Building decontamination facility. All drains lead to the Radwaste system where the liquid is processed and monitored prior to discharge. During site emergency evacuation conditions, personnel decontaminations can be accomplished at the Kootenai Building where a decontamination shower and supplies are maintained.

Energy Northwest policy requires decontamination of personnel, equipment, and material prior to release from a radiologically controlled area according to the criteria found in Chapter 12.5 of the FSAR.

If the contamination cannot be reduced to these limits by reasonable methods, such as with radioiodine skin contamination, the Radiation Protection Manager (for inside the Protected Area) and the Radiological Emergency Manager (for outside of that area) shall determine a further course of action. This may include referral to a local medical facility or placing the individual in an on-going exposure tracking program.

5.9.4.4 Drinking Water and Food Supplies

Radiological surveys will periodically be made in areas where food is stored onsite and isotopic analyses will periodically be made of the Columbia Generating Station drinking water supply. The primary source of potable water for Columbia Generating Station is the Columbia River. It is unlikely that an airborne release of radioactive material could affect this supply.

Offsite vegetation and milk samples are also analyzed routinely as part of the Radiological Environmental Monitoring Program (REMP). In the event of an airborne release of radioactive materials, environmental samples are collected and analyzed.

5.9.5 Personnel Dose Assessment

Routine and emergency personnel exposure monitoring and dose assessments are accomplished by issuing thermoluminescent dosimeters (TLDs), electronic or direct reading dosimeters and monitoring for airborne radioactivity. A twenty-four hour per day capability to analyze Energy Northwest issued dosimetry is available. Energy Northwest maintains a personnel monitoring program through the use of appropriate dosimetry and whole body counters.

5.9.5.1 Thermoluminescent Dosimeters

Issuance of personnel TLDs will be in accordance with established Health Physics procedures. Special provisions are included to increase the frequency of TLD processing, as necessary, during emergencies.

The measured dose as determined by TLDs shall serve as the permanent and official record of the individual's deep dose equivalent (DDE) and skin dose. Radiation dose to the hands, forearms, feet and ankles shall be obtained by placing additional TLDs in those locations when extremity exposure may be the controlling factor.

5.9.5.2 Direct Reading Dosimeters

Electronic or direct reading pocket dosimeters are issued to personnel entering radiologically controlled areas. Personnel shall be instructed to read these dosimeters frequently. Dosimeter readings provide an estimated record of external exposure received on a daily basis.

5.9.5.3 Issuance of Dosimetry to Offsite Emergency Personnel Responding Onsite

Offsite emergency personnel who respond onsite and do not have preassigned dosimetry will be issued the appropriate personnel dosimetry upon arrival at the site access point.

Emergencies requiring immediate response are characterized by the necessity for access by emergency response personnel with minimal or no delay. Examples include fire fighting teams, emergency medical personnel or bomb squads. In this situation, dosimetry will be dispensed by Security personnel at the access point. Procedures are established to ensure dosimeters are read at appropriate frequencies. Dosimetry and necessary personal and exposure information will be collected upon leaving the site. Energy Northwest Security will be provided with sufficient dosimetry devices, procedures, and data forms for this type of occurrence.

Offsite (State and County) personnel responding to the EOF will respond with their own dosimetry or will be provided dosimetry by Energy Northwest if necessary.

5.9.5.4 Airborne Radioactivity Monitoring

The primary method utilized to determine potential internal exposure of plant personnel is the measurement of airborne radioactivity. Standard Health Physics procedures describe the collection and analysis of air samples.

5.9.5.5 Whole Body Counting and In-Vitro Bioassays

Whole body counting and in-vitro bioassay will be available during and after an emergency to aid in determining the extent of an individual's internal exposure to radioactive materials. Measurements of radioactivity in the body (in-vivo), and/or radioactivity excreted from the body (in-vitro), will be performed as necessary. This will enable timely evaluation of uptakes of radioactive material whenever it is suspected that the individual has been exposed to airborne radioactivity above predetermined levels specified in established procedures.

5.9.5.6 Radiation Exposure Records

Exposure records are maintained by the Total Exposure System for external and internal radiation exposure for each person entering a radiologically controlled area at an Energy Northwest nuclear facility. These records include external dose [Deep Dose Equivalent (DDE)], skin and extremities dose [Skin Dose Equivalent (SDE)] and internal dose [Committed Dose Equivalents (CDE)] determined by dosimetry, whole body counting and/or in-vitro bioassay.

5.9.6 Respiratory Protection

Selected personnel assigned in-plant emergency response duties are trained in the use of respiratory protective equipment and qualified through quantitative respiratory fit testing. Respiratory protective equipment is maintained at strategic locations in the plant with backup supplies available. Respiratory protection under emergency conditions is administered in accordance with normal operating procedures with special provisions for prompt emergency action requirements.

Facilities and equipment are available to qualify outside response personnel on the use of respiratory protective equipment.

5.9.7 Thyroid Blocking Agent

Potassium Iodide (KI) is maintained for use by emergency workers at strategic locations.

In the event of a release involving radioiodine, the TSC Manager, in consultation with the Radiation Protection Manager, will issue instructions concerning the use of potassium iodide by in-plant emergency workers. The EOF Manager, in consultation with the Radiological Emergency Manager, will issue instructions to Energy Northwest environmental field teams and emergency workers in the Exclusion Area concerning the use of potassium iodide and will recommend that other offsite (State, County, etc.) emergency workers be issued instructions concerning use of potassium iodide. The EOF Manager will forward his recommendations to the appropriate offsite authorities. The thyroid blocking capability of KI is most effective when taken prior to or immediately after exposure to radioiodine. Therefore, a timely decision is necessary concerning this action.

Whenever offsite resources are expended, Energy Northwest will provide KI, along with personnel monitoring, dosimetry and decontamination services, when needed by offsite emergency workers.

Description	Total Within 2 Miles	Areas Within 5 Miles				Areas Within 10 Miles			
		I	II	III	Total	I	II	III	Total
Permanent Population	-	137	152	0	**289**	806	1429	1150	3385
Permanent Population Vehicles	-	63	32	0	**95**	421	420	342	1183
Transient Population	**1136**	1611	384	371	**2366**	828	5244	5881	11,953
Transient Population Vehicles	**1018**	629	236	155	**2038**	509	2397	910	3816
General Population	**1136**	1749	536	371	**2656**	1657	7217	7031	15,905
Total Vehicles	**1018**	692	268	155	**2133**	509	2817	1252	4999
Notification Time Minutes	**15**	30	30	30	**30**	30	30	30	30
Permanent Population Evac. Time Normal Conditions Hours Minutes	-	1:00	1:00	-	**1:00**	1:30	1:30	1:30	1:30
General Population Evac. Time Normal Conditions Hours Minutes	**1:00**	1:00	1:00	1:30	**1:30**	1:30	1:20	2:15	2:15
Permanent Population Evac. Time Adverse Conditions Hours Minutes	-	1:00	1:00	-	**1:00**	1:30	1:30	1:30	1:30
General Population Evac. Time Adverse Conditions Hours Minutes	**1:30**	1:00	1:00	2:00	**2:00**	1:30	1:30	2:30	2:30
Confirmation Time Minutes	**30**	60	60	60	**60**	60	60	60	60

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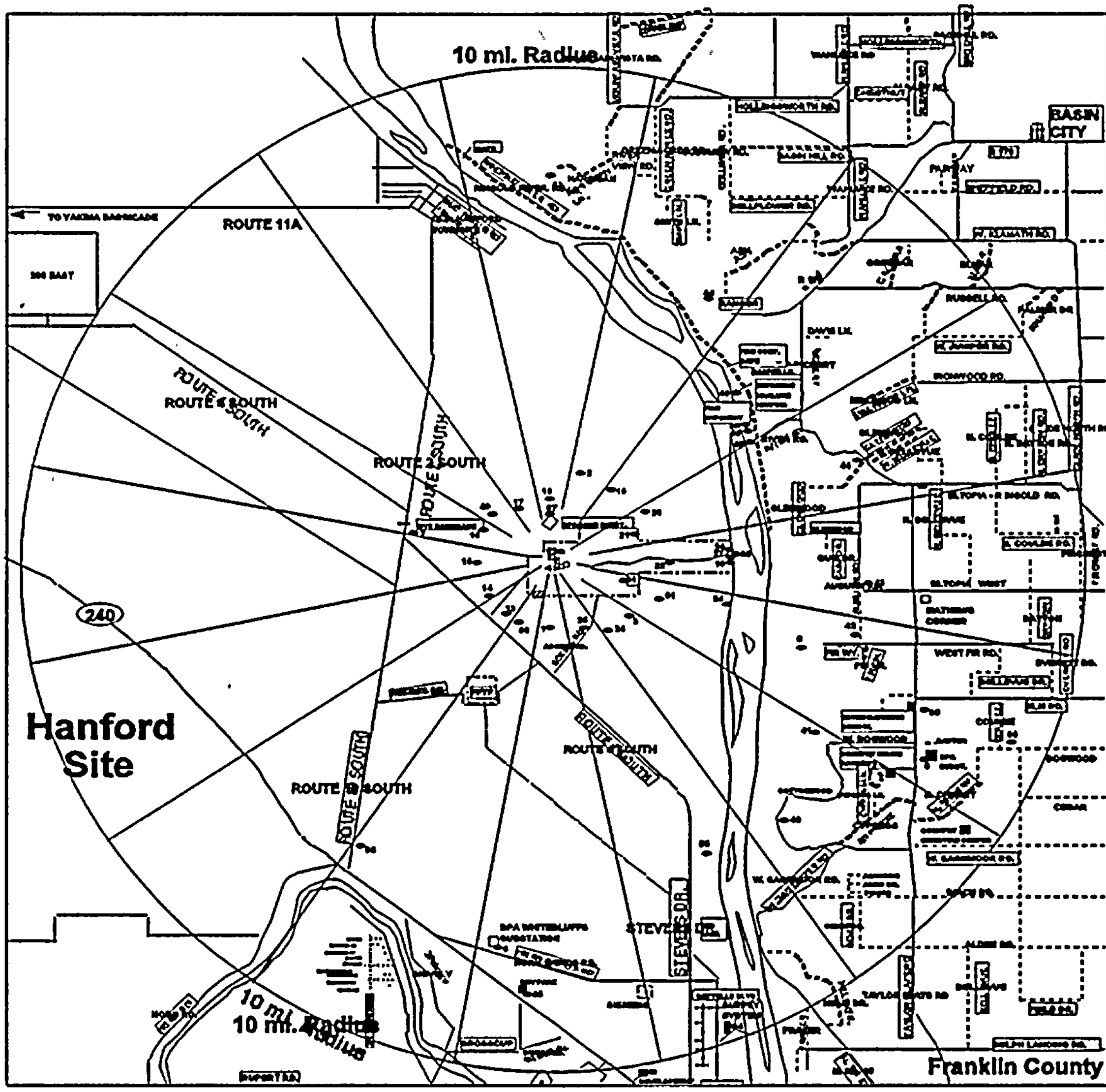
August 1998

Table 5-1, Summary of Results of Evacuation Times Analysis



Station	Reactor	Radial Miles*	TLD	AP/AI
1	S	1.3	O	X
2	NNE	1.8	O	
3	SE	2.0	X	
4	ESE	9.3	O	O
5	ESE	7.7	O	X
6	S	7.7	O	X
7	WNW	2.7	O	X
8	ESE	4.7	O	O
9A*	WSW	30.0	O	O
9B*	WSW	35.0		
9C*	WSW	33.0	O	
10	E	3.1	X	
11	ENE	3.1	X	
12	NNW	6.1	O	
13	SW	1.4	O	
14	WSW	1.4	O	
15	W	1.4	O	
16	WNW	1.4	O	
17	NNW	1.2	O	
18	N	1.1	O	
19	NE	1.8	O	
20	ENE	1.3	O	
21	ENE	1.5	X	X
22	S	2.1	O	
23	ESE	3.0	X	X
24	SE	1.9	O	
25	SSE	1.6	O	
26*	E	3.2		
27	E	3.2		
29	SSE	11.0		
30	E	3.5		
31	E	1.1		
32	E	1.2		
33	ENE	3.3		
34	ESE	3.3		
35	ENE	10.5		
36	ESE	7.2		
37A	SSE	17.0		
37B	SSE	16.0		
38*	E	26.5 (95.0)		
40	SE	6.4	O	O
41	SE	5.0	O	
42	ESE	5.8	O	
43	E	5.7	O	
44	ENE	5.7	O	
45	ENE	4.2	O	
46	NE	4.7	X	
47	N	8.5		O
48	NE	4.3	O	
49	NW	1.2	O	
50	SSW	1.2	O	
51	ESE	2.1	O	
52	N	0.1		
53	N	7.5	O	
54	NNE	6.5	O	
55	SSE	7.0	O	
56	SSW	7.0	O	
57	N	0.7		O
65	S	8.7		X

960334.1 Map
960292
June 1996

LEGEND
PAVED ROAD
IMPRVD RD OR GRVL ROAD
BOUNDARY LINES
SCALE

- Control location.
- X Sample collected at station (non-ODCM)
- O Offsite Dose Calculation Manual (ODCM) sample collected at station.
- * Estimated from center at WNP-2 Containment from map position.
- AP/AI Air Particulate and Iodine

Figure 5-1, Environmental Sampling Points

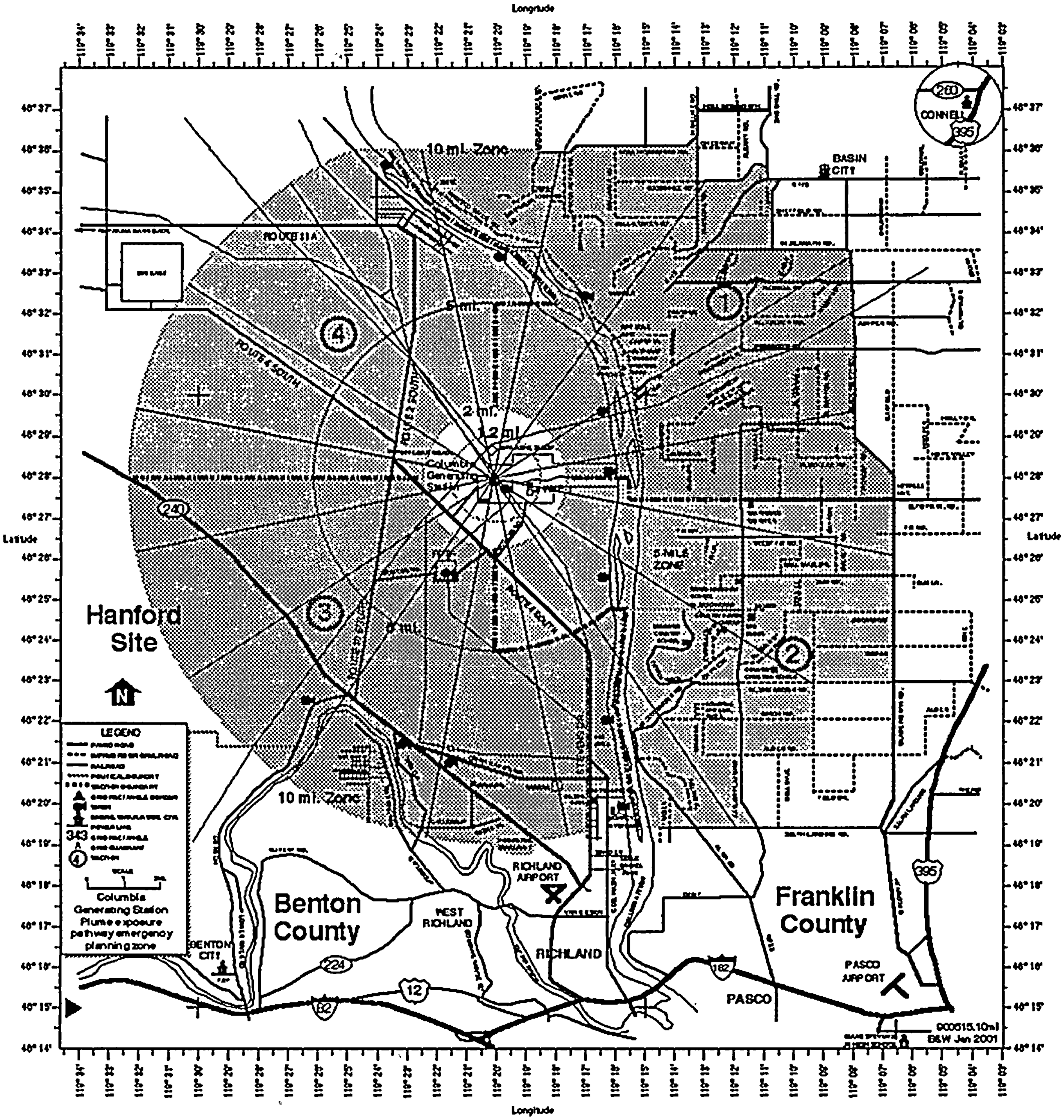
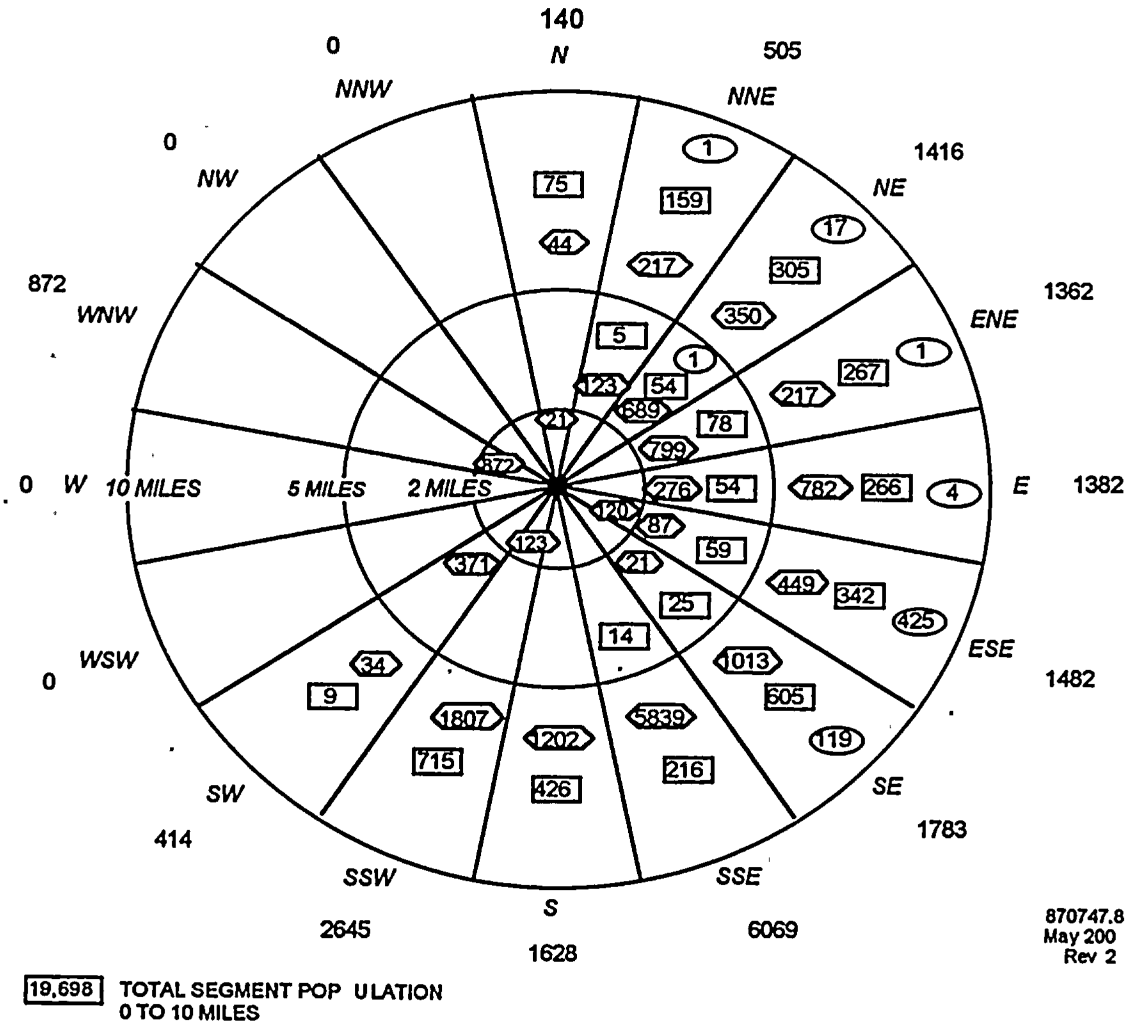


Figure 5-2, Ten Mile Grid Map



Population Totals - PERMANENT			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	0	0-2	0
2-5	289	0-5	289
5-10	3385	0-10	3674

Population Totals - TRANSIENT			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	1136	0-2	1136
2-5	2366	0-5	3502
5-10	11,954	0-10	15456

Population Totals - SPECIAL			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	0	0-2	0
2-5	1	0-5	1
5-10	567	0-10	568

Population Totals			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	1136	0-2	1136
2-5	2656	0-5	3792
5-10	15,906	0-10	19,698

Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down Into Classifications

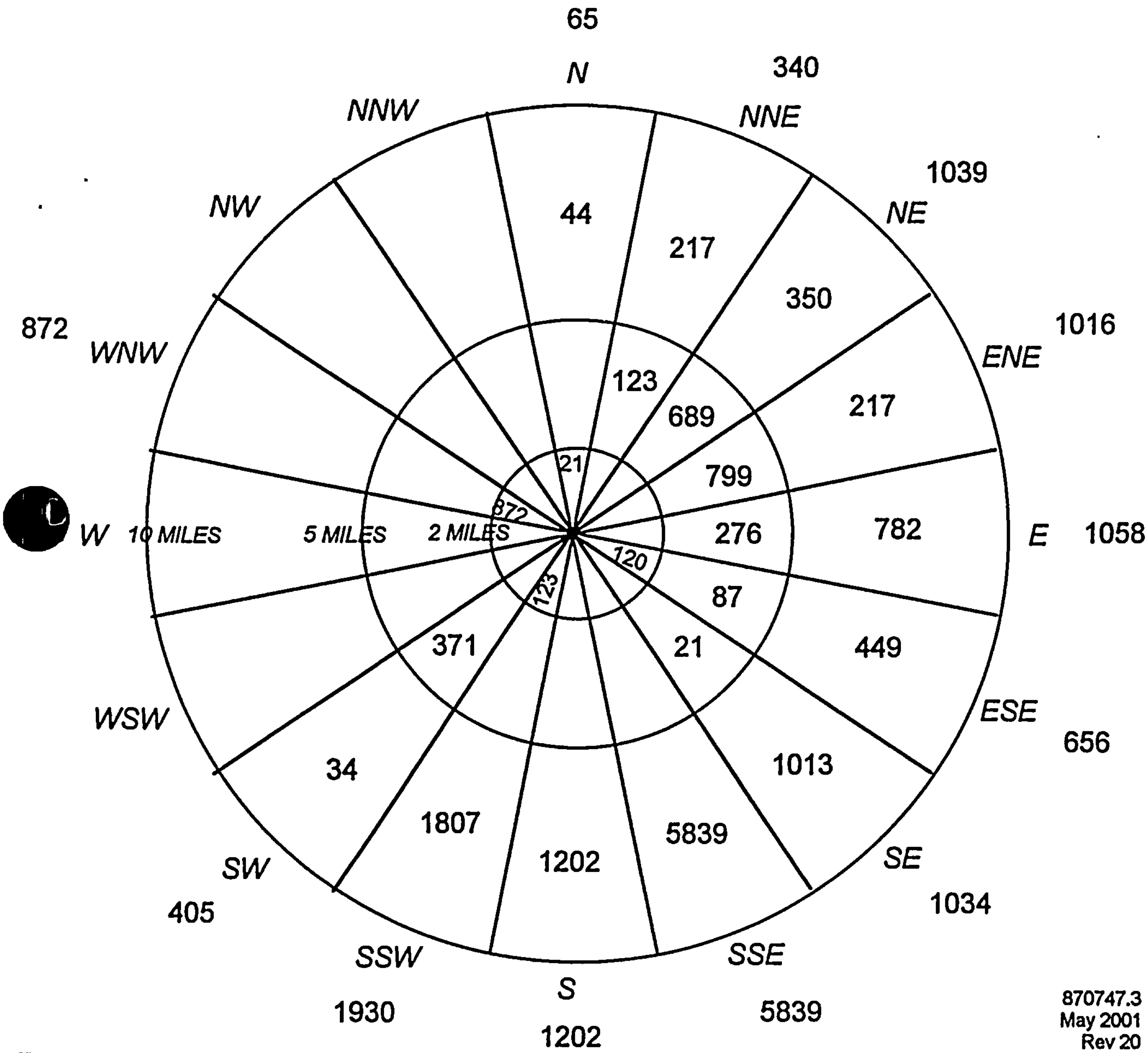


Figure 5-4, Distribution of Transient Population Within 10-Mile EPZ

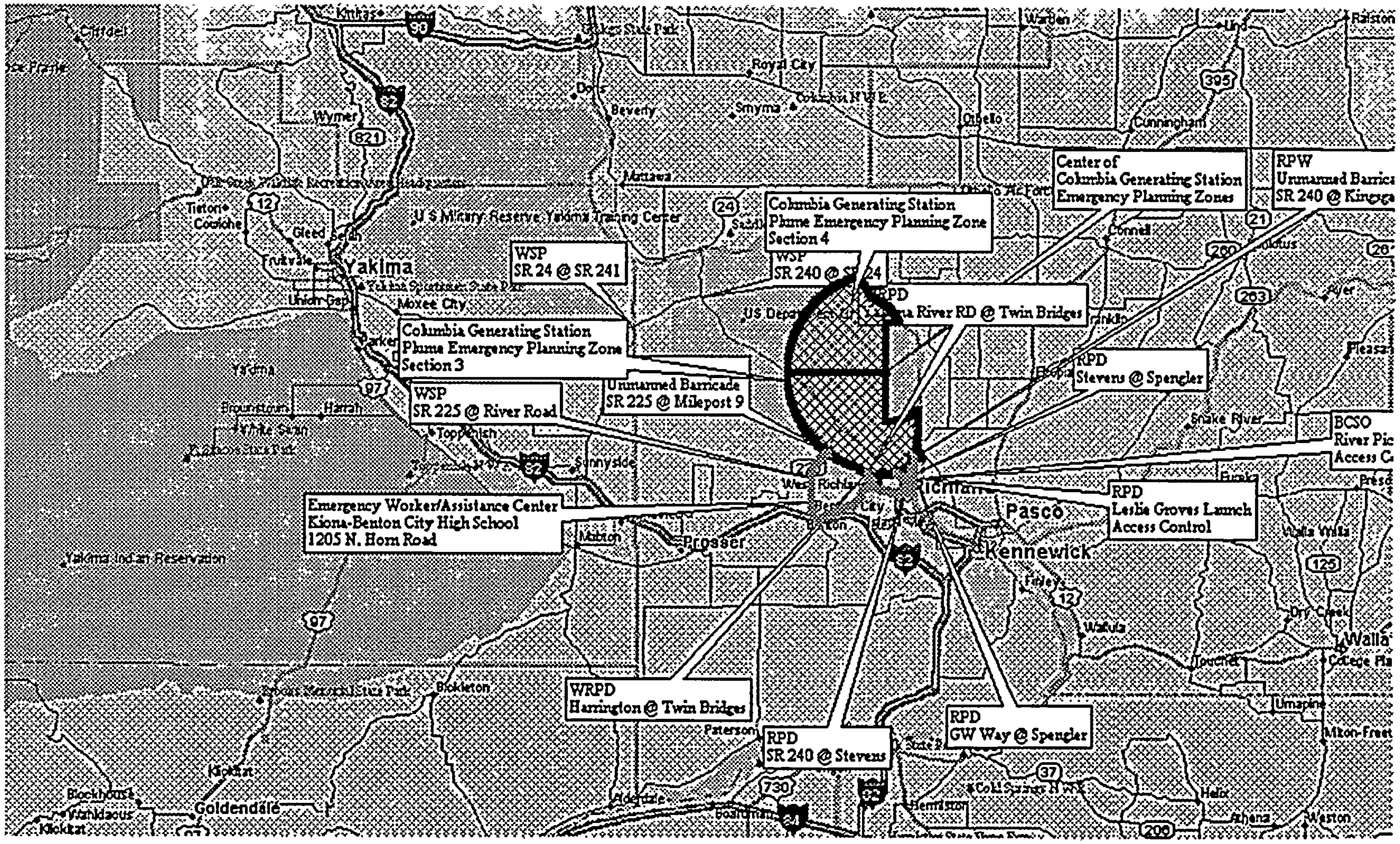


Figure 5-5, Benton County Evacuation Routes

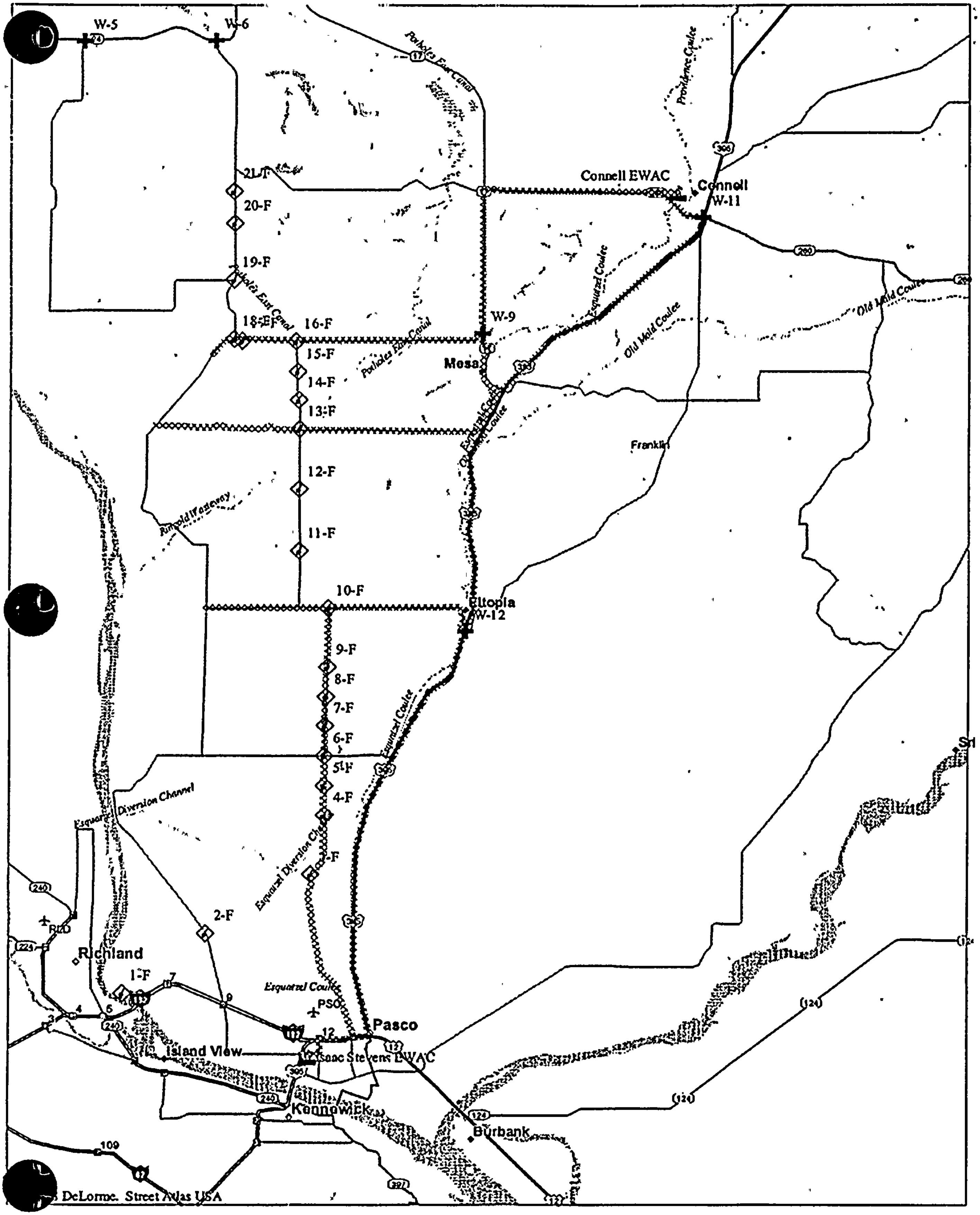


Figure 5-6, Franklin County Evacuation Routes

FRANKLIN COUNTY ACCESS CONTROL POINTS

ID #	LOCATION	RESPONSIBLE AGENCY
1-F	Road 68 @ Dent	Pasco PD
2-F	Dent Rd @ Court St	Pasco PD
3-F	Selph Landing @ Glade North	FC Sheriffs Office
4-F	Alder @ Glade North	FC Public Works *
5-F	Birch @ Glade North	FC Public Works *
6-F	West Sagemoor @ Glade North	FC Sheriffs Office
7-F	Cedar @ Glade North	FC Public Works *
8-F	Dogwood @ Glade North	FC Public Works *
9-F	Fir @ Glade North	FC Public Works *
10-F	Eltopia West @ Glade North	FC Sheriffs Office
11-F	Ringold @ Glade North	FC Public Works *
12-F	Ironwood @ Glade North	FC Public Works *
13-F	Russell @ Glade North	FC Public Works *
14-F	Klamath @ Glade North	FC Public Works *
15-F	Sheffield @ Glade North	FC Public Works *
16-F	SR 170 @ Glade North	FC Sheriffs Office
17-F	Fairway @ SR 170	FC Public Works *
18-F	SR 170 @ Sagehill	FC Sheriffs Office
19-F	Hollingsworth @ Sagehill	FC Public Works *
20-F	Fern @ Sagehill	FC Public Works *
21-F	North Wahluke @ Sagehill	FC Public Works *
W-5	Hwy 24 @ Mountain Vista	Washington State Patrol
W-6	Hwy 24 @ Sagehill	WSP
W-9	Hwy 17 @ Road 170	WSP
W-11	Hwy 395 @ Connell	WSP
W-12	Hwy 395 @ Eltopia West	WSP

Figure 5-7

NOTE: Asterisk (*) indicates Access Control Point is an unmanned barricade.

LEGEND:

= EWAC

= Evacuation Route

= Franklin Co. ACP

= WA State Patrol ACP

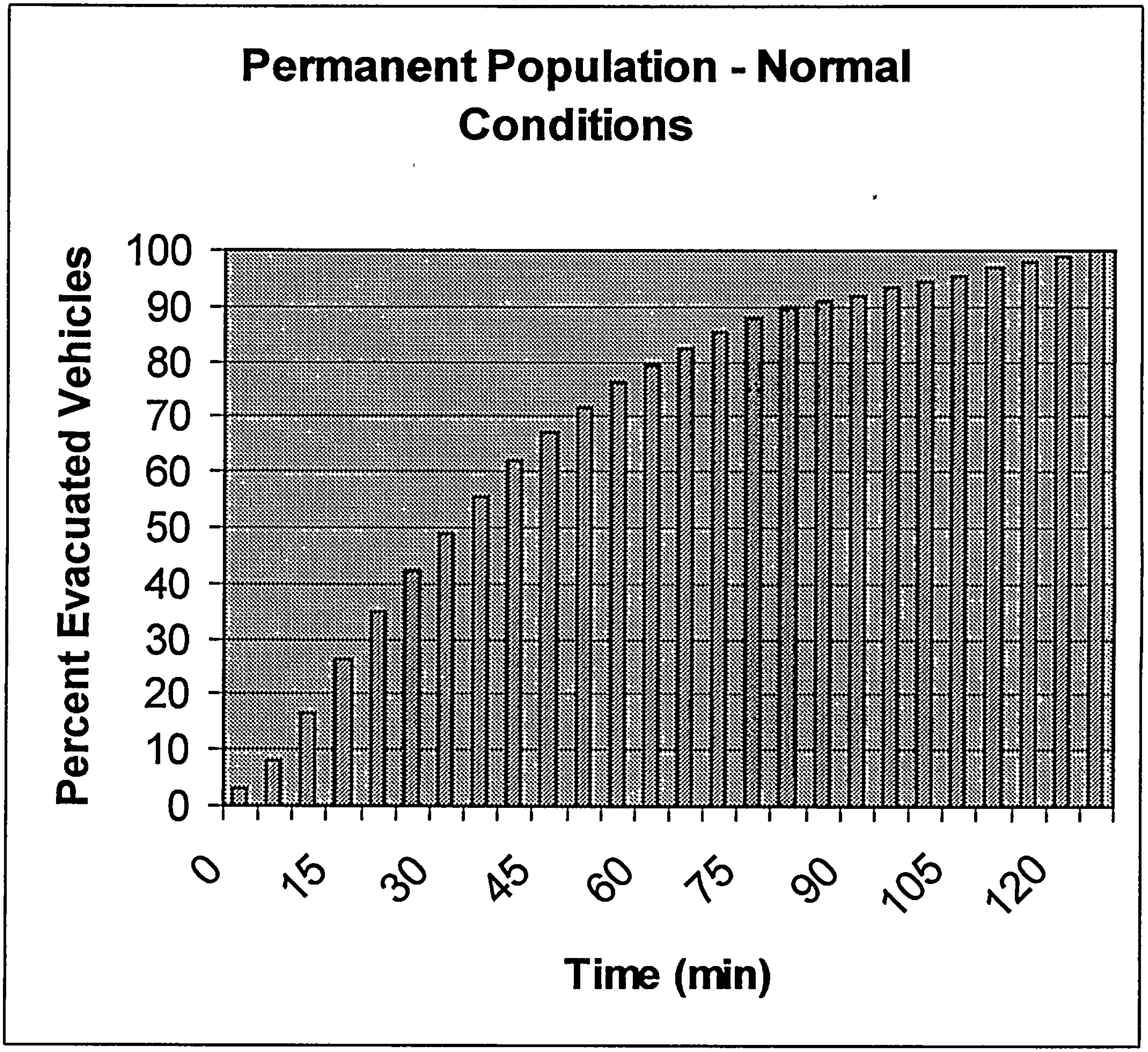


Figure 5-8.A Permanent Population-Normal Conditions

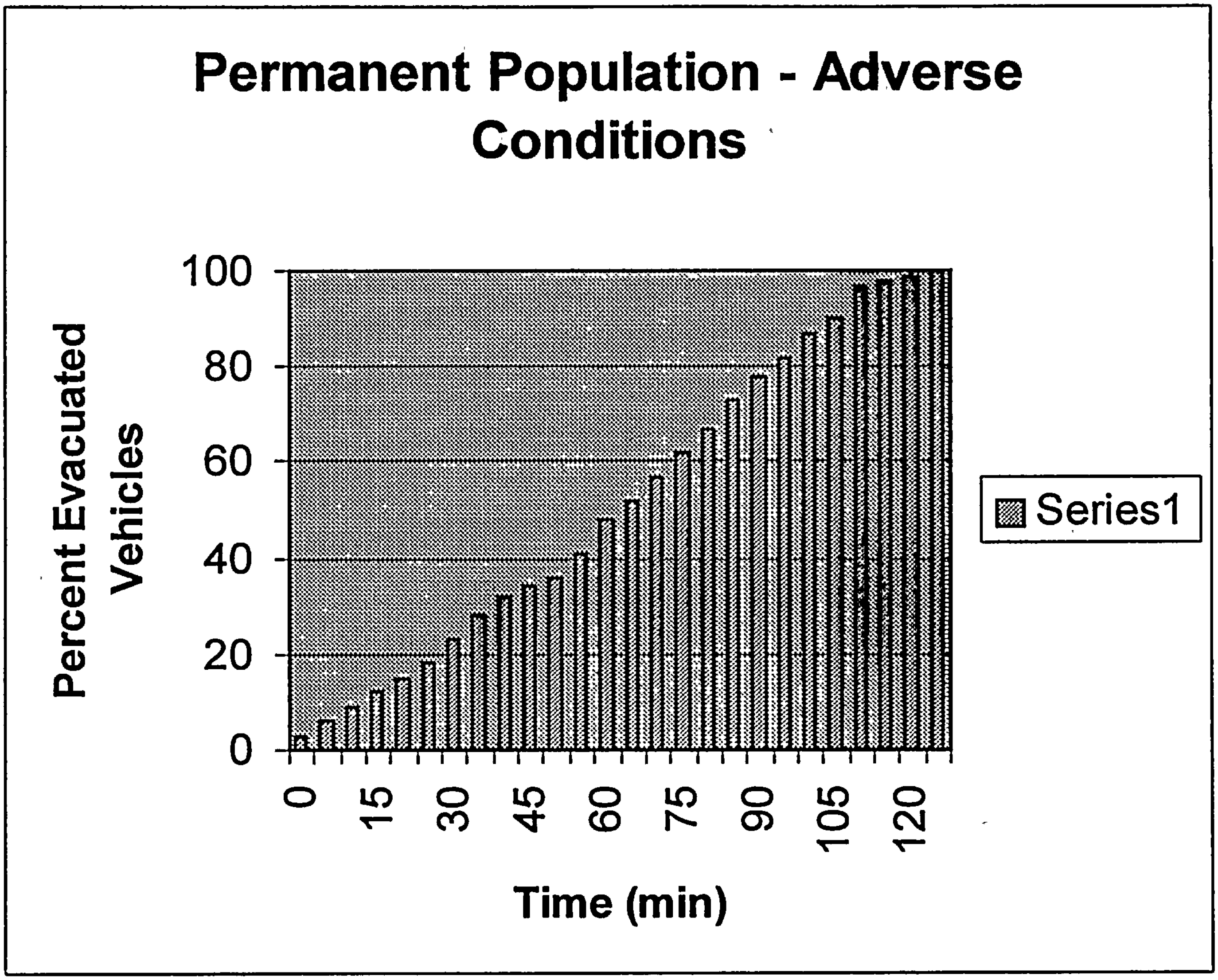


Figure 5-8.B Permanent Population-Adverse Conditions

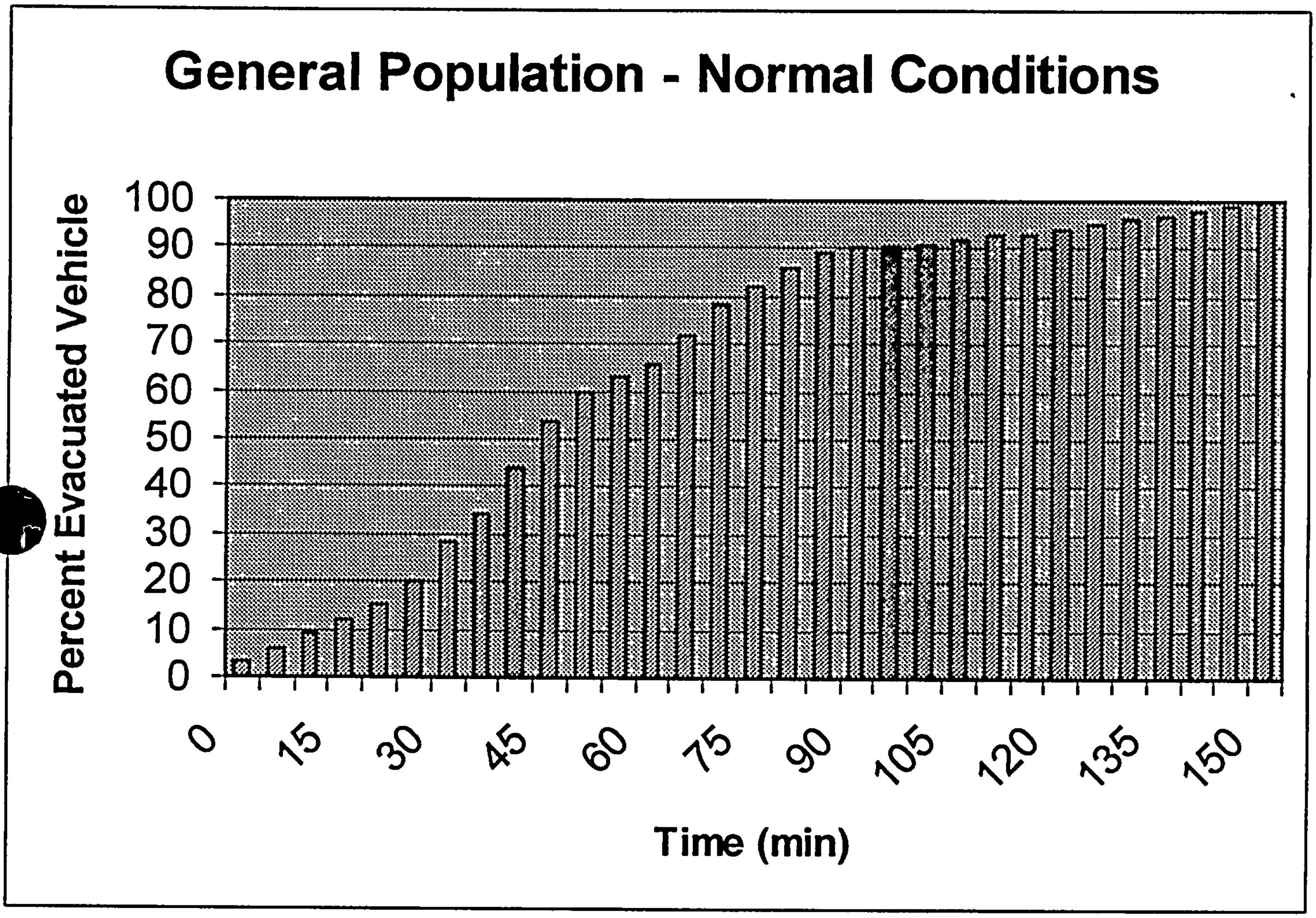


Figure 5-8.C General Population-Normal Conditions

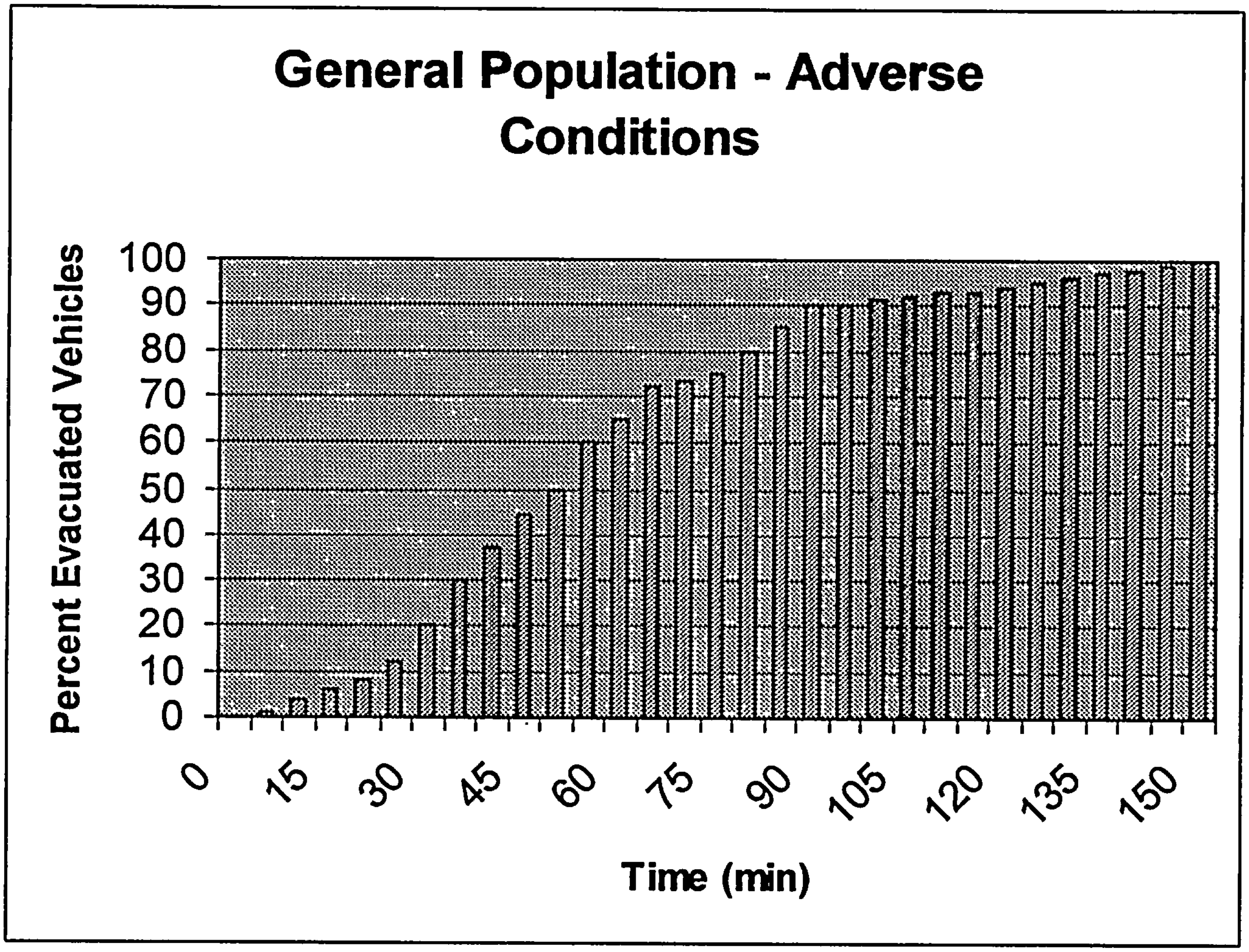


Figure 5-8.D General Population-Adverse Conditions

SECTION 6
EMERGENCY FACILITIES AND EQUIPMENT

6.1 PLANT FACILITIES

Located within the Columbia Generating Station facilities are several areas which will be used for evaluation and initiation of emergency actions. These facilities have the capability to manage the short term response and maintain plant control through sustained emergency and recovery operations.

6.1.1 Control Room

The Columbia Generating Station Control Room is located in the Radwaste Building, adjacent to the Reactor Building, as shown in Figure 6-1. Several entrance/exit points, each with airlocks, are provided. The Control Room contains instrumentation, controls and displays for the nuclear, reactor coolant, electrical, safety and accident monitoring systems and is where an emergency would be initially classified and declared.

The Control Room is staffed by licensed reactor operators and senior reactor operators and is under the direction of the plant Shift Manager twenty-four hours per day. Control Room personnel are responsible for coordinating all emergency response activities until other emergency facilities are activated. Control Room personnel are responsible to diagnose any abnormal plant conditions, perform corrective actions to mitigate the abnormal conditions, manage plant operations and perform initial emergency response activities.

Access to the Control Room during an emergency will be limited to essential personnel such as operators on duty or persons given specific permission for entry by the Technical Support Center Manager or the Shift Manager.

The Control Room has been designed for accessibility and habitability during the occurrences of postulated accidents that could result in the release of fission products and/or hazardous chemicals. To limit inward migration of hazardous materials the Control Room is maintained at a positive pressure with respect to adjacent areas using the pressurization mode of the control room ventilation system. The Control Room will be informed of a sodium oxide release from FFTF. Refer to FSAR section 6.4.4.2.2.

The system has been designed with both normal and remote sources of air to ensure the availability of uncontaminated air at all times. Both HEPA and charcoal filters are included. Shielding is provided to ensure that the combined radiation exposure of Control Room personnel during a postulated design-basis accident would remain within regulatory guidelines.

The Control Room communication system permits contact with the onsite Technical Support Center (TSC), the onsite Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the federal, state and local emergency response organizations on a twenty-four hour per day basis.

6.1.2 Technical Support Center

The Columbia Generating Station Technical Support Center (TSC) is a structure attached to the Radwaste Building on the west side of the plant (refer to Figure 6-1). A typical floor diagram is shown in Figure 6-2. The TSC is as habitable as the Control Room during accidents. The TSC ventilation HEPA filters and charcoal absorbers are the same type as those used for the Control Room System. The ventilation system normal air intake will automatically switch to the Control Room remote air intake upon receipt of an isolation signal. Should the TSC become uninhabitable, the TSC Manager in consultation with radiation protection personnel, will decide on an alternate TSC location and setup where the TSC functions can continue to be performed.

The TSC is activated during an Alert or higher emergency classification and is under the direction of the TSC Manager. The TSC Manager may assume the duties of Emergency Director from the Shift Manager if not transferred directly to the EOF Manager. Staffing includes designated technical, engineering and senior management personnel. Space is available for a small staff of Nuclear Regulatory Commission personnel during emergency conditions.

Functions of the TSC are to provide management and technical support to plant operations personnel during emergencies. This relieves the reactor operators of peripheral duties not directly related to reactor systems manipulation and prevents congestion in the Control Room. The TSC will perform Emergency Operations Facility functions during Alert, Site Area Emergency and General Emergency classifications until the Emergency Operations Facility becomes functional. TSC personnel have ready access to up-to-date plant documents needed to perform emergency functions.

The TSC is the primary onsite communications center for the plant during an emergency. It has reliable voice communications with the onsite Operations Support Center, Emergency Operation Facility, Energy Northwest Office Complex (ENOC), Control Room, NRC, and state and local Emergency Operations Centers.

Plant status, meteorological instrumentation, Plant Display and Information System (PDIS), display equipment and power supplies are provided in the TSC to support a comprehensive analysis of emergency conditions. A power circuit supplies the TSC from a Class 1E source located in the plant. This power source is backed by a diesel generator. Radiological monitoring equipment is available to continuously monitor dose rates and airborne radioactivity concentrations in the TSC. The TSC also assesses plant radiological conditions. In addition, protective equipment such as anti-contamination clothing, respirators and potassium iodide are provided in the TSC should conditions warrant their use.

6.1.3 Operations Support Center

A designated portion of the Yakima Building will serve as the Operations Support Center (OSC) for Columbia Generating Station and will be activated for an Alert or higher emergency classification. The location of this center is shown in Figure 6-1. If the primary OSC location becomes uninhabitable, the OSC Manager, in consultation with radiation protection personnel, will decide on an alternative OSC setup, and OSC personnel will be evacuated to an alternate location where OSC functions can continue to be performed.

The OSC will be under the control of the OSC Manager who is responsible for dispatching and coordinating in-plant team activities during emergencies. The OSC is activated during an Alert or higher emergency classification and provides a location for coordinated logistic support outside the Control Room.

The OSC Manager has communications necessary to dispatch and coordinate emergency team activities with the Shift Manager and TSC Manager, for other necessary onsite and offsite communication, and for emergency team communications (see Section 6.5). Equipment and supplies are available in the OSC for emergency team use. A list of emergency equipment kits is provided in Appendix 3.

6.1.4 Security Alarm Stations

Two security alarm stations are maintained at Columbia Generating Station. The Central Alarm Station (CAS) is the primary security center and is located in a separate building near the Yakima Building. The Secondary Alarm Station (SAS) is the backup security center located in the Control Room.

6.1.5 Protected Area Access Point

Persons requesting entrance to the plant will report to the Protected Area Access Point. Security will issue dosimeters as needed, maintain personnel accountability, and notify the onsite Operations Support Center of the arrival of persons and receive permission to allow entry. In situations which require immediate access by personnel and equipment, such as fire or medical emergencies, Security will be notified to permit immediate entry. The Security Shift Lieutenant will coordinate with the Technical Support Center Manager for implementation of the Safeguards Contingency Plan.

6.1.6 Personnel Decontamination and First Aid Facilities

First aid equipment kits required by the Washington Industrial Safety and Health Act are located as close as feasible to areas which have the heaviest concentration of workers. Designated locations are similar to those shown in Appendix 3.

Initial first aid for employees is provided by the Fire Brigade Team (FB) which is composed of first aid trained personnel who are designated FB members during each work shift.

Medical emergencies are reported via a special phone number that is posted throughout the plant. The special number rings into the Control Room where personnel can then dispatch FB members to an emergency by radio, telephone, or by the plant public address system.

Fire Brigade members receive initial and annual continuing education training in first aid from an in-house program that is certified as meeting "First Responder" requirements by the State of Washington.

A decontamination facility is provided on the 487′ elevation of the Radwaste Building (refer to Figure 6-3). The facility consists of a large shower area with drains connected to the radwaste effluent treatment system. First aid equipment and decontamination supplies are located nearby and will be used whenever a contamination incident is involved. Decontamination will also be implemented as necessary at the Energy Northwest Office Complex and Emergency Worker Assistance Centers (EWACs)

6.2 EMERGENCY OPERATIONS FACILITY (KOOTENAI BUILDING)

The Kootenai Building is located 0.75 miles southwest of Columbia Generating Station. This facility is used to support normal plant operations and includes a 20,000 square foot shielded area in the lower level which includes the 4,500 square foot Emergency Operations Facility (EOF).

A typical floor plan of the Kootenai Building is shown in Figure 6-4. The EOF contains several functional areas which are provided for various groups and will be activated as necessary for an Unusual Event and fully for an Alert, Site Area Emergency or General Emergency.

The EOF is under the direction of the Emergency Operations Facility (EOF) Manager and assists the plant by handling those functions associated with evaluating and minimizing the offsite effects of the accident, as well as supporting the TSC and Control Room with technical data analysis. This assistance includes such functions as field monitoring, dose projections, area security, interfacing with outside organizations, recommendation of protective actions for the public, assisting the plant technical staff, public information, administrative services, scheduling of personnel, and establishing a recovery program. If response to the primary EOF is hampered by radiological or other conditions, personnel unable to respond to the primary EOF will be directed to respond to the alternate EOF located at the Energy Northwest Richland Office Complex. Sufficient telephone links are available at the alternate EOF to communicate with the primary EOF and TSC. If the primary EOF location becomes uninhabitable, the EOF Manager in consultation with radiation protection personnel, will determine whether to evacuate the primary EOF, what equipment to take, and where to relocate. Select EOF staff will then evacuate and continue to perform the EOF functions.

The EOF will be used by representatives of the various offsite agencies to coordinate activities, resolve problems, maintain duty rosters, and make periodic status reports to their respective agencies. A close working relationship between these agencies and Energy Northwest is essential to the success of operations involving the general public. The personnel in the EOF receive information from all functional areas and provide clarifications to their respective agencies. Periodic briefings will be provided by Energy Northwest personnel to keep Energy Northwest and offsite agency personnel up-to-date on plant conditions and emergency measures underway.

The EOF is not used as a normal work location outside of drill and emergency use. It is subjected to periodic walkdowns by emergency preparedness personnel, as well as regularly scheduled inspections to ensure its readiness.

6.2.1 Emergency/Recovery Operations Area

The EOF Manager and his immediate staff will coordinate activities from the Emergency/ Recovery Operations Area of the EOF. The EOF Manager is responsible for the overall emergency effort and provides the necessary support to the TSC Manager. The Emergency/ Recovery Operations Area will maintain up-to-date information on plant and offsite status, recovery planning and scheduling, and will function as the designated area for periodic update briefings with selected personnel assigned to the EOF, including outside agency personnel.

6.2.2 Engineering Support Area

A segment of the EOF is designated as an Engineering Support Area which is established for use by Energy Northwest's engineering personnel, and architect/engineers, vendors, and contractors requested to assist Energy Northwest. A technical data information system including meteorological, radiological, and plant system status is available. Essential plant technical information is available in this area.

Using this area in the EOF, personnel from organizations outside the plant staff can provide needed technical assistance without responding directly to the plant. This provides technical personnel readily available to the plant if needed. The Engineering Support Area also provides a secondary location to track plant conditions and provides current and projected plant status reports to MUDAC and to the EOF Manager for inclusion in the formulation of Protective Action Recommendations.

6.2.3 Logistics Support Area

A designated portion of the EOF is established for logistics support functions which are provided by the Site Support Manager and staff. The Site Support Manager and his staff will provide general administrative support and logistical support to the EOF staff and as directed for other emergency centers.

6.2.4 Meteorology and Unified Dose Assessment Center

The Meteorology and Unified Dose Assessment Center (MUDAC) is utilized as a joint center by Energy Northwest, DOE-RL, and States of Washington and Oregon Departments of Health to coordinate field team operations, project dose rates, record actual measured dose rates during an emergency, and determine protective action recommendations. The computerized Emergency Dose Projection System as described in Section 5 is located in this center. Actual and projected doses obtained will be available for use in determining protective action recommendations for the general populations. From the MUDAC information can be sent by facsimile to the Benton and Franklin County Emergency Operations Centers, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and other Energy Northwest emergency centers. Communications with the field monitoring teams is provided in MUDAC. This capability allows for relaying instructions and receiving survey results.

6.2.5 Security Communications Center

The Security Communications Center is utilized in the notification process and has voice and hard copy transmission capabilities as detailed in Section 4.6. Any information received here will be delivered to the appropriate personnel.

6.2.6 News Release Preparation and Media Briefing

A news release preparation area is provided in the EOF for Energy Northwest's public relations personnel to develop public information status reports. These status reports will be updated and distributed to the Joint Information Center (JIC) located at the ENOC. Groups of media personnel may be escorted to the EOF, as conditions permit, for briefings and tours. This action will be taken under the direction of the EOF Public Information Officer (PIO), and with approval of the EOF Manager.

6.2.7 Work Areas

Several work areas are identified for Energy Northwest personnel as well as for Government agencies (DOE, FEMA, NRC, Washington and Oregon States, etc.), outside consultants, architect/engineers, contractors, and vendors in the EOF. Other general office or classrooms are available as needed.

6.2.8 Health Physics Center

The Health Physics Center consists of several areas in the protected Emergency Operations Facility and the non-protected Kootenai Building, a radiological laboratory, and counting lab. Energy Northwest contracts with a vendor to process thermoluminescent dosimeters and provide results to Energy Northwest in a timely manner. This vendor is certified to the standards of the National Voluntary Laboratory Accreditation Program (NVLAP). Results are recorded into a computerized Total Exposure System (TES) which can be accessed for information from the plant health physics areas as well as the Operations Support Center and Emergency Operations Facility.

A whole body counting, respiratory testing, and computerized internal dose assessment system is in use at Energy Northwest. The respiratory testing area consists of fitting and testing equipment. A large supply of respirators is available if required for emergency response or recovery operations.

The radiological laboratory and adjoining counting lab provide for radiological analysis of environmental samples as well as partial backup capability for plant laboratories. If plant analytical capabilities become unusable, plant samples can be transported to the Emergency Operations Facility or a support agency laboratory for chemical and/or radiological analysis. Energy Northwest contracts with outside laboratories for backup environmental sample analysis.

6.2.9 First Aid and Decontamination Area

A first aid facility is located near the Protected Area of the plant, and a decontamination facility is located in the unprotected portion of the Kootenai Building. The relative locations of these facilities provide for treatment and decontamination of injured personnel as well as independent operation of both facilities. Drains from the decontamination area are connected to an isolable tank. Energy Northwest contracts with HEHF for treatment of severely contaminated injured personnel. This first aid facility is staffed by qualified personnel and first aid equipment is available for normal first aid treatment.

6.2.10 Environmental Programs Area

The environmental programs area includes an environmental equipment area and biology lab. The environmental equipment area will be used to store any backlog of environmental samples. Additional storage is available in the biology lab. Provisions have been made for cataloging stored samples.

6.2.11 Habitability

The Emergency Operations Facility is a protected area in the Kootenai Building which has special shielding and ventilation to maintain habitability requirements. The ventilation system is designed to provide maximum habitability during an accidental radiological release. HEPA filters condition entering air during emergency conditions. Ion chambers are strategically located in the ventilation system to detect potential infiltration of contaminated air thus automatically allowing reconfiguration of airflows from replenishment to recirculation modes.

The EOF is designed to ensure that the total dose to occupying personnel is less than the Environmental Protection Agency Protective Action Guide limit of 5 rem TEDE for the duration of the postulated accident. Shielding requirements were determined using source terms from BWR/PWR accident scenarios described in the WASH 1400 Reactor Safety Study. Calculations considered worst case meteorology and assumed a 0.75 miles distance from the plant to the Emergency Operations Facility.

6.2.12 Emergency Power

A 365 kilowatt emergency power generator provides power to the Emergency Operations Facility during power loss. Vital equipment such as communication systems, counting equipment, dose assessment equipment, and lights are connected to the emergency power generator.

6.3 ALTERNATE EMERGENCY OPERATIONS FACILITY

The Alternate Emergency Operations Facility (EOF) is located approximately 10 miles south of the plant. This facility may be activated in the event of the primary EOF becoming uninhabitable, or inaccessible to offsite responders. The EOF Manager, in consultation with radiation protection personnel, will determine when to activate this facility, and appropriate staffing levels.

A Crash phone, dedicated facsimile machines, and a NRC Emergency Notification System phone are available to provide notifications to offsite agencies. The emergency functions for direction and control, emergency classification, notifications, protective action recommendations, dose projection operations, and field team dispatch and control may be provided from this facility. The Alternate EOF has sufficient communications capability to continue to communicate with the control room, TSC, primary EOF, field teams, and offsite agencies.

6.4 JOINT INFORMATION CENTER

The Energy Northwest Joint Information Center, (JIC), located approximately 10 miles south of the plant, integrates emergency response/recovery public information functions with the resources normally available to upper management personnel. Figure 6-5 shows the typical floor plan for the JIC.

Designated staff may support the EOF Manager and the emergency effort from the JIC.

Dedicated phones provide continuous contact with the plant and Emergency Operations Facility. Facsimile is available for the exchange of the latest data with other emergency centers. Access to certain areas are controlled when emergency centers are activated. The JIC will function as a joint news release center for Energy Northwest, county, state, DOE-RL and other federal agencies to facilitate consistent media releases. Areas will be set up to provide work space for the various media personnel.

Emergency power is provided for the JIC and telephone system.

6.5 EMERGENCY EQUIPMENT AND SUPPLIES

Appendix 3 identifies the emergency equipment staged for Fire Brigade Response at Columbia Generating Station. In addition to the Fire Brigade turnout stations, other equipment is staged throughout the plant for use by the Fire Brigade. This includes fire fighting hose stations, foam kits for Class B fires, and smoke removal.

Equipment is stored for field team use at the Emergency Operation Facility and at an offsite location. Vehicles and survey equipment kits are available for use by the field teams.

An inspection, inventory, and operational check of emergency equipment/instruments in each emergency cabinet or kit is conducted at least quarterly and after each drill which utilized that particular cabinet and kit. The equipment designated for emergency use will be calibrated at the intervals recommended by the manufacturer. Sufficient reserves of instruments and equipment are maintained to replace instruments removed from kits for repair or calibration. Emergency respiratory equipment will be inspected monthly. Required quantities in each cabinet or kit are established by procedure.

6.6 COMMUNICATION SYSTEMS

The Rolm phone system and the 300 dial-up system may be used as a backup to the Crash system for notification of offsite agencies. The Emergency Director will notify the SCC Duty Officer and offsite agency representatives using one or more of the following systems:

6.6.1 Radio Network

The radio system consists of radio channels covering several different radio bands. The Emergency Operations Facility is the primary facility for communication with emergency responders and offsite response organizations.

Limited radio capability is available in the Central Alarm Station, the Secondary Alarm Station (in the Control Room), the Technical Support Center, and the Operations Support Center. Mobile and portable radios are provided for selected vehicles and plant personnel.

Field monitoring teams will utilize the state sanctioned common emergency radio channel of 46.00 MHz. This system has a mountaintop base station that provides communications with field monitoring teams.

The mountaintop radio repeaters and 46.00 MHz base station are powered by a battery and charger system to provide communications capability during a loss of power.

Radio communication with the Department of Energy and the Benton and Franklin County Emergency Operations Centers is also available. The Department of Energy Communications Center and the Benton County Emergency Dispatch Center provide 24-hour monitoring of these radio links. See Table 6-1 for a listing of available radio channels.

6.6.2 Company Telephone System

Energy Northwest's Richland phone system is a computer based, software controlled telephone exchange (Computerized Branch Exchange). It is equipped with redundant computerized processor units and is served by an uninterruptible power supply.

The direct-dial private telephone system provides communication between the Hanford Energy Northwest facilities. The phone system is arranged such that plant telephones can reach other Energy Northwest facilities by direct-dialing and without the need of an operator. Telephones are at various strategic locations throughout the plants, including the Control Room, the remote shutdown panel, the Technical Support Center and Operations Support Center.

There are multiple direct inward dialing trunks to the Computerized Branch Exchange. Columbia Generating Station is connected to this exchange via company owned tie trunk lines. The Emergency Operations Facility has tie trunk lines connected to the Energy Northwest Office Complex (ENOC) Computerized Branch Exchange. The Computerized Branch Exchange in the plant is connected to the outside public telephone system via a minimum of 15 central office trunks. Each plant also has access to a number of long distance State Controlled Automatic Network Circuit (SCAN) trunks. Energy Northwest headquarters also has access to long distance SCAN lines. These SCAN lines are wired direct to Spokane and bypass the local toll centers. This allows bypassing of the local central office in the event of congestion.

6.6.3 Dedicated Telephone Circuits

The following dedicated phone networks are available for emergency communications in addition to the normal Energy Northwest phone network:

a. Energy Northwest Emergency Center Network,
b. Response Agency Network, and
c. NRC Emergency Notification System.

The Energy Northwest Emergency Center Network interconnects the plant and emergency centers. The network uses a push button system in which the caller selects the area to be called, pushes the appropriate button which in turn automatically rings into the selected area.

The Response Agency Network connects the Energy Northwest emergency centers with State and local emergency centers. Lines to the Washington State Emergency Operations Center are routed through the local State Patrol Office switchgear and transmitted via the state microwave system to Camp Murray. By dialing a unique series of numbers the user is able to reach a specific agency. Facilities serviced by these dedicated lines are Columbia Generating Station, the Benton and Franklin County Emergency Operations Centers in Richland and Pasco, the Department of Energy Patrol Occurrence Notification Center on the Hanford site, and the Washington State Emergency Operations Center in Camp Murray. In addition, the network has a crash function, which is why it is referred to as the Crash line or Crash Notification System. This feature of the system operates by dialing a unique activator number that automatically rings all the phones on the system. The Crash line is available in the Alternate EOF.

A federal telephone system (FTS 2000) connects Energy Northwest emergency centers to the Nuclear Regulatory Commission. The Emergency Notification Network (ENS) and the Health Physics Network (HPN) are included in this system. ENS is available in the Control Room, the Technical Support Center and the Emergency Operations Facility. The HPN, ENS, and Crash are available in the Technical Support Center, the Emergency Operations Facility, and the Alternate EOF.

Call list telephone numbers associated with activation of the Emergency Plan are updated at least quarterly by the Emergency Preparedness section.

6.6.4 Sound Powered Phone System

The plant Sound Powered System, designed to provide communications without the use of batteries or other outside power sources, is powered by voice sound energy. This system is completely separate and distinct from the computerized Branch Exchange telephone system.

The Sound Powered System has separate communications loops which are arranged by building and elevation. All sound powered jacks in each loop are wired in parallel and terminated on a switching device. This device provides the capability to merge and isolate various combinations of loops for maintenance and testing activities. Extension cords, handsets, and sound powered head or head-chest sets are provided for use with the jack stations.

6.6.5 In-Plant Public Address System

The Public Address System (PA) is composed of separate public address zones, each accessible through the Plant Computerized Branch Exchange telephone system. An additional phone number accesses all zones for group paging. Paging microphones located in the Control Room, Central Alarm Station, Secondary Alarm Station, Technical Support Center (TSC) and other areas override telephonic paging and transmit to all zones simultaneously. Tone generators operated from the Control Room or the TSC allow an alerting tone to be broadcast over the PA system. The paging microphones have priority over all other functions of the Public Address System.

Portable high noise evacuation devices, each composed of a radio-controlled siren and strobe light, are located in selected areas throughout the plant. These devices are activated by the PA alerting tone.

6.6.6 Area Wide Radio Paging

A Radio Paging System is used to alert on-call members of Energy Northwest's emergency response organization of an emergency.

6.6.7 Facsimile System

Various locations such as the Control Room, Technical Support Center, Emergency Operations Facility, Joint Information Center, Department of Energy-RL, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and the Benton and Franklin County Emergency Operations Centers have facsimile transceivers. The facsimile transceivers enable the transmission and receipt of printed material. The facsimile system which connects the Energy Northwest emergency centers with the county and state emergency centers uses dedicated phone lines.

6.6.8 Early Warning System

Tone activated radios are made available to all households within the Ten-Mile Emergency Planning Zone. These radios monitor the local Emergency Alerting System. If an Emergency Alerting System signal is received, a light is activated and an audible tone is heard. The radio then broadcasts the message. The radios contain a battery backup.

In addition to the tone activated radios, sirens located on the Columbia and Yakima Rivers, and in the Horn Rapids area are provided to assist in notifying sportsmen, boaters, and other recreationists that may be present. The Department of Energy also maintains a system for alerting its employees and its contractor's employees.

6.6.9 Automatic Dialer

An automatic dialing system is used similarly to and at times in conjunction with the area wide radio paging system as a means to notify Energy Northwest emergency personnel.

6.6.10 Emergency Response Data System

The Emergency Response Data System (ERDS) has been established to transmit raw reactor parametric data to the NRC when an Alert or higher emergency is declared. The data is conveyed over an FTS 2000 phone circuit.

6.7 COMMUNICATION SYSTEMS TESTS

The following test schedule of the communication system is established to ensure operability. This test schedule includes:

a. Communications with Emergency Dispatch Center and Department of Energy-RL

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

b. Communications with Washington State Emergency Operation Center

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

c. Communications with Nuclear Regulatory Commission Headquarters

   1. Dedicated telephone lines -- tested monthly.
   2. ERDS - tested quarterly.

d. Communications among Energy Northwest Emergency Facilities

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.
3. Data circuits -- tested monthly.
4. Installed Radio links -- tested monthly.
5. Environmental Field Team radios -- tested quarterly.

e. Notification System

1. Siren system

a) status test -- monthly documentation of status tests conducted at least bi-weekly.
b) complete system test -- annually.

2. EAS Radio receivers test

a) operability -- weekly (performed by the Emergency Alerting System).
b) coverage -- annually (performed by Energy Northwest and Benton and Franklin counties).

3. Automatic Dialer

Perform pager activation test/notification drill -- quarterly.

f. Emergency communications equipment (not covered above)

1. Area Wide Radio Paging -- operational test quarterly.

g. Fire Brigade Equipment

1. Replace batteries and perform operational tests monthly on portable radios (OSC).
2. Perform annual FCC checks on portable radios.

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

I. Emergency Facility Radio Channel Availability

A. Control Room

- In-Plant Operations Channel
- Area Wide Security Channel (Secondary Alarm Station)

B. Technical Support Center (TSC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Field Team - 46.00 MHz

C. Operations Support Center (OSC)

- In-Plant Operations Channel

D. Central Alarm Station (CAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

E. Secondary Alarm Station (SAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

F. Security Communications Center (SCC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel
- LERN (Law Enforcement Radio Network)

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

G. Emergency Operations Facility

- Area Wide Security Channel Link
  1. Franklin County Sheriff
  2. Emergency Dispatch Center
  3. Department of Energy Patrol Emergency Office
- Field Team - 46.00 MHz Channel
- Department of Energy Emergency Response Channel
- LERN Channel (Law Enforcement Radio Network)

H. Department of Energy

- Area Wide plant Security Channel

I. Benton County Emergency Dispatch Center

- Area Wide Security Channel

K. Franklin County Emergency Dispatch Center

- Area Wide Security Channel

J. Benton and Franklin Counties Emergency Operations Centers

- Area Wide Security Channel

II. Energy Northwest Emergency Center Telephone Capability

A. Technical Support Center (TSC) dedicated phone system interconnects with:

- Control Room
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Emergency Operations Facility
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System

B. Operations Support Center (OSC) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Emergency Operations Facility
- Central Alarm Station/Secondary Alarm Station
- Facsimile System

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

C. Control Room dedicated phone system interconnects with:

- Technical Support Center
- Operations Support Center
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System
- Emergency Operations Facility

D. Emergency Operations Facility (EOF) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

E. Alternate Emergency Operations Facility (EOF) phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

F. Joint Information Center (JIC) dedicated phone system interconnects with:

- Crash Notification System
- EOF
- Facsimile System

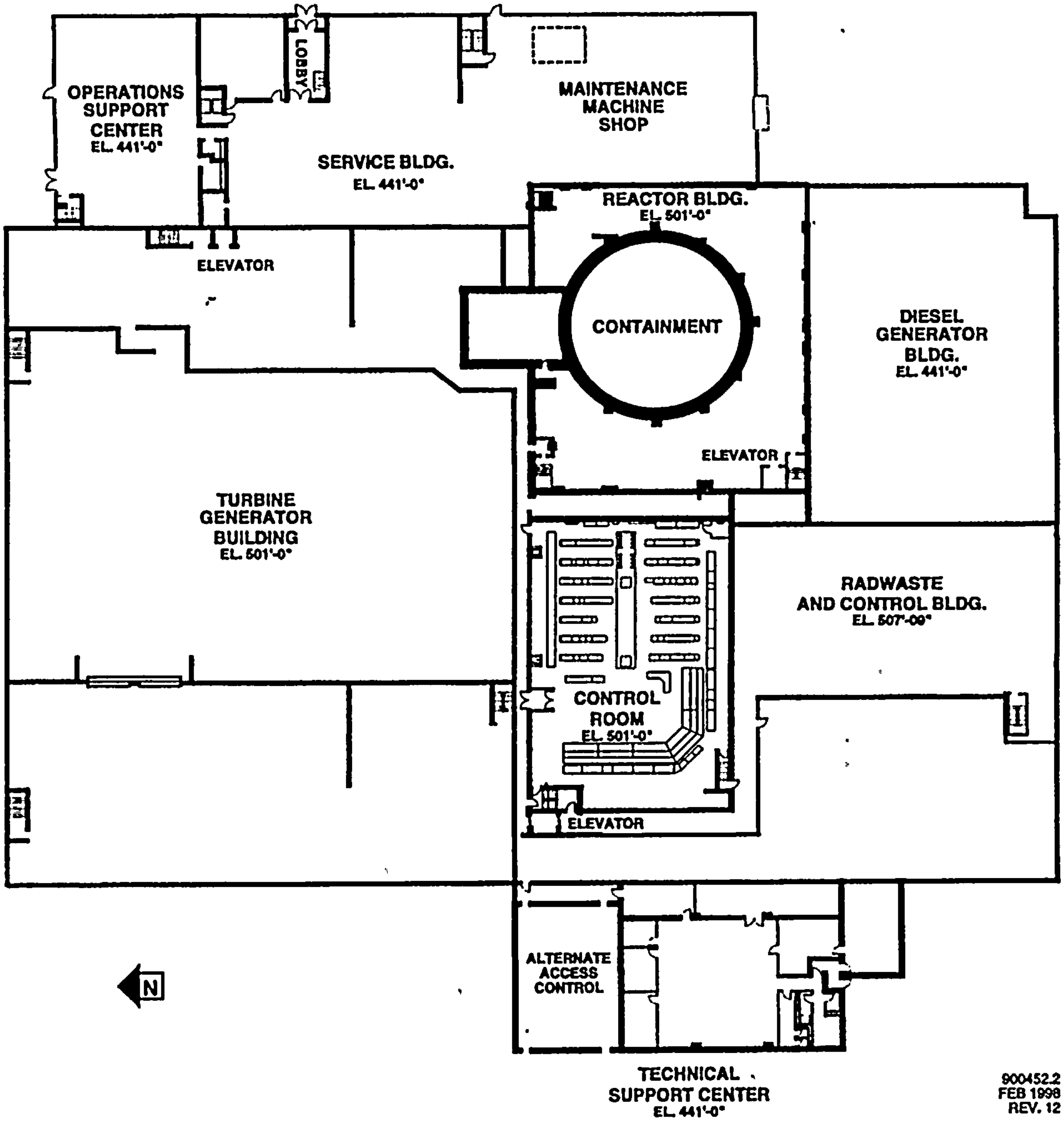


Figure 6-1, Columbia Generating Station Control Room, Technical Support Center and Operations Support Center Locations (Typical Arrangement)

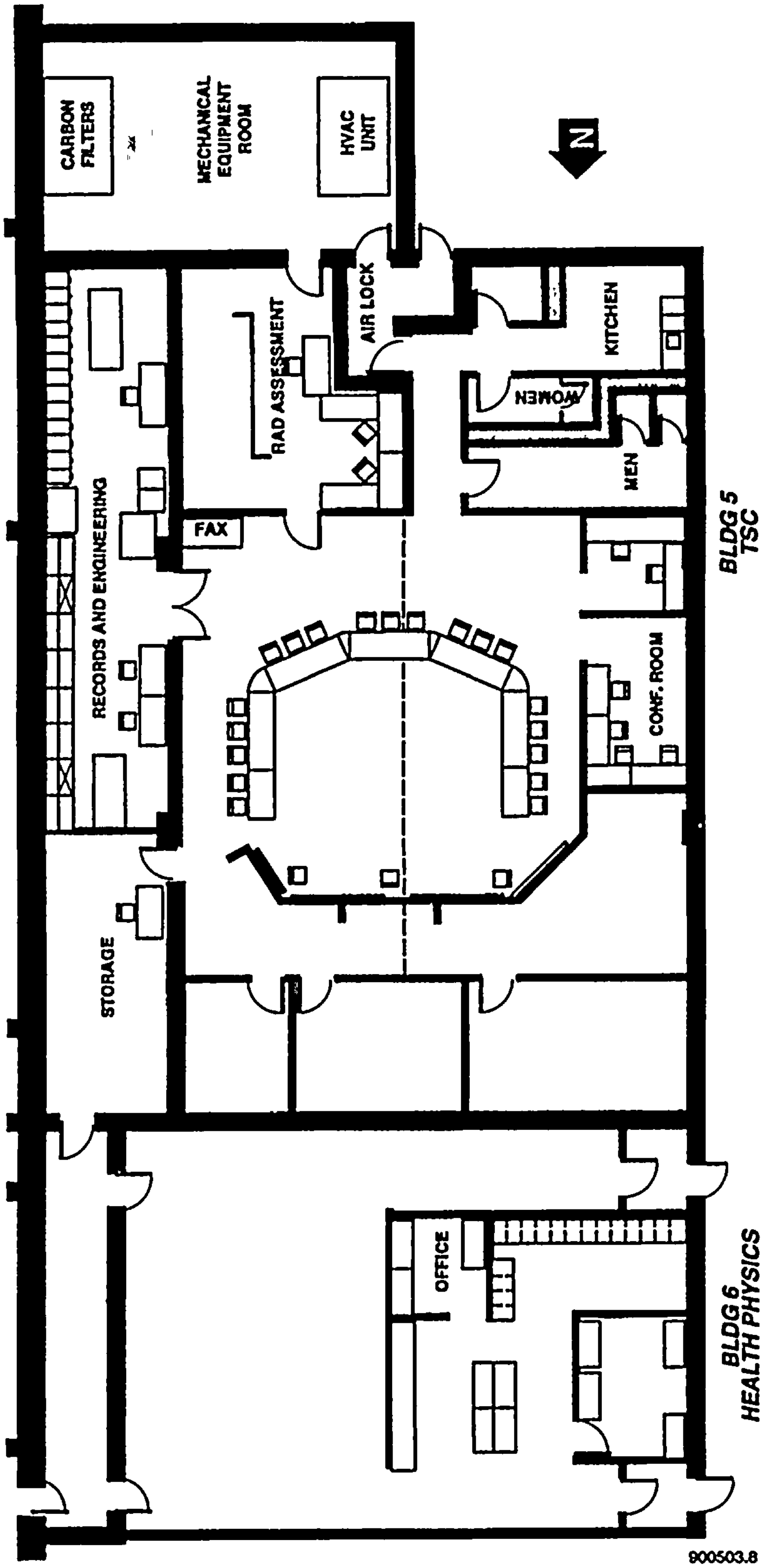


Figure 6-2, Columbia Generating Station Technical Support Center
(Typical Arrangement)

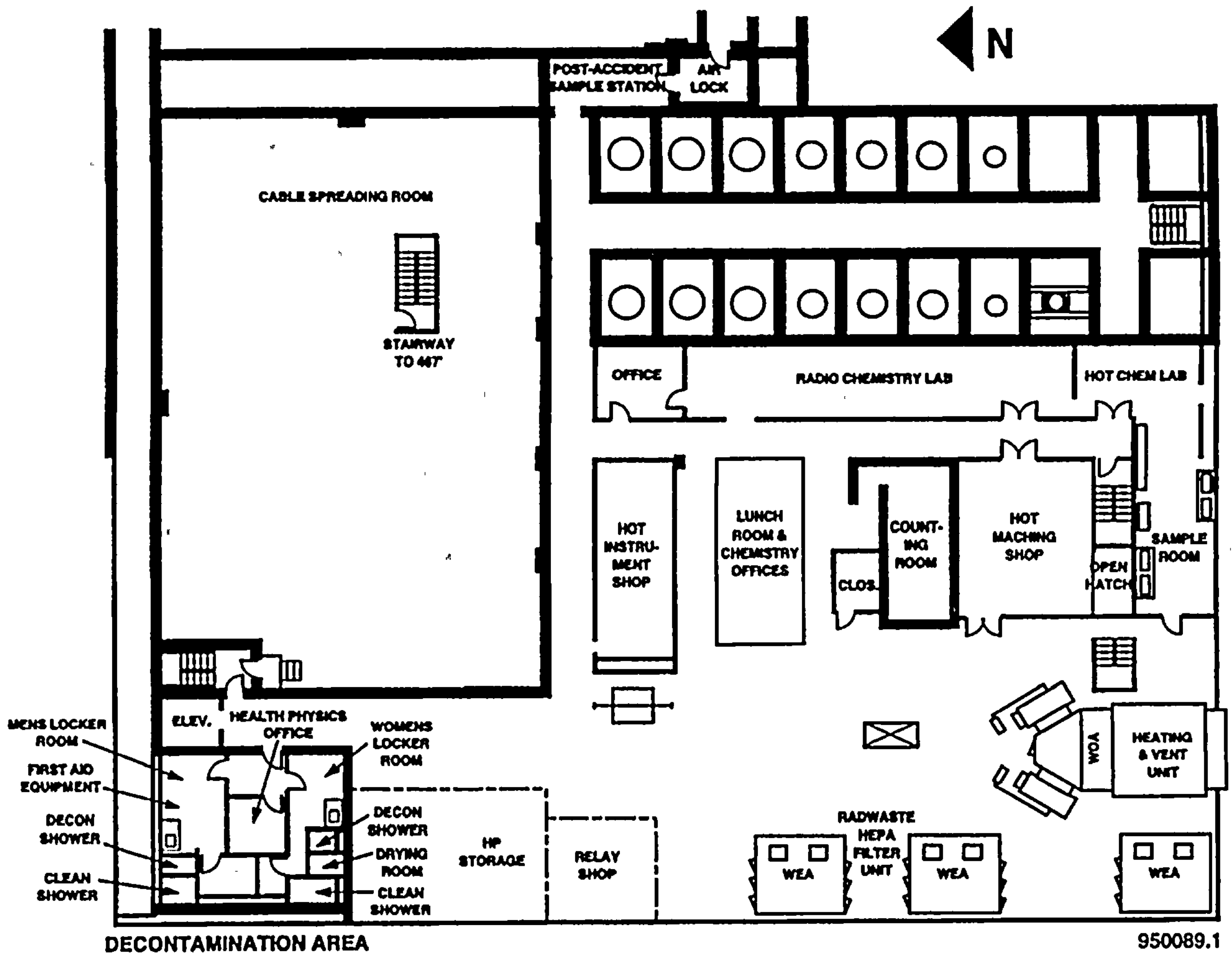


Figure 6-3, Columbia Generating Station Decontamination Area
(Typical Arrangement)

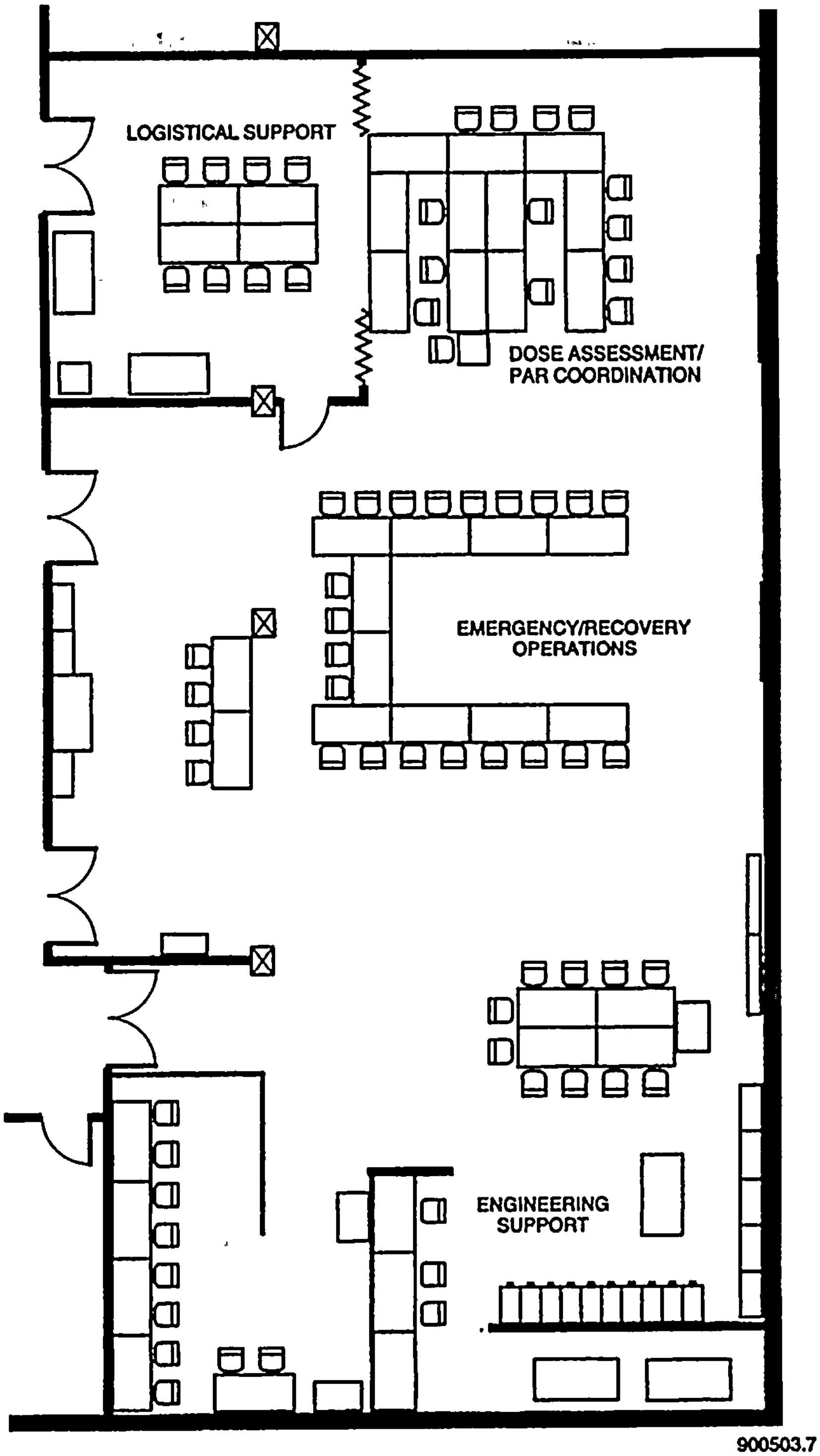


Figure 6-4, Kootenai Building
Emergency Operations Facility (EOF)
(Typical Arrangement)

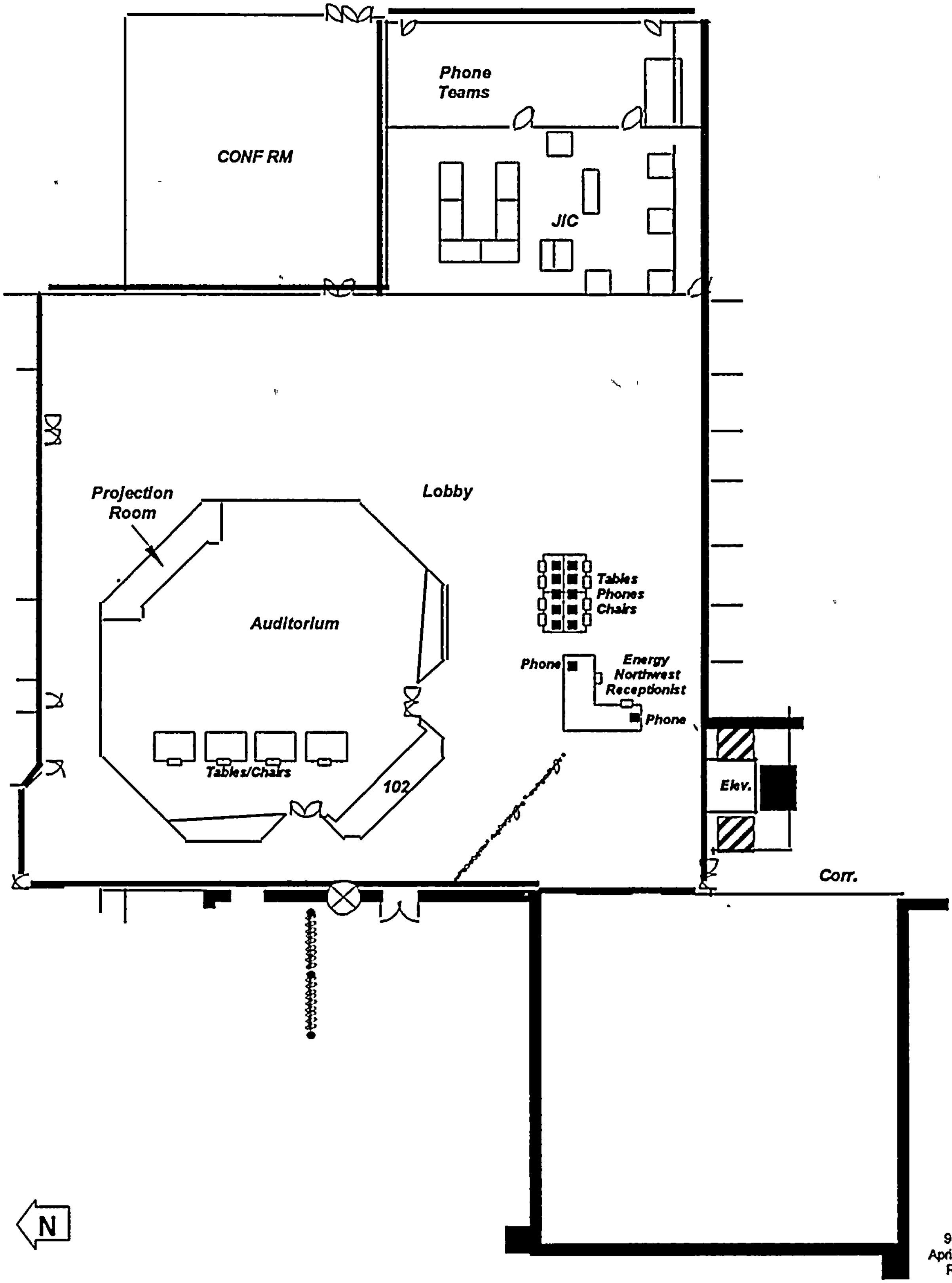


Figure 6-5, Joint Information Center - Typical Arrangement

SECTION 7
REENTRY AND RECOVERY OPERATIONS

7.1 REENTRY AND RECOVERY OPERATIONS

Emergency actions will shift to the recovery phase once the immediate corrective and protective actions have established effective control over the incident. Onsite reentry and recovery operations are addressed in 7.2 and 7.3. Offsite reentry and recovery operations are discussed in 7.4.

7.2 REENTRY INTO ONSITE AREAS

Reentry into evacuated onsite areas may be required during and after an emergency. This could include search and rescue, actions to minimize further accident consequence, or assessment of plant conditions to determine the scope of recovery operations. Exposure guidelines, as outlined in Section 5 of this plan, should not be relaxed without sufficient justification.

Prior to reentry, the Radiation Protection Manager or his representative shall:

a. Review all available radiation survey data and determine plant areas with high radiation exposure and/or contamination potential,

b. Review the radiation exposure records of personnel participating in the reentry operation and determine the need for additional personnel,

c. Review the adequacy of the radiological sampling and survey instrumentation to be used by the team (type, ranges, number, calibration etc.),

d. Review protective clothing, dosimetry, and respiratory protection requirements,

e. Ensure that appropriate communications are available, and

f. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry.

The initial recovery efforts should encompass the following actions:

a. Conduct comprehensive radiation surveys of the plant facilities and define all radiological problem areas;

b. Isolate and post all radiation and contamination areas with appropriate warning signs as conditions and available time allow, and

c. Identify potential hazards that may impact recovery operations.

During the reentry activities immediately following an accident, initial radiation monitoring functions involve only gross hazard evaluations, isolation of the hazard, and the definition of radiological problem areas. This immediate radiation surveillance activity is used to provide the basic information for the development of recovery operations.

7.3 ONSITE RECOVERY OPERATIONS

The EOF Manager and TSC Manager have the joint responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. A Recovery Manager will be appointed and a Recovery Organization will be established to develop and coordinate plans and schedules for the recovery operations. Following a Site Area Emergency or General Emergency, the Corporate Nuclear Safety Review Board (CNSRB) will review and comment on the recovery planning effort to assure that all nuclear safety aspects of the recovery are satisfied. (The CNSRB will report their findings to the Recovery Manager, who shall take the actions deemed appropriate for safe recovery operations.) Refer to Figure 7-1 for key positions and responsibilities of the recovery organization.

7.3.1 Initiating the Recovery Phase

Prior to terminating an emergency and entering the recovery phase, the EOF Manager will coordinate with the TSC Manager to ensure that the following criteria have been considered:

a. The conditions which caused the emergency have stabilized, are under control, and are unlikely to deteriorate further.

b. Plume tracking is no longer required. The only environmental assessment activities in progress may be those necessary to assess the extent of deposition resulting from passage of the plume.

c. In-plant radiation levels are stable or decreasing.

d. Radioactive releases are under control.

e. The potential for an uncontrolled radioactive release is acceptably low.

f. Containment pressure is within technical specifications.

g. The reactor is in a stable safe shutdown condition and long-term core cooling is available as required.

h. Any fire, flood, earthquake or similar emergency conditions no longer exist.

i. Offsite conditions will not limit access of personnel and support resources to the site.

j. Discussions have been held with DOE-RL, Washington, Oregon, affected counties and select regulatory agencies, and agreement has been reached to begin the recovery phase.

The extent of recovery activities will dictate the precise framework of the Recovery Organization:

a. For events of a minor nature, the normal onshift organization should be adequate to perform necessary close-out actions (e.g., for UNUSUAL EVENT classifications).

b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization, or portions thereof, should be adequate to coordinate the necessary recovery actions (e.g., for ALERT classifications).

c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, a formal Recovery Organization will be established to manage the recovery actions. Specific members of the Recovery Organization will be selected based upon the sequence of events that preceded the recovery activities.

7.3.2 Conducting Recovery Operations

Recovery operations will be performed in accordance with written procedures developed by the Recovery Manager and staff prior to implementation of any recovery action. These procedures shall be based upon information collected by the initial reentry team(s) and any subsequent updates. Special precautions will be identified for any potentially hazardous conditions. If radiological hazards exceed the boundaries of the radiation access controlled areas, the security access lists should be reviewed and revised to prevent unauthorized or unintentional entry into hazardous areas.

The Recovery Manager is responsible for directing the activities of the Recovery Organization and should:

a. Ensure that sufficient personnel from Columbia Generating Station and other organizations are available to support recovery.

b. Direct the development of a recovery plan and implementing procedures, as required.

c. Coordinate with the CNSRB to ensure adequate review of engineering activities and proper review and approval of the recovery plan and implementing procedures.

d. Coordinate the deactivations of emergency response facilities and personnel as appropriate.

e. Coordinate the integration of available state and federal assistance into recovery activities.

f. Coordinate with offsite authorities, and provide support as required for offsite recovery activities.

g. Approve all technically oriented recovery information released by the Public Information Organization.

h. Periodically estimate total population exposure.

When criteria to enter the recovery phase are met, the Recovery Manager will inform emergency centers and offsite agencies by crash call of the transition to recovery. The Recovery Manager then initiates a discussion of recovery items with the Recovery Task Force members to develop a shutdown safety plan focusing on procedurally defined priorities.

The Recovery Task Force will produce initial plans to cope with near and long term activities, provide direct input to the maintenance organization for an integrated outage plan, and provide assistance to the Recovery Manager to transition from a recovery phase to an outage, as appropriate.

During the recovery operations, particular attention should be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine the extent of any equipment damage and to determine the sequence of events that led up to the accident for event reporting and lessons learned findings.

The Recovery Manager will ensure that onsite ERO and appropriate offsite agencies are notified prior to initiating any recovery operation with a potential for a radiological release. The ERO and offsite agencies will also be notified of any changes in the key positions of the recovery organizational structure.

All recovery operations are considered to be terminated when the plant has returned to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.4 OFFSITE REENTRY AND RECOVERY OPERATIONS

A Reentry and Recovery Task Force is established by the State and County emergency response plans and is responsible for coordinating offsite recovery following radiological incidents including the requirements for reentry conditions for any offsite evacuated areas. Energy Northwest will provide a representative and additional assistance to this Task Force, as requested. Specific details of offsite reentry and recovery operations can be found in the State and County emergency response plans and implementing procedures.

- Recovery Manager
  - Recovery Phase Task Force Manager
    - Recovery Plan Operations Manager
    - Recovery Plan Radiological Manager
    - Recovery Plan Technical Manager
    - Recovery Plan Quality Assurance Manager
    - Recovery Plan Support Manager

Areas of Oversight Responsibilities:

Production Scheduling	Environmental	Fuels	Commitments	Procedures
Safety	Decon	Licensing	Reviews	Scheduling
Maintenance	Restoration HP	Vendors	Oversight	Finance
Security (Plant)	Radwaste	Analysis	Qualifications	Public Relations
OPS	Surveys	Plant Support		Legal
Shutdown Safety				Site Support
				Procurement
				Add'l Staffing

NOTE: The NRC will be invited to participate in this task force as deemed appropriate.

Figure 7-1

SECTION 8
MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES FOR THE PLANNING EFFORT

Overall responsibility and authority for emergency planning lies with the Vice President, Operations Support/Public Information Officer. The Manager, Resource Protection, reports directly to this Vice President, and has emergency preparedness as one of his general areas of responsibility. Reporting to the Manager, Resource Protection, is the Corporate Emergency Preparedness, Safety and Health Officer, who has specific responsibility for the Emergency Preparedness organization, and implementation of the program itself. Formal position descriptions specify minimum qualifications for the emergency planning personnel. Professional qualifications are maintained by periodic attendance at industry seminars and short courses, through observation of and participation in radiological emergency exercises conducted at other nuclear facilities, and through job-related in-house topical training sessions.

Specific responsibilities for the Corporate Emergency Preparedness, Safety and Health Officer include, but are not necessarily limited to, the following:

a. Ensure that the information, data, and procedures detailed in the Emergency Plan Implementing Procedures are consistent with the Columbia Generating Station Emergency Plan.

b. Ensure that the Emergency Plan Implementing Procedures and other procedures are coordinated and interface properly (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

c. Ensure the coordination of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures with the State, County and DOE-RL Plans.

d. Ensure an adequate staffing of the ERO.

e. Ensure emergency preparedness related training documentation is sent to Records Management.

f. Ensure emergency preparedness related drills and exercises are coordinated as described in this Plan.

g. Ensure periodic review and update of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures occurs as described in this Plan.

h. Ensure the maintenance and inventory of emergency facilities, equipment and supplies as described in this Plan.

i. Maintain knowledge current with respect to changes in the federal regulations and guidance that impact emergency preparedness activities.

j. Public information and education on emergency preparedness issues.

8.2 EMERGENCY PREPAREDNESS PLAN REVIEW

The Emergency Plan and the Agreements which support the plan are reviewed annually and updated as necessary. Critiques of past exercises, changes in company organizational structure, and issuance of new regulations provide the primary input to plan review. The Corporate Emergency Preparedness, Safety and Health Officer is responsible for developing and updating the Emergency Plan and coordinating the plan with other response organizations. The Plant Operations Committee is responsible for reviewing any proposed changes and submittal of the proposed revision to the Corporate Nuclear Safety Review Board.

The Corporate Emergency Preparedness, Safety and Health Officer provides a distribution list of all organizations and individuals with responsibility for implementation of the Emergency Plan. The Emergency Plan and all subsequent revisions are then distributed through a manuals control system which verifies receipt of the revisions by the implementing organization or individual. Revised pages are dated and marked to indicate where changes have occurred. If no revisions have occurred, the Corporate Emergency Preparedness, Safety and Health Officer will certify by letter to all Emergency Plan manual holders that the plan and supporting agreements have been reviewed and are current.

8.3 INDEPENDENT AUDIT OF THE EMERGENCY PREPAREDNESS PROGRAM

Either of two types of audit groups may be employed to ensure an adequate Emergency Preparedness Program. Audits may be performed by an outside organization with technical expertise in emergency planning or by an organization within Energy Northwest which is independent of the emergency preparedness program.

An audit will be conducted in accordance with 10 CFR 50.54(t) and the OQAPD. The review shall include the Emergency Plan, the Emergency Plan Implementing Procedures, training, readiness testing, equipment, and interfaces with state and local governments. The results of the audit, along with recommendations for improvement, shall be documented and reported to the Chief Executive Officer, the Plant General Manager, Vice President, Operations Support/PIO, and appropriate corporate and plant management. In addition, involved federal, state, and local organizations will receive results of the audit. The report and recommendations will be retained for a minimum period of five years.

The Corporate Nuclear Safety Review Board has the responsibility to review the Emergency Preparedness Program audit findings to determine if the conduct is adequate, and if the audit responses are appropriate and timely. The Board may expand these audit activities if necessary.

8.4 FACILITIES AND EQUIPMENT MAINTENANCE

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for ensuring that the facilities and equipment specified in Section 6 of this Plan are maintained in operational readiness. In addition to the routine tests and scheduled maintenance evolutions, the Emergency Preparedness staff members conduct periodic facility walk-downs of the on-site emergency response facilities. Various departments within Energy Northwest share the responsibility for performing maintenance and calibration on the equipment necessary to implement the provisions of the Emergency Plan, including survey meter calibration and testing, backup power source maintenance and testing (e.g., uninterruptible power supply batteries, diesel generators, etc.), emergency ventilation system maintenance and operational checks, field team vehicle maintenance, communications systems maintenance and testing, and tone alert radio and siren maintenance and periodic testing.

8.5 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The radiological emergency response training program is one of the most important aspects of the emergency preparedness effort. This training is intended to keep an adequate number of emergency personnel sufficiently familiar with the Emergency Plan and procedures to perform effectively in an emergency. Fire Brigade personnel are trained per FSAR 13.2. Security personnel are trained per the Physical Security Plan.

8.5.1 Emergency Training Program Description

Initial training for emergency responders is provided to all new Energy Northwest emergency response organization candidates. Refresher training is provided to the emergency response organization on an annual basis.

Personnel from local, state, and federal organizations who may be requested to assist during an emergency will be invited to participate in the site specific training program which may include tours to gain familiarization with the facilities. Support organization personnel will be provided qualified escorts if they enter the Plant Site during an emergency.

a. The Emergency Preparedness Training Program will include, but is not limited to the following:

- Applicable Emergency Plan Implementing Procedures
- Location of emergency equipment and supplies
- Names, locations, and functions of the emergency response facilities
- Use of plant communication systems
- Personnel accountability, assembly, and evacuation

b. As a minimum, all Emergency Response Organization personnel shall receive Emergency Preparedness Initial training. Emergency Plan training program lesson plans are developed using applicable guidance from the systematic approach to training process.

c. Initial training for Emergency Response Organization personnel shall include formalized classroom training, and examinations. Additionally, "hands on" training with completion of performance evaluation sign off forms may be used, as appropriate. It is the intent of this training program to qualify Emergency Response Organization personnel in the requirements of the Emergency Plan Implementing Procedures applicable to their emergency positions.

The training courses will provide the necessary information to enable each member of the emergency organization to perform assigned emergency tasks. Selected emergency personnel will attend specialized classes related to particular emergency assignments. Specific training course assignments for members of the emergency organization, and overall training responsibilities, may be found in the Qualification Directory. Detailed training responsibilities may be found in the Site Wide Procedures. The training course descriptions are found in the specific qualification directories.

8.5.1.1 Emergency Training for Essential Personnel

The emergency organization positions which are essential to implementation of this Emergency Plan are identified in Table 2-1. The individuals identified to function in these emergency organization positions will receive appropriate specialized initial training in the duties and responsibilities of the position and the applicable procedures. This training will consist of formal classroom instruction, written examination to verify a satisfactory level of comprehension, and where appropriate will include "hands-on" training with completion of performance evaluation sign off forms.

a. In addition to Emergency Center Overview training, essential personnel receive the following training:

- Emergency Director (Shift Manager, TSC Manager, EOF Manager)
    - > Protective Action Recommendations
    - > Emergency Classification
- Control Room Staff (Shift Manager, Control Room Supervisor, Control Room Operators, Emergency Response SRO, STA)
    - > Protective Action Recommendations (except Control Room Operators)
    - > Emergency Classification

> Dose Projection (except Control Room Operators)

> Emergency Notification

- Accident Assessment and Rad Monitoring Teams (RPM, Chemistry/Effluent Manager, REM, Dose Projection HP, Field Team Members, Field Team Coordinator)

  > Protective Action Recommendations (RPM and REM only)

  > Dose Projection (Chemistry/Effluent Manager, REM and Dose Projection HP only)

  > Field Team Overview and Operations (FT members and FT Dispatcher only)

- Fire Brigade

  > Trained per the requirements of FSAR Chapter 13.2

- Repair Teams (HP, Mechanic, Electrician, I&C, Chemistry)

  > OSC Maintenance Craft Overview

- First Aid/Rescue teams

  > Equivalent to Red Cross standard First Aid

8.5.1.2 Emergency Training for Augmenting and Support Personnel

Individuals assigned to emergency organization augmenting and support positions (not identified in Table 2-1) will receive training as described in the Qualification Directory.

8.5.2 Training for Offsite Agencies

Orientation and training of state and county agencies and personnel involved in the Columbia Generating Station emergency preparedness efforts will be made available by Columbia Generating Station, as follows:

a. The offsite organizations listed below will be invited, on at least an annual basis, to participate in a training program. The invitation will provide a schedule of drills and exercises to enable offsite agencies to request participation.

- Washington Emergency Management
- Washington Department of Health
- Benton County Emergency Management
- Franklin County Emergency Management
- Oregon Office of Energy
- Oregon State Health Division
- Local media personnel (newspapers, radio, tv, etc.)

b. The program will cover the basics of emergency preparedness as it relates to regulations and public safety. The program will include a review of select Emergency Plan Implementing Procedures with particular emphasis given to:

- Classification of emergencies,
- Reporting requirements,
- Assessments,
- Corrective and protective actions, and
- Communications networks.

Training for local services personnel includes, but is not necessarily limited to, procedures for notification and, where applicable, site access procedures, onsite contact identity, basic radiation protection and emergency response functions. This training is provided to the following organizations:

- Richland, Kennewick, and Pasco Fire Departments

  Initial and annual retraining is provided to the local fire department personnel concerning response requirements for accidents involving a threat of radiological contamination.

- Richland, Kennewick, and Pasco Hospitals

  Hospital personnel who may be involved in response to an emergency involving a potential of radiological contamination receive initial and annual retraining. Training covers how to deal with radiation accident cases.

8.5.3 Frequency of Training

Training for all individuals assigned to emergency organization positions will be successfully completed prior to their initial assignment to the emergency organization. Continuing training will also be administered to insure retention and familiarity with the subjects covered in the initial training. The continuing training will be administered annually.

The annual retraining program for ERO personnel is accomplished using classroom instruction and drill performance with immediate on the spot correction. Completion of self study information or examinations may be used to maintain qualifications of personnel unable to attend classroom sessions or drills.

Classroom instruction is used to refresh ERO personnel on information such as industry events, lesson learned from the past year's experience, significant procedure changes, and a review of response requirements.

Self guided performance evaluations may be used to refresh specific skills necessary for adequate emergency response skills. Written examinations may be used to evaluate comprehension and retention for refresher training.

Drills are used to provide practical experience to enhance information gained in the classroom. During the year, as many emergency response personnel as possible participate in scheduled drills, exercises and team training drills to broaden their experience base and that of the entire emergency organization.

When used, self-study by reading and acknowledgement is used to make responsible emergency response personnel aware of important changes to procedures. This method is primarily used when such information should not be delayed until classroom training can be provided.

8.5.4 Training Records

Responsibility for maintaining documentation of the training program is described in the Site Wide Procedures. Formal lesson plans for each course, including instructor qualifications and performance objectives will be maintained. Attendance records for all courses will also be maintained.

8.6 DRILLS AND EXERCISES

Periodic drills and exercises will be conducted in order to test the overall state of emergency preparedness. The prime objective of this form of training is to determine the level of emergency preparedness of all participating personnel, organizations, and agencies. More specifically, each drill or exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their duties and responsibilities.

b. Verify the adequacy of timing of drills and exercises and content of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures.

c. Test communications networks and systems.

d. Check the availability of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

Remedial exercises will be conducted if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot determine "reasonable assurance" that adequate protective measures can be taken in the event of a radiological emergency.

8.6.1 Drill and Exercise Responsibilities

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for the planning, scheduling, and coordination of all emergency preparedness related drills and exercises. All exercises are subject to the approval of the Manager, Resource Protection, and the Plant General Manager.

When a drill or exercise is to be conducted, the Corporate Emergency Preparedness, Safety and Health Officer will:

a. Schedule a date for and assign a drill or exercise coordinator.

b. Assign personnel to prepare a scenario and to act as controllers.

c. Coordinate efforts with other participating emergency personnel, organizations, and agencies.

d. Oversee conduct of the drill or exercise.

e. Critique the results of the drill or exercise.

f. Assign personnel to correct any deficiencies.

Combined functional drills and exercises will involve onsite as well as offsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted simulating, as closely as possible, actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Whenever practical this will incorporate provisions for "free play" on the part of the participants. Drill scenarios will be prepared that involve the participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations. This may include varying degrees of participation of state, county, and federal organizations and agencies, and local service support personnel and organizations. The Corporate Emergency Preparedness, Safety and Health Officer will make every effort to notify the offsite emergency response organizations and agencies at least 180 days in advance of the scheduled date of the drill or exercise.

Drills will involve on-the-spot correction of erroneous performance and a demonstration of the proper performance for the evaluator. During the conduct of exercises, the controllers are restricted in their ability to correct erroneous performance, and may only intercede to prevent damage to equipment or assure safety of personnel.

Recommendations for revisions to the Emergency Plan, Emergency Plan Implementing Procedures, and/or the upgrading of emergency equipment and supplies as a result of a drill or exercise are forwarded to the Corporate Emergency Preparedness, Safety and Health Officer by observers or participants for appropriate disposition.

8.6.2 Drill/Exercise Package

A drill/exercise package is the controlling document for each drill or exercise. It includes, as a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s) and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
- A description of the arrangements for and advance materials to be provided to official observers.

8.7 TYPES OF DRILLS

This section gives details of some of the types of drills which will be conducted periodically. Other types of drills may be developed as needed to test various portions of the emergency support organization.

8.7.1 Communication Drills

Communication drills are conducted in the following manner:

- Operability of the various communications systems is tested by two-way communication. See Section 6 for a detailed list of the systems tested. These tests may be included as part of a scheduled drill or exercise.
- Communication drills involving the field assessment teams are conducted as a part of the radiological monitoring drills.

- Communication drills with Washington State and local governments, (Benton and Franklin Counties), and DOE-RL are conducted to evaluate the message distribution process, including the ability of participants to understand the content of example messages.

8.7.2 Fire Drills

The Fire Brigade will be activated for response to a simulated fire or may respond to a training area to actually fight a fire under the supervision of the Fire Brigade Leader.

8.7.3 Medical Emergency Drills

This drill involves a simulated injury with contamination and will include provisions for participation by ambulance personnel and offsite medical treatment facilities. This drill shall occur annually. The offsite and onsite portions may be performed out of sequence and at different times. The onsite portion of the medical emergency drill should involve evaluation, packaging, and transport of the simulated victim to the ambulance pickup point.

8.7.4 Radiological Monitoring Drills

These drills involve the Environmental Field Teams. Plant and field activities may involve conducting surveys, tracking radiological plume(s) and deposition, and collecting and analyzing various samples such as water, soil, air, and vegetation. Provisions for communications and record keeping will also be tested.

8.7.5 Health Physics Drills

- The first type of health physics drill involves response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- The second type of health physics drill requires analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system.

8.8 FREQUENCY OF DRILLS AND EXERCISES

Scenarios will be varied from year to year so that all major elements of the plan and preparedness organizations are tested within a six-year period. Drills and exercises will be conducted under various weather conditions and may be unannounced. Provisions will be made to demonstrate an off hours drill between 6:00 P.M. and 4:00 A.M., at least once each six years. Additional drills may be conducted to provide practical training to emergency organization members. These drills may include components that satisfy the required drill elements in Table 8-1.

8.9 DRILL/EXERCISE PREPARATIONS AND CONDUCT

The Emergency Preparedness organization is responsible for initiating and coordinating the development of the drills and exercises necessary to meet the requirements of the Emergency Plan. The drill/exercise coordinator is responsible for overall development of the drill/exercise package and to ensure all preparatory activities between departments and agencies are coordinated (see Section 8.10.1). The minimum necessary actions to be taken in preparation for a drill or exercise are as follows:

a. Develop the drill/exercise scenario including:

 1. The objectives and evaluation criteria;

 2. The desired participants (i.e., response agencies);

 3. The primary actions/plans expected to be implemented, activated; and

 4. The tentative date.

b. Distribute the scenario to the desired participants for review and concurrence.

c. For all exercises, Federal, State, and local government agencies will be invited to observe, evaluate, and critique the exercise.

The use of the Columbia Generating Station Probabilistic Safety Assessment (PSA) should be considered when constructing drill and exercise scenarios. The use of PSA allows efforts to be directed at the most likely accident scenarios. Planning efficiency may therefore be increased by allowing the available resources to be directed at the most likely events. The Columbia Generating Station PSA considers both the likelihood and consequences of severe accidents possible at Columbia Generating Station and thus can be utilized to ensure the drill and exercise scenarios are more realistic to the players.

One of the major objectives of drills and exercises is to test the ability of emergency response organization personnel to utilize the emergency response procedures and to make effective and timely decisions based on available data. To effectively accomplish this objective, the drill/exercise controllers will provide the players with any data which the player would have available to them under the conditions being simulated by the drill or exercise.

Facilitative critique session(s) will be held as soon as practicable after each drill/exercise. The comments of the evaluators, controllers, players and observers including federal and state observers or evaluators, will be discussed and the significant comments will be identified. As a part of the critique report, deficiencies (involving needed plan/procedure changes) will be identified. The Emergency Preparedness Section will be responsible for tracking Energy Northwest corrective actions to completion and maintaining sufficient records to document correction of the deficiencies.

TABLE 8-1

REQUIRED DRILL ELEMENTS

	Drill/Exercise	Frequency
a.	Communications Tests	(As described in Section 6. Can be performed as part of drills or exercises.)
b.	Communications Drills	Monthly (with WA State, DOE RL, and Benton and Franklin County Response Agencies) Quarterly (with state and federal response agencies) Annually (with Columbia Generating Station, state and local field monitoring teams)
c.	Fire Brigade Drills	As described in FSAR Section 13.2 (See Note 1)
d.	Medical Emergency Drills	Annually (See Note 2)
e.	Radiological Monitoring Drills	Annually
f.	Health Physics Drills	
	1. Analysis of simulated samples and measurements in the environment	Semi-Annually
	2. Analysis of in plant liquid samples with actual elevated radiation levels	Annually
g.	Major Exercises, including tests of Public Notification System	Biennially (See Note 3)
h.	Combined Functional Drills	Biennially (See Note 4)

NOTE 1: One of the fire drills may be conducted as a portion of the major exercise or combined functional drill.

NOTE 2: The portion of the medical emergency drill involving offsite support agencies may be performed as a portion of the radiological monitoring, major exercise or combined functional drill.

NOTE 3: Department of Energy - Richland Operations, Benton and Franklin County and Washington State Emergency Management will be afforded the opportunity to participate biennially or more frequently if they so request.

NOTE 4: Performed during the alternating years from the major exercises, and testing a major portion of the basic elements of the plans and organizations.

SECTION 9
PUBLIC EDUCATION AND INFORMATION

9.1 PUBLIC EDUCATION AND INFORMATION PROGRAM

Energy Northwest has developed a public education and information program with the purpose of educating the public concerning power plant safety, expected effects of a reactor accident, and actions which should be taken by the public in the unlikely event of a release of radioactive material. This program is targeted for the transients and residents within the Ten-Mile Emergency Planning Zone (EPZ), as well as other interested members of the general public. Special programs have also been designed to address the special needs of the news media.

9.1.1 Annual Public Information Program

In coordination with the Department of Energy - Richland Operations, State of Washington and Benton and Franklin Counties, Energy Northwest provides information to permanent and transient populations within the Ten-Mile EPZ on such topics as radiation, recommended protective measures, selected evacuation routes and assistance centers, sheltering, respiratory protection, thyroid blocking agents, special needs for the handicapped, tone activated radio operation and contacts for additional information. This program includes written material updated and distributed annually to residences within the Ten-Mile EPZ for reference during an emergency.

Brochures at designated recreational facilities are available to transient populations within the 10-Mile EPZ.

9.1.2 Media Information Program

In addition to Energy Northwest's ongoing media program, special presentations coordinated with county and state emergency management offices are made annually to acquaint the news media with emergency preparedness, radiation hazards, and points of contact for release of public information during an emergency.

9.1.3 Warning Signs

Warning signs are posted and maintained at selected areas frequented by sportsmen within the Ten-Mile EPZ.

The signs inform the transients that upon hearing a steady siren tone to leave the area immediately and tune to the local Emergency Broadcast System frequency.

9.2 PUBLIC INFORMATION DURING EMERGENCIES

9.2.1 Emergency Public Information

During an emergency the Joint Information Center (JIC) Manager is responsible for ensuring an accurate and reliable flow of information. Emergency public information procedures are activated during an emergency and will include provisions for exchange of information between Energy Northwest, the public, and outside agencies.

It is likely that the perceived threat, hence media interest and public concern, will be greater than that actually associated with the emergency. The degree to which the emergency public information program is activated by the JIC Manager will depend upon the classification of the emergency and upon the public perception of the event. Therefore, accelerated operations beyond the requirements expected for the declared class of emergency may be implemented.

9.2.2 Emergency Operations Facility Public Information Operations

The Emergency Operations Facility (EOF) Public Information Officer and news writing staff are responsible for developing media release information, and will work closely with technical personnel in the EOF to assure accurate information.

9.2.3 Public Information Operations

The Joint Information Center, located outside the 10-mile EPZ, can accommodate a large number of media personnel and is activated automatically at an alert or higher classification or at the direction of the JIC Manager.

A News Coordination Team, chaired by the JIC Manager, will be established to issue accurate, coordinated and timely information to the media by conducting media briefings and preparing news releases. This team is composed of representatives from Energy Northwest, the Nuclear Regulatory Commission, the Department of Energy-RL, the Federal Emergency Management Agency (coordinating the rest of the federal agencies), and state and local officials. The team will assure that the spokepersons designated from each group have access to all necessary information, opportunity to exchange information, and have the opportunity to participate in media briefings.

Media briefings will be held at regular intervals. The Joint Information Center has space for briefing over 150 members of the media. Areas in the center will be provided for media work space. Copies of news releases and other support materials will be made available for media use.

A media briefing area is available in the Kootenai Building outside of the EOF. The main media center is located at the Energy Northwest Richland Office Complex in Richland.

9.2.4 Media Telephone Team Operations

A Media Phone Team can be activated and remain operational twenty-four hours per day until the emergency is terminated. This team will respond to incoming media calls with the latest available information. This team may be manned jointly by Energy Northwest, federal, local, and state representatives.

9.2.5 Public Information Telephone Team Operations

Public Information Phone Team operations will begin as directed by JIC Manager. This Team will respond to calls and correct misinformation distributed by the media or other groups. This team may be manned jointly by Energy Northwest, Federal, Local and State Representatives. The Public Information Phone Team, combined with the Media Phone Team, will ensure a comprehensive rumor control effort.

APPENDIX 1

SUPPORTING PLANS AND CONTRACTS

Annually Energy Northwest will review the supporting plans and/or contracts listed below to ensure they remain accurate and applicable relative to Columbia Generating Station activities. The results of this review may be communicated informally, but some form of record will be maintained.

Plan	Source
Washington State Fixed Nuclear Facility Emergency Response Plan	Washington Emergency Management
Benton County Fixed Nuclear Facility Response Plan	Benton County Emergency Management
Franklin County Radiological Emergency Response: Energy Northwest	Franklin County Emergency Management
Oregon Columbia Generating Station Emergency Response Plan	Oregon Office of Energy
Hanford Emergency Management Plan	Department of Energy, Richland Operations
Siemens Pre Emergency Plan Manual	Siemens Power Corporation
INPO 86-032, Emergency Resources Manual	Institute of Nuclear Power Operations
Federal Radiological Emergency Response Plan (FRERP)	Federal Emergency Management Agency
NUREG-0845, Agency Procedures for NRC Incident Response Plan (and supplements)	United States Nuclear Regulatory Commission

EMERGENCY PLAN IMPLEMENTING PROCEDURES
Index for Implementation of Emergency Plan Sections

Procedure	Title	Section of Plan Implemented
	13.1 Emergency Classification	
13.1.1	Classifying the Emergency	4.1 thru 4.4
13.1.1A	Classifying the Emergency - Technical Bases	4.2
	13.2 Protective Measures	
13.2.1	Emergency Exposure Level/Protective Action Guides	5.9
13.2.2	Determining Protective Action Recommendations	5.5
	13.3 Natural Emergency Actions	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.1.1 and the Abnormal Condition Procedures, Section 4.12, of the Plant Procedures Manual.	
	13.4 Notifications	
13.4.1	Emergency Notifications	4.6
	13.5 Evacuation and Accountability	
13.5.1	Localized and Protected Area Evacuations	5.7.2, 5.7.3
13.5.3	Evacuation of Exclusion Area and/or Nearby Facilities	1.6.2 5.7.2, 5.7.3
13.5.5	Personnel Accountability/ Search and Rescue	5.7.5
	13.6 Emergency Security Procedures	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.10.8 and other Security Plan Implementing Procedures.	

Procedure	Title	Section of Plan Implemented
	13.7 Personnel Monitoring, Decontamination, First Aid	
13.7.5	Offsite Assembly Area Operations	5.7.3
	13.8 Offsite Dose Calculations	
13.8.1	Computerized Emergency Dose Projection System Operations	5.3
	13.9 Environmental Field Monitoring	
13.9.1	Environmental Field Monitoring Operations	2.3.3.3, 2.4.4.16, 5.4, 6.2.4
13.9.5	Environmental Sample Collection	5.2.2, 5.4
13.9.8	River Evacuation Monitoring	5.7.4
	13.10 Plant Emergency Facilities	
13.10.1	Control Room Operations and Shift Manager Duties	2.3.1.1 thru 2.3.1.3, 2.3.1.6
13.10.2	TSC Manager Duties	2.3.2.1
13.10.3	Technical Manager and Staff Duties	2.3.2.4, 2.3.2.7
13.10.4	Radiation Protection Manager Duties	2.3.2.2
13.10.5	Operations Manager Duties	2.3.2.8
13.10.6	Plant/NRC Liaison Duties	2.3.2.3
13.10.7	Plant Administrative Manager Duties	2.4.1.1
13.10.8	Security Lieutenant Duties	2.3.1.4
13.10.9	OSC Manager and Staff Duties	2.3.1.8, 2.3.1.9 2.4.1.6, 2.4.1.7 2.10, 2.5.2-11

Procedure	Title	Section of Plan Implemented
13.10.14	Maintenance Manager Duties	2.4.1.2
13.10.16	Chemistry/Effluent Manger Duties	2.14.1.4
	13.11 Emergency Operations Facility	
13.11.1	EOF Manager Duties	2.3.3.1
13.11.2	Assistant EOF Manager Duties	2.4.2.1
13.11.3	Site Support Manager and Staff Duties	2.4.2.8
13.11.7	Radiological Emergency Manager Duties	2.3.3.2
13.11.8	Licensing Manager Duties	2.4.4.18
13.11.10	Security Manager Duties	2.4.2.7
13.11.12	EOF Engineering Manager and Staff Duties	2.4.2.4, 2.4.2.6
13.11.18	Information Coordinator Duties	2.4.1.3
	13.12 Headquarters Emergency Centers	
13.12.19	JIC Management	2.3.4.1
13.12.20	Media and Information Management	6.3
13.12.21	JIC Support Services	6.3
	13.13 Reentry/Recovery	
13.13.1	Reentry	7.2
13.13.2	Recovery Operations	7.3
13.13.3	Intermediate Phase MUDAC Operations	7.3.2
13.13.4	After Action Reporting	4.4

Procedure	Title	Section of Plan Implemented
	13.14 Supporting Information Procedures	
13.14.1	Nearby Nuclear Facility Emergencies/ Requests for Assistance	4.1
13.14.4	Emergency Equipment	6.4, 8.4
13.14.8	Drills and Exercises Program	8.6
13.14.9	Emergency Program Maintenance	8.1 thru 8.4
SWP-EPP-01	Emergency Response Organization and Training	8.5

APPENDIX 3

EMERGENCY KITS

Columbia Generating Station Fire Brigade Stations

Fire Brigade turnout stations are strategically located inside and outside the Radiologically Controlled Area (RCA). Contents include fire fighter protective equipment, self-contained breathing apparatus (SCBA) units, radios, fire fighter tools and equipment, First Responder medical kits, hazardous materials response kits, and radiological monitoring equipment.

Columbia Generating Station Decontamination Kits

Two decontamination kits are located in the Radwaste Building decontamination area, and one is located in the Yakima Building (GSB) Emergency Equipment Area.

Columbia Generating Station Protective Equipment Kit

A kit containing protective equipment and radiological monitoring equipment is located in the Technical Support Center.

Energy Northwest Field Monitoring Kits

Kits containing protective equipment, radiological monitoring equipment, communications equipment, and emergency supplies for Environmental Monitoring Field Teams are located at the Kootenai Building and Energy Northwest's Office Complex (ENOC). Kits located at ENOC also include a River Evacuation Monitoring Kit.

Hospital Radiological Emergency Kits

Kits containing protective equipment, radiological monitoring equipment, and emergency supplies are located at Kadlec Medical Center in Richland, Our Lady of Lourdes Hospital in Pasco, and Kennewick General Hospital in Kennewick.

APPENDIX 4

AGREEMENT LETTERS

This appendix refers to signed letters of agreement which formalize commitments between Energy Northwest and outside organizations to provide or receive mutual aid and support during emergency conditions.

Listed below are the outside agencies Energy Northwest has agreements with. Agreements are maintained in files by Energy Northwest's Emergency Preparedness Group.

Agreements already in place or provided for in existing response plans provide detailed, formalized commitments to provide or receive mutual aid or support during emergency conditions. These plans are referenced in Appendix 1 of this plan.

In addition, Federal commitment to support Columbia Generating Station is provided in Federal response plans maintained by Nuclear Regulatory Commission and Federal Emergency Management Agency. These plans are listed in section 3.6.1 and 3.6.3, as well as Appendix 1.

Annually, Energy Northwest will review the agreements listed below to ensure they remain accurate and applicable. The results of this review will be communicated to the affected organizations. Acknowledgements for this annual review are requested and maintained in the agreement file. Records of verbal acknowledgements are acceptable and will be maintained.

1. Agreement Letter With Our Lady of Lourdes Hospital

2. Agreement Letter With Kennewick General Hospital

3. Agreement Letter With Kadlec Medical Center

4. (Memorandum of Understanding Between) Department of Energy Richland Operations Office, Hanford Environmental Health Foundation, Emergency Response At the Hanford Site - Use of the Emergency Decontamination Facility

5. Law Enforcement Agency Agreement - Benton County

6. Hanford Site Support Services, Fire and Ambulance

APPENDIX 5

NUREG-0654

CROSS-REFERENCE

NUREG-0654 CROSS-REFERENCE

II. Planning Standards and Evaluation Criteria

A. Assignment of Responsibility (Organizational Control)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.a.	Each plan shall identify organizations that are intended to be part of the overall response. (See Appendix 5)	X Sect. 2 Sect. 3	X	X
b.	Specify its concept of operations, and its relationship to the total effort.	X Sect. 3	X	X
c.	Illustrate these interrelationships in a block diagram.	X 1.6.5 Table 1-1	X	X
d.	Identify a specific individual by title who shall be in charge of the emergency response.	X 2.1	X	X
e.	Provide for 24-hour per day emergency response, including manning of communications links	X 2.2, 2.3	X	X
2.a.	Specify the functions and responsibilities for major elements and key individuals by title. (See Section B for licensee.)		X	X
b.	The legal basis for such authorities.		X	X
3.	Include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations.	X App. 4	X	X
4.	Shall be capable of continuous (24-hour) operations for a protracted period.	X 2.1	X	X

B. Onsite Emergency Organization

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1. Specify the onsite emergency organization of plant staff personnel.	2.2 X 2.3		
2. Designate an individual as emergency coordinator who shall be on shift at all times.	X 2.2		
3. Identify a line of succession for the emergency coordinator.	X 2.1		
4. Establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated.	X 2.11		
5. Specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1.	Sect. 2, Table 2-1		
6. Specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram.	X Sect. 3, Figure 21		
7. Specify the corporate management, administrative, and technical support personnel who will augment the plant staff.	X 2.4		
a. logistics support for emergency personnel;	2.4.1.1, X 2.4.2.8		

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
B.	Onsite Emergency Organization (Cont'd.)	Licensee	State	Local
b.	technical support for planning and reentry/recovery operations;	X 2.3.3.1		
c.	management level interface with governmental authorities; and	X 2.3.3.1		
d.	release of information to news media during an emergency.	X 2.3.3.1		
8.	Specify the contractor and private organizations who may be requested to provide technical assistance	X 3.3		
9.	Identify the services to be provided by local agencies for handling emergencies. Provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan.	3.2 X App. 4		

C. Emergency Response Support and Resources

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Make provisions for incorporating the Federal response capability into its operation plan, including the following:			
a.	specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.	2.3.3.2, X 3.6.2	X	

C. Emergency Response Support and Resources (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and	X 3.6.2	X	
c.	specific licensee, State and local resources available to support the Federal response.	X 3.6.2	X	X
2.a.	Each principal offsite organization may dispatch representatives to the licensee's near-site Emergency Operations Facility.		X	X
b.	Prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.	X 3.1		
3.	Identify radiological laboratories and their general capabilities and expected availability.	3.3.1 3.3.2 3.3.3 X 3.6.2	X	
4.	Shall identify nuclear and other facilities, organizations or individuals which can be relied upon.	3.3 X App. 4	X	X

D. Emergency Classification System

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee.	X 4.1, 4.2, 4:4		
2.	The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the FSAR.	X 4.1		

D. Emergency Classification System (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
3. Establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.		X	X
4. Have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility.		X	X

E. Notification Methods and Procedures

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1. Establish procedures which describe mutually agreeable bases for notification of response organizations.	X 4.6 Table 4-2	X	X
2. Establish procedures for alerting, notifying, and mobilizing emergency response personnel.	X 4.6.1	X	X
3. Establish the contents of the initial emergency messages to be sent from the plant.	X 4.6.5		
4. Make provisions for followup messages from the facility.	X 4.6.6		
5. Establish a system for disseminating to the public appropriate information.		X	X
6. Establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public.	X 4.6.4	X	X

E. Notification Methods and Procedures (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide written messages intended for the public, consistent with the licensee's classification scheme.	X 4.6.5	X	X

F. Emergency Communications

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish reliable primary and backup means of communication.			
a. provision for 24-hour per day notification to and activation of the State/local emergency response network;	X 4.6	X	X
b. provision for communications with contiguous State/local governments within the Emergency Planning Zones;	X 4.6.3	X	X
c. provision for communications as needed with Federal emergency response organizations;	X 4.6	X	X
d. provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations centers, and radiological monitoring teams;	X Table 6-1	X	X
e. provision for alerting or activating emergency personnel in each response organization; and	X 4.6.1	X	X

F. Emergency Communications (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	provision for communication with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.	4.6.3 X 6.5.3		
2.	Ensure that a coordinated communication link for fixed and mobile medical support facilities exists.	X 3.2.2	X	X
3.	Conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).	X 6.6	X	X

G. Public Education and Information

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Provide a coordinated periodic (at least annually) dissemination of information to the public.	X 9.1.1	X	X
2.	Provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material. Shall also be used to disseminate to any transient population appropriate information that would be helpful if an emergency or accident occurs.	X 9.1.1, 9.1.3	X	X
3.a.	Designate the points of contact and physical locations for use by news media during an emergency.	X 9.2.3	X	X

G. Public Education and Information (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	Provide space which may be used for a limited number of the news media at the nearsite Emergency Operations Facility.	X 9.2.3		
4.a.	Designate a spokesperson who should have access to access to all necessary information.	X 9.2.3	X	X
b.	Establish arrangements for timely exchange of information among designated spokespersons.	X 9.2.3	X	X
c.	Establish coordinated arrangements for dealing with rumors.	X 9.2.5	X	X
5.	Conduct coordinated programs at least annually to acquaint news media with the emergency plans	X 9.1.2	X	X

H. Emergency/Facilities and Equipment

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish a Technical Support Center and an onsite operations support center	6.1.2 X 6.1.3		
2.	Establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out.	X 6.2		
3.	Establish an emergency operations center for use in directing and controlling response functions.		X	X

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Licensee	State	Local
		Applicability and Cross Reference to Plans		
4.	Provide for timely activation and staffing of the facilities and centers described in the plan.	6.5.6 X 6.5.9	X	X
5.	Identify and establish onsite monitoring systems that are to be used to initiate emergency measures, as well as those to be used for conducting assessment.	5.1, X 5.2		
	The equipment shall include:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	5.1 X 5.2		
b.	radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	5.1.2 X App. 3		
c.	process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and	6.3 X 5.1.1		
d.	fire and combustion products detectors.	X 5.1.1		
6.	Make provisions to acquire data from or for emergency access to offsite monitoring and analysis equipment including:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1.1		
b.	radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided; and	X 5.2.2		
c.	laboratory facilities, fixed or mobile.	X 5.4.5		

H. Emergency/Facilities and Equipment (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.	X 5.4.3	X	X
8. Provide meteorological instrumentation and procedures, and provisions to obtain representative current meteorological information from other sources.	X 5.2.1		
9. Provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies.	X 6.1.3		
10. Make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use.	6.4 X 8.4	X	X
11. Each plan shall, in an appendix, include identification of emergency kits by general category.	X App. 3	X	X
12. Establish a central point for the receipt and analysis of all field monitoring data and coordination of sample media.	6.2.4 6.2.8 X 6.2.10	X	X

I. Accident Assessment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents	Table 4-1 X 5.1		

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans: Licensee	State	Local
2.	Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident.	5.1 thru X 5.3		
3.	Establish methods and techniques to be used for determining:			
a.	the source term of releases of radioactive material within plant systems.	X 5.3.1		
b.	the magnitude of the release of radioactive materials.	X 5.3.2		
4.	Establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.	X 5.3.2		
5.	Have the capability of acquiring and evaluating meteorological information.	5.2.1 X 6.2.4		
6.	Establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.	X 5.3.1		
7.	Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone.	X 5.4	X	X
8.	Provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.	5.1 5.3 X 5.4	X	X

I. Accident Assessment (Cont'd)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
9.	Have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uCi/cc.	X 5.4.4	X	
10.	Establish means for relating the various measured parameters and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.	5.9.3 X 5.5	X	
11.	Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.		X	

J. Protective Response

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish the means and time required to warn or advise:			
a.	Employees not having emergency assignments;	X 5.7.3		
b.	Visitors;	X 5.7.3		
c.	Contractor and construction personnel; and	X 5.7.3		
d.	Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.	3.2.3 X 5.7.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
2.	Make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.	5.7.2 X 5.7.3		
3.	Provide for radiological monitoring of people evacuated from the site.	X 5.7.4		
4.	Provide for the evacuation of onsite non-essential personnel and shall provide a decontamination capability at or near the monitoring point specified in J.3.	X 5.7.3		
5.	Provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.	X 5.7.5		
6.	Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:			
a.	Individual respiratory protection;	X 5.9.6		
b.	Use of protective clothing; and	X 5.9.4.2		
c.	Use of radioprotective drugs, (e.g., individual thyroid protection).	X 5.9.7		
7.	Establish a mechanism for recommending protective actions to the appropriate State and local authorities.	X 5.9.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
8.	Contain time estimates for evacuation within the plume exposure EPZ.	Table 5-1 X 5.8		
9.	Establish a capability for implementing protective measures based upon protective action guides and other criteria.		X	X
10.	The organization's plans to implement protective measures for the plume exposure pathway shall include:			
a.	Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	Fig. 5-1 Fig. 5-2 X Fig. 5-5	X	X
b.	Maps showing population distribution around the nuclear facility;	Fig. 5-3 X Fig. 5-4	X	X
c.	Means for notifying all segments of the transient and resident population;	X 5.8.2	X	X
d.	Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;		X	X
e.	Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.		X	X

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
f. Include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;		X	X
g. Means of relocation;		X	X
h. Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone;		X	X
i. Projected traffic capacities of evacuation routes under emergency conditions;		X	X
j. Control of access to evacuated area and organization responsibilities for such control;		X	X
k. Identification of and means for dealing with potential impediments to use of evacuation routes, and contingency measures;		X	X
l. Time estimates for evacuation of various sectors and distances; and		X	X
m. The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions.	X 5.5.1	X	

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
11.	Specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food-stuffs. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained.		X	
12.	Describe the means for registering and monitoring of evacuees at relocation centers in host areas.		X	

K. Radiological Exposure Control

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish onsite exposure guidelines for:			
a.	removal of injured persons;	X 5.9.3		
b.	undertaking corrective actions;	X 5.9.3		
c.	performing assessment actions;	X 5.9.3		
d.	providing first aid;	X 5.9.3		
e.	performing personnel decontamination;	X 5.9.3		

K. Radiological Exposure Control (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
f.	providing ambulance service; and	X 5.9.3		
g.	providing medical treatment services.	X 5.9.3		
2.	Provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.	X 5.9		
3.a.	Make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X 5.9.5	X	X
b.	Ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records.	X 5.9.5.2	X	X
4.	Establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides.		X	X
5.a.	Specify action levels for determining the need for decontamination.	X 5.9.4.2	X	X
b.	Establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.	X 5.9.4.3	X	X
6.	Provide onsite contamination control measures including:			
a.	area access control;	X 5.9.4.1		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. drinking water and food supplies;	X 5.9.4.4		
c. criteria for permitting return of areas and items to normal use.	X 7.1		
7. Provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.	X 5.9.4.3		

L. Medical and Public Health Support

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X 3.2.2	X	X
2. Provide for onsite first aid capability.	6.1.5 X 6.2.9		
3. Develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities		X	
4. Arrange for transporting victims of radiological accidents to medical support facilities.	X 3.2.2.3	X	X

M. Recovery and Reentry Planning and Postaccident Operations

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Develop general plans and procedures for reentry and recovery.	X Sect. 7	X	X
2.	Plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization.	X 7.3		
3.	Specify means for informing members of the response organizations that a recovery operation is to be initiated.	X 7.3.2	X	
4.	Establish a method for periodically estimating total population exposure.	X 5.3.3	X	

N. Exercises and Drills

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.a.	Exercises shall be conducted as set forth in NRC and FEMA rules.	X 8.9	X	X
b.	Provide for a critique of the evaluated exercise by Federal and State observers/ evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once each six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced..	8.6.1 X 8.8	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
2. Conduct drills, in addition to the annual exercise at the frequencies indicated below.	X Table 8-1		
a. Communication Drills			
Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually.	X Table 8-1	X	X
b. Fire Drills			
Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.	8.7.2 X Table 8-1		
c. Medical Emergency Drills			
A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies shall be conducted annually.	8.7.3 X Table 8-1		X
d. Radiological Monitoring Drills			
Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually.	8.7.4 X Table 8-1	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
e. Health Physics Drills			
(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	8.7.5 X Table 8-1	X	
(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.	8.7.5 X Table 8-1		
3. Describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.			
a. The basic objective(s) of each drill and and exercise and appropriate evaluation criteria;	X 8.6.2	X	X
b. The date(s), time period, place(s) and participating organizations;	X 8.6.2	X	X
c. The simulated events;	X 8.6.2	X	X
d. A time schedule of real and simulated initiating events;	X 8.6.2	X	X
e. A narrative summary describing the conduct of the exercises or drills;	X 8.6.2	X	X
f. A description of the arrangements for and advance materials to be provided to official observers.	X 8.6.2	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
4. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.	X 8.6.1	X	X
5. Each organization shall establish means for evaluating observer and participant comments on areas needing improvement.	X 8.6.1	X	X

O. Radiological Emergency Response Training

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Each organization shall assure the training of appropriate individuals.	X 8.5	X	X
a. Provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.	X 8.5.1		
b. Each offsite response organization shall participate in and receive training.		X	X
2. The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills.	X 8.5.1		
3. Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.	6.1.6 X 8.5.1.1		

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
4.	Establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs shall be provided in the following categories:			
a.	Directors or coordinators of the response organizations;	X 8.5.1.1	X	X
b.	Personnel responsible for accident assessment;	X 8.5.1.1	X	*
c.	Radiological monitoring teams and radiological analysis personnel;	X 8.5.1.1	X	*
d.	Police, security and fire fighting personnel;	X 8.5.2	*	X
e.	Repair and damage control/correctional action teams (onsite);	X 8.5.1.1		
f.	First aid and rescue personnel;	X 8.5.1.1	*	X
g.	Local support services personnel including Civil Defense/Emergency Service personnel;	X 8.5.2		X
h.	Medical support personnel;	X 8.5.2	X	X
i.	Licensee's headquarters support personnel;	X 8.5.1.2		
j.	Personnel responsible for transmission of emergency information and instructions.	X 8.5.1.1	X	X

*NRC and FEMA encourage State and Local Governments which have these capabilities to continue to include them in their training programs.

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
5. Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.	X 8.5.2	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide for the training of individuals responsible for the planning effort.	X 8.1	X	X
2. Identify by title the individual with the overall authority and responsibility for radiological emergency response training.	X 8.1	X	X
3. Designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X 8.1	X	X
4. Update its plan and agreements as needed, review and certify it to be current on an annual basis.	X 8.2	X	X
5. Changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans.	X 8.2	X	X
6. Each plan shall contain a detailed listing of supporting plans and their source.	X App. 1	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
7. Each plan shall contain as an appendix listing, by title, procedures required to implement the plan.	X App. 2	X	X
8. Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.	Table of Contents X App. 5	X	X
9. Arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.	X 8.3		
10. Provide for updating telephone numbers in emergency procedures at least quarterly.	X 6.5.3	X	X

50-397
Superseded pages per Rev to EP dtd. 3/13/02

ENERGY NORTHWEST

EMERGENCY PLAN

COLUMBIA GENERATING STATION

Revision 31

APPROVALS: PRIOR NRC APPROVAL REQUIRED: __ Yes _X_ No

RECEIVED: __________ Date Correspondence No.: __________

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Plant Operations Committee Chairman — Date

10/27/01
Plant General Manager — Date

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ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 31 - SYNOPSIS OF CHANGES

Summary

In revision 31, Section 4, Table 4-1, Emergency Action Levels (EALs) 8.4.U.2 and 8.4.A.2 are updated to reflect revised wind speed values for Unusual Event and Alert emergency classifications, and to indicate that these values are averaged over 15 minutes instead of five minutes as before. Sections 5.2.1 and 5.3.3 are revised to reflect 15 minute data averaging as well.

Affected Pages	Description of Changes
EP 4.29	Emergency Action Levels (EALs) 8.4.U.2 and 8.4.A.2 are updated to reflect revised wind speed values for Unusual Event and Alert emergency classifications, and to indicate that these values are averaged over 15 minutes instead of five minutes as before. These changes are necessary due to meteorological tower wind speed instrument upgrades. The old instrumentation has become obsolete and the manufacturer no longer supports this equipment. The new equipment provides more accurate representation of wind speed, and 15 minute data averaging provides compliance with Reg Guide 1.23 and NUREG-0654 Appendix 2, Annex 1 requirements. As a result of the increased data accuracy and compliance with Reg Guide 1.23 requirements, no reduction of effectiveness occurs with this change.
EP 5.4	Section 5.2.1 is updated to reflect 15 minute data averaging for wind speed, direction and temperature. Because this change is necessary to comply with Reg Guide 1.23 and NUREG-0654 Appendix 2, Annex 1 requirements, no reduction of effectiveness occurs with this change.
EP 5.5	Section 5.2.1 is updated to reflect availability of backup meteorological data, and clarifies the availability of other backup meteorological data from appropriate offsite sources such as Pacific Northwest Laboratory and the National Weather Service. Additionally, the point at which the data is averaged is changed to the GE FANUC unit at the Meteorological tower rather than the Plant Process Computer as previously specified. The change is necessary to comply with Reg Guide 1.23 and NUREG-0654 Appendix 2, Annex 1 requirements; changing the point at which the data is averaged has no effect on the effectiveness of the Emergency Plan. Therefore, no reduction of effectiveness occurs with either of these changes.

ENERGY NORTHWEST
EMERGENCY PLAN FOR COLUMBIA GENERATING STATION

REVISION 31 - SYNOPSIS OF CHANGES

Affected Pages	Description of Changes
EP 5.6	Section 5.3.3 is updated to reflect 15 minute data average meteorological data for determining total population exposure. This change is necessary to comply with Reg Guide 1.23 and NUREG-0654 Appendix 2, Annex 1 requirements and, as a result, no reduction of effectiveness occurs with this change.

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SECTION 1
INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

The Energy Northwest Emergency Plan (or Plan) was written to address emergencies at the Columbia Generating Station located on the Hanford Reservation and to describe the emergency preparedness capability of the Energy Northwest and offsite emergency response organizations as required by Title 10, Code of Federal Regulations, Part 50. It was developed in conjunction with the Washington State and the Benton County Fixed Nuclear Facility Emergency Response Plan and the Franklin County Radiological Response: Energy Northwest plan. All plans were developed to meet the intent of NUREG-0654/FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2 PURPOSE OF THE EMERGENCY PREPAREDNESS PROGRAM

The emergency preparedness program provides concepts and protective actions that are necessary to limit the consequences of radiation accidents and other emergencies. The primary objectives include the necessary arrangements, procedures and organizations necessary to effectively resolve any plant emergency to ensure the safety of the general public and to safeguard plant personnel and property.

1.3 ENERGY NORTHWEST COMMITMENT TO SAFETY

Energy Northwest is committed to the safe operation of its nuclear project. The commitment begins at the highest level of management and is reflected in the day-to-day activities of all employees. In addition to meeting, or in many cases exceeding, regulatory requirements, Energy Northwest is committed to providing a comprehensive program of personnel safety and corporate loss prevention. This Plan is a description of the comprehensive preparedness exhibited by Energy Northwest and its employees.

A trained staff of emergency response personnel is available, equipped and ready to respond to any emergency at Energy Northwest's nuclear project. Arrangements have been made with federal, state, and local response organizations and other nuclear facilities for assistance, if needed, during an emergency. Together these organizations can quickly implement a unified effort to assess the hazards, make the necessary decisions, and initiate actions to protect the health and safety of both emergency workers and the general population.

Energy Northwest works closely with all involved agencies. A coordinated training program between Energy Northwest and the Department of Energy in Richland provides emergency personnel from Benton and Franklin counties and the State of Washington with the training needed to assist during an emergency. Participation by Energy Northwest in joint programs with the Department of Energy to upgrade county and state emergency response capabilities is an example of the commitment to safety which Energy Northwest recognizes as its responsibility.

1.4 SITE CHARACTERISTICS

Energy Northwest leases 1089 acres of land on the Hanford Reservation, located north of Richland, Washington, and controlled by the Department of Energy. The land leased by Energy Northwest is approximately three miles west of the Columbia River and 12 miles north of the populated area of Richland. Figures 1-1 and 1-2, the Plume Exposure and Ingestion Exposure Emergency Planning Zone maps, show the location of the facilities on the Hanford Reservation.

1.4.1 Plant Design

Columbia Generating Station is a boiling water reactor (BWR-5) with the reactor system supplied by the General Electric Company. This plant has an approximate electrical output of 1250 megawatts (MWe). Fuel for the reactor consists of slightly enriched uranium dioxide pellets sealed in Zircaloy-2 fuel rods. These fuel rods are assembled into individual fuel assemblies. Control of the core is achieved by movable, bottom-entry control rods.

The principal structures located on the plant site are shown in Figure 1-3 and include:

a. Reactor Building - envelopes the Mark II primary containment and provides a secondary containment structure. It also contains the new and spent fuel storage, refueling equipment, emergency core cooling systems and auxiliary equipment.

b. Radwaste and Control Building - houses the liquid and solid radwaste system, components of the off-gas system, and the main control room.

c. Turbine Building - houses the turbine-generator consisting of one high pressure and three low pressure turbines connected to a single generator.

d. Diesel Generator Building - location of the standby diesel generators and associated controls and instrumentation.

e. Yakima Building (GSB) - houses the potable and demineralized water storage tanks, machine shop, and office area.

f. Technical Support Center - this emergency response facility is utilized by the plant staff during an emergency. A more detailed description is provided in Section 6, "Emergency Facilities and Equipment."

g. Wind River Building (Circulating Water Pumphouse) - houses the circulating water pumps, plant service water pumps, and fire pumps.

h. Spray Ponds - the ultimate heat sink providing cooling water to the reactor for emergency shutdown.

i. Cooling Towers - six mechanical draft cooling towers used to dissipate the main condenser cooling water heat to the atmosphere.

1.4.2 Kootenai Buidling (PSF)

The Kootenai Building is used for support of the plant site and the interface with off-site support agencies. It houses the Plant Simulator, the Site Training Center, and the Emergency Operations Facility. Its location is shown in Figure 1-4. See Section 6 for a detailed description of the emergency centers located in this facility.

1.5 ACTIVATION OF THE EMERGENCY PLAN AND PROCEDURES

This Emergency Plan provides the basis for classifying emergencies according to severity, assigning responsibilities, and outlining the most effective course of action to safeguard the public and plant personnel in the event of an incident. Detailed emergency procedures required to implement the Emergency Plan are listed in Appendix 2. The Emergency Plan Implementing Procedures prescribe the appropriate course of action necessary to activate the emergency response organizations and minimize the consequences of an incident.

The Emergency Plan Implementing Procedures (EPIPs) are used when an emergency is declared in accordance with Section 4 of this plan. In the absence of other controlling procedures, EPIPs are used as appropriate. The section of EPIPs designated as "Supporting Information Procedures" are implemented on a continuing basis and are used to ensure long term program maintenance.

1.6 ASSIGNED AUTHORITIES

1.6.1 Hanford Reservation

The 570 square mile Hanford Reservation is under the control of the Department of Energy - Richland Operations. The Department of Energy maintains a well-trained and qualified organization capable of responding to emergencies on the Hanford Reservation. The Department of Energy maintains responsibility for response actions on the Hanford Reservation outside the exclusion area boundaries.

Representatives from the Department of Energy will coordinate their response efforts to an Energy Northwest emergency with Energy Northwest, State, and County organizations from Energy Northwest's Emergency Operations Facility. Communications will be maintained with the Department of Energy's Occurrence Notification Center in Richland, Washington.

An Energy Northwest emergency may require response by local, state and federal organizations. Because of the unique siting of Energy Northwest facilities on a federal reservation, several areas of responsibility must be defined. A coordinated effort by the response organizations will be jointly conducted from Energy Northwest's Emergency Operations Facility. Responsibilities concerning jurisdictional areas are defined in the following sections. Statements made within this document are not intended to exclude one agency from providing assistance to another agency upon request.

1.6.2 Exclusion Area

The exclusion area for Columbia Generating Station consists of a 1.2 mile radius around the plant. The exclusion area will be monitored by teams from Energy Northwest during an emergency and access will be controlled under the direction of Energy Northwest's Security Force. Coordination of activities within the exclusion area will be under the control of Energy Northwest and directed by the individual serving as the Emergency Director.

Energy Northwest has the authority to control and coordinate all activities within this exclusion area, as granted by Title 10 of the Code of Federal Regulations, Part 100.3. The agreement between Energy Northwest and the Department of Energy concerning the site lease on the Hanford Reservation includes provision for this authority.

1.6.3 Plume Exposure Pathway Emergency Planning Zone

The response to an emergency will usually require actions only within the site boundary; however, accidents are possible that may affect areas several miles from the facility. The planning basis for Energy Northwest's Emergency Preparedness Plan utilizes the emergency planning zone concept as first outlined in NUREG-0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, dated December, 1978. The emergency planning zones are designated as areas for planning to assure that prompt and effective actions shall be taken to protect the public in the event of an accident. The emergency planning zone concept establishes two zones, a ten-mile Plume Exposure Pathway Emergency Planning Zone and an approximately 50-mile Ingestion Exposure Pathway Emergency Planning Zone.

In the Plume Exposure Pathway (Ten-Mile) Emergency Planning Zone (EPZ) the principal exposure sources are:

a. Whole body external exposure to beta/gamma radiation from the plume and from deposited radioactive material.

b. Inhalation exposure from the passing radioactive plume.

The Plume Exposure Pathway EPZ includes parts of the Hanford Reservation and Benton and Franklin Counties. Response actions will be coordinated between the two counties from their respective County Emergency Operations Centers.

The counties will coordinate all activities off the Hanford Reservation during the initial phases of the emergency. The Benton and Franklin County Emergency Operations Centers will coordinate activities with Energy Northwest and Department of Energy through county representatives at Energy Northwest's Emergency Operations Facility. Energy Northwest will provide dose assessment and protective action recommendations to state and local governments.

The Director for the Washington State Military Department, Emergency Management Division, is responsible for ensuring that the State maintains the capability to protect the public health and safety in the event of a fixed nuclear facility incident.

The Washington State Department of Health (DOH) is responsible for safeguarding the health of the public. Coordination of monitoring activities will be provided from Energy Northwest's Emergency Operations Facility.

1.6.4 Ingestion Exposure Pathway Emergency Planning Zone

The Ingestion Exposure Pathway Emergency Planning Zone (EPZ) as shown in Figure 1-2 extends into the Yakama Indian Nation, eight counties within the State of Washington, and two counties in the State of Oregon. These are Benton, Franklin, Yakima, Kittitas, Grant, Adams, Walla Walla, and Klickitat in the State of Washington[1], and Morrow and Umatilla Counties in the State of Oregon. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs.

The State of Washington maintains communication with the Washington counties in the Ingestion Exposure Pathway EPZ. The State of Oregon does the same for Morrow and Umatilla Counties. Communications with the Yakama Indian Nation are handled by Yakima County. Dose projections and environmental sampling are also the responsibility of the States and will be coordinated from Energy Northwest's Emergency Operations Facility by State representatives. Support to the States of Washington and Oregon is provided by Energy Northwest through the sharing of field team data and other resources.

1.6.5 Emergency Plan Interrelationships

Interrelationships of this plan with procedures, other plans, and emergency arrangements are summarized as follows:

- Detailed actions to be taken by individuals in response to onsite emergency conditions are described in the Emergency Plan Implementing Procedures.

- The Columbia Generating Station Physical Security Plan and Procedures and this plan are coordinated to ensure that appropriate emergency actions can be taken. For example, the Physical Security Plan and Procedures contain provisions for emergency response personnel and vehicle access when required by the Emergency Plan Procedures.

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[1]Kittitas and Klickitat Counties do not actively participate in radiological emergency preparedness efforts. The State of Washington has established measures to ensure that appropriate actions will be taken for these two counties. Refer to the State of Washington Emergency Response Plan.

- Site construction groups at WNP-1 and the maintenance contractors at Columbia Generating Station that develop emergency procedures for their personnel are tasked with coordinating their procedures with this plan.

- The Columbia Generating Station Plant Procedure Manual, Radiological Protection Procedures Section defines administrative controls and procedures such as radiological control limits and precautions, use of personnel monitoring devices, use of protective clothing and equipment, personnel decontamination, etc. Additionally, the Chemistry Procedure Section and Radiation Protection Procedure Section provide instructions for conducting surveys, analyzing samples, operating health physics/radiation protection equipment, etc. Information and details provided in these documents have either been incorporated into the Plan or Emergency Plan Implementing Procedures, or have been appropriately referenced.

- Columbia Generating Station has formulated Abnormal Condition Procedures, as part of the Plant Procedure Manual, which discuss generic emergencies such as floods, volcanic ash, and other severe weather conditions. The methods and equipment developed for such emergencies are available for use in concert with emergency actions described in this plan.

- Formal agreements have been negotiated to define the coordination and interface between onsite and offsite organizations and agencies having related radiological emergency planning responsibilities. Continuing liaison with the offsite organizations ensures compatibility and proper interfacing with this plan. Section 3 of this plan further describes those agencies' activities with respect to an emergency at Columbia Generating Station.

- Other offsite organizations, not within the immediate area, may also be requested to offer technical assistance (e.g., Institute of Nuclear Power Operations, General Electric, NPS Energy Services, etc.).

1.7 DEFINITIONS

1.7.1	Activated	-	An Emergency Center may be activated when all appropriate personnel are present and capable of appropriately addressing the emergency condition.
1.7.2	ALARA	-	As Low as Reasonably Achievable.
1.7.3	Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guidelines exposure levels.
1.7.4	Annually, or Annual	-	Performed or executed at anytime during a calendar year.
1.7.5	Augmenting Emergency Organization Personnel	-	Emergency Response Organization personnel not designated as essential, but are desired for efficient operation of emergency centers.
1.7.6	Columbia Generating Station	-	Columbia Generating Station is an operational General Electric boiling water reactor rated at approximately 3486 MWth.
1.7.7	Drill	-	A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise and is supervised and evaluated by qualified drill controller(s) and/or evaluator(s).
1.7.8	Early Warning System	-	A system designed to alert all residents and transients within the Ten-Mile Emergency Planning Zone. This system will include sirens for areas along the Columbia River and the Horn Rapids area, and tone alert radios for residents within the ten mile Emergency Planning Zone.
1.7.9	Emergency Action Level	-	Plant-specific indications, conditions or instrument readings which are utilized to determine emergency classifications.

1.7.10	Emergency Decontamination Facility	-	A facility located adjacent to Kadlec Medical Center in Richland to be used for decontamination and emergency medical care of contaminated persons.
1.7.11	Emergency Director	-	This functional position is responsible for all emergency activities at the plant and coordination of outside assistance as needed. The position will be held by either the Shift Manager, the TSC Manager or the EOF Manager.
1.7.12	Emergency Operations Facility (EOF)	-	An area located within the Kootenai Building which is equipped to facilitate command and control decision-making for the coordination of emergency activities and environmental assessments.
1.7.13	EOF Manager	-	This position is responsible for overall management of Energy Northwest resources and will oversee all activities related to the plant emergency response effort when the EOF is activated.
1.7.14	Emergency Response Organization (ERO)	-	Employees designated as emergency response personnel.
1.7.15	Essential ERO Personnel	-	Emergency response positions designated as essential to coordinate a response to a Columbia Generating Station emergency.
1.7.16	Exercise	-	An exercise is an event that tests the integrated capability and a major portion of the Columbia Generating Station emergency preparedness plans and response organizations. It will consist of a simulated emergency that results in offsite radiological releases and may include mobilization of state and local personnel and resources adequate to verify their capability to respond to a Columbia Generating Station accident. Federal and State agencies will be invited to participate as observers/evaluators in exercises.
1.7.17	Exclusion Area	-	An area extending out to a radius of 1.2 miles from the Columbia Generating Station reactor.

1.7.18	Fixed Nuclear Facility	-	A permanent facility (plant) with an operable nuclear reactor.
1.7.19	General Emergency	-	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
1.7.20	Hanford Reservation	-	A federally owned reservation under the control of the Department of Energy, Richland Operations, Richland, Washington. The reservation covers 570 square miles and is located north of the City of Richland in Benton County.
1.7.21	Ingestion Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions for the public is based on potential ingestion of contaminated water and/or foods. This zone consists of the area within a 50-mile radius of Columbia Generating Station including a portion of the State of Oregon. The boundaries of the zone are shown in Figure 1-2.
1.7.22	Monthly	-	Performed or executed at any time during a calendar month.
1.7.23	Nonessential Personnel	-	Personnel not designated as Emergency Response Personnel.
1.7.24	Owner Controlled Area	-	That area that Energy Northwest maintains industrial and process control of.
1.7.25	Onsite Emergency Centers	-	Includes the Control Room, Technical Support Center, and Operations Support Center. Plant personnel will implement emergency actions and make decisions to support plant operations and repair activities from these centers.

1.7.26	Plant	-	That area containing the Columbia Generating Station reactor and certain support structures within the Protected Area.
1.7.27	Kootenai Building	-	A facility located approximately 0.75 miles southwest of Columbia Generating Station. The structure includes a shielded area designated as the Emergency Operations Facility.
1.7.28	Plume Exposure Pathway Emergency Planning Zone	-	A zone around Columbia Generating Station in which planning for protective actions by the public are based on potential exposure to or inhalation of materials carried by a passing radioactive plume released during an accident. This zone consists of the area within an approximate 10-mile radius of Columbia Generating Station, including portions of Benton and Franklin Counties.
1.7.29	Protected Area	-	An area located within the Owner-Controlled Area which contains the Columbia Generating Station power block and is surrounded by chain link fence.
1.7.30	Protective Action Guides	-	Numerical doses and concentrations which act as trigger points to initiate protective actions such as sheltering, evacuation, or placement of dairy herds on stored feed. These guides are established by the States of Washington and Oregon, and take the Environmental Protection Agency Protective Action Guides into consideration.
1.7.31	Quarterly	-	Performed or executed at any time during a calendar quarter.
1.7.32	Recovery Manager	-	This position is responsible for overall management of Energy Northwest's resources and will be in charge of all activities related to the recovery operations following a plant emergency.
1.7.33	Release in Progress	-	Any radioactive release that exceeds the Emergency Action Levels for an Unusual Event.

1.7.34	SE Comm	-	South East Communications, the 911 answering division of Benton County Emergency Services.
1.7.35	Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guides exposure levels except near the site boundary.
1.7.36	Energy Northwest	-	Energy Northwest is a "Joint Operating Agency" incorporated under the laws of the State of Washington. Its members include public utility districts and municipalities. Energy Northwest holds the license to operate Columbia Generating Station.
1.7.37	Support Emergency Response Organization	-	Consists of personnel that perform limited support functions, or may only be needed under certain conditions.
1.7.38	Thermoluminescent Dosimeter (TLD)	-	A device for measuring gamma, neutron and some beta radiation exposure.
1.7.39	Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

1.8 ACRONYMS

AMS	Aerial Measuring System
ARC	American Red Cross
ARM	Area Radiation Monitor
ATWS	Anticipated Transient Without Scram
BOP	Balance of Plant
BPA	Bonneville Power Administration
CAS	Central Alarm Station
Ci	Curie
CR	Control Room
CRS/SM	Control Room Supervisor/Shift Manager
DAC	Derived Air Concentration
DBA	Design Basis Accident
DEM	Department of Emergency Management
DG	Diesel Generator
DIL	Derived Intervention Level
DOE-RL	Department of Energy - Richland Operations
DOH	Department of Health
DW	Drywell
EAL	Emergency Action Level
EAS	Emergency Alerting System
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ED	Emergency Director
EDPS	Emergency Dose Projection System
EFPD	Effective Full Power Days
EFSEC	Energy Facility Site Evaluation Council, Washington State
EMD	Emergency Management Division
EMT	Emergency Medical Technician
EO	Equipment Operator
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data Systems
ERO	Emergency Response Organization
ERP	Elevated Release Point
EWAC	Emergency Worker/Assistance Center
FAX	Facsimile
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRERP	Federal Radiological Emergency Response Plan
GPM	Gallons Per Minute
HP	Health Physics
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning

I&C	Instrumentation and Control
JIC	Joint Information Center
KI	Potassium Iodide (Thyroid Blocking Agent)
KV	Kilovolt
LERN	Law Enforcement Radio Network
LLEA	Local Law Enforcement Agency
LOCA	Loss of Cooling Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
mREM	Millirem
MPF	Multipurpose Facility
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Safety/Relief Valve
MUDAC	Meteorology and Unified Dose Assessment Center
NPRDS	Nuclear Plant Reliability Data System
NRC	Nuclear Regulatory Commission
OAC	Offsite Agency Coordinator
OSC	Operations Support Center
PAD	Protective Action Decision
PAG	Protective Action Guide
PAAP	Protected Area Access Point
PAR	Protective Action Recommendation
PASS	Post-Accident Sampling System
PIO	Public Information Officer
PSIG	Pounds Per Square Inch Gauge
RACES	Radio Amateur Civil Emergency Service
RB	Reactor Building
RCIC	Reactor Core Isolation Cooling
REM	Radiological Emergency Manager
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RW	Radioactive Waste

SAS	Secondary Alarm Station
SC	Suppression Chamber
SCC	Security Communications Center
SE COMM	South East Communications
SECON	Security Condition
SFP	Spent Fuel Pool
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SM	Shift Manager
SP	Suppression Pool
SSW	Standby Service Water
TGB	Turbine Generator Building
TSC	Technical Support Center
USCG	United States Coast Guard
WEIC	Washington Emergency Information Center
WSDA	Washington State Department of Agriculture
WSP	Washington State Patrol
WW	Wetwell

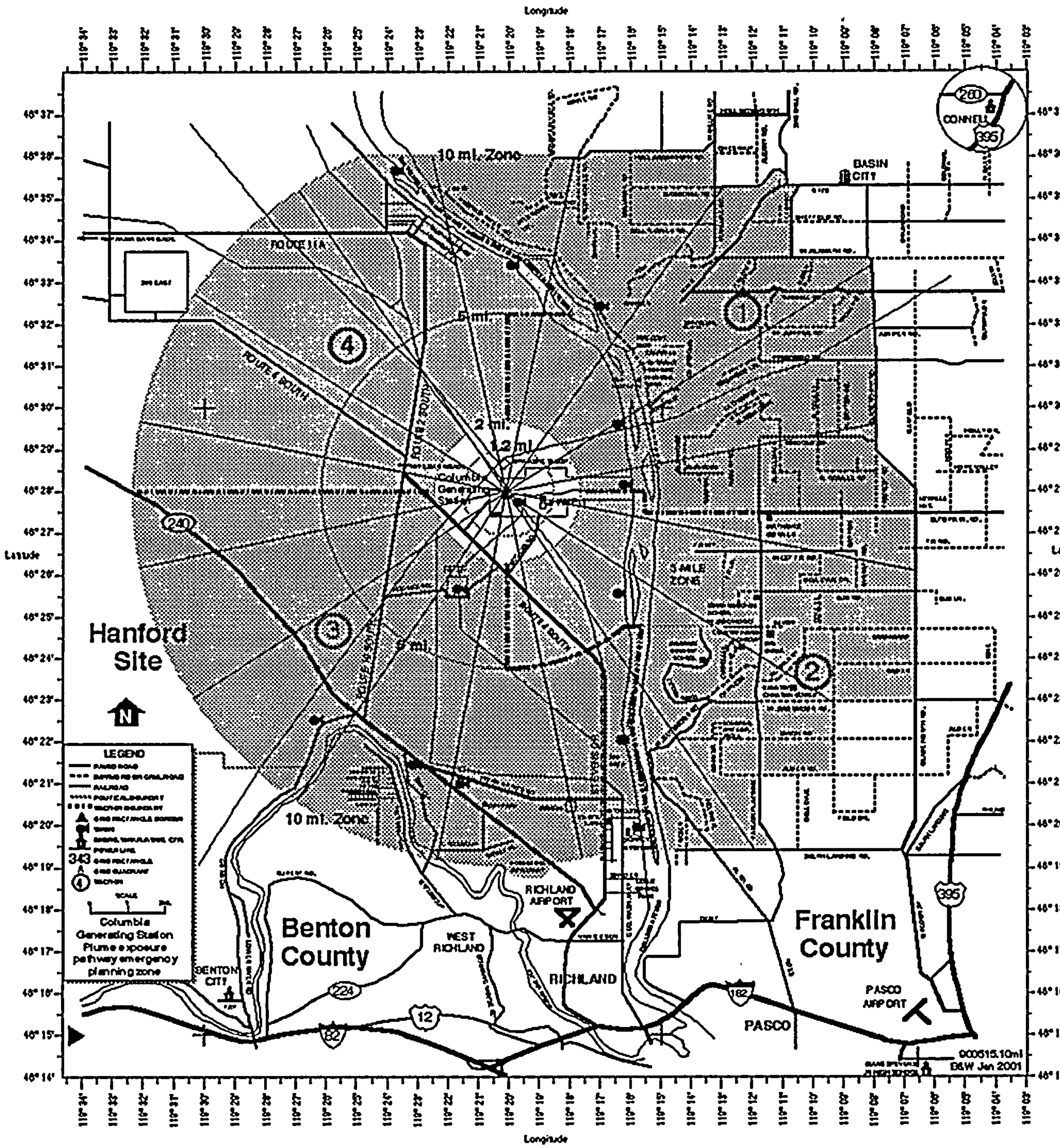
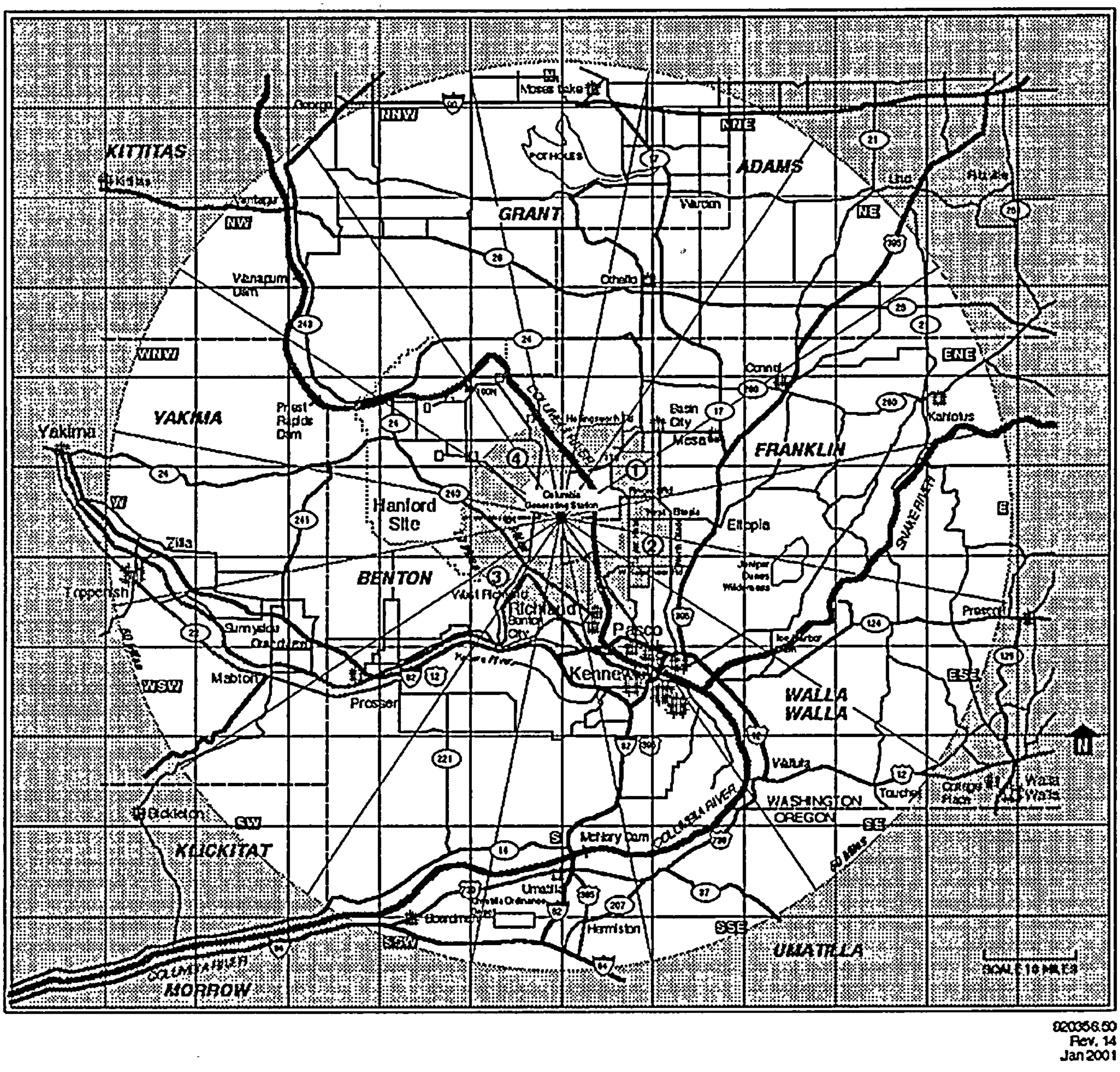


Figure 1-1, Ten-Mile Emergency Planning Zone (EPZ)



50 Mile Map

Figure 1-2, Fifty-Mile Emergency Planning Zone (EPZ)

Site Plan

Bldg No.	Building Description
2	Reactor Building
3	Radwaste Building
4	Turbine Generator Building
5	Technical Support Building
6	Health Physics Access Point
7	Diesel Generator Building
8	ASD Building
9	Palouse - Engineering
11	Chelan - Facilities
12	Heavy Equip. Maintenance
13	Cowlitz - Facilities
15	Laborers Storage
17	Wenatchee - Site Maintenance
19	Battery Storage
21	Backflow Preventer Building
22	Service Substation
23	Diesel Fuel Polishing Building
24	Visitor Center
25	Protected Area Access Point (P.A.A.P.)
26	Deschutes - Plant Engineering Center
30	Wind River Bldg. - Circ Water Pumphouse
32	Colville - Site Contractor Fab Shop
47	Document Storage
62	Primary Access Point (P.A.P.) (Security)
64	Willamette - Site Support Contractor/Records Mgmt.
75	Warehouse /Painters
88	Okanogan - Site Cafeteria/NDE/I&C Security
94	Laborers/Procedures
100	Fitness for Duty Facility/First Aid

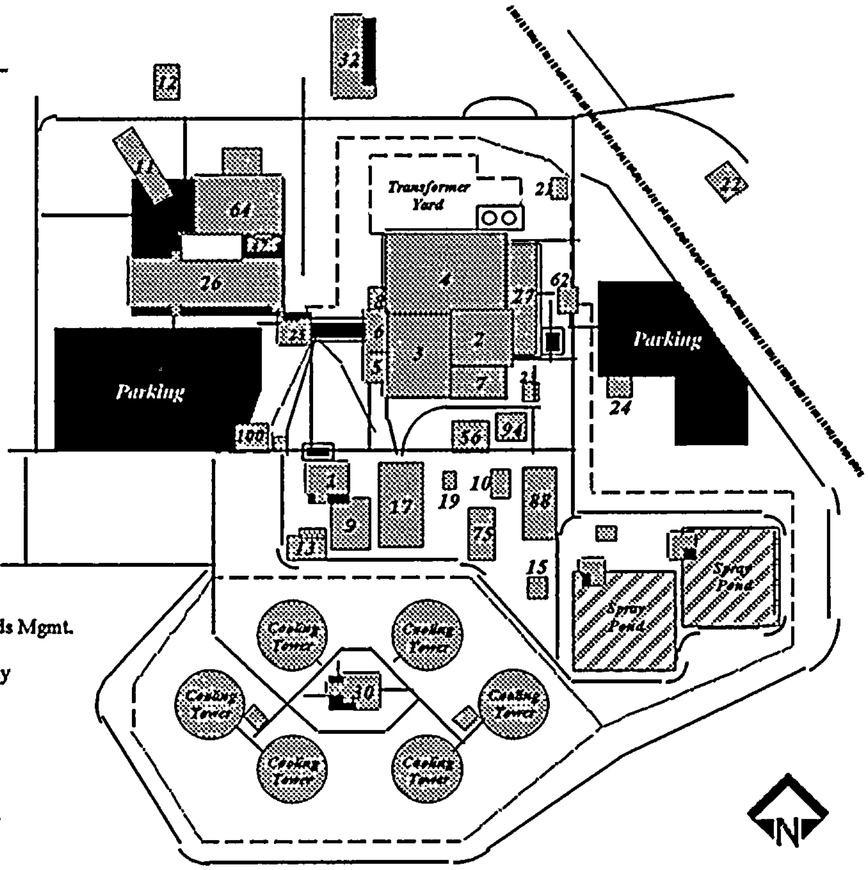


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Figure 1-3, Columbia Generating Station Site

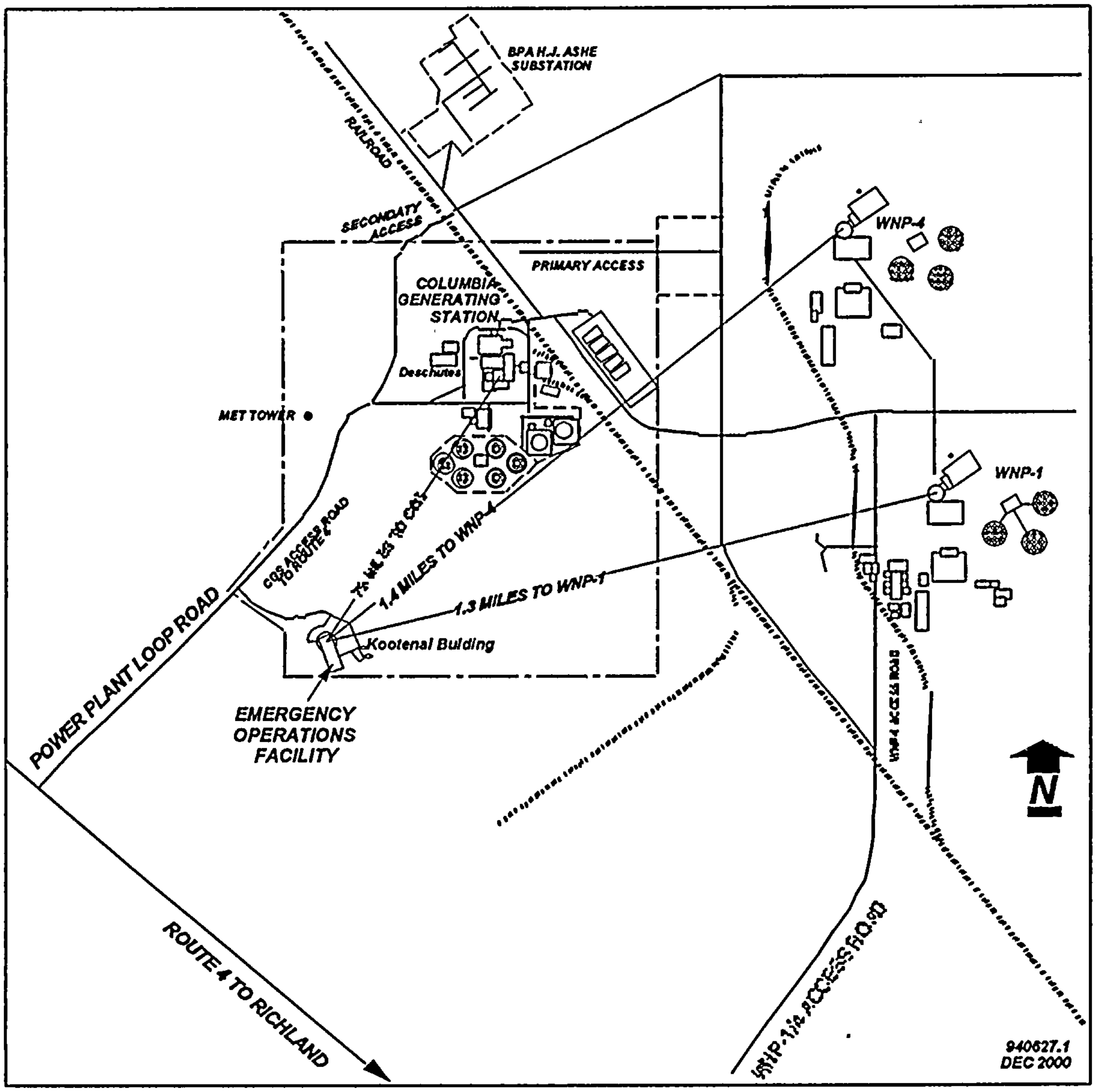

Figure 1-4, Emergency Operations Facility Location

SECTION 2
ENERGY NORTHWEST EMERGENCY ORGANIZATION

2.1 ORGANIZATIONAL CONCEPTS

This section of the Plan describes the emergency response organization at Energy Northwest. The normal plant operating organization serves as a foundation for the emergency organization and is augmented by the on-call Emergency Response Organization (ERO) at an Alert or higher emergency class. The normal organization is described in the corporate organization charts. An overview of the emergency organization is shown in Figure 2-1.

Energy Northwest's Emergency Response Organization consists of positions that satisfy requirements for initial and augmented staffing during declared emergency as well as positions that may be summoned as needed. The members of the emergency organization which are essential to implementation of the Plan and the augmenting organization which supports the essential personnel are shown in Figure 2-1. The Emergency Organization Assignment List contains a listing of the personnel assigned to the ERO. The title of Shift Technical Advisor (STA) describes a function, and the responsibility for implementing that function may be performed by other on-shift personnel qualified to perform the STA function for purposes of NUREG-0737 and NUREG-0654.

Responsibility for emergency direction and control (i.e., overall direction of the plant's emergency response which must include the non-delegable responsibilities for emergency classification, the decision to notify, and to recommend protective actions to authorities responsible for offsite emergency measures) is normally transferred from the Shift Manager to the TSC Manager to the EOF Manager. However, if the situation dictates, the responsibilities may be transferred from the Shift Manager directly to the EOF Manager. The transfer of responsibilities only takes place when the individual relieving the Shift Manager is at his assigned location, has minimum staffing level or greater in place, and has received a formal turnover.

2.2 SHIFT ORGANIZATION

The operating crew for each shift at the plant normally consists of a Shift Manager, to whom reports a Control Room Supervisor, Shift Support Supervisor, Shift Technical Advisor or Emergency Response SRO as required, licensed reactor operators, equipment operators, health physics technicians, chemistry technicians, and Security Force personnel. Operations personnel are trained to perform emergency maintenance functions in the absence of on shift maintenance personnel. The Shift Manager on duty has the immediate responsibility for the plant at all times, and has full authority and responsibility for recognizing and declaring emergencies. Each shift is provided with a complement of qualified individuals who have specialized training in notifications, the operation of the reactor and other plant systems, plant instrumentation, radiation safety, and maintenance.

Security force personnel and the control room have 24 hour communications capability with the ERO and offsite response agencies.

Plant Technical Specifications and 10 CFR 50.54 (m) provide for reduced staffing in reactor operational modes 4 and 5. Energy Northwest recognizes that these are minimum staffing levels and that additional personnel are necessary to perform emergency functions. On shift staffing, in all modes, includes adequate numbers of qualified personnel to perform classification, notification, and dose assessments within time requirements.

The Plant General Manager has full authority and responsibility for the overall supervision and administration of the nuclear plant. Technical support is provided by a staff experienced in reactor physics, nuclear power plant systems technology and operation and health physics and chemistry. The normal plant operating organizations are complemented by a group of specialists available from other departments of Energy Northwest and are identified in the corporate organization charts.

2.3 EMERGENCY RESPONSE ORGANIZATION

Energy Northwest's Emergency Response Organization (ERO) consists of positions that satisfy requirements for initial and augmented staffing during a declared emergency as well as positions that may be summoned as needed. This organization has the capability of continuous (24 hour) operations for a protracted period. The ERO is arranged in the following response categories:

On Shift:

On shift positions consist of the Shift Manager, Control Room Supervisor, Reactor Operators, Shift Technical Advisor (not required in Mode 4 and 5, thus can't provide initial response in these modes), Equipment Operators, HP Technicians, Chemistry Technicians, I&C Technicians, Electrical and Mechanical Craft, and Security. In addition, if the Shift Technical Advisor providing the engineering expertise on-shift is filling a dual role as the Control Room Supervisor or the Shift Manager, an SRO dedicated to supporting the Shift Manager in emergency response functions shall be on-shift. This position is designated as the Emergency Response SRO and is filled by an on-shift SRO.

Essential:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means at any time to respond within a specified time. Essential ERO personnel will normally assist on shift personnel to provide assessment and mitigation of accident conditions, notifications to offsite agencies, or provide overall direction, control and logistical support for emergency operations.

Augmenting:

Consists of positions designated on a rotating on-call list that can be summoned by electronic means to respond at any time within a specified time. Augmenting personnel provide additional emergency assessment, accident mitigation and logistics support to on shift and essential personnel.

Support:

Consists of positions which may or may not be designated on a rotating on-call list or ERO assignment list, but may be summoned by electronic or manual means when needed to support emergency operations.

The essential emergency organization has the capability to provide manpower and other resources to assist the normal plant organization within approximately one hour if an emergency situation arises. The essential organization has been established with responders designated on a rotating on call list. The emergency duties of the normal plant staff are transferred to the ERO as the corresponding members arrive on site and the emergency centers are activated.

If an emergency situation arises, the Shift Manager will activate the ERO to supplement the normal operating staff. Those members of the ERO who are not on site at the time of the emergency will be able to respond within about one hour of the emergency. In addition, designated members of the Emergency Preparedness department are available to assist with Emergency Operation Facility activation.

Following are general descriptions of the Essential Emergency Response Organization. Duties are discussed in more detail in the Emergency Plan Implementing Procedures. Table 2-1 demonstrates how these positions align with NUREG-0654/FEMA-REP-1, Rev. 1, Table B-1 requirements.

2.3.1 On Shift Emergency Organization

2.3.1.1 Shift Manager

Basic Emergency Function: The Shift Manager reports to the Operations Manager and is responsible for overall plant control. The Shift Manager assumes the Emergency Director duties and responsibilities upon initial emergency classification until relieved by the TSC Manager or EOF Manager. Once an emergency classification is declared, the Shift Manager, as the Emergency Director, is responsible for activation and direction of the emergency response organization to the extent required by the emergency.

NOTE: The Shift Manager is responsible for ensuring safe operation of the plant under all conditions. The Shift Manager, as the Emergency Director, ensures necessary protective actions are carried out. The priority of actions shall be in the following order:

- Public Safety
- On Site Personnel Safety
- Equipment Protection
- Plant Reliability

The Senior Reactor Operator (SRO) license holders on shift and the STAs are available to perform offsite dose assessment at all times when required.

2.3.1.2 Control Room Supervisor (On shift as required by Technical Specifications)

Basic Emergency Function: The Control Room Supervisor (CRS) is the senior individual responsible for plant control actions during both normal and emergency operations. The Control Room Supervisor will assume Shift Manager responsibilities, including emergency direction and control authority, in the absence of the Shift Manager.

2.3.1.3 Reactor (Control Room) Operators

Basic Emergency Function: The Reactor Operators (RO) are responsible for the day to day operations of the reactor and implement necessary actions under the direction of the Control Room Supervisor to terminate the condition causing the emergency and place the plant in a safe condition.

2.3.1.4 Security Communication Center Staff

Basic Emergency Function: The Security Communication Center (SCC) Staff will assist with notifications to Energy Northwest ERO personnel and to offsite agencies during both the emergency and recovery phases. The SCC staff reports to the Security Manager.

2.3.1.5 Equipment Operators

Basic Emergency Function: The Equipment Operators (EO) are responsible for responding to the emergency as directed by the Control Room Supervisor or Fire Brigade (FB) Leader. The location of the Equipment Operators is assigned by the Control Room Supervisor/FB Leader. Control and accountability of Equipment Operators may, after discussion between the Shift Manager and OSC Manager, be transferred to the OSC.

2.3.1.6 Shift Technical Advisor (On shift as required by PPM 1.3.1)

Basic Emergency Function: The Shift Technical Advisor (STA) qualified individual should keep abreast of plant activities and status. The STA qualified individual evaluates the risk associated with planned plant activities and advises shift management on actions to be taken to minimize the associated risk. When appropriate, the STA qualified individual should advise shift management on technical matters.

An STA qualified individual shall be on shift in Modes 1, 2, or 3, per FSAR requirements.

When the STA qualified individual is performing a dual role as the Shift Manager or Control Room Supervisor, another SRO (Emergency Response SRO) shall be on shift to provide independent oversight of plant activities and status, and to assist the Shift Manager in emergency response activities. This individual may be the Shift Support Supervisor (SSS), if SRO qualified.

2.3.1.7 Emergency Response SRO

Basic Emergency Function: The Emergency Response SRO shall be on shift in all modes when the STA function is provided by the Shift Manager or Control Room Supervisor. The Emergency Response SRO is another SRO present to advise and assist the Shift Manager on emergency response actions such as emergency classifications and notifications, protective action recommendations, and off-site dose assessment.

2.3.1.8 Fire Brigade

Basic Emergency Function: The Fire Brigade (FB) is responsible for fire fighting, first aid and search and rescue operations. The team will perform radiological surveys and contamination control as necessary. Members of the FB may also perform plant systems manipulation tasks to mitigate consequences of an accident. The FB is under the direction of the Shift Manager until directed to report to the OSC Manager.

2.3.1.9 Health Physics, Chemistry, and Maintenance Support Personnel

Basic Emergency Function: Health Physics, Chemistry, and Maintenance Support personnel are responsible for providing radiation surveillance, chemistry analyses, and maintenance operations as repair or reentry and recovery team members. These support staff will report to the OSC Manager for in plant team activities.

2.3.2 Essential Plant Emergency Organization

Figure 2-1 identifies the key shift personnel who are sufficiently trained to perform all necessary duties until relief personnel arrive. Figure 2-1 provides a diagram of the ERO showing the reporting chain within the ERO. The following sections detail duties of the essential emergency response organization.

2.3.2.1 TSC Manager

Basic Emergency Function: The Technical Support Center Manager (TSC Manager) is responsible for the coordination of onsite response efforts during an emergency. This position is also responsible for the overall development and implementation of accident mitigation and repair/damage control efforts. In some cases the TSC Manager may assume the responsibility for emergency direction and control until the EOF Manager assumes this responsibility at the Emergency Operations Facility. The TSC Manager initiates evacuation and onsite recovery actions as necessary. The TSC Manager is also responsible for ensuring plant security is maintained and provisions are made for immediate entry of necessary emergency assistance such as ambulance or fire equipment.

The Maintenance Manager, Operations Manager, Technical Manager, Radiation Protection Manager, Plant Admin Manager, Plant/NRC Liaison, and OSC Manager report to the TSC Manager.

2.3.2.2 TSC Radiation Protection Manager

Basic Emergency Function: The Radiation Protection Manager (RPM) is responsible for directing the health physics staff, assessing radiological conditions, reviewing radiological data received, ensuring personnel exposures are maintained As Low As is Reasonably Achievable (ALARA), and providing recommendations concerning radiation safety matters to the TSC Manager.

The Radiation Protection Manager will also assess offsite doses and make recommendations concerning protective actions to the TSC Manager until the Radiological Emergency Manager at the EOF takes over this function.

2.3.2.3 TSC Plant/NRC Liaison

Basic Emergency Function: The Plant/NRC Liaison is the primary plant interface with the NRC Headquarters concerning emergency matters and will coordinate commitments made to the NRC. He will keep the TSC Manager advised of NRC activities and, as necessary, will staff the NRC/ENS phone. The Plant/NRC Liaison is responsible for ensuring activation of the Emergency Response Data System (ERDS) for an Alert or higher classification.

2.3.2.4 TSC Technical Manager

Basic Emergency Function: The Technical Manager is responsible for analysis of plant data and the development of plans and procedures in direct support of plant operations personnel. The primary objective is to achieve a safe shutdown condition in a manner which minimizes the effect on the health and safety of the public. This position supervises the analysis of plant safety parameters by the plant technical and operations staff.

2.3.2.5 TSC Core Thermal Engineer

Basic Emergency Function: Provides information on reactor water pressures and temperature distribution, heat transfer and fluid flow rates, and performs core damage assessments.

2.3.2.6 TSC Electrical Engineer

Basic Emergency Function: Provides information and recommendations about plant and offsite electrical power sources and distribution.

2.3.2.7 TSC Mechanical Engineer

Basic Emergency Function: Provides information and recommendations on mechanical systems and hardware modifications.

2.3.2.8 TSC Operations Manager

Basic Emergency Function: The Operations Manager will assist the TSC Manager by providing oversight and direction to Control Room operations. He provides the interface between the TSC and Control Room. The Operations Manager keeps the TSC Manager informed of plant status and provides input concerning plant operations necessary for the accident and recovery process.

2.3.2.9 OSC Manager

Basic Emergency Function: The Operations Support Center (OSC) Manager is responsible for assigning and dispatching Repair Teams. This individual provides updates to the TSC Manager via the Maintenance Manager on team activities. The OSC Manager is also responsible for ensuring plant personnel accountability is performed. The Fire Brigade reports to the OSC Manager once it is released by the Shift Manager.

2.3.2.10 HP Lead

Basic Emergency Function: The HP Lead identifies hazardous areas within the plant, provides repair team HP briefings and assigns HP resources to repair teams. The HP Lead communicates with the OSC Manager and TSC RPM.

2.3.2.11 Repair Team

Basic Emergency Function: The Repair Teams provide the necessary manpower to perform tasks throughout the plant involving investigation of the accident, repair of equipment or taking actions to minimize the extent of damage. The Repair Teams report to the OSC Manager.

2.3.3 Essential Emergency Operations Facility Emergency Organization

The Emergency Operations Facility (EOF) is activated at the Alert classification and will be utilized by the EOF Manager and his staff to implement necessary actions during an Alert, Site Area or General Emergency. The EOF Manager normally assumes responsibility for emergency direction and control within approximately one hour of the declaration of an Alert or higher emergency. He normally receives a turnover from the TSC Manager but in some cases may receive a turnover from the Shift Manager. The EOF Manager is responsible for the overall management of Energy Northwest emergency resources and has full authority to make commitments for the company. The basic functions which will be directed from the Emergency Operations Facility are:

a. Manage the overall Energy Northwest emergency effort.

b. Evaluate the magnitude and consequences of actual or potential radiological releases.

c. Coordinate field sampling and analysis of radioactive material released from the plant.

d. Coordinate emergency response activities with local, state, and federal agencies and provide recommendations concerning appropriate offsite protective measures.

e. Provide technical support to the plant.

f. Provide necessary security controls.

g. Provide decontamination and medical assistance for personnel evacuated from the plant.

h. Secure necessary supplies and equipment.

i. Develop public information reports for the Joint Information Center concerning plant status, emergency actions underway, and hazards to the public.

j. Advise upper management concerning plant conditions.

k. Coordinate the overall recovery effort including the development of procedures and schedules, procurement of equipment, and identification of necessary licensing actions.

l. Provide for adequate work area for the recovery effort.

2.3.3.1 EOF Manager

Basic Emergency Function: The Emergency Operations Facility (EOF) Manager is responsible for the overall management of Energy Northwest resources and will be in charge of activities related to plant emergency and recovery operations. The EOF Manager has the authority to request outside assistance, including resources available from the federal government, and will assume the responsibility for emergency direction and control. The decision to request outside assistance, change emergency classifications, approve offsite protective action recommendations and make decisions concerning the notification of offsite authorities cannot be delegated once the EOF Manager has assumed the Emergency Director duties.

The Engineering Manager, Site Support Manager, Offsite Agency Coordinator, EOF Public Information Officer, Radiological Emergency Manager, TSC Manager, Security Manager, Licensing Manager, and Joint Information Center Manager report to the EOF Manager.

At his discretion, the EOF Manager may request one or more assistants. The assistant(s) perform duties as assigned by the EOF Manager.

2.3.3.2 EOF Radiological Emergency Manager

Basic Emergency Function: The Radiological Emergency Manager (REM) reports to the EOF Manager. The REM is responsible for managing radiological dose assessment and field monitoring activities. The REM assists in development of Protective Action Recommendations and, during the late phases of the response, coordinates this activity with the States of Washington and Oregon and the US DOE and provides offsite radiological Protective Action Recommendations to the EOF Manager. The REM also coordinates Energy Northwest offsite radiological monitoring effort with the States of Washington and Oregon and the US DOE.

2.3.3.3 EOF Field Team Coordinator

Basic Emergency Function: The Field Team Coordinator provides overall management of field teams, identifies plume path and areas requiring survey; directs the Field Team Dispatcher, and makes field teams available for river evacuation; communicates field team summary information to the REM.

2.3.3.4 Environmental Field Teams

Basic Emergency Function: The Environmental Field Teams are responsible for determining offsite radiological hazards and for conducting the required offsite surveys, monitoring and sampling. Field team activities are coordinated by the Field Team Coordinator. At least three teams will be available to conduct environmental sampling in the field.

2.3.3.5 EOF Telecommunications Manager

Basic Emergency Function: Provide for the operability of Energy Northwest communications systems. Will direct and dispatch Telecommunications Technicians to areas requesting assistance with phones or other telecommunications equipment.

2.3.4 Essential Joint Information Center Emergency Organization

The essential Joint Information Center emergency organization consists of the Joint Information Center Manager. This function ensures timely, accurate releases of information and assists offsite organizations in developing coordinated information for release to the public.

2.3.4.1 Joint Information Center Manager

Basic Emergency Function: The Joint Information Center (JIC) Manager will ensure timely and accurate releases of information to the media and public and will monitor and respond to misinformation. The JIC Manager will also coordinate Energy Northwest's emergency public information activities with those of Benton and Franklin counties, Washington State, Oregon State, and the Federal Government. The JIC Manager reports to the EOF Manager.

2.4 AUGMENTING EMERGENCY ORGANIZATION

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential Energy Northwest emergency organization described in Section 2.3. In addition to the positions described in this section, other augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures are listed in the Emergency Response Organization List.

2.4.1 Augmenting Plant Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the essential plant emergency organization described in Section 2.3.1. These positions will be filled by activating previously selected personnel who can respond as required.

2.4.1.1 TSC Plant Administrative Manager

Basic Emergency Function: The Plant Administrative Manager is responsible for providing the TSC Manager with the necessary administrative services including accountability, requests for additional personnel and office services support. The TSC Administrative staff reports to the Plant Administrative Manager.

2.4.1.2 TSC Maintenance Manager

Basic Emergency Function: The Maintenance Manager is responsible for assigning tasks to be performed by the Operations Support Center (OSC) teams, determining the priority to be assigned for each task, and acting as the focal point between the TSC and OSC for the work control process.

2.4.1.3 Information Coordinators

Basic Emergency Function: Provide information and plant status updates to the center manager and staff. Communicate pertinent emergency related information from their assigned center to the other information coordinators. Information Coordinators are assigned to the Control Room, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

2.4.1.4 TSC Chemistry/Effluent Manager

Basic Emergency Function: The Chemistry/Effluent Manager is responsible for monitoring the Plant effluent and ARM monitors. Changes in radiological conditions are reported to the Radiation Protection Manager. The Chemistry/Effluent Manager may also perform emergency dose projections. In addition, the Chemistry/ Effluent Manager advises the TSC Manager of chemistry concerns.

2.4.1.5 OSC Team Tracker

Basic Emergency Function: The OSC Team Tracker is responsible for maintaining communications with in-plant Repair Teams performing actions during the event following dispatch from the OSC. The Team Tracker is responsible for keeping the OSC Manager informed of team status and location. The Team Tracker also is responsible for coordination of site personnel accountability.

2.4.1.6 Repair Team Coordinator

Basic Emergency Function: Communicates maintenance tasks from the TSC and relays information about actions taken to the TSC. Responsible for directing repair team activities.

2.4.1.7 OSC Craft Leads

Basic Emergency Function: The Craft Leads will assist the OSC Manager in briefing and debriefing Repair Teams. They will also assist the Team Tracker in tracking of teams and personnel as required. Craft leads respond for Electrical, Mechanical, I&C and Health Physics disciplines.

2.4.2 Augmenting Emergency Operations Facility Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Emergency Operations Facility essential organization which is described in Section 2.3.2. These positions will be filled by activating previously selected personnel.

2.4.2.1 Assistant EOF Manager

Basic Emergency Function: The Assistant EOF Manager will assist the EOF Manager in the overall management of Energy Northwest resources and will assume the EOF Manager duties including Emergency Director responsibilities if the EOF Manager is not available at the EOF.

2.4.2.2 EOF Manager Secretary

Basic Emergency Function: The responsibilities of the EOF Manager Secretary include maintaining a log of EOF Manager actions, monitoring EOF Manager's phones, initiating Crash calls and performing other EOF administrative support duties as requested by the EOF Manager.

2.4.2.3 Dose Projection Health Physicist

Basic Emergency Function: The Dose Projection Health Physicist is responsible for completing dose projections, providing input to Protective Action Recommendations, and keeping the Radiological Emergency Manager informed of radiological release status. Refer to Section 6.4.2 for a description of the Meteorology and Unified Dose Assessment Center (MUDAC).

2.4.2.4 EOF Engineering Manager

Basic Emergency Function: The Engineering Manager and staff members are responsible for analyzing plant information and for developing plans and procedures in direct support of plant.

2.4.2.5 Emergency Operations Facility Public Information Officer

Basic Emergency Function: The Emergency Operations Facility Public Information Officer (EOF PIO) will prepare and transmit news releases to the Joint Information Center which can be used by Energy Northwest and offsite agencies. The EOF PIO keeps the EOF Manager up-to-date on public relations matters.

2.4.2.6 EOF Radiation Detection Systems Engineer

Basic Emergency Function: Analyzes radiation detection systems and assists in location of radiation source.

2.4.2.7 EOF Security Manager

Basic Emergency Function: The Security Manager is responsible for ensuring that security is maintained at all Energy Northwest facilities and security support groups are fully operational. This individual provides information and advice to the EOF Manager concerning the coordination of Energy Northwest Security and local law enforcement agency (LLEA) response actions. The Security Manager reports to the EOF Manager and supervises the Security staff.

2.4.2.8 EOF Site Support Manager

Basic Emergency Function: The Site Support Manager is responsible for coordinating requests for administrative and technical support to the plant and EOF. He also makes provisions to secure necessary supplies and equipment requested. The Site Support Manager reports to the EOF Manager and supervises the Offsite Agency Coordinator, EOF Information Coordinator, Telecommunications Manager, Manpower Scheduler and Admin Support staff.

2.4.2.9 Energy Northwest Representatives to County Emergency Operation Centers

Basic Emergency Function: Energy Northwest representatives will keep the staff members at the Benton and Franklin Counties Emergency Operations Center (EOCs) informed of the emergency conditions and Energy Northwest responses. The offsite representative will report to the Site Support Manager, normally through the EOF Offsite Agency Coordinator.

2.4.3 Augmenting Joint Information Center Emergency Organization

This section describes the basic augmenting emergency organization positions which have been established to supplement the Joint Information Center Manager described in Section 2.3.3. In addition to the positions described below, other administrative augmenting positions with responsibilities specified in the Emergency Plan Implementing Procedures will be filled by personnel who can respond as required.

2.4.3.1 Assistant JIC Manager

Basic Emergency Function: The Assistant JIC Manager manages the preparation of Energy Northwest news releases, coordinates the process for news releases prepared by agencies and jurisdictions represented in the JIC, manages the team responsible for distribution of news releases to the media and other emergency centers and assumes the duties of JIC Manager, if requested. The Assistant JIC Manager supervises the Distribution Team Supervisor and News Release Editor and reports to the JIC Manager.

2.4.3.2 JIC Media Manager

Basic Emergency Function: The Media Manager will address the information needs of media representatives at the Energy Northwest JIC. The Media Manager supervises the JIC Receptionist and reports to the JIC Manager.

2.4.4 Support Emergency Organization

2.4.4.1 Administrative Support Staff

Basic Emergency Function: Performs duplication and facsimile services, record searches, verification of document revision.

2.4.4.2 TSC Manager Secretary

Basic Emergency Function: Maintains a log of activities for the TSC Manager, initiates and monitors crash calls, and screens phone calls.

2.4.4.3 TSC/OSC Communicator:

Basic Emergency Function: Communicates maintenance tasks to the OSC and relays OSC information about actions taken to the TSC staff.

2.4.4.4 TSC Computer Engineer

Basic Emergency Function: The Computer Engineer is responsible for ensuring that the computer systems available in the TSC are operating as required. The Computer Engineer will troubleshoot system problems and assist TSC Engineering staff in obtaining information from the various Plant computers.

2.4.4.5 TSC Trending Forecaster

Basic Emergency Function: Trend plant parameters and forecast plant status.

2.4.4.6 EOF Plant Systems Assessment Engineer

Basic Emergency Function: Analyzes plant systems and provides technical input to the INPO Network Coordinator

2.4.4.7 EOF Fuels Assessment Engineer

Basic Emergency Function: Evaluates core damage, interfaces with the TSC Core Thermal Engineer and EOF Engineering Manager to provide results and projections of core damage. Provides input for PAR determinations to the Radiological Emergency Manager.

2.4.4.8 EOF PDIS Analyst

Basic Emergency Function: Provides technical data for EOF engineering and monitors the information network for problems.

2.4.4.9 EOF Manpower Scheduler

Basic Emergency Function: Coordinates the preparation of overall shift staffing rosters.

2.4.4.10 EOF State/County Technical Liaison

Basic Emergency Function: Informs Energy Northwest representatives to the state and counties of plant conditions.

2.4.4.11 EOF Offsite Agency Coordinator

Basic Emergency Function: Coordinates requests from offsite agencies for information and keeps the EOF Manager informed of those requests. Coordinates airspace or airport closure requests with the Federal Aviation Agency.

2.4.4.12 EOF INPO Network Coordinator

Basic Emergency Function: Prepares and transmits technical descriptions of major events during an emergency to INPO.

2.4.4.13 Health Physics Center Staff

Basic Emergency Function: Prepares the Health Physics Center for use by setting up tables, lanes, and signs.

2.4.4.14 EOF Electrical/I&C Engineer

Basic Emergency Function: Analyzes plant electrical and I&C systems and provides information to the Emergency Manager.

2.4.4.15 EOF PIO Technical Support

Basic Emergency Function: Provides technical interpretations of information for the EOF PIO to formulate accurate news releases for the JIC.

2.4.4.16 EOF Field Team Dispatcher

Basic Emergency Function: Dispatch of field teams and log keeping.

2.4.4.17 Energy Northwest Representative to the State

Basic Emergency Function: Dispatched to Washington State EOC, provides technical expertise to EOC personnel.

2.4.4.18 EOF Licensing Manager

Basic Emergency Function: Interface with onsite NRC response team and communicates with the NRC on licensing issues.

2.4.4.19 JIC Information Manager

Basic Emergency Function: The Information Manager coordinates response to telephone requests for information from news media representatives or the general public. The Information Manager coordinates responses to rumors and public concerns and insures timely and accurate information is provided. This individual directs activities of the Media and Public Phone Team Supervisors and reports to the JIC Manager.

2.4.4.20 JIC Offsite Agency Representatives

Basic Emergency Function: The Offsite Agency Representatives reporting to the JIC will coordinate the emergency public information activities of the organizations they represent. The representatives report to their parent agencies. Their activities are coordinated by the JIC Manager or the Assistant JIC Manager.

2.4.4.21 JIC Phone Team Supervisor

Basic Emergency Function: The Phone Team Supervisor, Public Phone Teams and Media Phone Teams will respond to incoming calls from the public and media, provide information updates as necessary, and make efforts to correct misinformation as necessary. The Public Phone Team Supervisor supervises the Public and Media Phone Teams and reports to the Information Manager.

2.4.4.22 JIC Support Manager

Basic Emergency Function: Provides administrative support and procurement of supplies for JIC personnel.

2.4.4.23 JIC Spokesperson

Basic Emergency Function: Conducts news conferences at the JIC and provides timely information during the conferences.

2.4.4.24 JIC Technical Spokesperson

Basic Emergency Function: Provides technical information in an easy to understand format.

2.4.4.25 JIC Health Physics Spokesperson

Basic Emergency Function: Provides health physics information in an easy to understand format.

2.4.4.26 JIC News Release Editor

Basic Emergency Function: Assists in preparing news releases for dissemination to the media.

2.4.4.27 JIC Public and Media Phone Teams

Basic Emergency Function: Answer phone calls made by the public and media to disseminate correct information and dispel rumors.

2.4.4.28 JIC Audio/Visual

Basic Emergency Function: Coordinates operation of A/V equipment during news conferences at the JIC.

2.4.4.29 JIC Distribution Team Supervisor

Basic Emergency Function: Supervises the JIC Distribution Team.

2.4.4.30 JIC Distribution Team

Basic Emergency Function: Distributes faxes, news releases, and makes copies for the JIC staff.

2.4.4.31 JIC Receptionist

Basic Emergency Function: Provides receptionist duties for the JIC

2.4.4.32 JIC Secretary

Basic Emergency Function: Provides secretarial duties for the JIC staff.

ENERGY NORTHWEST EMERGENCY RESPONSE ORGANIZATION
MINIMUM STAFFING REQUIREMENTS

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Senior Management	Emergency Operations Facility Mgr[3]		1
	Technical Support Center Mgr[3]		1
	Joint Information Center Mgr		1
Operations	Shift Manager[3]	1	
	Control Room Supervisor	1[1]	
	Reactor Operator	2	
	Equipment Operator	2	
	Operations Manager[5]		1
	STA Function	1[1]	
	Emergency Response SRO	1[6]	
Notification/Communication	Control Room ENS Communicator[4]	1	
	SCC Duty Officer	1	
	Security Responder	1[2]	
	Telecom Manager		1
	Plant/NRC Liaison		1
Health Physics	Radiation Protection Manager		1
	HP Technicians (In Plant Surveys)	1	2
	HP Technicians (Protective Actions)	2	4
	Field Team Coordinator[5]		1
	Environmental Field Teams (Offsite Surveys)		4
	Environmental Field Teams (Onsite Surveys Out of Plant)		2
	Radiological Emergency Manager (Offsite Dose Assessment)		1

Table 2-1

MINIMUM STAFFING REQUIREMENTS(Continued)

GROUP	POSITION/TITLE OR EXPERTISE	ON-SHIFT	AVAILABLE IN 60 MINUTES
Nuclear Chemistry	Chemistry Technicians	1	1
Maintenance	Operations Support Center Mgr[5]		1
	Electrical Maintenance/	1[2]	2
	I/C Support		1
	Mechanical Maintenance/Radwaste	1[2]	1
	Operator		1
Engineering	Core/Thermal Hydraulics		1
	Electrical		1
	Mechanical		1
	Technical Manager[5]		1
Security	Per Security Plan		
Firefighting	Fire Brigade	Fire Brigade per FSAR Section 13	Local Support
First Aid and Rescue Operations	Fire Brigade	2[2]	Local Support

1 On Shift as required by Technical Specifications in Modes 1, 2, and 3. Available within 60 minutes for call in for Modes 4 and 5. The STA qualified individual may be an individual staffing the CRS, SM or SSS position. When the STA is filling a dual role as the CRS or SM, another SRO is required to be on shift to perform duties as the Emergency Response SRO in all modes.

2 May be provided by shift personnel assigned other functions

3 Shift Manager initially assumes the responsibility for emergency direction and control, then is relieved by the TSC Manager or EOF Manager

4 Duties of ENS Communicator are assumed by an individual designated by Shift Manager

5 Not identified as a Table B-1, NUREG 0654 requirement

6 Position may be filled by STA qualified individual or designated on shift SRO. This position may not be filled by the CRS or SM when they are also fulfilling the STA function.

Table 2-1

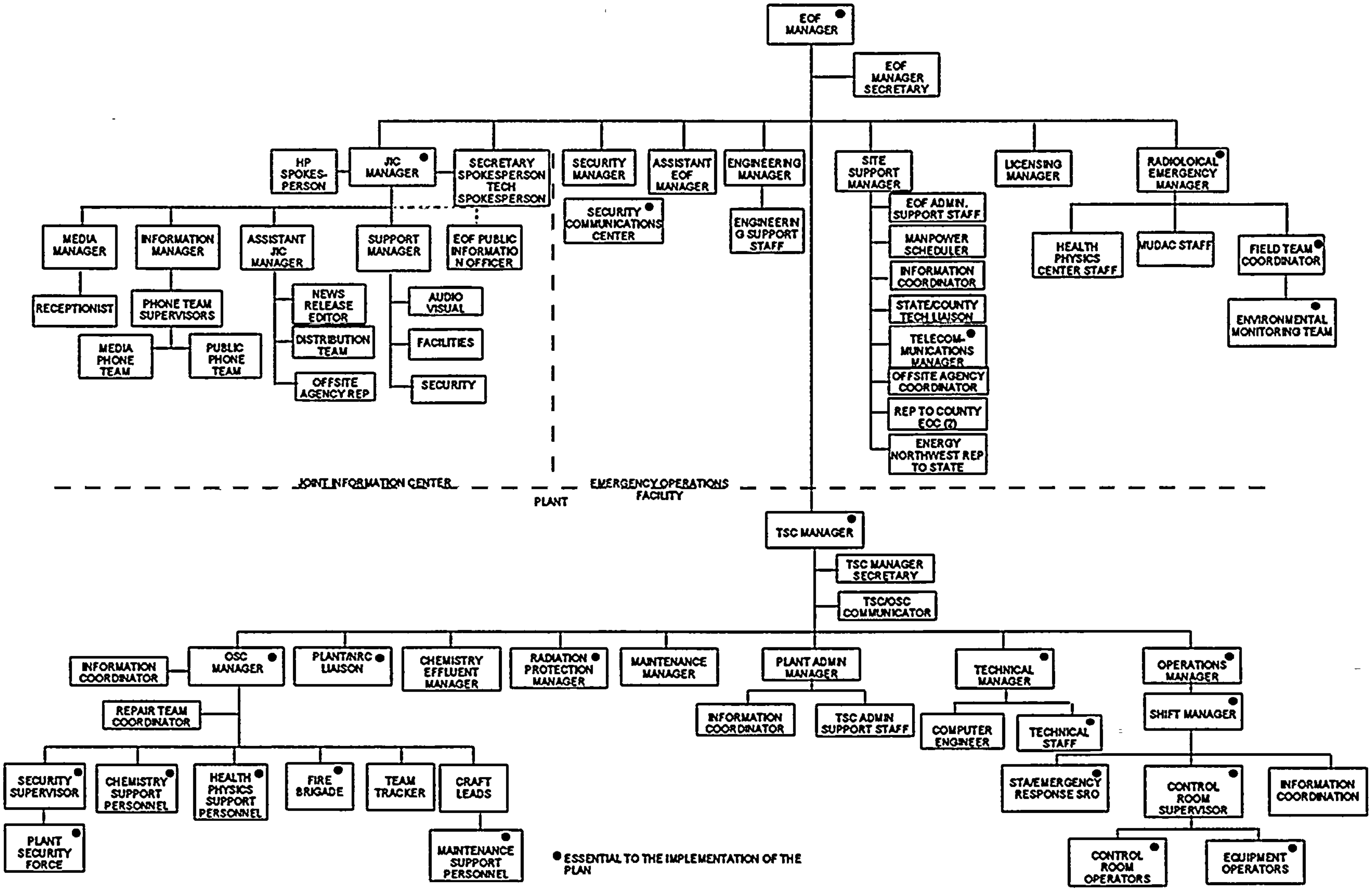

Figure 2-1, Emergency Response Organization Chart

SECTION 3
EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.1 COORDINATION OF SUPPORT ORGANIZATIONS

The Energy Northwest individual assigned the Emergency Director function is responsible for coordinating the use of emergency response resources available from outside Energy Northwest. These external resources are available through formal agreements referenced in Appendix 4 or in the emergency plans referenced in Appendix 1. Figure 3-1 shows the relationship between Energy Northwest emergency centers and the various outside response agencies. The Shift Manager/Emergency Director can call on any or all of these resources for support during an emergency.

The Energy Northwest Emergency Operations Facility contains provisions for outside organizations to coordinate actions with Energy Northwest. Specific areas in the Emergency Operations Facility and Energy Northwest Office Complex (ENOC) are designated in the Emergency Plan Implementing Procedures to be utilized by various offsite response organizations.

Energy Northwest representatives will normally be dispatched to the Benton and Franklin County Emergency Operations Centers at the Alert or higher emergency classification. The Energy Northwest representative to the state will normally report to the EOF at the Alert level, and be dispatched to the Washington State Emergency Operations Center at Site Area Emergency to assist. Energy Northwest representatives will assist in providing clarification of information and data.

The Offsite Agency Coordinator in the EOF will provide necessary support to responding agencies.

Figure 3-1 illustrates the various assistance organizations which may respond to the Emergency Operations Facility.

3.2 LOCAL SUPPORT SERVICES

A rapid response is available to Energy Northwest from local fire, medical, law enforcement, and radiological organizations. Agreements have been made with response agencies either through agreement letters or through their emergency plans. In cooperation with Energy Northwest and Benton and Franklin Counties Emergency Management, a training program has been established to familiarize responding agencies with their role at the plant site during an emergency. Energy Northwest will provide escorts, assistance, and dosimetry for all persons entering the plant protected areas, as requested.

3.2.1 Fire

Agreements established between the Department of Energy and Energy Northwest provide for Hanford Contract Fire Department response to all Energy Northwest facilities on the Hanford Reservation. Additional fire department response, if needed, is available through mutual aid agreements between county and municipal fire departments. The Hanford Contract Fire Department personnel are specifically trained to handle nuclear facility fire incidents and have specially equipped vehicles and personnel for rescue and other emergencies. Fire organizations performing functions onsite will interface directly with the Fire Brigade Leader.

3.2.2 Medical

The Emergency Director or designee is responsible for notifying the medical facility and providing qualified health physics personnel to assist. Communications with medical response agencies is coordinated through the radio network described in Section 6.5.1 of this Plan. The fixed medical facilities (i.e., hospitals) can also be reached by telephone using the numbers provided in the Emergency Phone Directory.

3.2.2.1 Local Hospitals

Kennewick General Hospital in Kennewick, Washington; Our Lady of Lourdes Hospital in Pasco, Washington; and Kadlec Medical Center in Richland, Washington, provide hospital and medical services. Any combinations of these three hospitals serves as the primary and backup medical facility. These hospitals have emergency room coverage twenty-four hours per day. The State of Washington also maintains agreements for handling contaminated patients with other hospitals in the State of Washington.

Energy Northwest has placed and maintains kits containing radiological monitoring equipment and decontamination supplies for use in the care of radiation accident patients at these hospitals. Energy Northwest also assists each hospital in developing procedures for the care of radiation accident patients as requested. Training and assistance on radiological decontamination procedures is offered by Energy Northwest to these hospitals when requested. Drills are periodically conducted to evaluate hospital proficiency for handling contaminated victims

3.2.2.2 Special Medical Facilities

The Emergency Decontamination Facility (EDF), located next to Kadlec Medical Center, can be used for handling highly contaminated patients.

If high levels of radioactive contamination or exposure are involved, injuries will be pre-treated at the specially equipped EDF. The EDF is a sophisticated unit specifically designed for handling and treatment of radiation/contamination accident victims. Provisions include decontamination equipment, shielded surgery tables, remote TV viewing, contaminated water retention, air filtration, radiation monitoring instrumentation, whole body counting, and communications equipment.

The EDF is operated by the Hanford Environmental Health Foundation (HEHF) for the Department of Energy in support of nuclear activities on the Hanford Reservation. The physicians responding to the EDF are prepared and qualified to make radiation exposure and uptake evaluations.

3.2.2.3 Medical Transportation

Medical emergency transportation will be provided by the Department of Energy - Richland Operations (DOE-RL). If additional assistance is required, local ambulance services may be used. An Energy Northwest employee knowledgeable in health physics will accompany contaminated patients to the hospital or meet the ambulance at the hospital to assist in the emergency. Additional health physics assistance may be requested from DOE-RL, or Washington State Department of Health.

3.2.3 Law Enforcement

The Benton County Sheriff has jurisdiction on the Hanford Reservation highways. Arrangements have been made for this organization to provide traffic control in order to limit access to the Hanford Reservation during an Energy Northwest emergency.

The Sheriff has jurisdiction at the Energy Northwest site for all civil disturbances or threats. Request for assistance to the Benton County Sheriff can be made directly to the Sheriff's office or through the 24 hour Emergency Dispatch Center (SE COMM) located in Richland. The Energy Northwest communications centers are capable of communicating with responding law enforcement agencies.

The Security Manager is the main interface with local law enforcement personnel and administers the agreement for law enforcement services. Activation of this support is under the direction of the Emergency Director.

In the event that evacuation is needed for areas off the Hanford Reservation, the Emergency Director, or designee, will notify the County Emergency Chairman or designee, at the Benton and Franklin County Emergency Operations Centers and provide available information concerning the nature of releases. Within the guidelines established by Washington State, a recommendation concerning necessary protective actions to be taken by the general public will be made by Energy Northwest. Following receipt of a protective action decision by an appropriate county authority, the Sheriffs of Benton and Franklin Counties will be responsible for implementing evacuation, traffic control, community security and search and rescue activities in their respective jurisdictions.

The Washington State Patrol provides assistance to the Sheriff concerning traffic control and area access. The local State Patrol headquarters has direct radio communications with the Benton and Franklin County sheriffs and the Emergency Dispatch Center (SE COMM).

3.2.4 Radiological

The Department of Energy (see Section 3.6.2) and Siemens Power Corporation (see Section 3.3.1) can provide a large number of trained personnel capable of assisting during a radiological emergency. Additionally, a training program for local support organizations (i.e., hospital, ambulance and fire companies) developed jointly by Energy Northwest and Benton and Franklin Counties, provides information on proper actions to take during a radiological emergency. Supporting emergency plans for this service are listed in Appendix 1.

3.3 PRIVATE RESPONSE ORGANIZATIONS

3.3.1 Framatome ANP

The Framatome facility, located just outside the Southern boundary of the Hanford Reservation, approximately 8 miles south of Columbia Generating Station, maintains 24-hour health physics coverage of operations. As provided for in their Emergency Plan, listed in Appendix 1, assistance can be quickly provided during an Energy Northwest emergency to monitor radiological conditions along the southern Hanford Site boundary. Assistance will be provided upon request of the Emergency Operations Facility Manager and will be coordinated from the Emergency Operations Facility.

3.3.2 Environmental Sample Analysis

Service contracts are currently maintained with appropriate vendors by Energy Northwest's Radiological Environmental Monitoring Program group for environmental sample analytical services.

3.3.3 General Electric Company

The General Electric Company, suppliers of the Columbia Generating Station nuclear steam supply system, provides a support program utilizing the resources of their Nuclear Energy Group in San Jose, California. An emergency response team can be dispatched to the Emergency Operations Facility within twenty-four hours to provide technical assistance. A technical support team with experts in appropriate technical disciplines will be activated at General Electric Headquarters and will establish telephone communications with the onsite General Electric Emergency Response Team. The response team, dispatched to Energy Northwest, will be provided work space in the Emergency Operations Facility and will coordinate efforts with the EOF Engineering Manager. General Electric personnel may be used in the plant as needed. When in the plant, the TSC Technical Manager will be the primary interface.

3.3.4 Institute of Nuclear Power Operations

The Institute of Nuclear Power Operations (INPO) will provide assistance in identifying and mobilizing the resources of the nuclear industry in the event of an emergency. INPO will be notified of any emergency at the alert or greater classification.

INPO will provide the following assistance, if requested:

a. Designated INPO representatives who can be dispatched to the utility.

b. Dedicated 24-hour emergency notification system.

c. Ability to locate personnel with specific technical expertise.

d. Obtaining industry experience regarding plant equipment through NPRDS.

3.3.5 American Nuclear Insurers

American Nuclear Insurers (ANI) provides insurance coverage for Energy Northwest's nuclear facilities. If an accident occurs which involves the general public, ANI will provide financial assistance and reimbursement of reasonable expenses to persons required to relocate. Within 24 hours of the declaration of the emergency, ANI will dispatch a representative to the local area and will coordinate with the Emergency Response Team.

3.3.6 Hanford Environmental Health Foundation

The Hanford Environmental Health Foundation provides physicians trained in the treatment of radiation accident patients and for response and consultation services to the plant and to the hospitals which have agreements with Energy Northwest. Refer to Appendix 4.

3.3.7 Dosimetry

Energy Northwest has provisions for thermoluminescent dosimeters and related services.

3.4 <u>COUNTY ORGANIZATIONS</u>

3.4.1 Benton and Franklin Counties

The Benton and Franklin County plans for responding to a nuclear emergency, referenced in Appendix 1, provides for a coordination of effort, resources, and facilities. Mitigation and preparedness responsibilities include coordinating local radiological emergency response planning, exchanging emergency preparedness information and, along with Energy Northwest assisting local agencies and officials in developing appropriate emergency capabilities, establishing a radiological emergency response program, emergency response training, and promoting the development of effective communications and other emergency resources. Local law enforcement agencies provide access control services for the Hanford reservation.

Emergency response activities of the Benton and Franklin Counties emergency organizations include implementing local emergency public information and instruction activities, establishment of emergency worker and assistance centers and the Benton and Franklin County Emergency Operations Centers, making protective action decisions, activation of the early warning system, and coordination of local protective action implementation and support. County officials are notified of an emergency through the Emergency Dispatch Centers, and also receive any recommendations provided by Energy Northwest in this manner. When activated, the county staff in the Emergency Operations Centers will communicate with the staff at the Emergency Operations Facility over Energy Northwest dedicated communications systems. Activation of the county plans is automatic for an Alert, a Site Area Emergency, or General Emergency and county representatives will be dispatched to the Emergency Operations Facility and the Joint Information Center.

Benton and Franklin Counties will also play an active role during recovery operations and will work closely with the State of Washington and Energy Northwest to ensure appropriate measures are taken for affected members of the public within their jurisdiction.

3.4.2 Counties Within the Ingestion Exposure Pathway Emergency Planning Zone

Six Washington counties (in addition to Benton and Franklin Counties) as well as two Oregon counties are located within the Ingestion Exposure Pathway Emergency Planning Zone (EPZ). A portion of the Yakama Indian Nation also falls within the Ingestion Exposure EPZ. The State of Washington will provide notification to these counties and the Yakama Indian Nation will be notified by Yakima County. This will be coordinated through the Washington State Emergency Management, or the Oregon Department of Energy, by the EOF Radiological Emergency Manager. Local governments will be kept informed regarding the status of the plant and recommended protective actions by the state(s).

3.5 STATE ORGANIZATIONS

3.5.1 State of Washington

The Washington State Plan referenced in Appendix 1 describes the detailed response which will be given during an emergency. Responsibilities are outlined for all state agencies which have a response role. The following list outlines the response actions of several of the state agencies which would respond during an Energy Northwest emergency. A Washington State Representative will proceed to the Emergency Operations Facility during a Site Area or General Emergency, and if conditions warrant during an Alert, to coordinate State resources. The Offsite Agency Coordinator will provide support and function as a working liaison with the State Representative when in the Emergency Operations Facility. Response time is estimated to be less than 6 hours.

3.5.1.1 Washington Emergency Management

Washington Emergency Management is the State agency responsible for radiological response planning and coordination of operations. The responsibility of this agency includes the following items:

a. Develop and maintain the Washington State Fixed Nuclear Facility Emergency Response Plan and assist the counties in developing their individual emergency response plans.

b. Arrange training programs for state and local agencies designed to promote effective response to radiological incidents.

c. Provide affected communities with warning confirmation, upon request.

d. Coordinate communications and other available support to affected local governments.

e. Coordinate the support of other state agencies and political subdivisions near the affected area and obtain assistance of federal agencies as required.

Dedicated communications with the State Emergency Operation Center are available. Representatives from Washington Emergency Management will have access to the Emergency Operations Facility (EOF) and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.5.1.2 Department of Health

The Department of Health (DOH) is responsible for administering and directing radiation control program activities within the State. DOH provides local authorities with technical guidance, assistance in establishing monitoring and decontamination programs, and recommending appropriate emergency countermeasures and recovery actions offsite. Responding at an Alert or higher classification, DOH provides representatives to support the emergency response as follows:

a. To the Meteorology and Unified Dose Assessment Center (MUDAC) for joint control of environmental field monitoring teams, assessment of dose projection information, preparation of protective action recommendations for the plume exposure pathway and ingestion zones, and estimation of total dose exposure. Also, DOH provides Radiation Control (Radcon) monitoring teams that perform radiological monitoring, collect samples and provide limited field analysis and monitoring and decontamination support to the counties at emergency worker and assistance centers.

b. Outside of the EOF, DOH normally furnishes a representative to the Joint Information Center (JIC) for the coordination of public information. At the State Emergency Operations Center (EOC), DOH representatives furnish guidance on implementation of protective actions and assist local health officials with the implementation of protective actions. Agency response times to the Richland area are expected to be less than six hours.

3.5.1.3 Washington State Patrol

The Washington State Patrol (WSP) will assist each affected county and provide, upon request from either state or county officials law enforcement functions, communications support, and transportation assistance to other agencies when the WSP's law enforcement commitment is not jeopardized. Energy Northwest has space available in the Emergency Operations Facility for a representative from the WSP to coordinate their activities with Energy Northwest Security Manager as needed.

3.5.1.4 Energy Facility Site Evaluation Council

The Energy Facility Site Evaluation Council (EFSEC) is the lead state organization for siting of power generating facilities in the State of Washington. EFSEC is responsible for assessing compliance with the Site Certification Agreement and administering contracts with state agencies and local governments for emergency preparedness services in support of the Columbia Generating Station Emergency Plan.

The council is periodically apprised of Energy Northwest's emergency preparedness per section V.A.2 of the Columbia Generating Station Site Certification Agreement.

3.5.1.5 Department of Agriculture

The Washington State Department of Agriculture (WSDA) is responsible for the control and protection of agricultural products within the boundaries of Washington State. This is accomplished by implementing agricultural protection measures in coordination with other participating agencies and local jurisdictions. These measures include preparing and issuing agricultural advisories to protect the public; preparing and implementing plans in coordination with affected agencies and jurisdictions to reduce the Food Control Area, release food, dispose of contaminated food and conduct embargoes. They will also provide input, as requested by other agencies, in the areas of soil, water and crop decontamination; claims procedures; reduction of Food Control Area and public information.

3.5.2 State of Oregon

The State of Oregon has the responsibility to protect the health and safety of Oregon residents during a radiological emergency at Columbia Generating Station. The Oregon Office of Energy has prepared a Columbia Generating Station Emergency Response Program for that purpose.

A major emergency at Columbia Generating Station is not expected to have immediate, life-threatening radiological impacts on Oregon. During the emergency phase, Oregon's involvement will be limited to maintaining communications and monitoring the emergency. If the emergency involves ingestion exposure considerations, however, Oregon will be involved in a cooperative effort with Energy Northwest, Washington State, and federal response agencies to assess conditions within the state boundaries, initiate necessary public protective measures, and provide public information (e.g., news releases) as may be required. Upon declaration of a Site Area Emergency, Oregon will begin a limited activation of the Oregon EOC in Salem. They will also send representatives to Energy Northwest EOF, JIC, and the Washington EOC. In addition, they will send one or more field teams to Morrow and Umatilla Counties and will provide field team assistance to Washington State as requested.

The Governor or designee will make protective action decisions for Oregon. During ingestion pathway events, Oregon will coordinate protective actions with other members of the protective action recommendation/decision group at the EOF and the Washington EOC.

Communications with the State Emergency Operations Center in Salem are available. Representatives from Oregon Office of Energy will have access to the EOF and will coordinate activities with the Offsite Agency Coordinator in the EOF.

3.6 FEDERAL ORGANIZATIONS

3.6.1 Nuclear Regulatory Commission

Personnel from the Nuclear Regulatory Commission (NRC), including Resident Inspectors, may elect to respond to any emergency. The NRC Resident Inspectors assigned to Energy Northwest facilities will be notified of any emergency condition on-site by pager and/or by phone contact and may proceed to the control room or any other areas. Facilities are available for NRC personnel in the Technical Support Center, Joint Information Center, and the Emergency Operations Facility. Dedicated communications are available between these facilities and the NRC. Additionally, the NRC duty officer in White Flint, Maryland is notified of the emergency by the Emergency Notification System (a dedicated phone circuit provided by NRC) of every emergency condition and will adapt their response to the situation as it evolves. If the dedicated phone circuit fails, the NRC duty officer can be reached by commercial phone lines using the numbers provided in the Emergency Phone Directory.

The role of NRC personnel during incidents at nuclear power plants is to monitor actions by the licensee to ensure that people in the vicinity of the plant are adequately protected and to provide any assistance requested by the licensee or offsite officials. NRC's principal role in the event of a power plant emergency is to ensure that appropriate protective actions are being taken. If it appears that warranted protective actions are not being recommended by the licensee or are not being taken by offsite officials, NRC representatives will contact the licensee or offsite officials and present their concerns.

NRC is the lead federal agency concerned with technical aspects of an accident at one of its licensed facilities (e.g., nuclear power plants). The specific NRC response roles are to:

a. monitor the licensee to ensure that appropriate protective action recommendations are being made off site:

b. support offsite authorities, including confirming the licensee's recommendation to offsite authorities, if requested;

c. support the licensee;

d. keep other federal agencies and entities (e.g., Congress and the White House) informed of the status of the incident;

e. keep the media informed of NRC's knowledge of the status of the incident, including coordination with other public affairs groups; and

f. intervene in a limited fashion to direct the licensee's on-site response in some unusual and very rare situations.

3.6.2 Department of Energy

Assistance from of the Department of Energy can be requested by the Emergency Director. The Department of Energy-Richland Operations office located in Richland, Washington, is capable of providing radiological response, such as field monitoring teams, within two hours. The Department of Energy will provide additional federal field monitoring and dose assessment capability when requested. Coordination with Energy Northwest will be through the Offsite Agency Coordinator or the Radiological Emergency Manager. A representative from the Department of Energy may proceed to the Emergency Operations Facility to coordinate the effort.

The Department of Energy-Richland Operations (RL) has large resources of equipment and manpower available. Technical personnel and laboratory facilities can quickly be made available. RL will provide support for the alerting of personnel, and establishment of a safety zone on the portion of the Columbia River within the Columbia Generating Station Ten-Mile Emergency Planning Zone. Also, RL will coordinate and implement protective actions for portions of the 10-mile Emergency Planning Zone on Hanford outside of the Columbia Generating Station Exclusion Area.

Assistance which can be requested via the Department of Energy includes:

a. Emergency Decontamination Facility staffed by qualified radiological emergency personnel able to treat contaminated patients.

b. Hanford contractor ambulances with qualified EMT support personnel.

c. Hanford contractor Fire Department resources to respond to fires on the Hanford Reservation.

d. Hanford contractors with additional respirators, protective clothing and equipment for personnel decontamination.

e. Hanford contractors that can assist with field monitoring, dose assessment, meteorological data and laboratory analysis.

Eight DOE Regional Coordinating Offices for Radiological Assistance provide radiological assistance on request in any region of the country. The radiological assistance teams are the front lines of Federal assistance under the Federal Radiological Emergency Response Plan (FRERP). RAP teams will generally be requested quite early in an event by the State and/or the NRC. RAP teams typically are composed of four to six people. They are capable of conducting gross gamma, alpha, and beta monitoring. They will require only one half to two hours to prepare for a response. Response time will depend on travel time to the location of the accident. The RAP team will also act as an advance team for coordination of further DOE assistance such as the Federal Radiological Monitoring and Assessment Center (FRMAC) or the Aerial Measuring System (AMS).

When assistance is requested, DOE coordinates the monitoring and assessment efforts of all Federal agencies. The FRMAC is usually established near the site of the accident as part of or in conjunction with the Federal Response Center established by the Federal Emergency Management Agency (refer to Section 3.6.3). The size and complexity of the assistance effort will depend on the incident. DOE can provide the most extensive monitoring and assessment capabilities available in the United States. It will require about 24 hours for a fully operational unit to be established. DOE has delegated the responsibility for establishing this service to the DOE Nevada Operations Office.

The AMS is an airborne radiological detection system that can respond to radiological incidents and perform plume tracking, radiation surveys, and radiation mapping over large areas around the site of an incident. Most of the aerial monitoring assets are located in Las Vegas, Nevada, but there are also some capabilities based at Andrews Air Force Base, near Washington, D.C. The AMS will be integrated into the assistance effort once it is established.

3.6.3 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) coordinates federal responses to nuclear facilities for both radiological and non-radiological emergencies. In the event of a radiological emergency a number of federal agencies can be activated through FEMA to support State and County activities. FEMA would coordinate these activities through provisions of the Federal Radiological Emergency Response Plan (FRERP). For a Site Area or General Emergency, FEMA would normally establish a Federal Response Center (FRC) in the Tri-Cities area. Space would also be made available at the Energy Northwest Emergency Operations Facility (EOF) for representatives of responding federal agencies. If resources are needed from FEMA to support offsite emergency activities, the State has the authority to request offsite assistance. Energy Northwest will coordinate with the FEMA representative concerning field response activities.

3.6.4 U.S. Coast Guard

The U.S. Coast Guard, through the Thirteenth District Commander in Seattle, Washington, and the Captain of the Port in Portland, Oregon, regulates activities on navigable waters. For Site Area or General Emergencies, the Coast Guard may establish a safety zone on the Columbia River and broadcast a river closure notice to mariners.

U.S. Coast Guard assistance is a special case which, by virtue of pre-coordination with Benton and Franklin Counties, is automatically provided or may be made directly. Coast Guard Officers of authority may establish the "Safety Zone" within the 10-Mile Emergency Planning Zone (EPZ) for the Columbia River when notified of a Site Area or General Emergency. This Safety Zone provides authority for DOE and Sheriff's Office patrol craft to control river access within the EPZ. This service is provided for by the plan and procedures maintained by Benton and Franklin Counties, via the Fixed Nuclear Facility Response Plans referenced in Appendix 1.

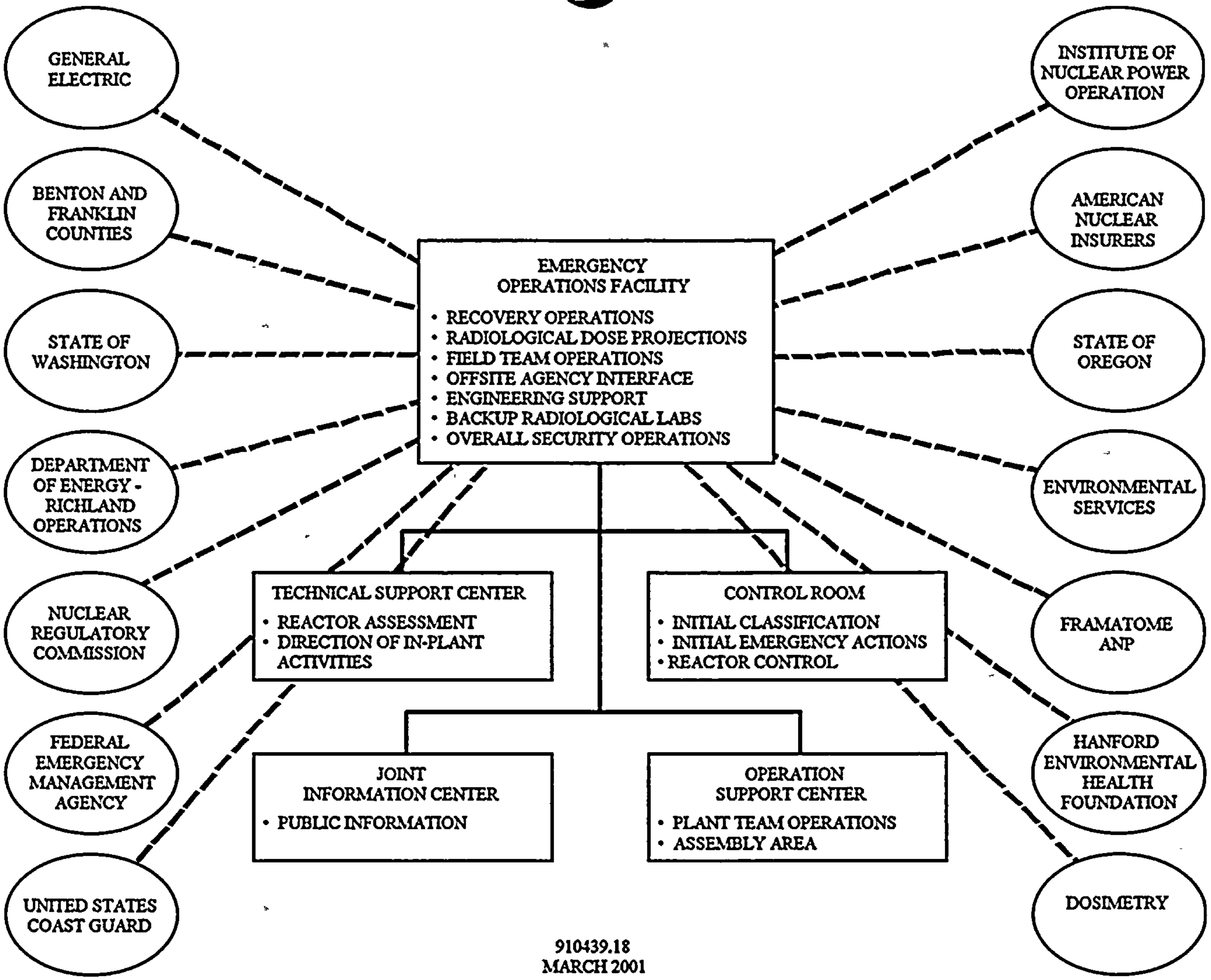

Figure 3-1, Outside Response Agency Resources

SECTION 4
EMERGENCY CLASSIFICATION AND NOTIFICATION

4.1 EMERGENCY CLASSIFICATION

The Emergency Plan provides for four classes of emergency to cover a spectrum of plant events that could lead to a loss of control over radioactive materials which could result in the need to initiate protective measures for the public. These four classes, in order of increasing severity of plant conditions, are Unusual Event, Alert, Site Area Emergency, and General Emergency. The basic regulatory premise for these classifications is found in 10 CFR 50 Part 47, with further guidance in NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1, where example initiating conditions are provided for each emergency classification.

The initiating conditions (ICs) form the basis for establishing specific indications, i.e., plant instrument readings or personal observations, which would indicate that a given initiating condition had been met and thus an emergency classification must be declared. These instrument readings and personal observations are known as Emergency Action Levels (EALs).

Classifying an event based on plant abnormal conditions is the responsibility of the Emergency Director. Initiating events or conditions are included in this section, and implemented by Emergency Plan Implementing Procedure EPIP 13.1.1, Classifying the Emergency.

A conservative philosophy for emergency classification is used to declare the highest category for which an EAL has been met. For example, a Site Area Emergency would be declared directly if a Site Area Emergency EAL is met. This would be done without having first declared the Unusual Event or Alert emergency classifications. Also, if two or more EALs have been met, the EAL representing the highest emergency classification would be used to declare the emergency to ensure that appropriate notifications and actions are taken.

The initiating conditions presented in Table 4-1 are all inclusive of EALs and demonstrate how the EPIP 13.1.1 EALs are arranged. Due to the comprehensive nature of the initiating conditions, however, all postulated accidents in the Final Safety Analysis Report (FSAR) for Columbia Generating Station are fully covered and could be classified, when necessary, by using this scheme. Since some FSAR accidents are not representative of a significant plant event and do not pose a challenge to the fission product barriers, not all FSAR accidents would require declaration of an emergency classification.

Events occurring offsite at nearby nuclear facilities or transportation accidents involving hazardous materials, such as chemicals or nuclear fuel, will only be classified under the Columbia Generating Station EALs when conditions onsite are changed by the event to where they meet the criteria in EPIP 13.1.1. Columbia Generating Station actions will be based on the significance of these events. A transportation accident that does not directly impact the Plant site will be categorized as a Transportation Emergency.

4.2 EMERGENCY ACTION LEVEL CRITERIA

The Columbia Generating Station EAL criteria is based on a combination of methods. The combination ranges from primarily event-based EALs for Unusual Events, to primarily symptom-based or barrier-based EALs for General Emergencies. This type of an approach to EAL development ensures that timely recognition and notification occurs, that events occurring during refueling and cold shutdown are appropriately covered, and that multiple events can be effectively classified.

The symptom-based and barrier-based parameters used in the EALs are consistent with the parameters used in the Plant Emergency Operating Procedures, which are derived from accident analysis done by General Electric and the Boiling Water Reactor (BWR) Owner's Group after the Three Mile Island-2 accident. Symptom-based parameter examples are provided in EPIP 13.1.1, and represent conditions of plant system malfunctions or failures. Some of the parameters are linked to an electronic system which displays an alarm on the Computerized Graphic Display System (GDS) in the Control Room whenever certain abnormal conditions are met.

Situation-based parameters used in the EALs define other abnormal conditions which cannot be easily computerized or quantitatively defined and for which classification may require some judgement. In these cases, personnel are instructed to make decisions based on conservative principles and the definitions and purposes for event classification. Further guidance and justification for the Columbia Generating Station EALs is provided in a technical bases document, EPIP 13.1.1.A, Classifying the Emergency Technical Bases.

4.3 OFFSITE AGENCY REVIEW OF EMERGENCY ACTION LEVELS

EPIP 13.1.1 is the document provided to the NRC, the states, the US Department of Energy, Richland Operations, and the local government agencies to use for review and comment on emergency classification criteria.

A major revision of EPIP 13.1.1 EALs were discussed and agreed upon with state and local governments, and approved by the NRC on December 9, 1994. On at least an annual basis, the most recent revision to EPIP 13.1.1 is reviewed with state and local government representatives.

4.4 CLASSIFICATION DEFINITIONS AND PURPOSES

The conditions for event classification presented here are not intended to cover all situations. Other events and combinations of situations can warrant conservative action and emergency classifications. Classifications shall be made utilizing conservative principles and in situations not covered by examples. The Emergency Director shall declare an appropriate emergency classification where, in his judgement, plant status warrants such a declaration.

4.4.1 Unusual Event

a. Definition

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Purpose

To bring the plant operating staff to a heightened state of readiness, provide for a more systematic handling of information and decision making, and to ensure that notification is made to the emergency response organization, including all offsite emergency authorities.

c. Rationale

The rationale for the Unusual Event classification is to provide early notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. Emergency response organizations are typically not activated for an Unusual Event declaration.

d. Actions:

(1) Promptly inform states and/or local offsite authorities of the nature of the unusual condition as soon as discovered.

(2) Augment on shift resources as needed.

(3) Assess and respond.

(4) Escalate to a higher classification, if appropriate, or

(5) Close out with verbal summary to offsite authorities, followed by written summary within 24 hours.

4.4.2 Alert

a. Definition

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases of radioactive material are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

b. Purpose

To provide additional help in responding to the situation and provide systematic handling of information and decision making. Declaring an Alert will provide additional manpower in the Technical Support Center to help the normal operating crew in those duties not directly related to plant control, such as offsite dose assessment, technical problem evaluation, and communications with outside organizations. It will also activate the Operations Support Center, which will provide additional manpower to respond to plant conditions, and the Emergency Operations Facility and Joint Information Center to improve offsite communications and the ability to relay information to the news media and the public.

c. Rationale

The rationale for the Alert classification is to provide prompt notification of minor events of more significance than the Unusual Event category and to ensure fuller response preparations are performed. The Columbia Generating Station emergency response organization is activated for an Alert declaration.

d. Actions:

(1) Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered.

(2) Augment resources and activate on-site Technical Support Center, on-site Operations Support Center near site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site monitoring teams and associated communications.

(5) Provide periodic plant status updates to offsite authorities (at least every 15 minutes).

(6) Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases, from the appropriate emergency center.

(7) Escalate to a more severe class, if appropriate.

(8) Close out or recommend reduction in emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction.

4.4.3 Site Area Emergency

a. Definition

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

b. Purpose

To assure that all emergency response centers are activated, field monitoring teams dispatched, evacuation coordinators readied, predetermined protective actions issued for the public, and to keep the public informed.

c. Rationale

The rationale for the Site Area Emergency classification reflects conditions where some significant releases are likely or are occurring but where a fuel failure situation is not indicated based on current information. In this situation full mobilization of emergency personnel, and the assembly, accountability and evacuation of non-essential personnel in the near site environs is indicated, as well as associated offsite communications, and the dispatch of radiation monitoring personnel.

d. Actions:

(1) Promptly inform State and/or local offsite authorities of site area emergency status and reason for emergency as soon as discovered.

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF) and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provided meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Escalate to general emergency class, if appropriate

or

(10) Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.4 General Emergency

a. Definition

Events are in progress or have occurred which involve actual or imminent substantial fuel degradation or failure with potential for loss of containment integrity. Releases of radioactive material can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite at distances more than the immediate site area.

b. Purpose

To initiate predetermined actions for the public, provide for continuous offsite assessment, initiate additional measures, as indicated by radiological releases or plant conditions, and to provide for consultation and flow of information to and from the various offsite authorities.

c. Rationale

The rationale for the General Emergency classification reflects conditions where actual or imminent substantial fuel degradation or failure with the potential for loss of containment are occurring. In this situation, evacuation becomes the preferred immediate action.

d. Actions:

(1) Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local).

(2) Augment resources by activating on-site Technical Support Center, on-site Operational Support Center, near-site Emergency Operations Facility (EOF), and Joint Information Center (JIC).

(3) Assess and respond.

(4) Dispatch on-site and offsite monitoring teams and associated communications.

(5) Dedicate an individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).

(6) Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.

(7) Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.

(8) Provide release and dose projections based on available plant condition information and foreseeable contingencies.

(9) Close out or recommend reduction of emergency class by briefing of offsite authorities at EOF and by phone followed by written summary within 8 hours of closeout or class reduction.

4.4.5 One-Hour Reportability

Events are evaluated against the criteria of 10CFR50.72(b)(1). PPM 1.10.1, Notifications and Reportable Events, implements this criteria. NUREG 1022 contains clarifying NRC guidance.

4.5 STATE AND COUNTY CLASSIFICATION SYSTEM

The States of Washington and Oregon have adopted a fixed nuclear facility emergency classification scheme with classification levels. Each State maintains individual emergency response plans with these classification levels and specific guidelines for responding to emergencies at Columbia Generating Station.

The Columbia Generating Station 10-Mile Emergency Planning Zone lies within two counties. These counties, Benton and Franklin, have agreed to use the emergency classification scheme used by Columbia Generating Station and the States.

As part of the annual EAL review process, Energy Northwest ensures that both the counties' emergency response plans and the State emergency response plan continue to use a classification scheme consistent with the Columbia Generating Station scheme.

4.6 NOTIFICATION METHODS AND PROCEDURES

The Energy Northwest notification process for activating the emergency organizations includes notification of emergency response personnel and assistance organizations, who are notified when an emergency is declared. Initial communication links between the Energy Northwest Emergency Director and the duty officers of Benton and Franklin Counties, and the State of Washington are available on a 24 hour per day basis. The extent of notification will depend upon the emergency classification. A means for verifying the authenticity of all initial offsite notifications is established.

Communication links are established among the various on-site and offsite emergency centers. Descriptions of the emergency response positions at each center include responsibilities for communications with specific positions or other emergency response facilities. Those communication responsibilities are further specified in the EPIPs.

4.6.1 Energy Northwest Emergency Organization Notification

The in-plant paging system, high noise area paging devices, a radio paging system, and an Automated Notification System will be used to notify Energy Northwest ERO personnel. Instructions will be provided if protective measures are required.

Activation of response teams during normal working hours will be via the telephone system, the inplant public address system, or the paging system. Activation during hours other than normal working hours will be accomplished by the paging system, public address and automatic notification system. The automatic notification system will be initiated by the Security Communication Center Duty Officer. The Duty Officer will be directed to make the notifications by the Emergency Director. The Duty Officer is able to manually activate the radio paging system, and this system will serve as a backup notification method.

On-duty Energy Northwest personnel will notify Washington Emergency Management, Benton County Emergency Management, Franklin County Emergency Management, and the Department of Energy.

The extent of the notification will depend upon the emergency classification. However, the Emergency Director may call anyone deemed necessary to support the emergency effort. Table 4-2 outlines the response organizations that will be notified by Energy Northwest for each emergency class. The above scheme is established in procedures.

4.6.2 Nearby Facilities Notification

Initial emergency notification to nearby facilities will be made. Instructions will be provided if protective measures are required.

The Department of Energy is responsible for notifying facilities on the Hanford Reservation during an Energy Northwest emergency; however, Energy Northwest will notify the Fast Flux Test Facility (FFTF) control room when an Exclusion Area evacuation is implemented. DOE notifies Energy Northwest in the event of a sodium oxide release from FFTF.

4.6.3 Support Organizations Notification

Initial notification to Benton County Emergency Management, Franklin County Emergency Management, Department of Energy, and Washington Emergency Management will be made from the Control Room, the Technical Support Center or the Emergency Operations Facility. The Nuclear Regulatory Commission Emergency Response Center will be notified. The Nuclear Regulatory Commission offices will patch the call through to the Nuclear Regulatory Commission offices in Region IV, Arlington, Texas. A means for verifying the authenticity of the notification is established.

4.6.4 General Public Notification

Emergency notification to both transients and residents is the responsibility of the County Emergency Chairman. Notification will be based on information received from Energy Northwest and, if time permits, consultation with the staffs of the Benton County Emergency Operations Center, Franklin County Emergency Operations Center, and Washington State Emergency Operations Center.

Transient and resident populations are advised in public information material to monitor the Emergency Alerting System (EAS) for emergency announcements and protective action instructions. The initial instructions will consist of prescribed emergency messages consistent with the Emergency Classification and will contain information such as:

a. Identification of agency/organization issuing information.

b. A statement that a facility has had an accident.

c. Identification of the communities or geographical areas affected by the emergency.

d. A brief description of the type of emergency and the nature of the hazard.

e. Specific protective measures such as sheltering or evacuation to be taken by residents of the affected areas.

f. A statement that further information will be given over the Emergency Alerting System (EAS).

Copies of the text of prerecorded EAS messages and the messages to be read over the siren system are provided in the Benton and Franklin Counties Emergency Response Plans.

Initial and follow-up notifications of an emergency at the plant are made to the County Emergency Dispatch Center, to the Department of Energy-Richland Operations, and to the State of Washington from the control room, the TSC or the EOF. Washington State is responsible for notifying Oregon DOE. The Benton County Emergency Operations Center is responsible for notifying the public in Benton County. The Franklin County Emergency Operations Center is responsible for notifying the public in Franklin County. Benton County is responsible for making Protective Action Decisions (PADs) in Benton County during the Plume phase of an emergency. Franklin County is responsible for making PADs in Franklin County during the Plume phase of an emergency. They will notify the public within fifteen minutes after a Protective Action Decision is made. The State of Washington is responsible for making PADs during the ingestion phase of an emergency. The Department of Energy has the responsibility to alert and provide information to its employees and contractors on the Hanford Reservation. The Joint Information Center will coordinate public news releases with responding agencies.

The Early Warning System is designed to alert and provide information to the population in the Ten-Mile Emergency Planning Zone.

Tone activated radios provide the primary means of notification. These radios are activated by the Emergency Alerting System signal and provide instructions for protective actions. Transient population along the Columbia River is notified by sirens within the 10-mile EPZ, a Coast Guard marine band broadcast and, if necessary, by Sheriffs Department. Transient population along the Yakima River and in the Horn Rapids area within the 10-mile EPZ are notified by sirens. In addition, Washington State Department of Fish and Wildlife may inform members of the public of protective response actions required.

4.6.5 Initial Messages to Offsite Response Organizations

Initial messages to response organizations will contain such information as:

a. Type of notification
b. Facility experiencing emergency
c. Time of incident
d. Emergency classification
e. Protective action recommendation

4.6.6 Follow-up Messages

Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as:

a. Name and telephone number of caller
b. Location of incident
c. Date/Time of incident
d. Classification of Emergency
e. Type of actual or projected release and estimated duration/impact times
f. Estimate of quantity of radioactive material released or being released, and the points of release
g. Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates
h. Meteorological conditions
i. Actual or projected dose rates at site boundary; projected integrated dose at site boundary
j. Projected dose rates and integrated dose at the projected peak and at 2 and 10 miles, including sector(s) affected
k. Estimate of any surface radioactive contamination; in-plant, onsite or offsite
l. Emergency response actions underway
m. Recommended emergency actions, including protective action recommendations
n. Request for offsite organization support needed onsite
o. Prognosis for worsening or termination of event based on plant information

TAB

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.1 Coolant Activity	Fuel Clad Degradation 1.1.U.1 1 2 3 4 RCS sample activity GT Technical Specification 3.4.8 for GT LCO Action Statement time.	Loss OR potential loss of fuel clad 1.1.A.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine.	Loss or potential loss of any two fission product barriers 1.1.S.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND ANY of the following: • <u>Any</u> RCS Loss Indicators, Table 1 • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • <u>Any</u> PC Loss Indicators, Table 2 • Cannot maintain plant parameters within SRVTPLL, or PSP	A loss of any two fission product barriers and loss or potential loss of the third 1.1.G.1 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Drywell pressure response not consistent with LOCA conditions 1.1.G.2 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2, upscale high AND <u>Any</u> PC Loss Indicators, Table 2 1.1.G.3 1 2 3 Coolant activity GT 300 μCi/gm dose equivalent iodine AND <u>Any</u> RCS Loss Indicators, Table 1 AND either of the following: <u>Any</u> PC Loss Indicators, Table 2 OR Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP

TABL
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.2 Radiation Monitors	Fuel Clad Degradation 1.2.U.1 1 2 3 SJAE CONDSR OUTLET RAD HI-HI alarm (P602)	Loss OR potential loss of RCS 1.2.A.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Loss or potential loss of any two fission product barriers 1.2.S.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr	A loss of any two fission product barriers and loss or potential loss of the third 1.2.G.1 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr 1.2.G.2 1 2 3 Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr AND ANY of following: • Cannot maintain plant parameters within HCTL, SRVTPLL, or PSP. • Drywell pressure response not consistent with LOCA conditions. • Any PC Loss Indicators, Table 2

TAB
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
1 Reactor Fuel 1.3 Refueling Incidents	Unexpected decrease in water covering irradiated fuel assemblies 1.3.U.1 1 | 2 | 3 | 4 | 5 | def Uncontrolled water level decrease in the reactor cavity or SFP below the level of the weirs with all irradiated fuel assemblies remaining covered by water	Major damage to irradiated fuel OR loss of water level that has resulted or will result in the uncovering of irradiated fuel outside the RPV 1.3.A.1 1 | 2 | 3 | 4 | 5 | def HIGH alarm on ARM-RIS-1 (Fuel Pool ARM) resulting from an uncontrolled irradiated fuel handling process		
		Loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel 1.3.A.2 1 | 2 | 3 | 4 | 5 | def Water level, when not intentionally lowered, observed to be below the top of the gate sill separating the reactor cavity and the SFP 1.3.A.3 1 | 2 | 3 | 4 | 5 | def Report of visual observation of irradiated fuel uncovered or uncovering imminent.		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.1 RPV Water Level	RCS Leakage 2.1.U.1 1 2 3 Valid unidentified leakage GE 10 gpm or upscale high indicated on recorder EDR-FRS-623, Pen 1 (P632) (Non RCC) OR Valid identified leakage GE 25 gpm indicated on recorder EDR-FRS-623, Pen 2 (P632)	Loss OR potential loss of RCS 2.1.A.1 1 2 3 Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Loss or potential loss of any two fission product barriers 2.1.S.1 1 2 3 4 5 RPV level LT -161 inches (for ATWS conditions, RPV level LT -192") or cannot be determined	A loss of any two fission product barriers and loss of potential loss of the third 2.1.G.1 1 2 3 Entry into Severe Accident Guidelines 2.1.G.2 1 2 3 RPV level LT -161 inches, (for ATWS conditions, RPV level LT -192") or cannot be determined AND ANY of following: • Rapid unexplained decrease of PC pressure following an initial increase. • Drywell pressure response not consistent with LOCA conditions • Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
2 RPV 2.2 Reactivity Control	Inadvertent Criticality 2.2.U.1 2 3 4 5 An extended and unplanned sustained positive period observed on NIs, while NOT performing a reactor startup.	Failure of Reactor Protection System (RPS) instrumentation to complete or initiate a reactor scram AND manual scram was successful. 2.2.A.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Manual Actions (mode switch in shutdown, manual push buttons and ARI) result in reactor power LE 5%.	Failure of RPS instrumentation to complete or initiate an automatic reactor scram once a RPS setpoint has been exceeded AND manual scram was NOT successful 2.2.S.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND either: Reactor power GT 5% or unknown OR Wetwell temperature GT 110°F	Failure of the RPS to complete an automatic scram AND manual scram was NOT successful AND there is indication of an extreme challenge to the ability to cool the core. 2.2.G.1 1 2 Any RPS setpoint (including manual) has been exceeded per Technical Specification 3.3.1.1 AND RPS actuation failed to result in a control rod pattern which alone always assures reactor shutdown under all conditions AND Wetwell temperature cannot be maintained LT the HCTL

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.1 Primary Containment Pressure	Loss or potential loss of primary containment 3.1.U.1 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase	Loss or potential loss of either fuel clad or RCS 3.1.A.1 1 2 3 Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	Loss or potential loss of any two fission product barriers 3.1.S.1 1 2 3 Drywell pressure response not consistent with LOCA conditions 3.1.S.2 1 2 3 Rapid unexplained decrease of PC pressure following an initial increase AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell.	A loss of any two fission product barriers and loss or potential loss of the third 3.1.G.1 1 2 3 PC pressure exceeds PCPL
3.2 Wetwell Temperature/ Level	Loss or potential loss of primary containment 3.2.U.1 1 2 3 Cannot maintain plant parameters within SRVTPLL		Loss or potential loss of any two fission product barriers 3.2.S.1 1 2 3 RPV pressure and wetwell temperature cannot be maintained below HCTL	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.2 Wetwell Temperature/Pressure			Loss or potential loss of any two fission product barriers 3.2.S.2 1 | 2 | 3 | | | Cannot maintain plant parameters within SRVTPLL or PSP AND ANY of the following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell	

TABL
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
3 Primary Containment 3.3 Combustible Gas Concentration				A loss of any two fission product barriers and loss or potential loss of the third 3.3.G.1 1 2 3 PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
3.4 Containment Isolation Status	Loss or potential loss of primary containment 3.4.U.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists	Main steam line break outside containment with isolation 3.4.A.1 1 2 3 Indications of a MSL break AND MSIV closure <u>has isolated</u> the break	Loss or potential loss of any two fission product barriers 3.4.S.1 1 2 3 Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists. AND ANY of following: • Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr • Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell 3.4.S.2 1 2 3 Indications of a MSL break AND MSIV closure <u>has not isolated</u> the break	A loss of any two fission product barriers and loss or potential loss of the third 3.4.G.1 1 2 3 Intentional venting of Primary Containment to prevent failure.

TABLE
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
4 Secondary Containment 4.1 Reactor Building Temperature/ Radiation Levels			Loss or potential loss of any two fission product barriers 4.1.S.1 1 | 2 | 3 | | | Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures).	A loss of any two fission product barriers and loss of potential loss of the third 4.1.G.1 1 | 2 | 3 | | | Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (as defined in the Emergency Operating Procedures). AND ANY of the following: • Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr • RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches) or cannot be determined • Coolant activity GT 300 μCi/gm dose equivalent iodine

TAB

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.1 Offsite Release	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times ODCM limits for 60 minutes or longer 5.1.U.1 1 | 2 | 3 | 4 | 5 | def	Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological specifications for 15 minutes or longer 5.1.A.1 1 | 2 | 3 | 4 | 5 | def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 100 mrem TEDE OR 500 mrem thyroid CDE for the actual OR projected duration of the release 5.1.S.1 1 | 2 | 3 | 4 | 5 | def	Offsite dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mrem total effective dose equivalent OR 5000 mrem thyroid committed dose equivalent for the actual OR projected duration of the release using actual meteorology 5.1.G.1 1 | 2 | 3 | 4 | 5 | def
	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "UE" for GT 60 minutes 5.1.U.2 1 | 2 | 3 | 4 | 5 | def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Alert" for GT 15 minutes 5.1.A.2 1 | 2 | 3 | 4 | 5 | def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "Site Area" for GT 15 minutes 5.1.S.2 1 | 2 | 3 | 4 | 5 | def	A valid reading exists which exceeds or <u>is expected</u> to exceed Table 3 column "General" for GT 15 minutes 5.1.G.2 1 | 2 | 3 | 4 | 5 | def
	Offsite dose calculations indicate offsite dose rates GT Table 4 column "UE" OR Sample analysis indicates release GT 2 times ODCM 6.2.1.1 limits for GT 60 minutes	Offsite dose calculations indicate dose rates GT Table 4 column "Alert" OR Sample analysis indicates release GT 200 times ODCM 6.2.1.1 limits for GT 15 minutes	Offsite dose calculations indicate doses or dose rates GT Table 4 column "Site Area" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "Site Area"	Offsite dose calculations indicate doses or dose rates GT Table 4 column "General" OR Field survey or survey sample analysis indicates offsite dose rates GT Table 4 column "General".

TAB
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
5 Radioactivity Release 5.2 Area Radiation	Unexpected increase in plant radiation levels 5.2.U.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 5E3 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-20 thru ARM-RIS-30 • ARM-RIS-32 thru ARM-RIS-34 (High Range)	Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operation or to establish or maintain cold shutdown 5.2.A.1 1 | 2 | 3 | 4 | 5 | def Valid reading GT 15 mR/hr on ARM-RIS-19 (CR) OR Valid reading GT 1E4 mR/hr on ANY of the following ARMs: • ARM-RIS-4 thru ARM-RIS-18 • ARM-RIS-23 • ARM-RIS-24 • ARM-RIS-32 thru ARM-RIS-34 (High Range)		

TABLE 1
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
6 Electrical Failures 6.1 AC Power Loss	Loss of all offsite power to critical AC busses for greater than 15 minutes 6.1.U.1 1 2 3 4 5 def Power is unavailable to SM-7 and SM-8 from offsite AC sources GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.A.1 4 5 def Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Loss of all offsite power and loss of all onsite power to critical AC busses for greater than 15 minutes 6.1.S.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 GT 15 minutes	Prolonged loss of all offsite power and prolonged loss of all onsite power to critical AC busses 6.1.G.1 1 2 3 Complete loss of <u>all</u> AC power to SM-7 and SM-8 AND either of the following: In the judgement of the Emergency Director, AC power to either SM-7 or SM-8 is not likely to be restored within 4 hours OR RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
		Power capability to critical AC busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout. 6.1.A.2 1 2 3 Available emergency bus AC power has been reduced to only one of the following sources for GT 15 min • TR-N1 (SM-7 and/or SM-8) • TR-S (SM-7 and/or SM-8) • TR-B (SM-7 and/or SM-8) • DG-1 (SM-7) • DG-2 (SM-8)		
6.2 DC Power Loss	Degradation of all critical DC power for greater than 15 minutes. 6.2.U.1 4 5 def Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicated by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes		Degradation of all critical DC power for greater than 15 minutes 6.2.S.1 1 2 3 Degradation of <u>both</u> Division 1 and Division 2 critical DC voltage as indicted by bus voltage LT 110 VDC on <u>both</u> 125 V Dist. Panels S1-1 and S1-2 voltmeters (Bd. C) for GT 15 minutes	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.1 System Failures	Inability to reach required shutdown within technical specification limits 7.1.U.1 1 | 2 | 3 | | | Plant is not brought to required operating mode within T.S. LCO action statement time 7.1.U.2 1 | 2 | 3 | 4 | 5 | def Uncontrolled flooding in a safe shutdown building, Table 5, that has the potential to affect safety related equipment needed for the current operating mode	Inability to maintain plant in cold shutdown 7.1.A.1 | | | 4 | 5 | Inability to restore and maintain reactor coolant temp LT 200°F 7.1.A.2 1 | 2 | 3 | 4 | 5 | def Report by plant personnel confirming the occurrence of plant uncontrolled internal flooding in a safe shutdown building, Table 5 AND Affected safe shutdown system parameters indicate degraded performance		
7.2 Control Room Evacuation		Control room evacuation has been initiated 7.2.A.1 1 | 2 | 3 | 4 | 5 | The decision to evacuate the Control Room has been made.	Control room evacuation has been initiated, but plant control CANNOT be established 7.2.S.1 1 | 2 | 3 | 4 | 5 | CR evacuation initiated AND Control of plant equipment needed to maintain adequate core cooling cannot be established at either the Remote Shutdown Panel or Alternate Remote Shutdown panel within 15 minutes of the SRO in charge of the CR physically leaving the CR	

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Unplanned loss of most or all safety system annunciators or indication in the control room for greater than 15 minutes 7.3.U.1 1 | 2 | 3 | | | Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd. C associated with safety related equipment GT 15 minutes	Unplanned loss of most or all safety system annunciators or indications in the control room with EITHER: 1) a significant transient in progress; OR 2) Compensatory non-alarming indicators are unavailable 7.3.A.1 1 | 2 | 3 | | | Unplanned loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603, and Bd C associated with safety related equipment GT 15 minutes AND either of the following: A significant plant transient is in progress OR Compensatory non-alarming indications are <u>not</u> available (plant computer system and GDS)	Inability to monitor a significant transient in progress. 7.3.S.1 1 | 2 | 3 | | | Loss of <u>most</u> or <u>all</u> annunciators on P601, P602, P603 and Bd. C associated with safety related equipment AND Compensatory nonalarming indications are unavailable (process computer system and GDS) AND Significant transient in progress AND Loss of indications needed to monitor ANY of the following plant critical safety parameters: • Reactor power • RPV level • RPV pressure • Drywell pressure • Drywell temperature • Wetwell pressure • Wetwell/Drywell H2/O2 Concentrations • Wetwell level • Wetwell temperature • Radioactive Gaseous Effluents	
	Significant loss of onsite OR offsite communications capabilities 7.3.U.2 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following onsite communications capability: • Plant Public Address (PA) System • Plant Telephone System • Plant Radio System Operations and Security Channels			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
7 Equipment Failures 7.3 Loss of Indications/ Communications	Significant loss of onsite or offsite communications capabilities 7.3.U.3 1 | 2 | 3 | 4 | 5 | def Unplanned loss of ALL of the following offsite communications capability: • State/County Notification (CRASH) System • Offsite calling capability from the Control Room via direct telephone and fax lines • Long distance calling capability on the Plant ("2000") Switch and Kootenai (Plant Support Facility)/Deschutes (Plant Engineering Center) ("8000") Switch			

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.1 Security Threats	Confirmed security event which indicates a potential degradation in the level of safety of the plant 8.1.U.1 1 2 3 4 5 def Bomb device discovered within plant protected area <u>but</u> outside a Safe Shutdown Building, Table 5 OR Confirmed report of an attempted entry, sabotage or security threat that cannot be properly compensated for within 10 minutes	Security event in a Plant Protected Area 8.1.A.1 1 2 3 4 5 def Confirmed report of an intrusion by a hostile force into the Plant Protected Area	Security event in a Plant Vital Area 8.1.S.1 1 2 3 4 5 def Bomb device discovered or detonated within a Safe Shutdown Building, Table 5 OR Confirmed report of intrusion by a hostile force into a Safe Shutdown Building, Table 5	Security event resulting in loss of ability to reach and maintain cold shutdown 8.1.G.1 1 2 3 4 5 def Loss of physical control of the CR due to security event OR Loss of physical control of the remote shutdown capability due to security event
8.2 Fire/Explosion Caused by Equipment Failure	Fire within the Protected Area Boundary not extinguished within 15 minutes of detection OR an explosion within Protected Area Boundary 8.2.U.1 1 2 3 4 5 def Fire within or adjacent to any Safe Shutdown Building, Table 5, which is <u>not</u> extinguished within 15 minutes of either CR notification by plant personnel or receipt of an alarm OR Report by plant personnel of an unplanned explosion within the Protected Area boundary resulting in visible damage to permanent structures or equipment	Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown 8.2.A.1 1 2 3 4 5 def Confirmed fire or explosion in a safe shutdown building, Table 5 AND either of the following: Affected safe shutdown system parameters indicate degraded performance OR Report by plant personnel of visible damage to the affected safe shutdown building or equipment contained within the affected safe shutdown building		

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EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.3 Man-Made Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.3.U.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash into or projectile which impacts a Safe Shutdown Building, Table 5 8.3.U.2 1 | 2 | 3 Turbine failure resulting in casing penetration or damage to turbine or generator seals	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.3.A.1 1 | 2 | 3 | 4 | 5 | def Vehicle crash or projectile impact which impedes access to or damages equipment in a Safe Shutdown Building, Table 5 8.3.A.2 1 | 2 | 3 Missiles generated from a turbine failure have resulted in visible structural damage to or penetration of a safe shutdown building, Table 5		
	Release of toxic or flammable gases affecting the Protected Area Boundary deemed detrimental to safe operation of the plant. 8.3.U.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for evacuation or shelter of site personnel based on offsite event	Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. 8.3.A.3 1 | 2 | 3 | 4 | 5 | def Report or detection of toxic or flammable gases within a safe shutdown building, Table 5, in concentrations that will be life threatening to plant personnel or impede access to equipment needed for safe plant operation.		

TAB

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.1 1 2 3 4 5 def	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.1 1 2 3 4 5 def		
	MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake 8.4.U.2 1 2 3 4 5 def	OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake 8.4.A.2 1 2 3 4 5 def		
	Weather Service projected winds GT 80 mph OR CR measured winds GT 61 mph (15 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary 8.4.U.3 1 2 3 4 5 def	Weather Service projected winds GT 100 mph OR CR measured winds GT 70 mph (15 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5 8.4.A.3 1 2 3 4 5 def		
	Range fires near the plant which threaten to reduce the level of safety	Ash fallout from volcanic activity is severe enough to warrant plant shutdown		

TAB[illegible]

EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
8 Hazards 8.4 Natural Events	Natural and destructive phenomena affecting the Protected Area Boundary 8.4.U.4 1 | 2 | 3 | 4 | 5 | def Visible ash fallout from volcanic activity 8.4.U.5 1 | 2 | 3 | 4 | 5 | def River level increase which threatens to flood the river pumphouse	Natural and destructive phenomena affecting Safe Shutdown Buildings 8.4.A.4 1 | 2 | 3 | 4 | 5 | def Report by plant personnel of an event causing visible structural damage to a safe shutdown building, Table 5		

TAB[illegible]
EMERGENCY CLASSIFICATION INITIATING CONDITIONS

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Other 9.1 Other	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Unusual Event. 9.1.U.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, events are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of an Alert. 9.1.A.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, events are in progress or have occurred which indicate actual or potential substantial degradation of the level of safety of the plant	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a Site Area Emergency 9.1.S.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public	Other conditions existing which, in the judgement of the Emergency Director, warrant declaration of a General Emergency 9.1.G.1 1 | 2 | 3 | 4 | 5 | def In the judgement of the Emergency Director, other conditions exist which indicate either of the following: Actual or imminent substantial core degradation or melting with the potential for loss of containment integrity OR Potential for uncontrolled radionuclide releases which can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary
	Loss OR potential loss of Primary Containment 9.1.U.2 1 | 2 | 3 <u>Any</u> event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment as indicted by Fission Product Barrier Degradation Table, Table 6	Loss OR potential loss of fuel clad or RCS 9.1.A.2 1 | 2 | 3 <u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier as indicted by Fission Product Barrier Degradation Table, Table 6	Loss or potential loss of any two fission product barriers 9.1.S.2 1 | 2 | 3 <u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of any two fission product barriers as indicted by Fission Product Barrier Degradation Table, Table 6	A loss of any two fission product barriers and loss or potential loss of the third 9.1.G.2 1 | 2 | 3 <u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third as indicated by Fission Product Barrier Degradation Table, Table 6

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	Wetwell pressure exceeds PSP PC pressure exceeds PCPL
<u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		<u>Any</u> event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		<u>Any</u> event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

Table 1 RCS Barrier Loss Indicators
• Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr
• RPV level LT -161 inches (for ATWS conditions, RPV level LT-192 inches)
• Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell

Table 2 PC Barrier Loss Indicators
• Rapid unexplained decrease of PC pressure following an initial increase
• Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 3

Table 3 Effluent Monitor Classification Thresholds				
Monitor	UE	Alert	Site Area	General
NOTE: If a dose projection cannot be performed, and the monitor reading is sustained for longer than the specified time then the declaration must be made based on the valid reading.				
	60 minutes	15 minutes	15 minutes	15 minutes
PRM-RE-1B Reactor Bldg. Exhaust Inter.	1.35E4 cps	N/A	N/A	N/A
PRM-RE-1C Reactor Bldg. Exhaust Hi	N/A	1.14E3 cps	9.65E3 cps	9.35E4 cps
TEA-RIS-13 Turbine Bldg. Exhaust. Low	1.7E4 cpm	4.4E4 cpm	4.4E5 cpm	N/A
TEA-RIS-13A Turbine Bldg. Exhaust, Int.	N/A	N/A	N/A	11 PMU
WEA-RIS-14 Rad Waste Bldg. Exhaust	1.2E5 cpm	1.7E5 cpm	1.7E6 cpm	N/A
WEA-RIS-14A Rad Waste Bldg. Int.	N/A	N/A	N/A	29 PMU
TSW-RIS-5 TSW Effluent	3.9E3 cpm	3.9E5 cpm	N/A	N/A
FDR-RIS-606 Rad. Waste Effluent	2 x Hi-Hi alarm	200 x Hi-Hi alarm	N/A	N/A
SW-RIS-604 SW 'A' Process	2.0E2 cps	2.0E4 cps	N/A	N/A
SW-RIS-605 SW 'B' Process	2.0E2 cps	2.0E4 cps	N/A	N/A

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

TABLES 4 & 5

cps = counts per second   cpm = counts per minute   PMU = panel meter units   N/A = not applicable (outside of meter range)

Table 4 Offsite Dose Calculation/Field Survey Sample Analysis Classification Thresholds at 1.2 miles

	UE	Alert	Site Area	General
TEDE	N/A	N/A	100 mrem	1000 mrem
CDE Thyroid	N/A	N/A	500 mrem	5000 mrem
TEDE rate	0.1 mrem/hr	10 mrem/hr	100 mrem/hr (projected GT 60 min)	1000 mrem/hr (projected GT 60 min)
CDE Thyroid rate	0.3 mrem/hr	50 mrem/hr	500 mrem (for GT 1 hr inhalation)	5000 mrem (for GT 1 hr inhalation)

Table 5 Safe Shutdown Buildings

- Vital portions of the RadWaste/Control Building
- Reactor Building
- Vital portions of the Turbine Building
- Standby Service Water Pump Houses
- Diesel Generator Building
- Diesel Generator Fuel Oil Storage Area

COLUMBIA GENERATING STATION EMERGENCY CLASSIFICATION TABLE

TABLE 6 FISSION PRODUCT BARRIER DEGRADATION TABLE

Fuel Clad Loss	Fuel Clad Potential Loss	RCS Loss	RCS Potential Loss	PC Loss	PC Potential Loss
Coolant activity GT 300 μCi/gm dose equivalent iodine	RPV level LT -161 inches	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 70 R/hr	Total RCS leakage GT 30 gpm inside PC or EDR-FRS-623, Pen 2 upscale high	Rapid unexplained decrease of PC pressure following an initial increase	Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 14,000 R/hr
Containment Radiation Monitor CMS-RIS-27E and CMS-RIS-27F reading GT 3,600 R/hr		RPV level LT -161 inches	Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1, "Secondary Containment Control")	Drywell pressure response not consistent with LOCA conditions	PC H_2 and O_2 concentrations GT 6% H_2 and 5% O_2
Entry into Severe Accident Guidelines		Drywell pressure GT 1.68 psig with indications of RCS leakage inside drywell		Failure of containment isolation valves (LCS Table 1.6.1.3-1) in any one line to close following auto or manual initiation AND downstream pathway outside primary containment exists OR Unisolable primary system discharging outside PC resulting in any area temperature or radiation level above Maximum Safe Operating Values (PPM 5.3.1,"Secondary Containment Control")	Entry into Severe Accident Guidelines Loss of pressure suppression function Cannot maintain plant parameters within HCTL or SRVTPLL Wetwell pressure exceeds PSP
				Intentional venting per PPM 5.2.1, "Primary Containment Control"	PC pressure exceeds PCPL
Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the fuel clad barrier		Any event, in the judgement of the Emergency Director, that could lead or has led to a loss or potential loss of the RCS barrier		Any event, in the judgement of the Emergency Director, that could lead to or has led to a loss or potential loss of primary containment barrier	

TABLE 4-2
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Energy Northwest:				
Technical Support Center	N,R	A	A	A
Operations Support Center	N,R	A	A	A
Security Communications Center	A	A	A	A
Emergency Operations Facility	N,R	A	A	A
Joint Information Center (Energy Northwest Richland Office Complex)	N,R	A	A	A
County:				
Benton Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
Benton and Franklin County Sheriffs[1]	N,R	A	A	A
County:				
Franklin Emergency Operations Center	N	A	A	A
Emergency Dispatch Center	N	A	A	A
State:				
Washington State Emergency Management	N	A	A	A
Oregon State[2] Department of Energy	N	N	A	A

A = Activate N = Notify for information only R = Respond if requested

[1] Notified by Benton County or Franklin County, as appropriate, Emergency Dispatch
[2] Notified by Washington State

TABLE 4-2 (Cont'd.)
NOTIFICATION OF PRINCIPLE
EMERGENCY RESPONSE ORGANIZATIONS

Agency	Unusual Event	Alert	Site Area Emergency	General Emergency
Federal:				
Nuclear Regulatory Commission	N	N	A	A
U.S. Coast Guard		R	N,A	A
Federal Emergency Management Agency	N	N,R	A	A
Department of Energy Richland (will notify and activate DOE contractors)	N	N,R	A	A
Support Services:				
Siemens Corporation	R	R	N,R	N,R
General Electric	R	R	N,R	N,R
Institute of Nuclear Power Operations		N	N,R	N,R
American Nuclear Insurers		N	N,R	A
Northwest Health Services	R	R	N,R	N,R
Hospitals	R	R	R	R
BPA Substation	N	N	N	N

A = Activate N = Notify for information only R = Respond if requested

SECTION 5
ACCIDENT ASSESSMENT AND PROTECTIVE RESPONSE

5.1 ASSESSMENT ACTIONS, PLANT INSTRUMENTATION, AND RADIOLOGICAL MONITORING

Effective coordination and direction of all elements of the emergency response organization requires that accident assessment be continued throughout the emergency. Using plant instrumentation and radiological monitoring, each emergency class invokes similar assessment methods. The magnitude of the assessment actions posed by each classification varies. An important focus of assessment actions is to track the ability of plant systems to contain the core inventory of radioactive material (i.e., radionuclides) and to monitor whether the potential exists for accidental release of this material into the environment. Assessment actions also include determining the consequences of a radioactive material release on both a projected and actual basis.

For the Unusual Event classification level, assessment actions will generally involve situations that do not pose a threat to containment of the reactor core's radioactive material. Usually, declaration of an emergency classification will result from alarms, instrument readings, severe weather warnings, operating experience, or any combination thereof. Continuing assessment for an Unusual Event category of emergency will consist of the normal monitoring of Control Room and plant instrumentation and status. Tornado and severe weather assessment actions consist of keeping in contact with the load dispatcher and appropriate public authorities. If a fire prompted the declaration of an Unusual Event, the Fire Brigade Leader will go to the fire location, make continuing assessments, and report to the Shift Manager on whether offsite fire fighting support is required.

Once an incident has been classified as an Alert, assessment actions will include:

a. Increased surveillance of in-plant instrumentation.

b. If possible, the dispatching of shift personnel to the identified problem area to confirm and visually assess the problem.

c. The dispatching of personnel to monitor for possible releases, and to confirm the correct classification.

d. If a radiological incident is occurring, surveillance of the in-plant instrumentation necessary to obtain meteorological and radiological data required for calculating or estimating projected offsite doses will occur. Dose assessment activity will continue until termination of the emergency so that assessment updates may be provided to all concerned offsite agencies and to the Emergency Director. Emergency Plan Implementing Procedures are provided to allow a rapid, consistent projection of offsite doses.

Assessment actions for the Site Area Emergency and General Emergency category are similar to the actions for an Alert. However, due to the increased magnitude of the possible release, assessment activity of greater scope will occur. The personnel necessary for this assessment effort will be provided by full mobilization of the onsite and offsite emergency response organizations. The assessment actions at these levels will include:

a. An increased amount of plant instrumentation will be monitored. (In particular, indications of core status, e.g., saturation temperature, core covery/uncovery indications etc.)

b. Radiation monitoring efforts will be greatly increased. Field Monitoring Teams will be available for dispatch. Beta-gamma field measurements will be performed; air sampling, environmental thermoluminescent dosimeter (TLD) change out, and collection of environmental media for assessment of material transport and deposition will be performed as necessary.

c. Dose assessment activities will be performed more frequently, with an increased emphasis on dose projection for use as a factor in determining necessary protective actions. Radiological and meteorological instrumentation readings will be used to project the dose rate at predetermined distances from the plant, and to project the potential integrated dose.

   In reporting the dose projections to the Emergency Director, the dose rate, dose, and basis for the time used for the dose estimate should be provided. Confirmation of dose rates by Field Monitoring Teams will be reflected in reports or revised dose estimate information provided to offsite agencies.

   All dose projections will be performed in accordance with the Emergency Plan Implementing Procedures which incorporate recommendations found in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." Reports to offsite authorities will include the relationship of dose to these guidelines. Emergency Plan Implementing Procedures provide for the recording of pertinent information.

Detailed plant operating procedures are available for use during emergencies, as well as during normal operations. Specific Emergency Operating Procedures and Abnormal Condition Procedures are provided to assist the Control Room operators in placing the plant in a safe condition and taking corrective actions.

5.1.1 Plant Instrumentation

Plant instrumentation measures appropriate parameters that are indicative of the status of various plant systems and the reactor. Instrumentation used to ensure safe reactor operation is deemed safety related. An important group of safety related parameters is commonly referred to as the Safety Parameter Display System (SPDS). The purpose of this system as outlined in NUREG-0696, is to help Control Room personnel make quick assessments of plant safety status. At Columbia Generating Station, the SPDS is made up of hard wired Control Room instrumentation. This instrumentation is sufficiently concentrated in the Main Control Room to allow rapid assessment of plant conditions. Additional information that is useful for emergency response is supplied by the Graphic Display System (GDS) which is part of SPDS. The SPDS provides information related to assessment of the following plant functions:

- Reactivity control,
- Reactor core cooling and heat removal,
- Reactor coolant system integrity,
- Radioactivity control, and
- Containment integrity.

The SPDS and other post-accident monitoring instrumentation provide the means to assess plant status during and following an accident. For more detailed information on plant instrumentation, refer to the Final Safety Analysis Report, Chapter 7.

The structures, systems, components and instrumentation important to safety at Columbia Generating Station are designed and located to minimize the probability and effect of fires and explosions, as well as to withstand the effects of natural phenomena such as earthquakes, tornadoes, and floods without the loss of capability to perform their safety functions.

Facilities and equipment for detecting, annunciating, and extinguishing fires are provided to protect both plant and personnel. These include fire detection and alarm systems, deluge water spray systems, dry and wet pipe sprinkler systems, carbon dioxide systems, hose stations, portable fire extinguishers, and halon flooding systems. In addition, noncombustible and heat resistant materials are used wherever practical throughout the Plant, particularly in locations such as the containment and Control Room. For more detailed information on the fire protection systems, refer to the Columbia Generating Station Fire Protection Evaluation.

The Plant site is near the Columbia River, which is the predominant hydrologic feature of the area. The elevations of safety related systems and components, however, are sufficient to protect the Plant against design basis flood conditions. All safety related structures, systems and components are also designed to withstand the effects of an earthquake, estimated as the maximum earthquake potential for this area. Instrumentation used to monitor earthquake seismic motion at Columbia Generating Station complies with Regulatory Guide 1.12 requirements and provides both a printout and an alarm annunciation if certain levels of seismic motion are detected. For more detailed information on tornado, flood and earthquake protection, refer to the Final Safety Analysis Report, Chapter 3. If needed as backup, flood information can be obtained from the U.S. Coast Guard and seismic information can be obtained from the Department of Energy, Richland Operations. Both agencies are listed in the Emergency Phone Directory.

5.1.2 Radiological Monitoring Instrumentation

The plant radiation monitoring instrumentation is used to provide information in regard to general area radiation levels as well as the radiation levels in process and effluent streams, i.e., fluids in piping systems or air in ventilation systems. The area radiation and airborne radioactivity monitoring systems are comprised of area monitoring components located throughout the plant. Under normal operating conditions, the area monitors warn personnel both locally and remotely of increasing radiation levels. These monitors provide information to assessment personnel so that decisions can be made with respect to deployment of personnel or initiation of protective actions in the event of a radiation accident. For more detailed information on the area radiation and airborne radioactivity monitoring systems, refer to the Final Safety Analysis Report, Chapter 12.

The process and effluent radiological monitoring and sampling systems provide the means for sampling and continuously monitoring paths by which significant amounts of radioactivity could be released to the environment during normal operation and anticipated operational occurrences. As part of the plant radiological monitoring program, the process and effluent radiological monitoring and sampling systems assist in limiting effluent radioactivity to within the limits of 10CFR 20 and 10CFR 50, Appendix I and provide measurement for reporting radioactivity released to the environs in compliance with Regulatory Guide 1.21. These systems also provide the accident radiation monitoring required for compliance with NUREG-0737. Portions of these systems are also employed during postulated accident conditions for monitoring effluent discharge paths, and initiating automatic control features. A detailed description of the process and effluent monitoring and sampling systems is included in the Final Safety Analysis Report, Chapter 11.

5.2 METEOROLOGICAL AND ENVIRONMENTAL MONITORING

5.2.1 Meteorological Monitoring System

The primary onsite meteorological equipment includes a 240-foot tower with a 5 ft. wind mast located approximately 1700 feet west of Columbia Generating Station and provides data to Columbia Generating Station. System measurements include wind speed, wind direction, sigma theta, temperature, dew point, barometric pressure, precipitation, and temperature differential. The Operational Meteorological Program is described in Chapter 2 of the Final Safety Analysis Report.

Wind speed, wind direction, and temperatures, except the temperature at 245 feet, are available in the control room as near real-time digital displays, (15-minute averages). The averaged data is sent via the supervisory system to the Control Room. The data is then sent to chart recorders and the PPCRS computer. The data is also accessible at the Emergency Operations Facility, the Technical Support Center, and the control room via the plant computer system.

Backup meteorological information consists of wind speed and direction, temperature, dew points, and sigma theta parameters. This and other information is available from backup instrumentation located on the Met Tower or from appropriate offsite sources such as Pacific Northwest National Laboratory (PNNL) or the National Weather Service, for 15-minute averaging (manual) and input to the computer systems.

The outputs of the primary tower sensors are fed to the plant process computer for 15 minute averaging for input to the Emergency Dose Projection System (EDPS). Error diagnostics, simulated data entry, and archiving are performed concurrently. Near real time access for both emergency and routine operations is thus provided.

A procedure shall be available for the use of normal and backup meteorological data.

5.2.2 Radiological Environmental Monitoring Program

A routine radiological environmental monitoring program is established in accordance with the Offsite Dose Calculation Manual (ODCM) requirement. Energy Northwest activities include air, milk, water, garden produce, fish, soil and sediment sampling, and thermoluminescent dosimeter (TLD) placement. Energy Northwest environmental monitoring locations are similar to Figure 5-1 and are fully listed in Section 5.0 of Energy Northwest ODCM.

In case of an emergency at Columbia Generating Station, TLDs will provide a time integrated exposure record. Permanent TLD stations are located within the Ten-Mile Emergency Planning Zone, around the Exclusion Area Boundary, and at various points of interest around the Hanford Reservation and across the Columbia River in Franklin County. A control station is located near Grandview, approximately 30 miles southwest of the site. Exchange frequency during normal operations is quarterly; however, during an emergency the TLDs may be exchanged more frequently based on release conditions. In addition, continuous air samplers are located within the Ten-Mile Emergency Planning Zone. The air samplers collect airborne radioiodines and particulates on filters which are analyzed either in the field or at the radiological laboratory in the Emergency Operations Facility.

5.3 OFFSITE DOSE PROJECTIONS

5.3.1 Source Term Determinations

Release data, such as volumetric flow rates and gross radiation levels, in conjunction with calibration factors and time dependent nuclide ratios, will be utilized during an accident to assess the radiological source term. Capability exists on shift to perform dose assessment projections using real time meteorological and effluent monitor data at all times. Data from instrumentation in the airborne effluent release pathways are available to be entered into the Emergency Dose Projection System (EDPS) to calculate the source term. A more detailed assessment of the isotopic composition of the release will be determined by laboratory analysis of effluent and field sampling media. Methods for determining release rate in the event the instrumentation is offscale or inoperative are contained in the Emergency Plan Implementing Procedures.

5.3.2 Emergency Dose Projection System

The Emergency Dose Projection System (EDPS) consists of 2 programs, QEPDS and EDPS Main. Both programs are accessed via personal computer. Both programs rely on a precalculated, real time, site-specific relationship between effluent monitor readings and on-site and offsite dose rates.

QEDPS is designed for rapid evaluation of a release with restricted data input and a straight-line dispersion model. QEDPS provides incremental dose projections from the site boundary out to 10 miles. QEDPS is available in the Control Room, TSC, EOF, and Alternate EOF, and provides text and map output. Field Team data may be used to calculate dose projections or validate previous projections.

Having the QEDPS software loaded on multiple, stand-alone computers located in the Control Room and EOF ensures backup dose projection capability.

EDPS Main is designed to accept much more detailed inputs for a more thorough release evaluation with more extensive text and graphical output. EDPS Main has the choice of puff or straight-line dispersion models and incremental dose projections from the site boundary out to 10 or 50 miles. EDPS Main has a graphical map output as well as a text output of the dose projection. EDPS Main is available in the TSC and EOF.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

5.3.3 Total Population Exposure

The Columbia Generating Station plant data systems collect and maintain files of effluent flow, radiation monitor readings, and 15-minute average meteorology data. These data are manually input into a joint frequency program, into the XOQDOQ program, and then to the GASPAR II computer code to calculate total population dose for occupied areas. The GASPAR II code can be adapted to emergency operations by input of short term atmospheric dispersion factors and appropriate exposure pathway parameters out to 50 miles.

5.4 FIELD MONITORING

5.4.1 Environmental Field Teams

Field monitoring capabilities will be activated whenever an Alert classification occurs. Field monitoring will be performed by environmental field teams that have been selected and trained to perform these duties.

Sufficient personnel are identified within Energy Northwest and outside assistance agencies to maintain 24-hour shift coverage if needed for an extended period. Energy Northwest maintains sufficient dedicated equipment to adequately equip four Energy Northwest environmental field teams.

Field team members responding during offshift hours will report to their emergency duty station within 60 minutes. Field team deployment time from their emergency duty station will be as needed, and can be achieved in less than 30 minutes. This is based on the time necessary to brief the team, load equipment, and depart the staging area. This deployment time could be shorter during normal work hours when field team personnel are more available and could respond sooner than the 60 minute required response time.

Field monitoring will concentrate in the downwind area from the plant. Locations used during the normal environmental monitoring program will be used as preselected monitoring points when applicable (Figure 5-1).

5.4.2 Aerial Monitoring

Aerial monitoring may be used to locate a plume in a delayed or extended release, or to identify areas of radioactive deposition following a release. Aerial monitoring capability is available through federal emergency resources. The decision to employ aerial monitoring will be made by representatives of the Washington Department of Health, Oregon Department of Health, US Department of Energy, and Energy Northwest. Any request for federal resources to conduct aerial monitoring will be directed through the Washington State Emergency Operations Center (EOC).

5.4.3 Environmental Field Team Kits

Environmental field team monitoring kits are maintained in a state of readiness. Additional supplies and equipment are available to replace equipment out of service for repair and recalibration. Equipment in the calibration laboratory provides an additional resource. Appendix 3 provides lists of equipment and their location.

5.4.4 Radioiodine Determinations

Environmental air samples are analyzed for particulate and radioiodine concentrations. Analysis of particulate filters and iodine sampling cartridges are performed using a portable count rate meter. Procedures concerning sampling time and field analysis techniques are established to measure airborne radioiodine concentrations as low as 10^{-7} microcuries per cubic centimeter under field conditions.

5.4.5 Laboratory Capability

Laboratory analysis of environmental field samples can be conducted at Energy Northwest facilities as described in Section 6.2.8 of this Plan. In addition, the States of Oregon and Washington both maintain laboratories under the direction of their respective Departments of Health. These laboratories have the capability to identify, both qualitatively and quantitatively, the constituent elements that might be contained in radiological releases from Columbia Generating Station during a nuclear incident. Following such an event, samples of air, drinking water, milk, pasture and other agricultural products would be obtained by field teams and brought to the labs for analysis. The results of this analysis would then be used to determine the existence of radiological hazards in food products. The specific capabilities of the state laboratories are evaluated by FEMA.

5.5 PROTECTIVE ACTION AND RESPONSIBILITIES

The appropriate protective actions for an airborne release of radioactive material are evacuation and sheltering. The decision to evacuate or shelter is based on the dose to be avoided by the protective action relative to the risk associated with implementing a protective action. Dose to be avoided by a protective action can be affected by duration and quantity of radioactive release as well as time of release relative to time of implementation of the protective action. Protective Action Guides, discussed in Section 5.5.1, provide pre-planned guidance for making response decisions. When applied with professional judgement, they help to ensure rapid action to protect members of the public. Specifically:

a. Evacuation - Evacuation and control of access to an affected area can be the most effective protective action for reducing the dose to the public. However, constraints such as severe weather conditions, obstruction of roads, and limited time may impact the benefits of evacuation.

b. Sheltering - Sheltering in buildings with windows and doors closed and ventilation turned off can provide partial protection from a passing radioactive plume. The extent of the protection depends on the duration and isotopic mixture of the release and the type of building.

The provisions for relating measured parameters to dose rates for key isotopes and for estimating integrated dose from projected and actual dose rates shall be described in procedures.

5.5.1 Recommendations to Counties, States and Department of Energy-Richland Operations (RL)

Energy Northwest will make prompt recommendations for protective actions to state, county and DOE-RL officials. These officials will make decisions on the specific actions to be implemented in their jurisdiction.

Protective Action Recommendations (PARs) will be made based on plant or radiological conditions. Recommendations for evacuation and sheltering of certain areas are required upon classification of a General Emergency without regard to whether a radiological release is occurring. If plant conditions and a radiological release both warrant PARs, the most conservative recommendation will be made.

Shelter, evacuation or access control guidelines are based on the EPA Protective Action Guidelines and NUREG-0654 Supplement 3 recommendations.

The preferred initial action to protect the public from a severe reactor accident is to evacuate immediately about two miles around the plant and 10 miles downwind unless other conditions make evacuation dangerous. Persons in the remainder of the plume zone should be directed to stay indoors and listen to EBS/EAS broadcasts while the situation is evaluated further.

Travel conditions that may present extreme hazard may prompt offsite officials to recommend shelter until conditions improve. Shelter may also be appropriate for special, transit-dependent populations, or during controlled, short duration releases of radioactivity.

Plant and offsite officials will continue to assess plant conditions to determine additional protective actions. These protective actions should be based on field monitoring data and dose projections that indicate EPA PAGs may be exceeded in areas beyond those that have been evacuated.

5.5.2 Energy Northwest Responsibilities

Primary responsibilities of Energy Northwest associated with offsite area protective actions are to:

a. Provide the best possible effort to resolve the emergency onsite, thus alleviating the offsite condition.

b. Notify the affected county, DOE, and state officials responsible for Protective Action Decisions of the emergency condition and provide the best possible information, recommendations, and support services.

c. Coordinate Energy Northwest actions with those of federal, state, and local agencies involved in implementing protective actions.

d. Ensure that all required agencies are advised of the protective actions recommended and provided periodic updates.

5.6 POPULATION DISTRIBUTION

Figures 5-3 and 5-4 present the compass sector population estimates for the Columbia Generating Station site. Estimates for the Ten-Mile Emergency Planning Zone were acquired from population surveys conducted by the Benton and Franklin County Offices of Emergency Management. The transient industrial worker populations on the Hanford Site have been updated by the appropriate facilities. Transient recreationist figures for the Columbia River and Horn Rapids areas were updated through contacts with local representatives of the Washington Department of Fisheries and the Washington Department of Wildlife.

5.6.1 Permanent Residents

Permanent residents include all persons residing in the area. In 2000 an estimated 3,674 people were living within the Ten-Mile Emergency Planning Zone. The nearest inhabitants occupy farms which are located east of the Columbia River and are thinly spread over five compass sectors. There are no permanent residents located within three miles of the site. About 289 persons reside between the three-mile and the five-mile radii; these are all located east of the Columbia River. Of the 3,674 people residing in the Ten-Mile Emergency Planning Zone, about 2,524 live in Franklin County and about 1,150 in Benton County.

There are no significant changes in land use expected in Franklin County over the next several years. As it is currently irrigated to about the maximum amount practicable, little population increase is foreseen. No significant change in land use on the Hanford Reservation is expected, and no foreseeable population will reside there. The unincorporated area near the Horn Rapids Dam on the Yakima River in the SSW sector is expected to be the primary growth area within the Ten-Mile Emergency Planning Zone. Population growth within the Ten-Mile Emergency Planning Zone is projected to be about 6% per annum.

5.6.2 Transient Population

The transient population is divided into three main subgroups: 1) industrial employees, 2) migratory agricultural workers, and 3) recreationists. Figure 5-4 illustrates this population location graphically.

Industrial employees in the Ten-Mile EPZ total 7,017. Most are located in Benton County and form the main population to be evacuated. About 995 industrial employees work at Columbia Generating Station, and Energy Northwest Kootenai and Deschutes Buildings.

Industrial employment in the Ten-Mile Emergency Planning Zone includes:

WNP-1 (Energy Northwest & Non-Energy Northwest personnel) (12/00)	120
Ashe Substation (12/00)	21
Energy Northwest's Columbia Generating Station (12/00 Operational dayshift value)	560
Energy Northwest's Deschutes Building (12/00)	312
Energy Northwest's Kootenai Building (12/00)	123
DOE 400 Area (FFTF, Fast Flux Test Facility) (12/00)	371
Framatome ANP (12/00)	750
Allied Technology Group (12/00)	230
Hearth Melting (12/00)	75
Richland City Dump (12/00)	6
Hammer and Law Enforcement Training Center (12/00)	69
DOE 300 Area (12/00)	1,631
DOE 3000 Area, (Battelle and other contractors in POB area) (12/00)	486
Pacific Northwest National Laboratory (12/00)	2,263
TOTAL	7,017

The majority of these employees work day shift, but there may be some back-shift workers in the DOE figures. Credit is not deducted from the population values due to emergency personnel remaining in place. Therefore, the planning figure of 7,017 to be evacuated is conservatively high.

There are up to approximately 5,135 migrant farm workers in the Ten-Mile Emergency Planning Zone. This figure may be high due to the possibility of double counting during the different harvest periods. The peak season for these workers is May and June; the next highest employment season is during the fall harvest. These workers consist of both permanent and temporary residents of the Tri-Cities area, some living within the Ten-Mile Emergency Planning Zone. The numbers shown on Figure 5-4 and Table 5-1 reflect their work locations in Franklin County within the Ten-Mile Emergency Planning Zone, not their residences.

Recreationists, consisting of hunters, fishermen and boaters, enjoy activities mainly along the east bank of the Columbia river. The primary fishing season is from June through November; the main hunting season being October through January. The heaviest use of the area by recreationists is on weekends and holidays in the early morning hours. On the average, 52 fishermen and 80 hunters are present in Franklin County during the weekdays. This increases to about 155 fishermen and 200 hunters on weekends and holidays. Recreationists also use the Yakima River with an estimated maximum of 42 at any time in this area. During peak fishing or hunting times, up to 1,275 fishing and hunting recreationists may be located within the Ten-Mile Emergency Planning Zone. Of these, 1,233 are assigned to Franklin County and 42 to Benton County.

The main concentration of recreationists consists of fishermen located just south of the Ringold Fish Hatchery spillway on the Franklin County side of the Columbia River. Hunting consists of both water fowl, hunted at the Wahluke Hunting Area on the Franklin County side of the Columbia River, and upland game birds, hunted inland on the farm land of Franklin County. Up to 600 recreationists may be located around the Ringold Fish Hatchery and the Wahluke Hunting Area and the rest distributed inland.

An additional recreation attraction is in the south section of the Ten-Mile Emergency Planning Zone in Benton County as an Off-Road Vehicle Park (ORV). As many as 1,500 participants and spectators may be present during an event. Thus, a maximum total of 2,775 recreationists may be located within the Ten-Mile Emergency Planning Zone. Additional provisions have been made for the Horn Rapids housing development and golf course.

5.6.3 Special Facility Population

There are no individuals within the Ten-Mile Emergency Planning Zone confined to facilities such as hospitals, nursing homes, or penal institutions. There are four schools, the Edwin Markham Elementary School, the Country Haven Academy, the Country Christian Center, and the Big River Country School, with a total enrollment of approximately 575 (students and faculty). Most of the students live within the Ten-Mile Emergency Planning Zone.

5.7 EVACUATION ROUTES AND ASSISTANCE CENTERS

5.7.1 Public Evacuation Routes

The Benton County Fixed Nuclear Facility Response Plan and the Franklin County Radiological Columbia Generating Station Response Plan (referred to in Appendix 1) contain information concerning evacuation routes and assistance centers for personnel who would be evacuated from the Ten-Mile Emergency Planning Zone. See Figure 5-5 for Assistance Center locations.

5.7.2 Site Evacuation Routes

Several evacuation routes are available to site personnel. These are shown in Figure 5-5 and include:

a. Route 4 South - This four-lane road leads southeast from the site to Richland and is the main route from the plants.

b. Route 10 South - A two-lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads on into Richland.

c. Route 4 South - A two-lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.

d. Route 2 South - A two-lane road leading north from the plants, intersecting with Highway 240 and Highway 24 to Yakima.

All of these roads have an expected vehicle capacity of between 1200 and 1800 vehicles per lane per hour.

5.7.3 Plant and Nearby Facilities Evacuation

Radiological conditions may dictate evacuation of the plant and nearby facilities. If an evacuation of the plant is ordered by the Emergency Director, plant personnel, visitors, and contract personnel other than those with emergency functions will evacuate plant areas. Procedures and equipment are provided to immediately determine the habitability of the area. Preliminary surveys will also be made to determine the contamination or exposure status of personnel and identify those individuals needing decontamination.

For a Site Area Emergency or General Emergency, personnel within the Protected Area may be evacuated to the Kootenai Building (PSF) or the Energy Northwest Office Complex, for monitoring or decontamination as necessary. Procedures provide for personnel accountability and assessment of contamination/exposure status. Personnel that do have assigned emergency functions will proceed to their emergency center.

Non-essential personnel in the Exclusion Area will be evacuated as needed at a Site Area Emergency or General Emergency. They will be directed to go home if radiological contamination concerns do not exist, otherwise they will be directed to the Energy Northwest Office Complex (or other area as appropriate and designated by procedure). Personnel assigned emergency functions will proceed to their emergency center.

5.7.4 Radiological Monitoring and Decontamination of Personnel

Personnel will be monitored for contamination prior to leaving the plant if conditions permit. Whole body friskers and portable detectors are available at the plant exit. Personnel decontamination facilities in the plant include showers, sinks, and cleaning agents. Decontamination capabilities for emergency purposes are also available at the Kootenai Building, at remote decontamination locations, and for injured personnel at the Hanford Environmental Health Foundation Emergency Decontamination Facility in Richland.

For the general population, monitoring will be conducted under provisions of the Benton County Fixed Nuclear Facility Response Emergency Plan and the Franklin County Radiological Response: Energy Northwest plan. Emergency Worker/Assistance Centers (EWAC) are identified for the monitoring of personnel leaving the affected sectors of the 10 mile EPZ. Personnel evacuated from affected segments of the Columbia River will be monitored when necessary at a location along the river. The Washington State Department of Health will be in charge of the monitoring and decontamination effort.

5.7.5 Personnel Accountability

Personnel accountability will be conducted at predetermined locations. The Operations Support Center Manager is responsible for ensuring performance of accountability within the Protected Area and reporting the results to the TSC Manager or Shift Manager if the TSC is not activated. Non-essential personnel will be logged offsite utilizing the electronic access control system or personnel logs. The goal is to complete personnel accountability inside the Protected Area within 30 minutes. The last known location of unaccounted individuals will be obtained and search and rescue procedures initiated to locate the missing individuals.

For the Exclusion Area, personnel are alerted by the evacuation siren, public address announcement or telephones and will follow evacuation procedures. Energy Northwest personnel will be available to initiate the search and rescue procedures as needed.

5.8 EVACUATION TIME ESTIMATES

Evacuation time estimates for the Columbia Generating Station site have been developed in the Columbia Generating Station Ten Mile EPZ Evacuation Time Estimate Study, Revision 4, May, 2001. Table 5-1 of this section summarizes the results.

5.8.1 Emergency Planning Zone Sub-Areas

The Ten-Mile Emergency Planning Zone was divided into several sub-areas as follows:

0-2 miles	entire circumference
0-5 miles	four approximate 90° sections
2-10 miles	four approximate 90° sections
0-10 miles	entire EPZ

The two-mile radius was not subdivided because it contains no residential population and the only institution populations are transients all working on contiguous Energy Northwest properties. Only three of the four 5 and 10 mile sectors (about 90°) were examined because the fourth, entirely on the Hanford Reservation, contains no residential, transient or special population. These sectors are graphically shown on Figure 5-5. The Columbia River forms a natural border between Benton and Franklin Counties and was used to form the division between Sector 2 and Sector 3. Franklin County was divided, approximately in half, since it was assumed that those persons north of the plant location would evacuate north toward Mesa and Connell and those persons south of the plant would evacuate south towards Pasco. When making estimates for outer portions of the sectors it was assumed that the inner adjacent portions were being simultaneously evacuated.

5.8.2 Notification, Preparation, Response and Confirmation Times

The evacuation time estimates shown in Table 5-1 include preparation time and response time. Notification times and confirmation times are shown as separate items.

Energy Northwest has established procedures to notify officials of Washington State, Benton and Franklin Counties and the Department of Energy-Richland Operations within 15 minutes of a declaration of any emergency classification. The Energy Northwest early warning system was designed to enable the county to notify the permanent 10-mile population within 15 minutes from the time the decision to take a protective action is made by county officials. Therefore, a maximum of 30 minutes notification time is assumed.

In the event of an evacuation, residents needing transportation are instructed to call the respective county emergency management office to request transportation. The respective emergency management office will dispatch emergency workers to collect these residents. Energy Northwest will be responsible for personnel accountability at Energy Northwest facilities (estimated to take a maximum of 30 minutes). The calculated evacuation time estimates start at the time of the announcement over the Emergency Broadcast System (EBS) or Emergency Alerting System (EAS) station to begin evacuation and end when the evacuation is complete.

The Figure 5-6 series illustrates "S-curves" for various populations and conditions. In the congested traffic environment which is characteristic of an evacuation process, travel time on a roadway section is, to a large extent, determined by the capacity of that section. Roadway capacities were based upon the type of roadway considered and the presence of traffic control. The following table presents the per-lane capacities utilized:

Roadway Type	Per-lane Capacity (Veh/hr)
Freeway	1800
Arterial/Rural Road	1500
Local Street	1200

A vehicle occupancy of three persons per vehicle was generally used for residents and transients. Exceptions are the industrial plants for which 1.5 persons per vehicle was used, the schools for which 35 persons per school bus was used, and the Off-Road Vehicle Park for which 2 persons per vehicle was used.

5.8.3 Adverse Weather

Severe weather conditions such as blizzards, heavy rain storms, flooding, fog, or high winds could seriously hamper evacuation. However, historical records indicate that severe conditions of this nature have occurred rarely in the past. Because of the effect of weather on the capacity of roadway and the fact that capacity is a controlling factor in deriving evacuation times, it is necessary to adjust capacity figures to represent estimated road conditions during adverse weather. Based on limited empirical data, weather conditions such as heavy rain reduce the values of capacity for the highways utilized as evacuation routes by approximately 20 percent. For adverse conditions during the winter months, estimated capacity reductions and free-flow speed reductions of 30 percent each, relative to normal weather conditions are assumed.

5.8.4 Special Facilities

The only special facilities within the Ten-Mile Emergency Planning Zone are Edwin Markham Elementary School, Country Haven Academy, the Big River Country School, and the Country Christian Center, with a total enrollment of approximately 575 students and faculty. Because of the small size of this population, it was considered counted as part of the permanent population in making evacuation time estimates. Buses which could be used in the evacuation are located at the district bus lot in north Pasco during the day. The buses can be dispatched to the schools within the one hour preparation time assumed for this section.

Public transportation, although not specifically identified as being needed, is available to the public in a portion of the Ten-Mile Emergency Planning Zone and is not relied upon for evacuation. The sheriffs' departments will be patrolling the area during an emergency and could make transportation arrangements for anyone not already evacuated.

5.9 RADIOLOGICAL EXPOSURE CONTROL

Radiation exposure limits and guidelines have been established for the control of radiation exposure to workers during an emergency. Facilities are available and arrangements can be made for internal and external personnel dose assessment. The individual functioning as Emergency Director has the responsibility to authorize exposures in excess of 10CFR20 limits or EPA-400 guidance, but can delegate this responsibility if necessary to improve command and control operations.

5.9.1 ALARA Policy

ALARA is an acronym meaning As Low As Reasonably Achievable. Energy Northwest's ALARA policy states:

> "Energy Northwest shall conduct all operations involving radiation and radioactive material such that radiation exposures to employees, contractors and the general public are maintained as low as is reasonably achievable. "Reasonably achievable" takes into account the state of technology and the economics of exposure reduction in relationship to the benefits to health and safety."

The principles of ALARA will be considered during all phases of the emergency and applied where practical. Refer to Section 5.9.3.

5.9.2 Administrative Exposure Hold Points

Administrative exposure hold points are used during normal operations to bring exposures which are or could be significant to the attention of Plant Management. Energy Northwest administrative exposure hold points will be automatically waived upon declaration of an Alert or higher emergency classification. The Radiation Protection Manager (RPM), for onsite, and the Radiological Emergency Manager (REM), for offsite, are still responsible for limiting personnel exposures in keeping with the ALARA philosophy.

Whenever the administrative exposure hold points are waived, efforts shall be made to keep all exposures below 10 CFR 20 limits.

5.9.3 Protective Action Guides (PAGs)

The Environmental Protection Agency (EPA) has established Emergency Worker and Lifesaving Activity Protective Action Guides as follows:

PROTECTIVE ACTION GUIDES FOR EMERGENCY WORKERS		
DOSE LIMIT	ACTIVITY	PROTECTIVE ACTIONS
5 rem TEDE[1]	ALL	Emergency Workers continuously monitor and limit exposure.
10 rem TEDE	PROTECTING VALUABLE PROPERTY	Evaluate alternatives prior to granting authorization to exceed limits. Exposures above 5 rem require approval of the Emergency Director or designee.
25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Lower doses not practicable.
>25 rem TEDE	LIFE-SAVING OR PROTECTION OF LARGE POPULATIONS	Provide specific review and decision for each VOLUNTARY life-saving mission. Only volunteers fully aware of the risks should request exceeding this limit.

Energy Northwest will at all times attempt to keep exposures below EPA 400 Guidelines. However, situations such as the following may arise which could necessitate application of the above Protective Action Guides:

a. lifesaving activities
b. removal of injured persons
c. undertaking corrective actions
d. performing assessment actions
e. providing first aid
f. performing personnel decontamination
g. providing ambulance services
h. providing medical treatment services

Permission for emergency workers to receive additional radiation exposure is contained in procedures which includes expeditious decisions and comparison of relative risk.

[1]The total effective dose equivalent (TEDE) is the sum of the deep dose equivalent (DDE) resulting from exposure to external sources and the committed effective dose equivalent (CEDE) projected over 50 years for internal exposures. CEDE is the risk weighted sum of committed dose equivalents (CDE) to organs. CDE is the total dose from an internally deposited radionuclide over the subsequent 50 year period.

5.9.4 Contamination Control

5.9.4.1 Area Access

Controls have been established at Columbia Generating Station to ensure there is no detectable fixed or loose contamination (beta-gamma or alpha) outside of the Radiologically Controlled Area (RCA) under normal or emergency conditions. Energy Northwest policy is to minimize the potential for personnel contamination and to prevent the spread of contamination to uncontrolled areas at all times. Normally all personnel and equipment leaving the RCA are monitored to ensure the limits for contamination levels are met. However, normal in-plant contamination control procedures may be suspended during an emergency by the plant Radiation Protection Manager to allow for prompt emergency response and to minimize personnel exposure to other hazards. Contamination control measures intended to prevent transport of radioactive materials out of the plant or into continuously occupied areas such as the control room shall retain high priority.

5.9.4.2 Personnel

Personnel work practices within the RCA are controlled by Health Physics procedures. Upon leaving a radiologically contaminated area, each worker will normally proceed to the nearest personnel monitoring station which has a background count rate of less than 300 cpm and perform a personal survey. Individuals leaving the RCA are normally monitored for contamination before entering an uncontrolled area.

If survey of an individual indicates contamination levels in excess of established contamination limits, decontamination will be performed. Records will be maintained in accordance with established Health Physics procedures. Potassium Iodide, respirators and protective clothing can be distributed to plant personnel if needed.

5.9.4.3 Decontamination

Decontamination limits apply to personnel and equipment during routine and emergency operations. Only the Radiation Protection Manager or his delegate can waive these limits and then only on a case by case basis.

Normal personnel decontamination is accomplished in the 487′ elevation Radwaste Building decontamination facility. All drains lead to the Radwaste system where the liquid is processed and monitored prior to discharge. During site emergency evacuation conditions, personnel decontaminations can be accomplished at the Kootenai Building where a decontamination shower and supplies are maintained.

Energy Northwest policy requires decontamination of personnel, equipment, and material prior to release from a radiologically controlled area according to the criteria found in Chapter 12.5 of the FSAR.

If the contamination cannot be reduced to these limits by reasonable methods, such as with radioiodine skin contamination, the Radiation Protection Manager (for inside the Protected Area) and the Radiological Emergency Manager (for outside of that area) shall determine a further course of action. This may include referral to a local medical facility or placing the individual in an on-going exposure tracking program.

5.9.4.4 Drinking Water and Food Supplies

Radiological surveys will periodically be made in areas where food is stored onsite and isotopic analyses will periodically be made of the Columbia Generating Station drinking water supply. The primary source of potable water for Columbia Generating Station is the Columbia River. It is unlikely that an airborne release of radioactive material could affect this supply.

Offsite vegetation and milk samples are also analyzed routinely as part of the Radiological Environmental Monitoring Program (REMP). In the event of an airborne release of radioactive materials, environmental samples are collected and analyzed.

5.9.5 Personnel Dose Assessment

Routine and emergency personnel exposure monitoring and dose assessments are accomplished by issuing thermoluminescent dosimeters (TLDs), electronic or direct reading dosimeters and monitoring for airborne radioactivity. A twenty-four hour per day capability to analyze Energy Northwest issued dosimetry is available. Energy Northwest maintains a personnel monitoring program through the use of appropriate dosimetry and whole body counters.

5.9.5.1 Thermoluminescent Dosimeters

Issuance of personnel TLDs will be in accordance with established Health Physics procedures. Special provisions are included to increase the frequency of TLD processing, as necessary, during emergencies.

The measured dose as determined by TLDs shall serve as the permanent and official record of the individual's deep dose equivalent (DDE) and skin dose. Radiation dose to the hands, forearms, feet and ankles shall be obtained by placing additional TLDs in those locations when extremity exposure may be the controlling factor.

5.9.5.2 Direct Reading Dosimeters

Electronic or direct reading pocket dosimeters are issued to personnel entering radiologically controlled areas. Personnel shall be instructed to read these dosimeters frequently. Dosimeter readings provide an estimated record of external exposure received on a daily basis.

5.9.5.3 Issuance of Dosimetry to Offsite Emergency Personnel Responding Onsite

Offsite emergency personnel who respond onsite and do not have preassigned dosimetry will be issued the appropriate personnel dosimetry upon arrival at the site access point.

Emergencies requiring immediate response are characterized by the necessity for access by emergency response personnel with minimal or no delay. Examples include fire fighting teams, emergency medical personnel or bomb squads. In this situation, dosimetry will be dispensed by Security personnel at the access point. Procedures are established to ensure dosimeters are read at appropriate frequencies. Dosimetry and necessary personal and exposure information will be collected upon leaving the site. Energy Northwest Security will be provided with sufficient dosimetry devices, procedures, and data forms for this type of occurrence.

Offsite (State and County) personnel responding to the EOF will respond with their own dosimetry or will be provided dosimetry by Energy Northwest if necessary.

5.9.5.4 Airborne Radioactivity Monitoring

The primary method utilized to determine potential internal exposure of plant personnel is the measurement of airborne radioactivity. Standard Health Physics procedures describe the collection and analysis of air samples.

5.9.5.5 Whole Body Counting and In-Vitro Bioassays

Whole body counting and in-vitro bioassay will be available during and after an emergency to aid in determining the extent of an individual's internal exposure to radioactive materials. Measurements of radioactivity in the body (in-vivo), and/or radioactivity excreted from the body (in-vitro), will be performed as necessary. This will enable timely evaluation of uptakes of radioactive material whenever it is suspected that the individual has been exposed to airborne radioactivity above predetermined levels specified in established procedures.

5.9.5.6 Radiation Exposure Records

Exposure records are maintained by the Total Exposure System for external and internal radiation exposure for each person entering a radiologically controlled area at an Energy Northwest nuclear facility. These records include external dose [Deep Dose Equivalent (DDE)], skin and extremities dose [Skin Dose Equivalent (SDE)] and internal dose [Committed Dose Equivalents (CDE)] determined by dosimetry, whole body counting and/or in-vitro bioassay.

5.9.6 Respiratory Protection

Selected personnel assigned in-plant emergency response duties are trained in the use of respiratory protective equipment and qualified through quantitative respiratory fit testing. Respiratory protective equipment is maintained at strategic locations in the plant with backup supplies available. Respiratory protection under emergency conditions is administered in accordance with normal operating procedures with special provisions for prompt emergency action requirements.

Facilities and equipment are available to qualify outside response personnel on the use of respiratory protective equipment.

5.9.7 Thyroid Blocking Agent

Potassium Iodide (KI) is maintained for use by emergency workers at strategic locations.

In the event of a release involving radioiodine, the TSC Manager, in consultation with the Radiation Protection Manager, will issue instructions concerning the use of potassium iodide by in-plant emergency workers. The EOF Manager, in consultation with the Radiological Emergency Manager, will issue instructions to Energy Northwest environmental field teams and emergency workers in the Exclusion Area concerning the use of potassium iodide and will recommend that other offsite (State, County, etc.) emergency workers be issued instructions concerning use of potassium iodide. The EOF Manager will forward his recommendations to the appropriate offsite authorities. The thyroid blocking capability of KI is most effective when taken prior to or immediately after exposure to radioiodine. Therefore, a timely decision is necessary concerning this action.

Whenever offsite resources are expended, Energy Northwest will provide KI, along with personnel monitoring, dosimetry and decontamination services, when needed by offsite emergency workers.

Description	Total Within 2 Miles	Areas Within 5 Miles				Areas Within 10 Miles			
		I	II	III	Total	I	II	III	Total
Permanent Population	-	137	152	0	289	806	1429	1150	3385
Permanent Population Vehicles	-	63	32	0	95	421	420	342	1183
Transient Population	1136	1611	384	371	2366	828	5244	5881	11,953
Transient Population Vehicles	1018	629	236	155	2038	509	2397	910	3816
General Population	1136	1749	536	371	2656	1657	7217	7031	15,905
Total Vehicles	1018	692	268	155	2133	509	2817	1252	4999
Notification Time Minutes	15	30	30	30	30	30	30	30	30
Permanent Population Evac. Time Normal Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Normal Conditions Hours Minutes	1:00	1:00	1:00	1:30	1:30	1:30	1:20	2:15	2:15
Permanent Population Evac. Time Adverse Conditions Hours Minutes	-	1:00	1:00	-	1:00	1:30	1:30	1:30	1:30
General Population Evac. Time Adverse Conditions Hours Minutes	1:30	1:00	1:00	2:00	2:00	1:30	1:30	2:30	2:30
Confirmation Time Minutes	30	60	60	60	60	60	60	60	60

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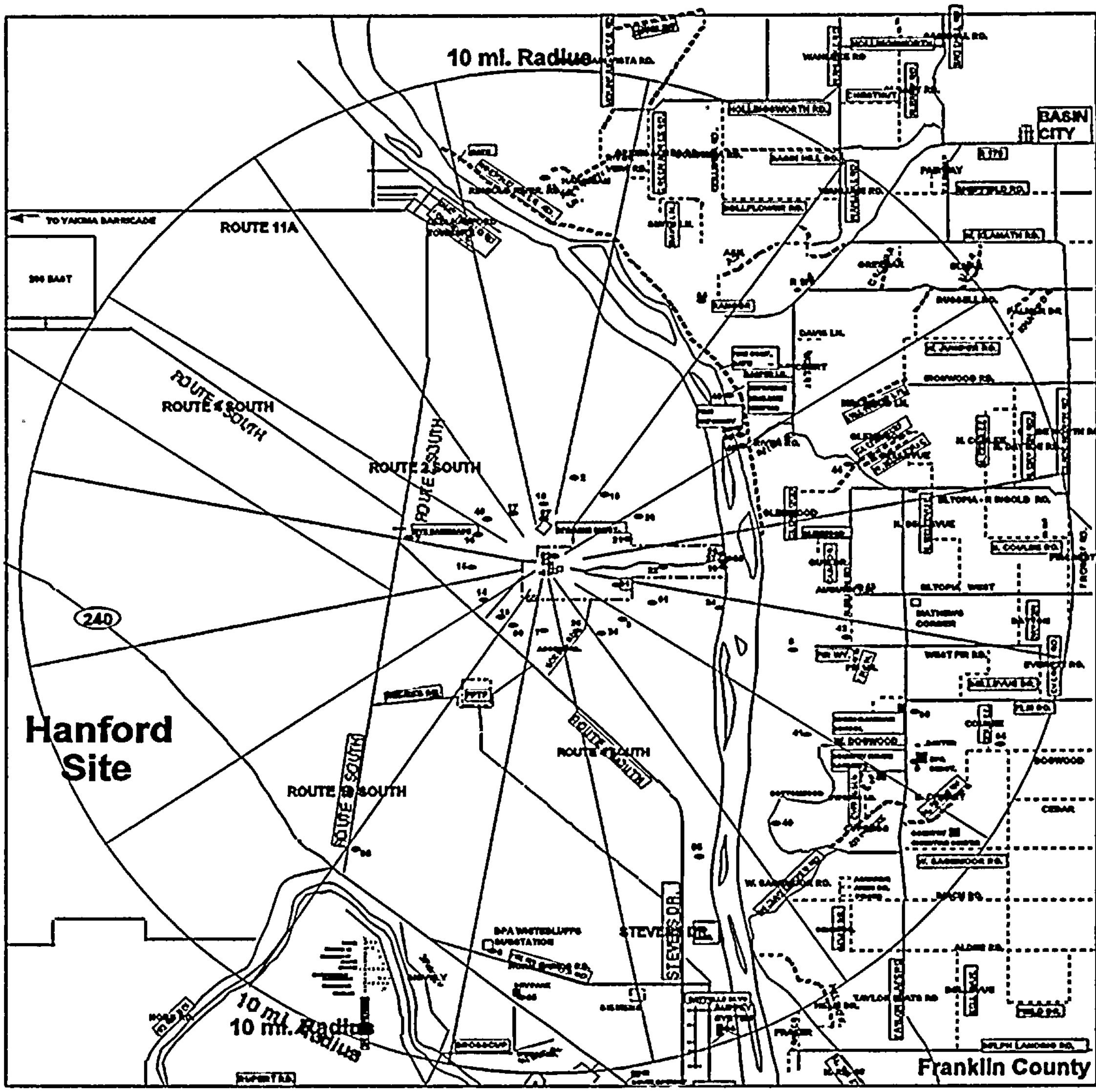
Table 5-1, Summary of Results of Evacuation Times Analysis



Station	Reactor	Radial Miles*	TLD	AP/AI
1	S	1.3	O	X
2	NNE	1.8	O	
3	SE	2.0	X	
4	ESE	9.3	O	O
5	ESE	7.7	O	X
6	S	7.7	O	X
7	WNW	2.7	O	X
8	ESE	4.7	O	O
9A*	WSW	30.0	O	O
9B*	WSW	36.0		
9C*	WSW	33.0	O	
10	E	3.1	X	
11	ENE	3.1	X	
12	NNW	6.1	O	
13	SW	1.4	O	
14	WSW	1.4	O	
15	W	1.4	O	
16	WNW	1.4	O	
17	NNW	1.2	O	
18	N	1.1	O	
19	NE	1.8	O	
20	ENE	1.3	O	
21	ENE	1.5	X	X
22	S	2.1	O	
23	ESE	3.0	X	X
24	SE	1.9	O	
25	SSE	1.6	O	
26*	E	3.2		
27	E	3.2		
29	SSE	11.0		
30	E	3.5		
31	E	1.1		
32	E	1.2		
33	ENE	3.3		
34	ESE	3.3		
35	ENE	10.5		
36	ESE	7.2		
37A	SSE	17.0		
37B	SSE	16.0		
38*	E	26.5 (95.0)		
40	SE	6.4	O	O
41	SE	5.8	O	
42	ESE	5.6	O	
43	E	5.7	O	
44	ENE	5.7	O	
45	ENE	4.2	O	
46	NE	4.7	X	
47	N	0.5		O
48	NE	4.3	O	
49	NW	1.2	O	
50	SSW	1.2	O	
51	ESE	2.1	O	
52	N	0.1		
53	N	7.5	O	
54	NNE	8.5	O	
55	SSE	7.0	O	
56	SSW	7.0	O	
57	N	0.7		O
65	S	8.7		X

880334.1 Map
990292
June 1999

LEGEND
PAVED ROAD
SCALE

- Control location.
X Sample collected at station (non-ODCM)
O Offsite Dose Calculation Manual (ODCM) sample collected at station.
* Estimated from center at WNP-2 Containment from map position.
AP/AI Air Particulate and Iodine

Figure 5-1, Environmental Sampling Points

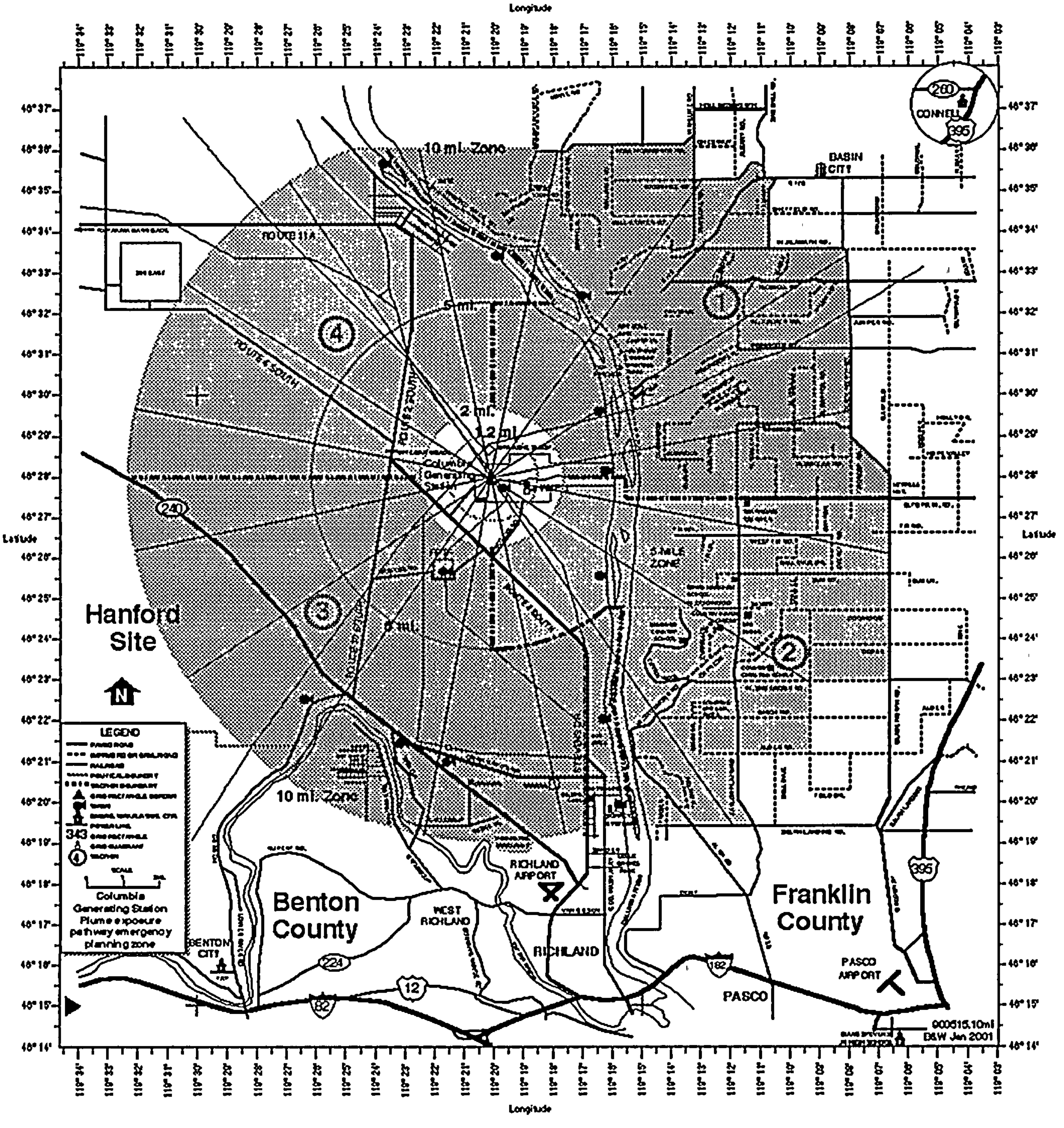
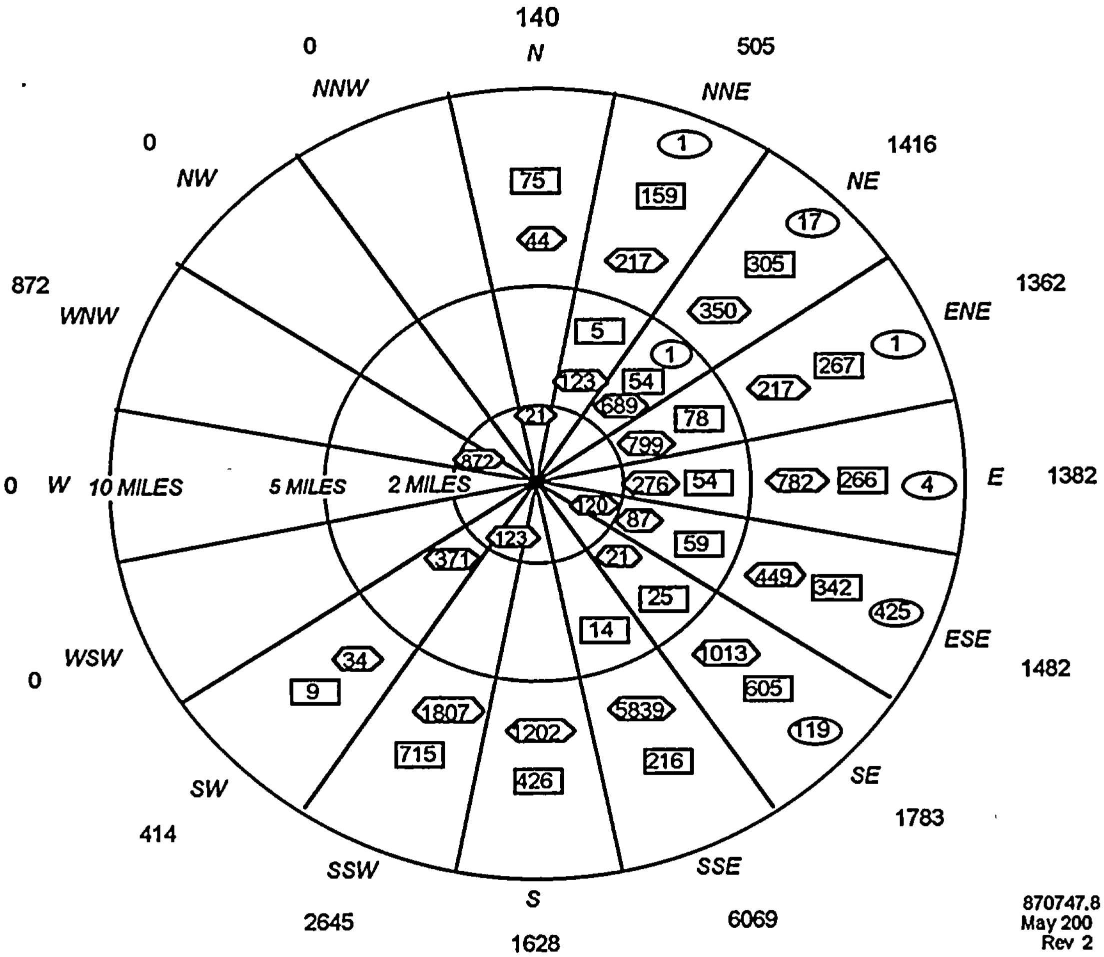


Figure 5-2, Ten Mile Grid Map



19,698 TOTAL SEGMENT POP ULATION 0 TO 10 MILES

Population Totals - PERMANENT			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	0	0-2	0
2-5	289	0-5	289
5-10	3385	0-10	3674

Population Totals - TRANSIENT			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	1136	0-2	1136
2-5	2366	0-5	3502
5-10	11,954	0-10	15456

Population Totals - SPECIAL			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	0	0-2	0
2-5	1	0-5	1
5-10	567	0-10	568

Population Totals			
Ring Miles	Ring Population	Total Miles	Cumulative Population
0-2	1136	0-2	1136
2-5	2656	0-5	3792
5-10	15,906	0-10	19,698

Figure 5-3, Total Population Within the 10-Mile EPZ Broken Down Into Classifications

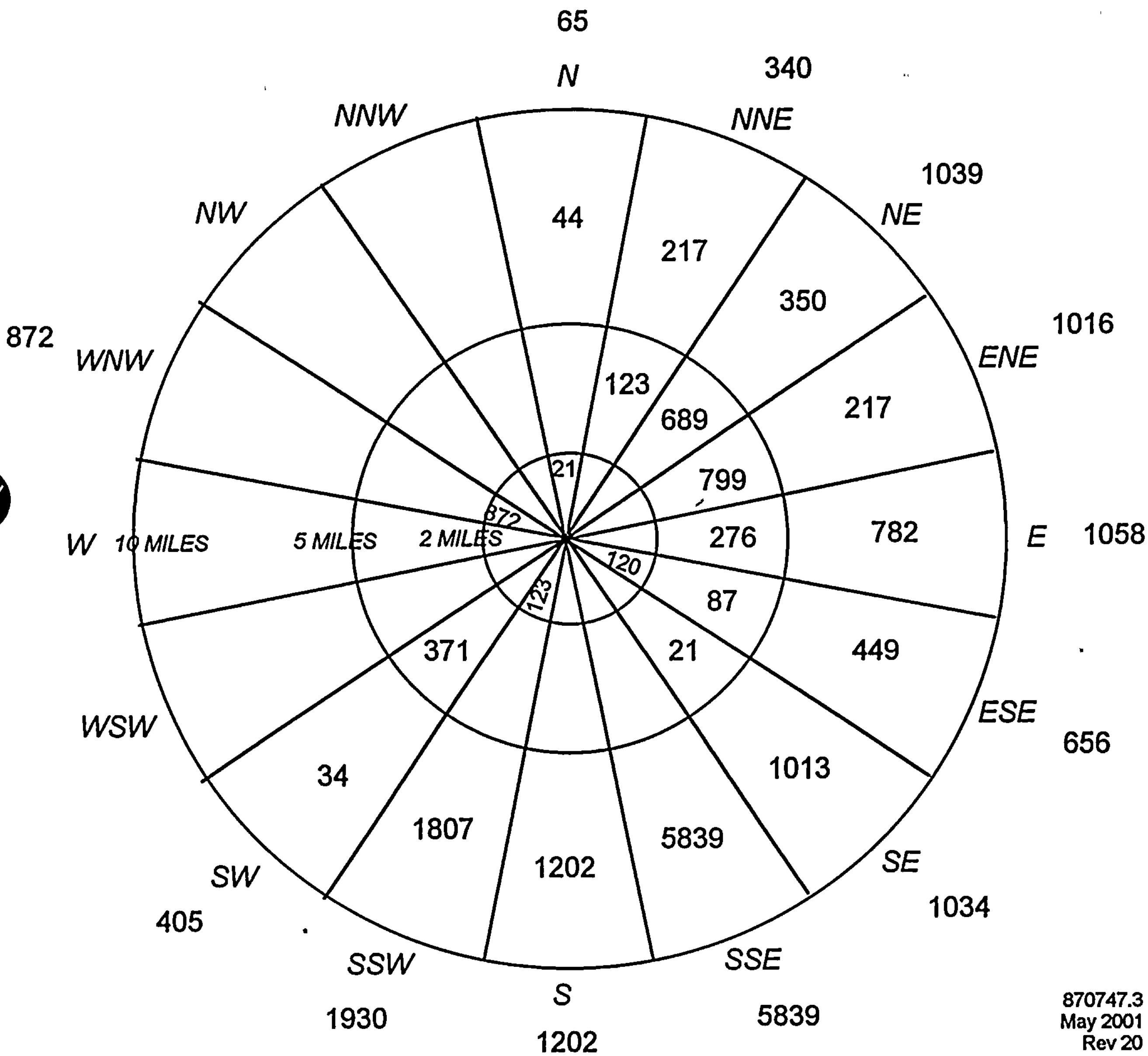


Figure 5-4, Distribution of Transient Population Within 10-Mile EPZ

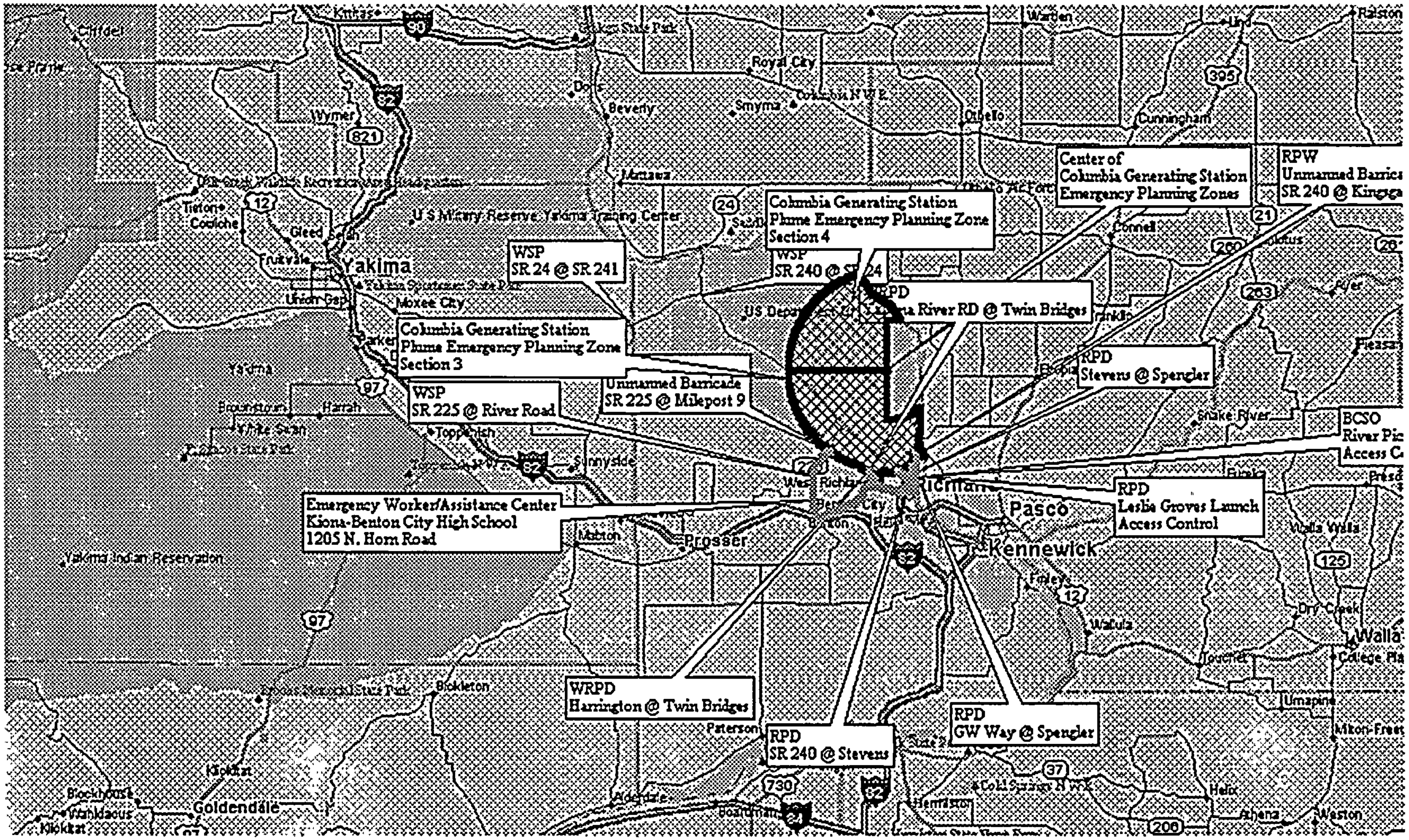


Figure 5-5, Benton County Evacuation Routes

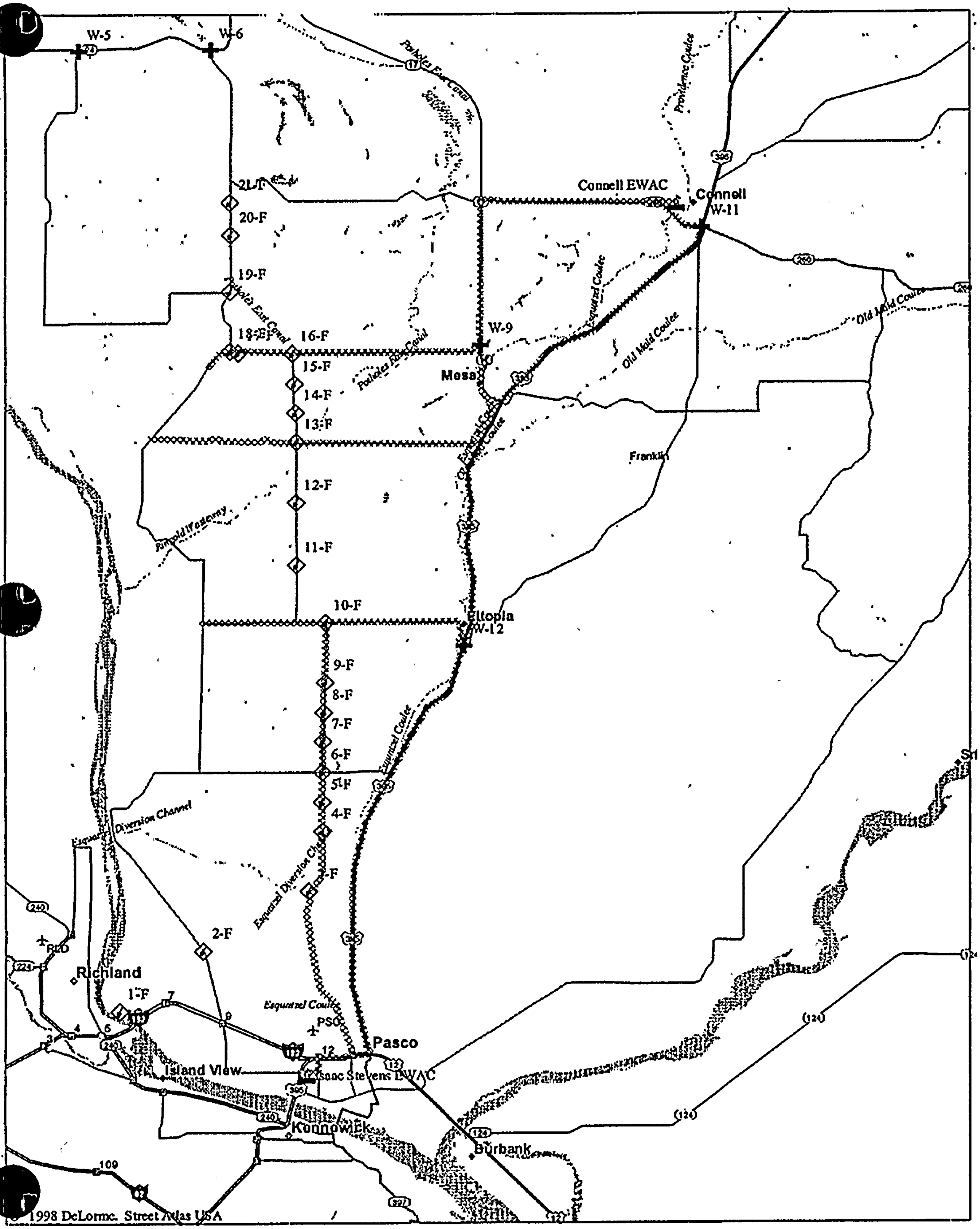


Figure 5-6, Franklin County Evacuation Routes

FRANKLIN COUNTY ACCESS CONTROL POINTS

ID #	LOCATION	RESPONSIBLE AGENCY
1-F	Road 68 @ Dent	Pasco PD
2-F	Dent Rd @ Court St	Pasco PD
3-F	Selph Landing @ Glade North	FC Sheriffs Office
4-F	Alder @ Glade North	FC Public Works *
5-F	Birch @ Glade North	FC Public Works *
6-F	West Sagemoor @ Glade North	FC Sheriffs Office
7-F	Cedar @ Glade North	FC Public Works *
8-F	Dogwood @ Glade North	FC Public Works *
9-F	Fir @ Glade North	FC Public Works *
10-F	Eltopia West @ Glade North	FC Sheriffs Office
11-F	Ringold @ Glade North	FC Public Works *
12-F	Ironwood @ Glade North	FC Public Works *
13-F	Russell @ Glade North	FC Public Works *
14-F	Klamath @ Glade North	FC Public Works *
[illegible]	Sheffield @ Glade North	FC Public Works *
[illegible]	SR 170 @ Glade North	FC Sheriffs Office
17-F	Fairway @ SR 170	FC Public Works *
18-F	SR 170 @ Sagehill	FC Sheriffs Office
19-F	Hollingsworth @ Sagehill	FC Public Works *
20-F	Fern @ Sagehill	FC Public Works *
21-F	North Wahluke @ Sagehill	FC Public Works *
W-5	Hwy 24 @ Mountain Vista	Washington State Patrol
W-6	Hwy 24 @ Sagehill	WSP
W-9	Hwy 17 @ Road 170	WSP
W-11	Hwy 395 @ Connell	WSP
W-12	Hwy 395 @ Eltopia West	WSP

NOTE: Asterisk (*) indicates Access Control Point is an unmanned barricade.

LEGEND:

= EWAC

= Evacuation Route

= Franklin Co. ACP

= WA State Patrol ACP

Figure 5-7

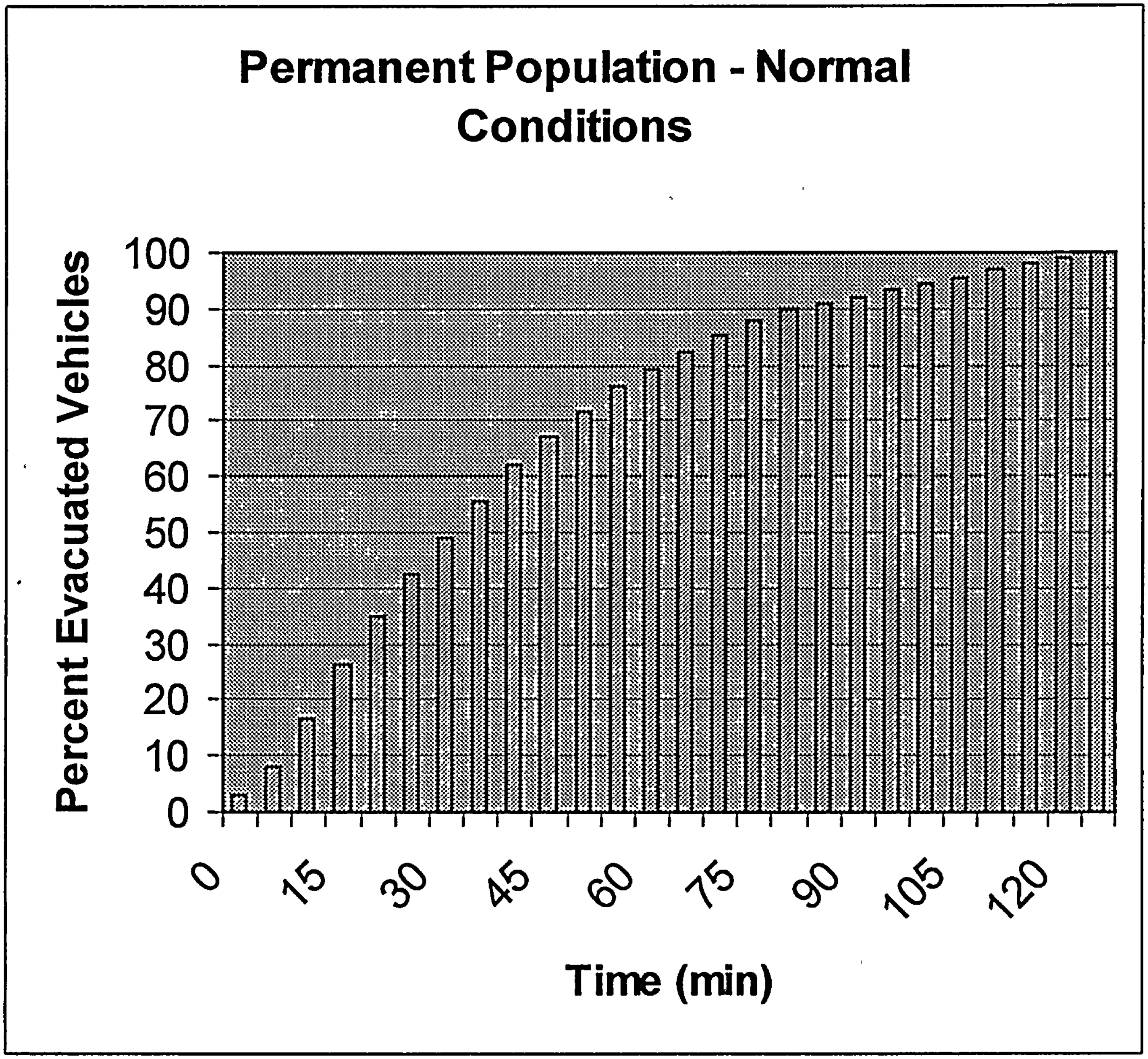


Figure 5-8.A Permanent Population-Normal Conditions

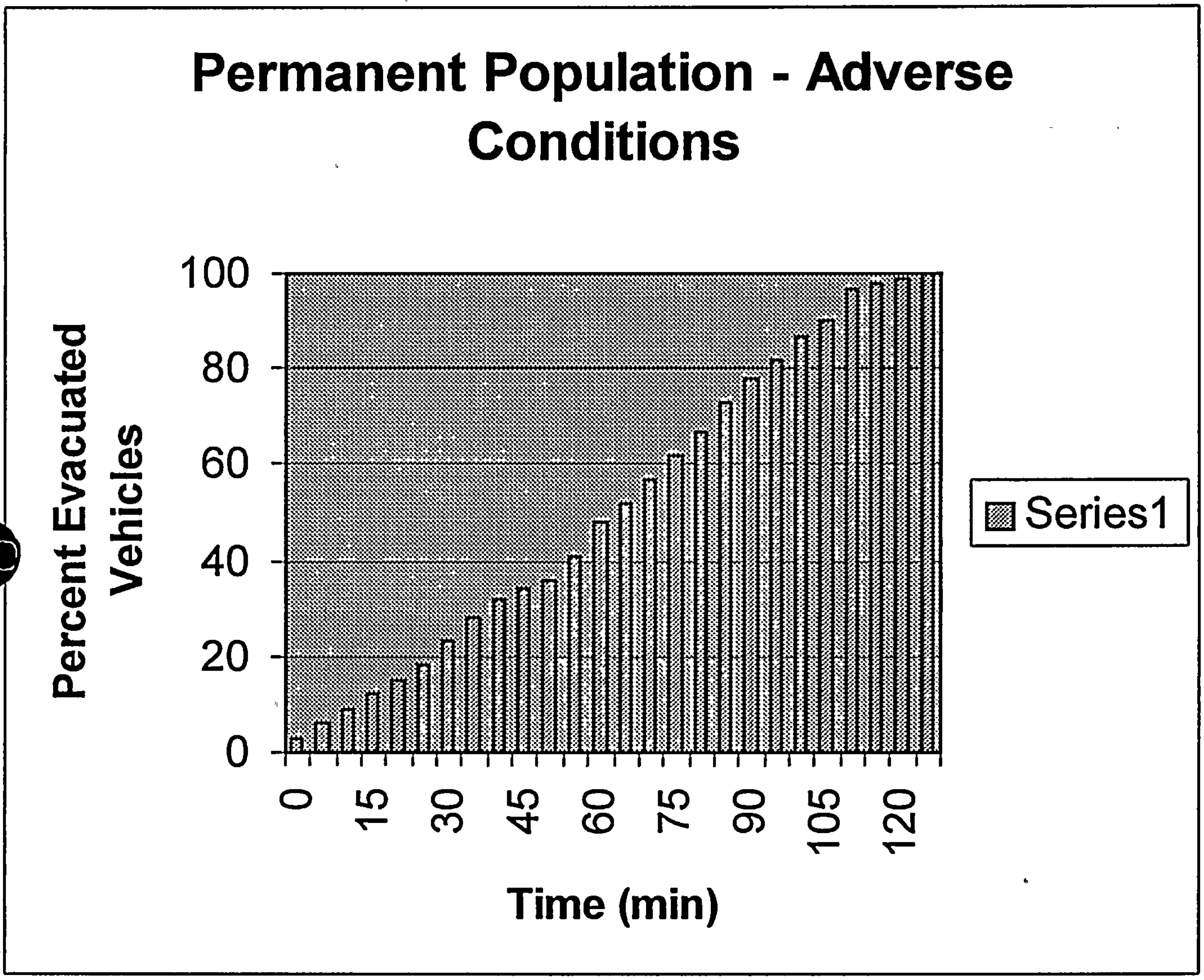


Figure 5-8.B Permanent Population-Adverse Conditions

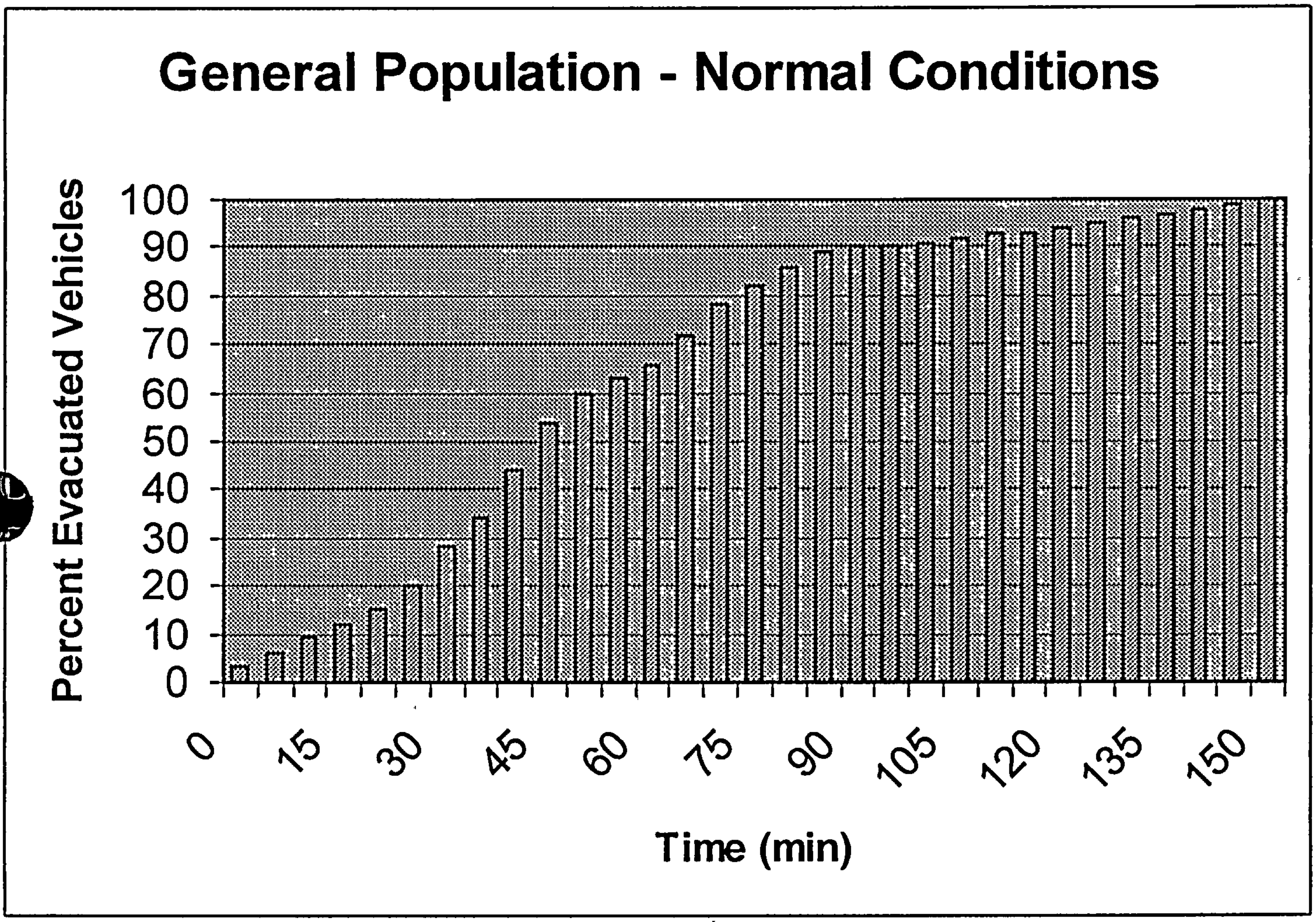


Figure 5-8.C General Population-Normal Conditions

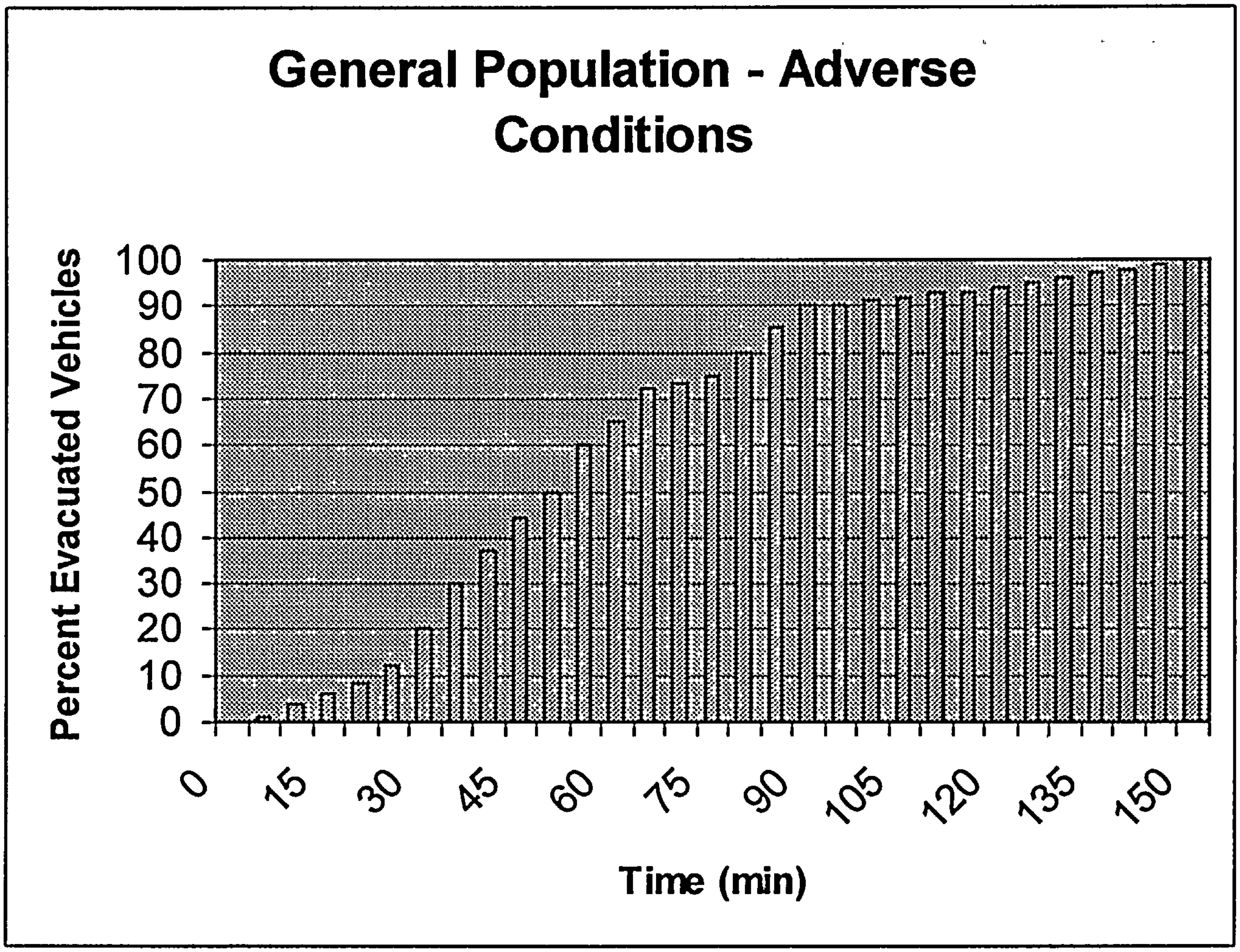


Figure 5-8.D General Population-Adverse Conditions

SECTION 6
EMERGENCY FACILITIES AND EQUIPMENT

6.1 PLANT FACILITIES

Located within the Columbia Generating Station facilities are several areas which will be used for evaluation and initiation of emergency actions. These facilities have the capability to manage the short term response and maintain plant control through sustained emergency and recovery operations.

6.1.1 Control Room

The Columbia Generating Station Control Room is located in the Radwaste Building, adjacent to the Reactor Building, as shown in Figure 6-1. Several entrance/exit points, each with airlocks, are provided. The Control Room contains instrumentation, controls and displays for the nuclear, reactor coolant, electrical, safety and accident monitoring systems and is where an emergency would be initially classified and declared.

The Control Room is staffed by licensed reactor operators and senior reactor operators and is under the direction of the plant Shift Manager twenty-four hours per day. Control Room personnel are responsible for coordinating all emergency response activities until other emergency facilities are activated. Control Room personnel are responsible to diagnose any abnormal plant conditions, perform corrective actions to mitigate the abnormal conditions, manage plant operations and perform initial emergency response activities.

Access to the Control Room during an emergency will be limited to essential personnel such as operators on duty or persons given specific permission for entry by the Technical Support Center Manager or the Shift Manager.

The Control Room has been designed for accessibility and habitability during the occurrences of postulated accidents that could result in the release of fission products and/or hazardous chemicals. To limit inward migration of hazardous materials the Control Room is maintained at a positive pressure with respect to adjacent areas using the pressurization mode of the control room ventilation system. The Control Room will be informed of a sodium oxide release from FFTF. Refer to FSAR section 6.4.4.2.2.

The system has been designed with both normal and remote sources of air to ensure the availability of uncontaminated air at all times. Both HEPA and charcoal filters are included. Shielding is provided to ensure that the combined radiation exposure of Control Room personnel during a postulated design-basis accident would remain within regulatory guidelines.

The Control Room communication system permits contact with the onsite Technical Support Center (TSC), the onsite Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the federal, state and local emergency response organizations on a twenty-four hour per day basis.

6.1.2 Technical Support Center

The Columbia Generating Station Technical Support Center (TSC) is a structure attached to the Radwaste Building on the west side of the plant (refer to Figure 6-1). A typical floor diagram is shown in Figure 6-2. The TSC is as habitable as the Control Room during accidents. The TSC ventilation HEPA filters and charcoal absorbers are the same type as those used for the Control Room System. The ventilation system normal air intake will automatically switch to the Control Room remote air intake upon receipt of an isolation signal. Should the TSC become uninhabitable, the TSC Manager in consultation with radiation protection personnel, will decide on an alternate TSC location and setup where the TSC functions can continue to be performed.

The TSC is activated during an Alert or higher emergency classification and is under the direction of the TSC Manager. The TSC Manager may assume the duties of Emergency Director from the Shift Manager if not transferred directly to the EOF Manager. Staffing includes designated technical, engineering and senior management personnel. Space is available for a small staff of Nuclear Regulatory Commission personnel during emergency conditions.

Functions of the TSC are to provide management and technical support to plant operations personnel during emergencies. This relieves the reactor operators of peripheral duties not directly related to reactor systems manipulation and prevents congestion in the Control Room. The TSC will perform Emergency Operations Facility functions during Alert, Site Area Emergency and General Emergency classifications until the Emergency Operations Facility becomes functional. TSC personnel have ready access to up-to-date plant documents needed to perform emergency functions.

The TSC is the primary onsite communications center for the plant during an emergency. It has reliable voice communications with the onsite Operations Support Center, Emergency Operation Facility, Energy Northwest Office Complex (ENOC), Control Room, NRC, and state and local Emergency Operations Centers.

Plant status, meteorological instrumentation, Plant Display and Information System (PDIS), display equipment and power supplies are provided in the TSC to support a comprehensive analysis of emergency conditions. A power circuit supplies the TSC from a Class 1E source located in the plant. This power source is backed by a diesel generator. Radiological monitoring equipment is available to continuously monitor dose rates and airborne radioactivity concentrations in the TSC. The TSC also assesses plant radiological conditions. In addition, protective equipment such as anti-contamination clothing, respirators and potassium iodide are provided in the TSC should conditions warrant their use.

6.1.3 Operations Support Center

A designated portion of the Yakima Building will serve as the Operations Support Center (OSC) for Columbia Generating Station and will be activated for an Alert or higher emergency classification. The location of this center is shown in Figure 6-1. If the primary OSC location becomes uninhabitable, the OSC Manager, in consultation with radiation protection personnel, will decide on an alternative OSC setup, and OSC personnel will be evacuated to an alternate location where OSC functions can continue to be performed.

The OSC will be under the control of the OSC Manager who is responsible for dispatching and coordinating in-plant team activities during emergencies. The OSC is activated during an Alert or higher emergency classification and provides a location for coordinated logistic support outside the Control Room.

The OSC Manager has communications necessary to dispatch and coordinate emergency team activities with the Shift Manager and TSC Manager, for other necessary onsite and offsite communication, and for emergency team communications (see Section 6.5). Equipment and supplies are available in the OSC for emergency team use. A list of emergency equipment kits is provided in Appendix 3.

6.1.4 Security Alarm Stations

Two security alarm stations are maintained at Columbia Generating Station. The Central Alarm Station (CAS) is the primary security center and is located in a separate building near the Yakima Building. The Secondary Alarm Station (SAS) is the backup security center located in the Control Room.

6.1.5 Protected Area Access Point

Persons requesting entrance to the plant will report to the Protected Area Access Point. Security will issue dosimeters as needed, maintain personnel accountability, and notify the onsite Operations Support Center of the arrival of persons and receive permission to allow entry. In situations which require immediate access by personnel and equipment, such as fire or medical emergencies, Security will be notified to permit immediate entry. The Security Shift Lieutenant will coordinate with the Technical Support Center Manager for implementation of the Safeguards Contingency Plan.

6.1.6 Personnel Decontamination and First Aid Facilities

First aid equipment kits required by the Washington Industrial Safety and Health Act are located as close as feasible to areas which have the heaviest concentration of workers. Designated locations are similar to those shown in Appendix 3.

Initial first aid for employees is provided by the Fire Brigade Team (FB) which is composed of first aid trained personnel who are designated FB members during each work shift.

Medical emergencies are reported via a special phone number that is posted throughout the plant. The special number rings into the Control Room where personnel can then dispatch FB members to an emergency by radio, telephone, or by the plant public address system.

Fire Brigade members receive initial and annual continuing education training in first aid from an in-house program that is certified as meeting "First Responder" requirements by the State of Washington.

A decontamination facility is provided on the 487′ elevation of the Radwaste Building (refer to Figure 6-3). The facility consists of a large shower area with drains connected to the radwaste effluent treatment system. First aid equipment and decontamination supplies are located nearby and will be used whenever a contamination incident is involved. Decontamination will also be implemented as necessary at the Energy Northwest Office Complex and Emergency Worker Assistance Centers (EWACs)

6.2 EMERGENCY OPERATIONS FACILITY (KOOTENAI BUILDING)

The Kootenai Building is located 0.75 miles southwest of Columbia Generating Station. This facility is used to support normal plant operations and includes a 20,000 square foot shielded area in the lower level which includes the 4,500 square foot Emergency Operations Facility (EOF).

A typical floor plan of the Kootenai Building is shown in Figure 6-4. The EOF contains several functional areas which are provided for various groups and will be activated as necessary for an Unusual Event and fully for an Alert, Site Area Emergency or General Emergency.

The EOF is under the direction of the Emergency Operations Facility (EOF) Manager and assists the plant by handling those functions associated with evaluating and minimizing the offsite effects of the accident, as well as supporting the TSC and Control Room with technical data analysis. This assistance includes such functions as field monitoring, dose projections, area security, interfacing with outside organizations, recommendation of protective actions for the public, assisting the plant technical staff, public information, administrative services, scheduling of personnel, and establishing a recovery program. If response to the primary EOF is hampered by radiological or other conditions, personnel unable to respond to the primary EOF will be directed to respond to the alternate EOF located at the Energy Northwest Richland Office Complex. Sufficient telephone links are available at the alternate EOF to communicate with the primary EOF and TSC. If the primary EOF location becomes uninhabitable, the EOF Manager in consultation with radiation protection personnel, will determine whether to evacuate the primary EOF, what equipment to take, and where to relocate. Select EOF staff will then evacuate and continue to perform the EOF functions.

The EOF will be used by representatives of the various offsite agencies to coordinate activities, resolve problems, maintain duty rosters, and make periodic status reports to their respective agencies. A close working relationship between these agencies and Energy Northwest is essential to the success of operations involving the general public. The personnel in the EOF receive information from all functional areas and provide clarifications to their respective agencies. Periodic briefings will be provided by Energy Northwest personnel to keep Energy Northwest and offsite agency personnel up-to-date on plant conditions and emergency measures underway.

The EOF is not used as a normal work location outside of drill and emergency use. It is subjected to periodic walkdowns by emergency preparedness personnel, as well as regularly scheduled inspections to ensure its readiness.

6.2.1 Emergency/Recovery Operations Area

The EOF Manager and his immediate staff will coordinate activities from the Emergency/ Recovery Operations Area of the EOF. The EOF Manager is responsible for the overall emergency effort and provides the necessary support to the TSC Manager. The Emergency/ Recovery Operations Area will maintain up-to-date information on plant and offsite status, recovery planning and scheduling, and will function as the designated area for periodic update briefings with selected personnel assigned to the EOF, including outside agency personnel.

6.2.2 Engineering Support Area

A segment of the EOF is designated as an Engineering Support Area which is established for use by Energy Northwest's engineering personnel, and architect/engineers, vendors, and contractors requested to assist Energy Northwest. A technical data information system including meteorological, radiological, and plant system status is available. Essential plant technical information is available in this area.

Using this area in the EOF, personnel from organizations outside the plant staff can provide needed technical assistance without responding directly to the plant. This provides technical personnel readily available to the plant if needed. The Engineering Support Area also provides a secondary location to track plant conditions and provides current and projected plant status reports to MUDAC and to the EOF Manager for inclusion in the formulation of Protective Action Recommendations.

6.2.3 Logistics Support Area

A designated portion of the EOF is established for logistics support functions which are provided by the Site Support Manager and staff. The Site Support Manager and his staff will provide general administrative support and logistical support to the EOF staff and as directed for other emergency centers.

6.2.4 Meteorology and Unified Dose Assessment Center

The Meteorology and Unified Dose Assessment Center (MUDAC) is utilized as a joint center by Energy Northwest, DOE-RL, and States of Washington and Oregon Departments of Health to coordinate field team operations, project dose rates, record actual measured dose rates during an emergency, and determine protective action recommendations. The computerized Emergency Dose Projection System as described in Section 5 is located in this center. Actual and projected doses obtained will be available for use in determining protective action recommendations for the general populations. From the MUDAC information can be sent by facsimile to the Benton and Franklin County Emergency Operations Centers, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and other Energy Northwest emergency centers. Communications with the field monitoring teams is provided in MUDAC. This capability allows for relaying instructions and receiving survey results.

6.2.5 Security Communications Center

The Security Communications Center is utilized in the notification process and has voice and hard copy transmission capabilities as detailed in Section 4.6. Any information received here will be delivered to the appropriate personnel.

6.2.6 News Release Preparation and Media Briefing

A news release preparation area is provided in the EOF for Energy Northwest's public relations personnel to develop public information status reports. These status reports will be updated and distributed to the Joint Information Center (JIC) located at the ENOC. Groups of media personnel may be escorted to the EOF, as conditions permit, for briefings and tours. This action will be taken under the direction of the EOF Public Information Officer (PIO), and with approval of the EOF Manager.

6.2.7 Work Areas

Several work areas are identified for Energy Northwest personnel as well as for Government agencies (DOE, FEMA, NRC, Washington and Oregon States, etc.), outside consultants, architect/engineers, contractors, and vendors in the EOF. Other general office or classrooms are available as needed.

6.2.8 Health Physics Center

The Health Physics Center consists of several areas in the protected Emergency Operations Facility and the non-protected Kootenai Building, a radiological laboratory, and counting lab. Energy Northwest contracts with a vendor to process thermoluminescent dosimeters and provide results to Energy Northwest in a timely manner. This vendor is certified to the standards of the National Voluntary Laboratory Accreditation Program (NVLAP). Results are recorded into a computerized Total Exposure System (TES) which can be accessed for information from the plant health physics areas as well as the Operations Support Center and Emergency Operations Facility.

A whole body counting, respiratory testing, and computerized internal dose assessment system is in use at Energy Northwest. The respiratory testing area consists of fitting and testing equipment. A large supply of respirators is available if required for emergency response or recovery operations.

The radiological laboratory and adjoining counting lab provide for radiological analysis of environmental samples as well as partial backup capability for plant laboratories. If plant analytical capabilities become unusable, plant samples can be transported to the Emergency Operations Facility or a support agency laboratory for chemical and/or radiological analysis. Energy Northwest contracts with outside laboratories for backup environmental sample analysis.

6.2.9 First Aid and Decontamination Area

A first aid facility is located near the Protected Area of the plant, and a decontamination facility is located in the unprotected portion of the Kootenai Building. The relative locations of these facilities provide for treatment and decontamination of injured personnel as well as independent operation of both facilities. Drains from the decontamination area are connected to an isolable tank. Energy Northwest contracts with HEHF for treatment of severely contaminated injured personnel. This first aid facility is staffed by qualified personnel and first aid equipment is available for normal first aid treatment.

6.2.10 Environmental Programs Area

The environmental programs area includes an environmental equipment area and biology lab. The environmental equipment area will be used to store any backlog of environmental samples. Additional storage is available in the biology lab. Provisions have been made for cataloging stored samples.

6.2.11 Habitability

The Emergency Operations Facility is a protected area in the Kootenai Building which has special shielding and ventilation to maintain habitability requirements. The ventilation system is designed to provide maximum habitability during an accidental radiological release. HEPA filters condition entering air during emergency conditions. Ion chambers are strategically located in the ventilation system to detect potential infiltration of contaminated air thus automatically allowing reconfiguration of airflows from replenishment to recirculation modes.

The EOF is designed to ensure that the total dose to occupying personnel is less than the Environmental Protection Agency Protective Action Guide limit of 5 rem TEDE for the duration of the postulated accident. Shielding requirements were determined using source terms from BWR/PWR accident scenarios described in the WASH 1400 Reactor Safety Study. Calculations considered worst case meteorology and assumed a 0.75 miles distance from the plant to the Emergency Operations Facility.

6.2.12 Emergency Power

A 365 kilowatt emergency power generator provides power to the Emergency Operations Facility during power loss. Vital equipment such as communication systems, counting equipment, dose assessment equipment, and lights are connected to the emergency power generator.

6.3 ALTERNATE EMERGENCY OPERATIONS FACILITY

The Alternate Emergency Operations Facility (EOF) is located approximately 10 miles south of the plant. This facility may be activated in the event of the primary EOF becoming uninhabitable, or inaccessible to offsite responders. The EOF Manager, in consultation with radiation protection personnel, will determine when to activate this facility, and appropriate staffing levels.

A Crash phone, dedicated facsimile machines, and a NRC Emergency Notification System phone are available to provide notifications to offsite agencies. The emergency functions for direction and control, emergency classification, notifications, protective action recommendations, dose projection operations, and field team dispatch and control may be provided from this facility. The Alternate EOF has sufficient communications capability to continue to communicate with the control room, TSC, primary EOF, field teams, and offsite agencies.

6.4 JOINT INFORMATION CENTER

The Energy Northwest Joint Information Center, (JIC), located approximately 10 miles south of the plant, integrates emergency response/recovery public information functions with the resources normally available to upper management personnel. Figure 6-5 shows the typical floor plan for the JIC.

Designated staff may support the EOF Manager and the emergency effort from the JIC.

Dedicated phones provide continuous contact with the plant and Emergency Operations Facility. Facsimile is available for the exchange of the latest data with other emergency centers. Access to certain areas are controlled when emergency centers are activated. The JIC will function as a joint news release center for Energy Northwest, county, state, DOE-RL and other federal agencies to facilitate consistent media releases. Areas will be set up to provide work space for the various media personnel.

Emergency power is provided for the JIC and telephone system.

6.5 EMERGENCY EQUIPMENT AND SUPPLIES

Appendix 3 identifies the emergency equipment staged for Fire Brigade Response at Columbia Generating Station. In addition to the Fire Brigade turnout stations, other equipment is staged throughout the plant for use by the Fire Brigade. This includes fire fighting hose stations, foam kits for Class B fires, and smoke removal.

Equipment is stored for field team use at the Emergency Operation Facility and at an offsite location. Vehicles and survey equipment kits are available for use by the field teams.

An inspection, inventory, and operational check of emergency equipment/instruments in each emergency cabinet or kit is conducted at least quarterly and after each drill which utilized that particular cabinet and kit. The equipment designated for emergency use will be calibrated at the intervals recommended by the manufacturer. Sufficient reserves of instruments and equipment are maintained to replace instruments removed from kits for repair or calibration. Emergency respiratory equipment will be inspected monthly. Required quantities in each cabinet or kit are established by procedure.

6.6 COMMUNICATION SYSTEMS

The Rolm phone system and the 300 dial-up system may be used as a backup to the Crash system for notification of offsite agencies. The Emergency Director will notify the SCC Duty Officer and offsite agency representatives using one or more of the following systems:

6.6.1 Radio Network

The radio system consists of radio channels covering several different radio bands. The Emergency Operations Facility is the primary facility for communication with emergency responders and offsite response organizations.

Limited radio capability is available in the Central Alarm Station, the Secondary Alarm Station (in the Control Room), the Technical Support Center, and the Operations Support Center. Mobile and portable radios are provided for selected vehicles and plant personnel.

Field monitoring teams will utilize the state sanctioned common emergency radio channel of 46.00 MHz. This system has a mountaintop base station that provides communications with field monitoring teams.

The mountaintop radio repeaters and 46.00 MHz base station are powered by a battery and charger system to provide communications capability during a loss of power.

Radio communication with the Department of Energy and the Benton and Franklin County Emergency Operations Centers is also available. The Department of Energy Communications Center and the Benton County Emergency Dispatch Center provide 24-hour monitoring of these radio links. See Table 6-1 for a listing of available radio channels.

6.6.2 Company Telephone System

Energy Northwest's Richland phone system is a computer based, software controlled telephone exchange (Computerized Branch Exchange). It is equipped with redundant computerized processor units and is served by an uninterruptible power supply.

The direct-dial private telephone system provides communication between the Hanford Energy Northwest facilities. The phone system is arranged such that plant telephones can reach other Energy Northwest facilities by direct-dialing and without the need of an operator. Telephones are at various strategic locations throughout the plants, including the Control Room, the remote shutdown panel, the Technical Support Center and Operations Support Center.

There are multiple direct inward dialing trunks to the Computerized Branch Exchange. Columbia Generating Station is connected to this exchange via company owned tie trunk lines. The Emergency Operations Facility has tie trunk lines connected to the Energy Northwest Office Complex (ENOC) Computerized Branch Exchange. The Computerized Branch Exchange in the plant is connected to the outside public telephone system via a minimum of 15 central office trunks. Each plant also has access to a number of long distance State Controlled Automatic Network Circuit (SCAN) trunks. Energy Northwest headquarters also has access to long distance SCAN lines. These SCAN lines are wired direct to Spokane and bypass the local toll centers. This allows bypassing of the local central office in the event of congestion.

6.6.3 Dedicated Telephone Circuits

The following dedicated phone networks are available for emergency communications in addition to the normal Energy Northwest phone network:

a. Energy Northwest Emergency Center Network,
b. Response Agency Network, and
c. NRC Emergency Notification System.

The Energy Northwest Emergency Center Network interconnects the plant and emergency centers. The network uses a push button system in which the caller selects the area to be called, pushes the appropriate button which in turn automatically rings into the selected area.

The Response Agency Network connects the Energy Northwest emergency centers with State and local emergency centers. Lines to the Washington State Emergency Operations Center are routed through the local State Patrol Office switchgear and transmitted via the state microwave system to Camp Murray. By dialing a unique series of numbers the user is able to reach a specific agency. Facilities serviced by these dedicated lines are Columbia Generating Station, the Benton and Franklin County Emergency Operations Centers in Richland and Pasco, the Department of Energy Patrol Occurrence Notification Center on the Hanford site, and the Washington State Emergency Operations Center in Camp Murray. In addition, the network has a crash function, which is why it is referred to as the Crash line or Crash Notification System. This feature of the system operates by dialing a unique activator number that automatically rings all the phones on the system. The Crash line is available in the Alternate EOF.

A federal telephone system (FTS 2000) connects Energy Northwest emergency centers to the Nuclear Regulatory Commission. The Emergency Notification Network (ENS) and the Health Physics Network (HPN) are included in this system. ENS is available in the Control Room, the Technical Support Center and the Emergency Operations Facility. The HPN, ENS, and Crash are available in the Technical Support Center, the Emergency Operations Facility, and the Alternate EOF.

Call list telephone numbers associated with activation of the Emergency Plan are updated at least quarterly by the Emergency Preparedness section.

6.6.4 Sound Powered Phone System

The plant Sound Powered System, designed to provide communications without the use of batteries or other outside power sources, is powered by voice sound energy. This system is completely separate and distinct from the computerized Branch Exchange telephone system.

The Sound Powered System has separate communications loops which are arranged by building and elevation. All sound powered jacks in each loop are wired in parallel and terminated on a switching device. This device provides the capability to merge and isolate various combinations of loops for maintenance and testing activities. Extension cords, handsets, and sound powered head or head-chest sets are provided for use with the jack stations.

6.6.5 In-Plant Public Address System

The Public Address System (PA) is composed of separate public address zones, each accessible through the Plant Computerized Branch Exchange telephone system. An additional phone number accesses all zones for group paging. Paging microphones located in the Control Room, Central Alarm Station, Secondary Alarm Station, Technical Support Center (TSC) and other areas override telephonic paging and transmit to all zones simultaneously. Tone generators operated from the Control Room or the TSC allow an alerting tone to be broadcast over the PA system. The paging microphones have priority over all other functions of the Public Address System.

Portable high noise evacuation devices, each composed of a radio-controlled siren and strobe light, are located in selected areas throughout the plant. These devices are activated by the PA alerting tone.

6.6.6 Area Wide Radio Paging

A Radio Paging System is used to alert on-call members of Energy Northwest's emergency response organization of an emergency.

6.6.7 Facsimile System

Various locations.such as the Control Room, Technical Support Center, Emergency Operations Facility, Joint Information Center, Department of Energy-RL, Washington State Emergency Operations Center, Oregon State Emergency Coordination Center, and the Benton and Franklin County Emergency Operations Centers have facsimile transceivers. The facsimile transceivers enable the transmission and receipt of printed material. The facsimile system which connects the Energy Northwest emergency centers with the county and state emergency centers uses dedicated phone lines.

6.6.8 Early Warning System

Tone activated radios are made available to all households within the Ten-Mile Emergency Planning Zone. These radios monitor the local Emergency Alerting System. If an Emergency Alerting System signal is received, a light is activated and an audible tone is heard. The radio then broadcasts the message. The radios contain a battery backup.

In addition to the tone activated radios, sirens located on the Columbia and Yakima Rivers, and in the Horn Rapids area are provided to assist in notifying sportsmen, boaters, and other recreationists that may be present. The Department of Energy also maintains a system for alerting its employees and its contractor's employees.

6.6.9 Automatic Dialer

An automatic dialing system is used similarly to and at times in conjunction with the area wide radio paging system as a means to notify Energy Northwest emergency personnel.

6.6.10 Emergency Response Data System

The Emergency Response Data System (ERDS) has been established to transmit raw reactor parametric data to the NRC when an Alert or higher emergency is declared. The data is conveyed over an FTS 2000 phone circuit.

6.7 COMMUNICATION SYSTEMS TESTS

The following test schedule of the communication system is established to ensure operability. This test schedule includes:

a. Communications with Emergency Dispatch Center and Department of Energy-RL

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

b. Communications with Washington State Emergency Operation Center

   1. Dedicated telephone lines -- tested monthly.
   2. Facsimile -- tested monthly.

c. Communications with Nuclear Regulatory Commission Headquarters

   1. Dedicated telephone lines -- tested monthly.
   2. ERDS - tested quarterly.

d. Communications among Energy Northwest Emergency Facilities

1. Dedicated telephone lines -- tested monthly.
2. Facsimile -- tested monthly.
3. Data circuits -- tested monthly.
4. Installed Radio links -- tested monthly.
5. Environmental Field Team radios -- tested quarterly.

e. Notification System

1. Siren system

   a) status test -- monthly documentation of status tests conducted at least bi-weekly.
   b) complete system test -- annually.

2. EAS Radio receivers test

   a) operability -- weekly (performed by the Emergency Alerting System).
   b) coverage -- annually (performed by Energy Northwest and Benton and Franklin counties).

3. Automatic Dialer

   Perform pager activation test/notification drill -- quarterly.

f. Emergency communications equipment (not covered above)

1. Area Wide Radio Paging -- operational test quarterly.

g. Fire Brigade Equipment

1. Replace batteries and perform operational tests monthly on portable radios (OSC).
2. Perform annual FCC checks on portable radios.

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

I. Emergency Facility Radio Channel Availability

A. Control Room

- In-Plant Operations Channel
- Area Wide Security Channel (Secondary Alarm Station)

B. Technical Support Center (TSC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Field Team - 46.00 MHz

C. Operations Support Center (OSC)

- In-Plant Operations Channel

D. Central Alarm Station (CAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

E. Secondary Alarm Station (SAS)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel

F. Security Communications Center (SCC)

- Area Wide Operations Channel
- In-Plant Operations Channel
- Area Wide Security Channel
- In-Plant Security Channel
- LERN (Law Enforcement Radio Network)

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

G. Emergency Operations Facility

- Area Wide Security Channel Link
  1. Franklin County Sheriff
  2. Emergency Dispatch Center
  3. Department of Energy Patrol Emergency Office
- Field Team - 46.00 MHz Channel
- Department of Energy Emergency Response Channel
- LERN Channel (Law Enforcement Radio Network)

H. Department of Energy

- Area Wide plant Security Channel

I. Benton County Emergency Dispatch Center

- Area Wide Security Channel

K. Franklin County Emergency Dispatch Center

- Area Wide Security Channel

J. Benton and Franklin Counties Emergency Operations Centers

- Area Wide Security Channel

II. Energy Northwest Emergency Center Telephone Capability

A. Technical Support Center (TSC) dedicated phone system interconnects with:

- Control Room
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Emergency Operations Facility
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System

B. Operations Support Center (OSC) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Emergency Operations Facility
- Central Alarm Station/Secondary Alarm Station
- Facsimile System

TABLE 6-1

AVAILABLE RADIO CHANNELS AND TELEPHONE CAPABILITY

C. Control Room dedicated phone system interconnects with:

- Technical Support Center
- Operations Support Center
- Crash Notification System
- NRC Emergency Notification System
- Facsimile System
- Emergency Operations Facility

D. Emergency Operations Facility (EOF) dedicated phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

E. Alternate Emergency Operations Facility (EOF) phone system interconnects with:

- Control Room
- Technical Support Center
- Operations Support Center
- Central Alarm Station/Secondary Alarm Station
- Crash Notification System
- NRC Emergency Notification System
- Joint Information Center (Headquarters)
- Facsimile System

F. Joint Information Center (JIC) dedicated phone system interconnects with:

- Crash Notification System
- EOF
- Facsimile System

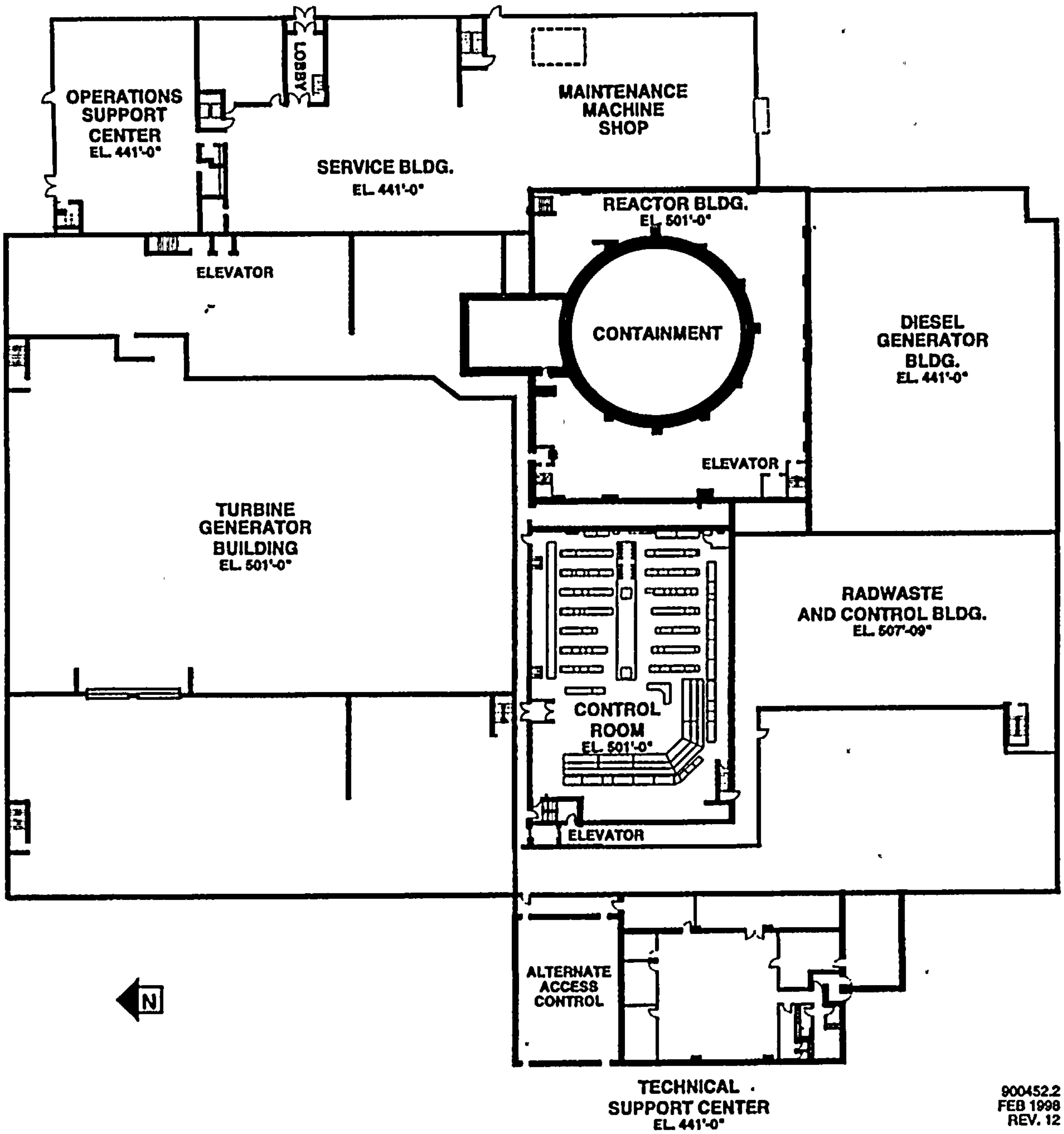


Figure 6-1, Columbia Generating Station Control Room, Technical Support Center and Operations Support Center Locations (Typical Arrangement)

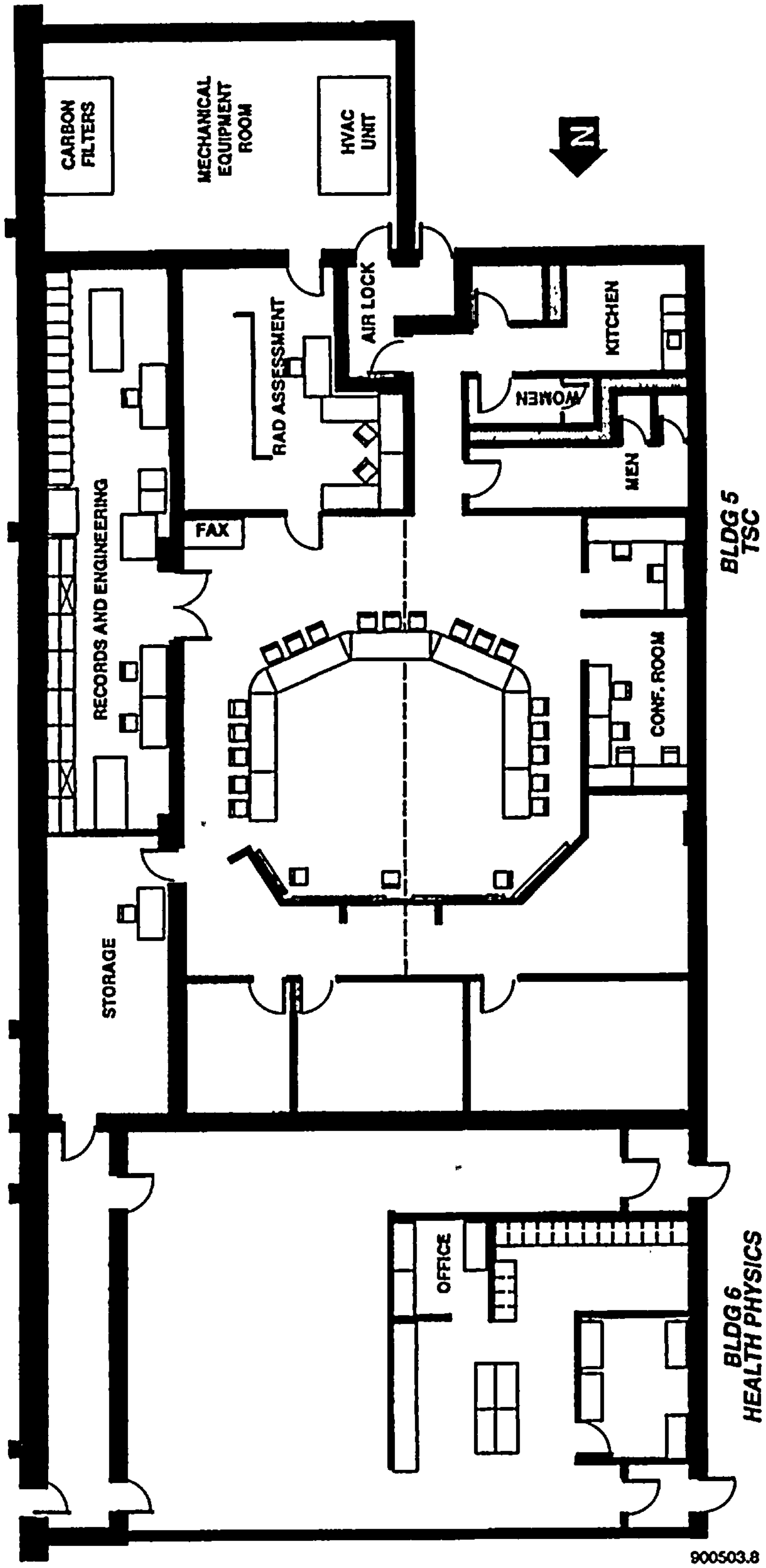


Figure 6-2, Columbia Generating Station Technical Support Center
(Typical Arrangement)

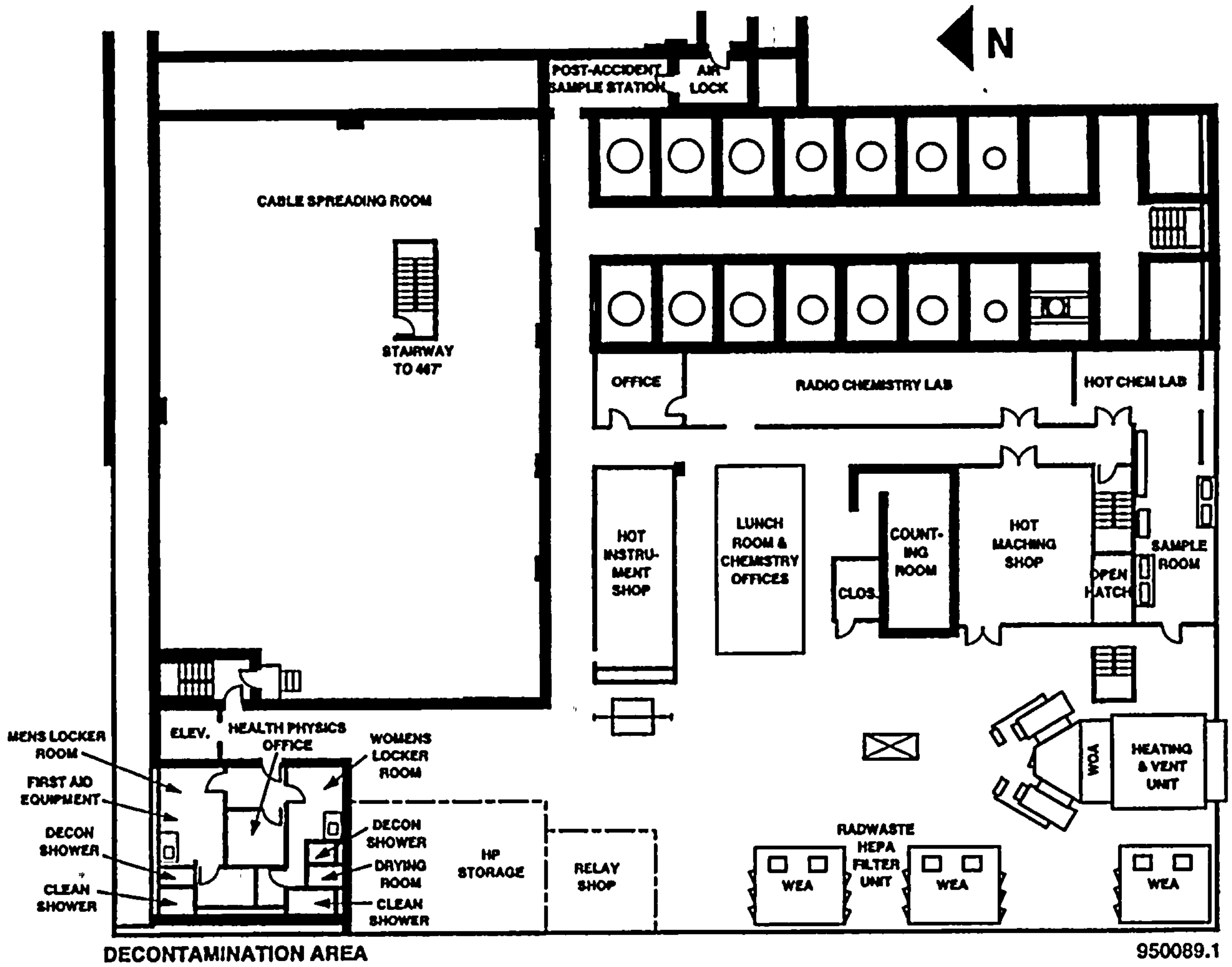


Figure 6-3, Columbia Generating Station Decontamination Area
(Typical Arrangement)

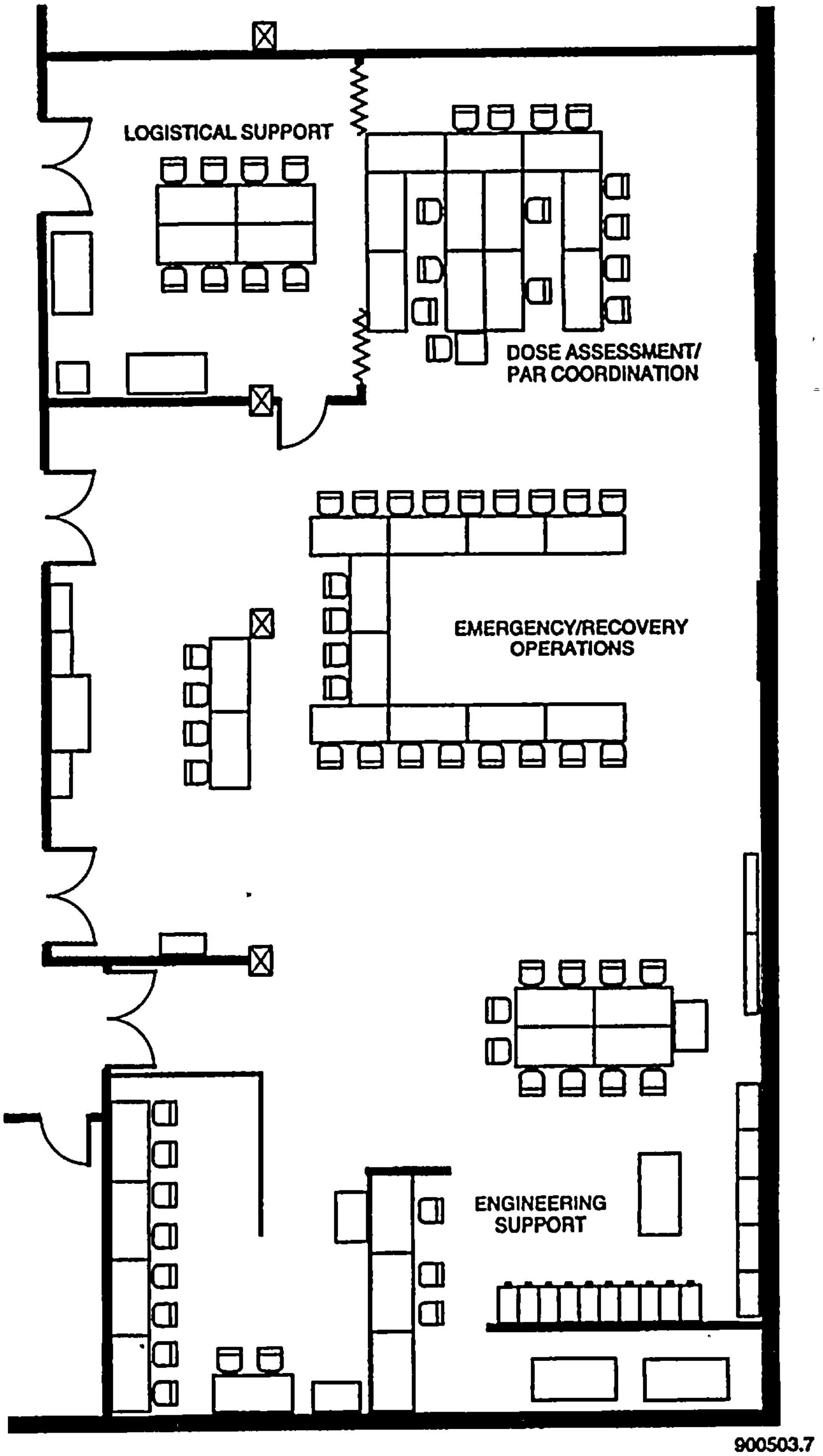


Figure 6-4, Kootenai Building
Emergency Operations Facility (EOF)
(Typical Arrangement)

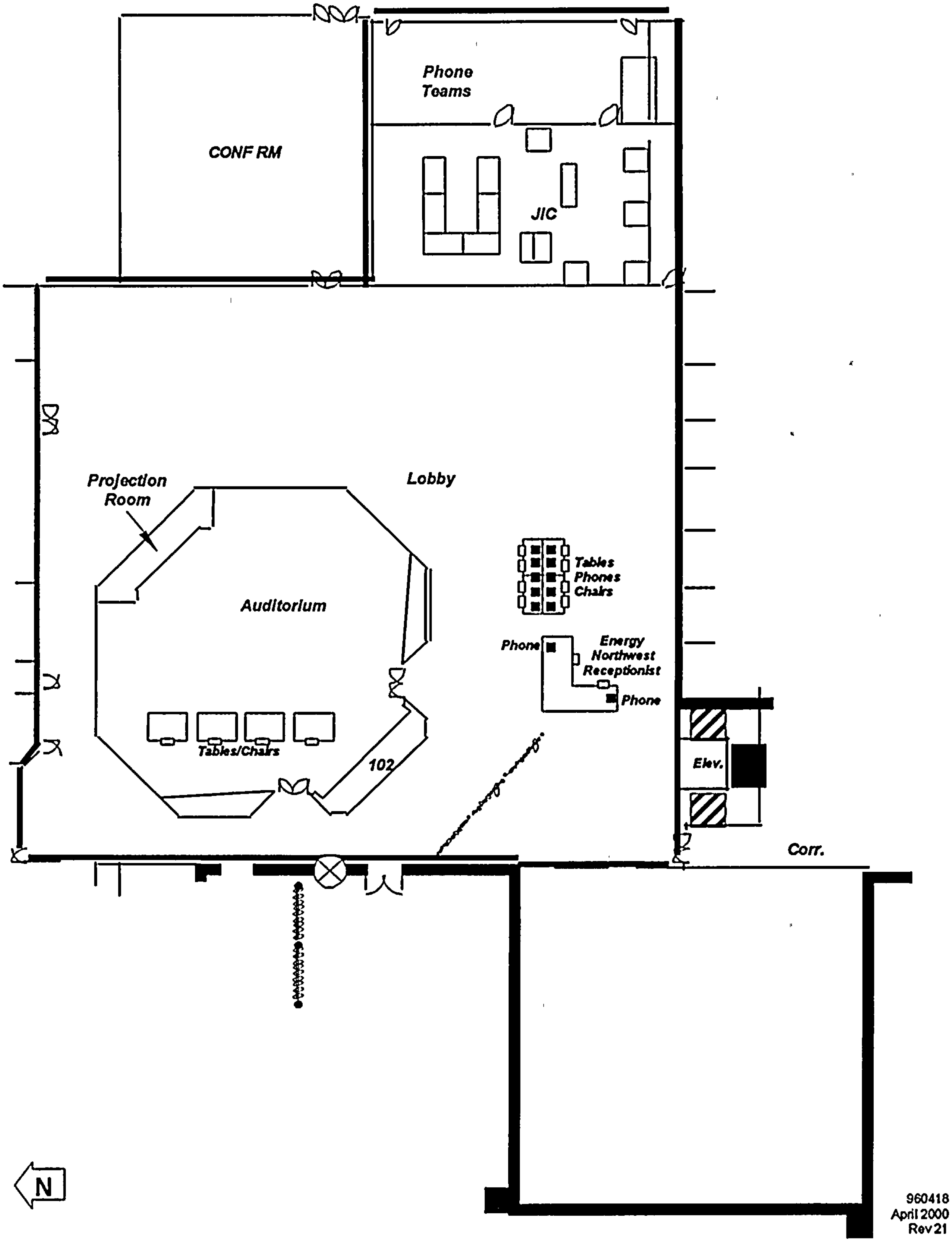


Figure 6-5, Joint Information Center - Typical Arrangement

SECTION 7
REENTRY AND RECOVERY OPERATIONS

7.1 REENTRY AND RECOVERY OPERATIONS

Emergency actions will shift to the recovery phase once the immediate corrective and protective actions have established effective control over the incident. Onsite reentry and recovery operations are addressed in 7.2 and 7.3. Offsite reentry and recovery operations are discussed in 7.4.

7.2 REENTRY INTO ONSITE AREAS

Reentry into evacuated onsite areas may be required during and after an emergency. This could include search and rescue, actions to minimize further accident consequence, or assessment of plant conditions to determine the scope of recovery operations. Exposure guidelines, as outlined in Section 5 of this plan, should not be relaxed without sufficient justification.

Prior to reentry, the Radiation Protection Manager or his representative shall:

a. Review all available radiation survey data and determine plant areas with high radiation exposure and/or contamination potential,

b. Review the radiation exposure records of personnel participating in the reentry operation and determine the need for additional personnel,

c. Review the adequacy of the radiological sampling and survey instrumentation to be used by the team (type, ranges, number, calibration etc.),

d. Review protective clothing, dosimetry, and respiratory protection requirements,

e. Ensure that appropriate communications are available, and

f. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry.

The initial recovery efforts should encompass the following actions:

a. Conduct comprehensive radiation surveys of the plant facilities and define all radiological problem areas;

b. Isolate and post all radiation and contamination areas with appropriate warning signs as conditions and available time allow, and

c. Identify potential hazards that may impact recovery operations.

During the reentry activities immediately following an accident, initial radiation monitoring functions involve only gross hazard evaluations, isolation of the hazard, and the definition of radiological problem areas. This immediate radiation surveillance activity is used to provide the basic information for the development of recovery operations.

7.3 ONSITE RECOVERY OPERATIONS

The EOF Manager and TSC Manager have the joint responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. A Recovery Manager will be appointed and a Recovery Organization will be established to develop and coordinate plans and schedules for the recovery operations. Following a Site Area Emergency or General Emergency, the Corporate Nuclear Safety Review Board (CNSRB) will review and comment on the recovery planning effort to assure that all nuclear safety aspects of the recovery are satisfied. (The CNSRB will report their findings to the Recovery Manager, who shall take the actions deemed appropriate for safe recovery operations.) Refer to Figure 7-1 for key positions and responsibilities of the recovery organization.

7.3.1 Initiating the Recovery Phase

Prior to terminating an emergency and entering the recovery phase, the EOF Manager will coordinate with the TSC Manager to ensure that the following criteria have been considered:

a. The conditions which caused the emergency have stabilized, are under control, and are unlikely to deteriorate further.

b. Plume tracking is no longer required. The only environmental assessment activities in progress may be those necessary to assess the extent of deposition resulting from passage of the plume.

c. In-plant radiation levels are stable or decreasing.

d. Radioactive releases are under control.

e. The potential for an uncontrolled radioactive release is acceptably low.

f. Containment pressure is within technical specifications.

g. The reactor is in a stable safe shutdown condition and long-term core cooling is available as required.

h. Any fire, flood, earthquake or similar emergency conditions no longer exist.

i. Offsite conditions will not limit access of personnel and support resources to the site.

j. Discussions have been held with DOE-RL, Washington, Oregon, affected counties and select regulatory agencies, and agreement has been reached to begin the recovery phase.

The extent of recovery activities will dictate the precise framework of the Recovery Organization:

a. For events of a minor nature, the normal onshift organization should be adequate to perform necessary close-out actions (e.g., for UNUSUAL EVENT classifications).

b. For events involving significant damage to plant systems required to maintain operation of the plant, the onsite emergency organization, or portions thereof, should be adequate to coordinate the necessary recovery actions (e.g., for ALERT classifications).

c. For events involving damage to plant systems required to maintain safe shutdown of the reactor, a formal Recovery Organization will be established to manage the recovery actions. Specific members of the Recovery Organization will be selected based upon the sequence of events that preceded the recovery activities.

7.3.2 Conducting Recovery Operations

Recovery operations will be performed in accordance with written procedures developed by the Recovery Manager and staff prior to implementation of any recovery action. These procedures shall be based upon information collected by the initial reentry team(s) and any subsequent updates. Special precautions will be identified for any potentially hazardous conditions. If radiological hazards exceed the boundaries of the radiation access controlled areas, the security access lists should be reviewed and revised to prevent unauthorized or unintentional entry into hazardous areas.

The Recovery Manager is responsible for directing the activities of the Recovery Organization and should:

a. Ensure that sufficient personnel from Columbia Generating Station and other organizations are available to support recovery.

b. Direct the development of a recovery plan and implementing procedures, as required.

c. Coordinate with the CNSRB to ensure adequate review of engineering activities and proper review and approval of the recovery plan and implementing procedures.

d. Coordinate the deactivations of emergency response facilities and personnel as appropriate.

e. Coordinate the integration of available state and federal assistance into recovery activities.

f. Coordinate with offsite authorities, and provide support as required for offsite recovery activities.

g. Approve all technically oriented recovery information released by the Public Information Organization.

h. Periodically estimate total population exposure.

When criteria to enter the recovery phase are met, the Recovery Manager will inform emergency centers and offsite agencies by crash call of the transition to recovery. The Recovery Manager then initiates a discussion of recovery items with the Recovery Task Force members to develop a shutdown safety plan focusing on procedurally defined priorities.

The Recovery Task Force will produce initial plans to cope with near and long term activities, provide direct input to the maintenance organization for an integrated outage plan, and provide assistance to the Recovery Manager to transition from a recovery phase to an outage, as appropriate.

During the recovery operations, particular attention should be directed toward isolating components and systems as required to control or minimize the hazards. A systematic investigation will be conducted to determine the extent of any equipment damage and to determine the sequence of events that led up to the accident for event reporting and lessons learned findings.

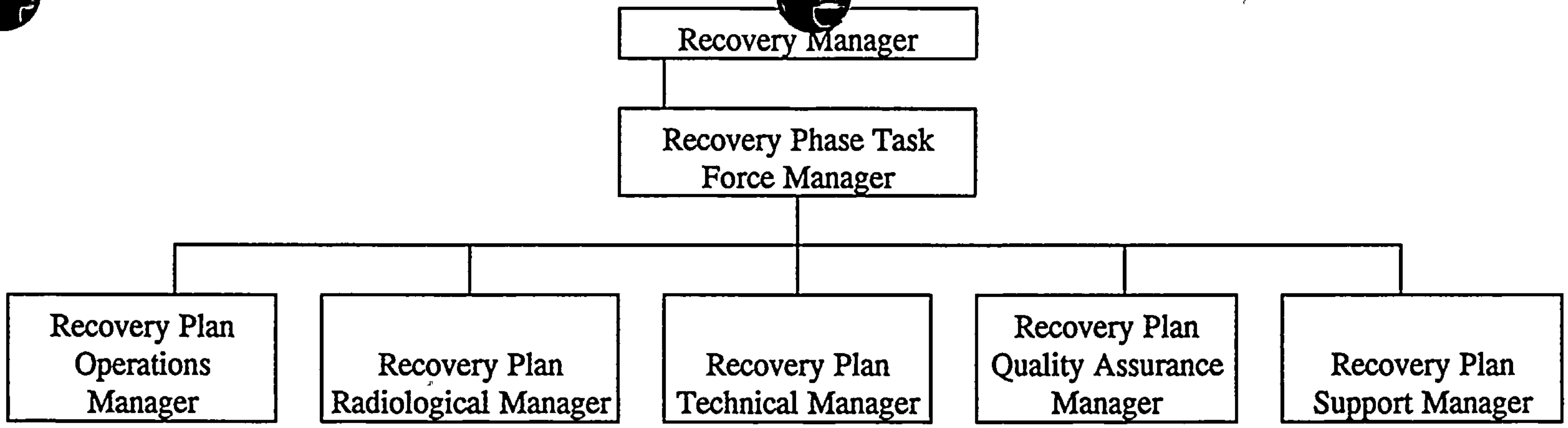
The Recovery Manager will ensure that onsite ERO and appropriate offsite agencies are notified prior to initiating any recovery operation with a potential for a radiological release. The ERO and offsite agencies will also be notified of any changes in the key positions of the recovery organizational structure.

All recovery operations are considered to be terminated when the plant has returned to pre-accident levels of radiation and contamination or to conditions which are acceptable and controllable for an extended period of time.

7.4 OFFSITE REENTRY AND RECOVERY OPERATIONS

A Reentry and Recovery Task Force is established by the State and County emergency response plans and is responsible for coordinating offsite recovery following radiological incidents including the requirements for reentry conditions for any offsite evacuated areas. Energy Northwest will provide a representative and additional assistance to this Task Force, as requested. Specific details of offsite reentry and recovery operations can be found in the State and County emergency response plans and implementing procedures.

RECOVERY TASK FORCE ORGANIZATION CHART



<u>Areas of Oversight Responsibilities:</u>

Production Scheduling	Environmental	Fuels	Commitments	Procedures
Safety	Decon	Licensing	Reviews	Scheduling
Maintenance	Restoration HP	Vendors	Oversight	Finance
Security (Plant)	Radwaste	Analysis	Qualifications	Public Relations
OPS	Surveys	Plant Support		Legal
Shutdown Safety				Site Support
				Procurement
				Add'l Staffing

<u>NOTE</u>: The NRC will be invited to participate in this task force as deemed appropriate.

Figure 7-1

SECTION 8
MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES FOR THE PLANNING EFFORT

Overall responsibility and authority for emergency planning lies with the Vice President, Operations Support/Public Information Officer. The Manager, Resource Protection, reports directly to this Vice President, and has emergency preparedness as one of his general areas of responsibility. Reporting to the Manager, Resource Protection, is the Corporate Emergency Preparedness, Safety and Health Officer, who has specific responsibility for the Emergency Preparedness organization, and implementation of the program itself. Formal position descriptions specify minimum qualifications for the emergency planning personnel. Professional qualifications are maintained by periodic attendance at industry seminars and short courses, through observation of and participation in radiological emergency exercises conducted at other nuclear facilities, and through job-related in-house topical training sessions.

Specific responsibilities for the Corporate Emergency Preparedness, Safety and Health Officer include, but are not necessarily limited to, the following:

a. Ensure that the information, data, and procedures detailed in the Emergency Plan Implementing Procedures are consistent with the Columbia Generating Station Emergency Plan.

b. Ensure that the Emergency Plan Implementing Procedures and other procedures are coordinated and interface properly (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

c. Ensure the coordination of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures with the State, County and DOE-RL Plans.

d. Ensure an adequate staffing of the ERO.

e. Ensure emergency preparedness related training documentation is sent to Records Management.

f. Ensure emergency preparedness related drills and exercises are coordinated as described in this Plan.

g. Ensure periodic review and update of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures occurs as described in this Plan.

h. Ensure the maintenance and inventory of emergency facilities, equipment and supplies as described in this Plan.

i. Maintain knowledge current with respect to changes in the federal regulations and guidance that impact emergency preparedness activities.

j. Public information and education on emergency preparedness issues.

8.2 EMERGENCY PREPAREDNESS PLAN REVIEW

The Emergency Plan and the Agreements which support the plan are reviewed annually and updated as necessary. Critiques of past exercises, changes in company organizational structure, and issuance of new regulations provide the primary input to plan review. The Corporate Emergency Preparedness, Safety and Health Officer is responsible for developing and updating the Emergency Plan and coordinating the plan with other response organizations. The Plant Operations Committee is responsible for reviewing any proposed changes and submittal of the proposed revision to the Corporate Nuclear Safety Review Board.

The Corporate Emergency Preparedness, Safety and Health Officer provides a distribution list of all organizations and individuals with responsibility for implementation of the Emergency Plan. The Emergency Plan and all subsequent revisions are then distributed through a manuals control system which verifies receipt of the revisions by the implementing organization or individual. Revised pages are dated and marked to indicate where changes have occurred. If no revisions have occurred, the Corporate Emergency Preparedness, Safety and Health Officer will certify by letter to all Emergency Plan manual holders that the plan and supporting agreements have been reviewed and are current.

8.3 INDEPENDENT AUDIT OF THE EMERGENCY PREPAREDNESS PROGRAM

Either of two types of audit groups may be employed to ensure an adequate Emergency Preparedness Program. Audits may be performed by an outside organization with technical expertise in emergency planning or by an organization within Energy Northwest which is independent of the emergency preparedness program.

An audit will be conducted in accordance with 10 CFR 50.54(t) and the OQAPD. The review shall include the Emergency Plan, the Emergency Plan Implementing Procedures, training, readiness testing, equipment, and interfaces with state and local governments. The results of the audit, along with recommendations for improvement, shall be documented and reported to the Chief Executive Officer, the Plant General Manager, Vice President, Operations Support/PIO, and appropriate corporate and plant management. In addition, involved federal, state, and local organizations will receive results of the audit. The report and recommendations will be retained for a minimum period of five years.

The Corporate Nuclear Safety Review Board has the responsibility to review the Emergency Preparedness Program audit findings to determine if the conduct is adequate, and if the audit responses are appropriate and timely. The Board may expand these audit activities if necessary.

8.4 FACILITIES AND EQUIPMENT MAINTENANCE

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for ensuring that the facilities and equipment specified in Section 6 of this Plan are maintained in operational readiness. In addition to the routine tests and scheduled maintenance evolutions, the Emergency Preparedness staff members conduct periodic facility walk-downs of the on-site emergency response facilities. Various departments within Energy Northwest share the responsibility for performing maintenance and calibration on the equipment necessary to implement the provisions of the Emergency Plan, including survey meter calibration and testing, backup power source maintenance and testing (e.g., uninterruptible power supply batteries, diesel generators, etc.), emergency ventilation system maintenance and operational checks, field team vehicle maintenance, communications systems maintenance and testing, and tone alert radio and siren maintenance and periodic testing.

8.5 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The radiological emergency response training program is one of the most important aspects of the emergency preparedness effort. This training is intended to keep an adequate number of emergency personnel sufficiently familiar with the Emergency Plan and procedures to perform effectively in an emergency. Fire Brigade personnel are trained per FSAR 13.2. Security personnel are trained per the Physical Security Plan.

8.5.1 Emergency Training Program Description

Initial training for emergency responders is provided to all new Energy Northwest emergency response organization candidates. Refresher training is provided to the emergency response organization on an annual basis.

Personnel from local, state, and federal organizations who may be requested to assist during an emergency will be invited to participate in the site specific training program which may include tours to gain familiarization with the facilities. Support organization personnel will be provided qualified escorts if they enter the Plant Site during an emergency.

a. The Emergency Preparedness Training Program will include, but is not limited to the following:

- Applicable Emergency Plan Implementing Procedures
- Location of emergency equipment and supplies
- Names, locations, and functions of the emergency response facilities
- Use of plant communication systems
- Personnel accountability, assembly, and evacuation

b. As a minimum, all Emergency Response Organization personnel shall receive Emergency Preparedness Initial training. Emergency Plan training program lesson plans are developed using applicable guidance from the systematic approach to training process.

c. Initial training for Emergency Response Organization personnel shall include formalized classroom training, and examinations. Additionally, "hands on" training with completion of performance evaluation sign off forms may be used, as appropriate. It is the intent of this training program to qualify Emergency Response Organization personnel in the requirements of the Emergency Plan Implementing Procedures applicable to their emergency positions.

The training courses will provide the necessary information to enable each member of the emergency organization to perform assigned emergency tasks. Selected emergency personnel will attend specialized classes related to particular emergency assignments. Specific training course assignments for members of the emergency organization, and overall training responsibilities, may be found in the Qualification Directory. Detailed training responsibilities may be found in the Site Wide Procedures. The training course descriptions are found in the specific qualification directories.

8.5.1.1 Emergency Training for Essential Personnel

The emergency organization positions which are essential to implementation of this Emergency Plan are identified in Table 2-1. The individuals identified to function in these emergency organization positions will receive appropriate specialized initial training in the duties and responsibilities of the position and the applicable procedures. This training will consist of formal classroom instruction, written examination to verify a satisfactory level of comprehension, and where appropriate will include "hands-on" training with completion of performance evaluation sign off forms.

a. In addition to Emergency Center Overview training, essential personnel receive the following training:

- Emergency Director (Shift Manager, TSC Manager, EOF Manager)
    - > Protective Action Recommendations
    - > Emergency Classification
- Control Room Staff (Shift Manager, Control Room Supervisor, Control Room Operators, Emergency Response SRO, STA)
    - > Protective Action Recommendations (except Control Room Operators)
    - > Emergency Classification

> Dose Projection (except Control Room Operators)

> Emergency Notification

- Accident Assessment and Rad Monitoring Teams (RPM, Chemistry/Effluent Manager, REM, Dose Projection HP, Field Team Members, Field Team Coordinator)

    > Protective Action Recommendations (RPM and REM only)

    > Dose Projection (Chemistry/Effluent Manager, REM and Dose Projection HP only)

    > Field Team Overview and Operations (FT members and FT Dispatcher only)

- Fire Brigade

    > Trained per the requirements of FSAR Chapter 13.2

- Repair Teams (HP, Mechanic, Electrician, I&C, Chemistry)

    > OSC Maintenance Craft Overview

- First Aid/Rescue teams

    > Equivalent to Red Cross standard First Aid

8.5.1.2 Emergency Training for Augmenting and Support Personnel

Individuals assigned to emergency organization augmenting and support positions (not identified in Table 2-1) will receive training as described in the Qualification Directory.

8.5.2 Training for Offsite Agencies

Orientation and training of state and county agencies and personnel involved in the Columbia Generating Station emergency preparedness efforts will be made available by Columbia Generating Station, as follows:

a. The offsite organizations listed below will be invited, on at least an annual basis, to participate in a training program. The invitation will provide a schedule of drills and exercises to enable offsite agencies to request participation.

- Washington Emergency Management
- Washington Department of Health
- Benton County Emergency Management
- Franklin County Emergency Management
- Oregon Office of Energy
- Oregon State Health Division
- Local media personnel (newspapers, radio, tv, etc.)

b. The program will cover the basics of emergency preparedness as it relates to regulations and public safety. The program will include a review of select Emergency Plan Implementing Procedures with particular emphasis given to:

- Classification of emergencies,
- Reporting requirements,
- Assessments,
- Corrective and protective actions, and
- Communications networks.

Training for local services personnel includes, but is not necessarily limited to, procedures for notification and, where applicable, site access procedures, onsite contact identity, basic radiation protection and emergency response functions. This training is provided to the following organizations:

- Richland, Kennewick, and Pasco Fire Departments

  Initial and annual retraining is provided to the local fire department personnel concerning response requirements for accidents involving a threat of radiological contamination.

- Richland, Kennewick, and Pasco Hospitals

  Hospital personnel who may be involved in response to an emergency involving a potential of radiological contamination receive initial and annual retraining. Training covers how to deal with radiation accident cases.

8.5.3 Frequency of Training

Training for all individuals assigned to emergency organization positions will be successfully completed prior to their initial assignment to the emergency organization. Continuing training will also be administered to insure retention and familiarity with the subjects covered in the initial training. The continuing training will be administered annually.

The annual retraining program for ERO personnel is accomplished using classroom instruction and drill performance with immediate on the spot correction. Completion of self study information or examinations may be used to maintain qualifications of personnel unable to attend classroom sessions or drills.

Classroom instruction is used to refresh ERO personnel on information such as industry events, lesson learned from the past year's experience, significant procedure changes, and a review of response requirements.

Self guided performance evaluations may be used to refresh specific skills necessary for adequate emergency response skills. Written examinations may be used to evaluate comprehension and retention for refresher training.

Drills are used to provide practical experience to enhance information gained in the classroom. During the year, as many emergency response personnel as possible participate in scheduled drills, exercises and team training drills to broaden their experience base and that of the entire emergency organization.

When used, self-study by reading and acknowledgement is used to make responsible emergency response personnel aware of important changes to procedures. This method is primarily used when such information should not be delayed until classroom training can be provided.

8.5.4 Training Records

Responsibility for maintaining documentation of the training program is described in the Site Wide Procedures. Formal lesson plans for each course, including instructor qualifications and performance objectives will be maintained. Attendance records for all courses will also be maintained.

8.6 DRILLS AND EXERCISES

Periodic drills and exercises will be conducted in order to test the overall state of emergency preparedness. The prime objective of this form of training is to determine the level of emergency preparedness of all participating personnel, organizations, and agencies. More specifically, each drill or exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their duties and responsibilities.

b. Verify the adequacy of timing of drills and exercises and content of the Columbia Generating Station Emergency Plan and Emergency Plan Implementing Procedures.

c. Test communications networks and systems.

d. Check the availability of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

Remedial exercises will be conducted if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot determine "reasonable assurance" that adequate protective measures can be taken in the event of a radiological emergency.

8.6.1 Drill and Exercise Responsibilities

The Corporate Emergency Preparedness, Safety and Health Officer is responsible for the planning, scheduling, and coordination of all emergency preparedness related drills and exercises. All exercises are subject to the approval of the Manager, Resource Protection, and the Plant General Manager.

When a drill or exercise is to be conducted, the Corporate Emergency Preparedness, Safety and Health Officer will:

a. Schedule a date for and assign a drill or exercise coordinator.

b. Assign personnel to prepare a scenario and to act as controllers.

c. Coordinate efforts with other participating emergency personnel, organizations, and agencies.

d. Oversee conduct of the drill or exercise.

e. Critique the results of the drill or exercise.

f. Assign personnel to correct any deficiencies.

Combined functional drills and exercises will involve onsite as well as offsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted simulating, as closely as possible, actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Whenever practical this will incorporate provisions for "free play" on the part of the participants. Drill scenarios will be prepared that involve the participation of several emergency teams and all or specific parts of the onsite and offsite emergency organizations. This may include varying degrees of participation of state, county, and federal organizations and agencies, and local service support personnel and organizations. The Corporate Emergency Preparedness, Safety and Health Officer will make every effort to notify the offsite emergency response organizations and agencies at least 180 days in advance of the scheduled date of the drill or exercise.

Drills will involve on-the-spot correction of erroneous performance and a demonstration of the proper performance for the evaluator. During the conduct of exercises, the controllers are restricted in their ability to correct erroneous performance, and may only intercede to prevent damage to equipment or assure safety of personnel.

Recommendations for revisions to the Emergency Plan, Emergency Plan Implementing Procedures, and/or the upgrading of emergency equipment and supplies as a result of a drill or exercise are forwarded to the Corporate Emergency Preparedness, Safety and Health Officer by observers or participants for appropriate disposition.

8.6.2 Drill/Exercise Package

A drill/exercise package is the controlling document for each drill or exercise. It includes, as a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s) and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
- A description of the arrangements for and advance materials to be provided to official observers.

8.7 TYPES OF DRILLS

This section gives details of some of the types of drills which will be conducted periodically. Other types of drills may be developed as needed to test various portions of the emergency support organization.

8.7.1 Communication Drills

Communication drills are conducted in the following manner:

- Operability of the various communications systems is tested by two-way communication. See Section 6 for a detailed list of the systems tested. These tests may be included as part of a scheduled drill or exercise.
- Communication drills involving the field assessment teams are conducted as a part of the radiological monitoring drills.

- Communication drills with Washington State and local governments, (Benton and Franklin Counties), and DOE-RL are conducted to evaluate the message distribution process, including the ability of participants to understand the content of example messages.

8.7.2 Fire Drills

The Fire Brigade will be activated for response to a simulated fire or may respond to a training area to actually fight a fire under the supervision of the Fire Brigade Leader.

8.7.3 Medical Emergency Drills

This drill involves a simulated injury with contamination and will include provisions for participation by ambulance personnel and offsite medical treatment facilities. This drill shall occur annually. The offsite and onsite portions may be performed out of sequence and at different times. The onsite portion of the medical emergency drill should involve evaluation, packaging, and transport of the simulated victim to the ambulance pickup point.

8.7.4 Radiological Monitoring Drills

These drills involve the Environmental Field Teams. Plant and field activities may involve conducting surveys, tracking radiological plume(s) and deposition, and collecting and analyzing various samples such as water, soil, air, and vegetation. Provisions for communications and record keeping will also be tested.

8.7.5 Health Physics Drills

- The first type of health physics drill involves response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- The second type of health physics drill requires analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system.

8.8 FREQUENCY OF DRILLS AND EXERCISES

Scenarios will be varied from year to year so that all major elements of the plan and preparedness organizations are tested within a six-year period. Drills and exercises will be conducted under various weather conditions and may be unannounced. Provisions will be made to demonstrate an off hours drill between 6:00 P.M. and 4:00 A.M., at least once each six years. Additional drills may be conducted to provide practical training to emergency organization members. These drills may include components that satisfy the required drill elements in Table 8-1.

8.9 DRILL/EXERCISE PREPARATIONS AND CONDUCT

The Emergency Preparedness organization is responsible for initiating and coordinating the development of the drills and exercises necessary to meet the requirements of the Emergency Plan. The drill/exercise coordinator is responsible for overall development of the drill/exercise package and to ensure all preparatory activities between departments and agencies are coordinated (see Section 8.10.1). The minimum necessary actions to be taken in preparation for a drill or exercise are as follows:

a. Develop the drill/exercise scenario including:

   1. The objectives and evaluation criteria;

   2. The desired participants (i.e., response agencies);

   3. The primary actions/plans expected to be implemented, activated; and

   4. The tentative date.

b. Distribute the scenario to the desired participants for review and concurrence.

c. For all exercises, Federal, State, and local government agencies will be invited to observe, evaluate, and critique the exercise.

The use of the Columbia Generating Station Probabilistic Safety Assessment (PSA) should be considered when constructing drill and exercise scenarios. The use of PSA allows efforts to be directed at the most likely accident scenarios. Planning efficiency may therefore be increased by allowing the available resources to be directed at the most likely events. The Columbia Generating Station PSA considers both the likelihood and consequences of severe accidents possible at Columbia Generating Station and thus can be utilized to ensure the drill and exercise scenarios are more realistic to the players.

One of the major objectives of drills and exercises is to test the ability of emergency response organization personnel to utilize the emergency response procedures and to make effective and timely decisions based on available data. To effectively accomplish this objective, the drill/exercise controllers will provide the players with any data which the player would have available to them under the conditions being simulated by the drill or exercise.

Facilitative critique session(s) will be held as soon as practicable after each drill/exercise. The comments of the evaluators, controllers, players and observers including federal and state observers or evaluators, will be discussed and the significant comments will be identified. As a part of the critique report, deficiencies (involving needed plan/procedure changes) will be identified. The Emergency Preparedness Section will be responsible for tracking Energy Northwest corrective actions to completion and maintaining sufficient records to document correction of the deficiencies.

TABLE 8-1

REQUIRED DRILL ELEMENTS

	Drill/Exercise	Frequency
a.	Communications Tests	(As described in Section 6. Can be performed as part of drills or exercises.)
b.	Communications Drills	Monthly (with WA State, DOE RL, and Benton and Franklin County Response Agencies) Quarterly (with state and federal response agencies) Annually (with Columbia Generating Station, state and local field monitoring teams)
c.	Fire Brigade Drills	As described in FSAR Section 13.2 (See Note 1)
d.	Medical Emergency Drills	Annually (See Note 2)
e.	Radiological Monitoring Drills	Annually
f.	Health Physics Drills	
	1. Analysis of simulated samples and measurements in the environment	Semi-Annually
	2. Analysis of in plant liquid samples with actual elevated radiation levels	Annually
g.	Major Exercises, including tests of Public Notification System	Biennially (See Note 3)
h.	Combined Functional Drills	Biennially (See Note 4)

NOTE 1: One of the fire drills may be conducted as a portion of the major exercise or combined functional drill.

NOTE 2: The portion of the medical emergency drill involving offsite support agencies may be performed as a portion of the radiological monitoring, major exercise or combined functional drill.

NOTE 3: Department of Energy - Richland Operations, Benton and Franklin County and Washington State Emergency Management will be afforded the opportunity to participate biennially or more frequently if they so request.

NOTE 4: Performed during the alternating years from the major exercises, and testing a major portion of the basic elements of the plans and organizations.

SECTION 9
PUBLIC EDUCATION AND INFORMATION

9.1 PUBLIC EDUCATION AND INFORMATION PROGRAM

Energy Northwest has developed a public education and information program with the purpose of educating the public concerning power plant safety, expected effects of a reactor accident, and actions which should be taken by the public in the unlikely event of a release of radioactive material. This program is targeted for the transients and residents within the Ten-Mile Emergency Planning Zone (EPZ), as well as other interested members of the general public. Special programs have also been designed to address the special needs of the news media.

9.1.1 Annual Public Information Program

In coordination with the Department of Energy - Richland Operations, State of Washington and Benton and Franklin Counties, Energy Northwest provides information to permanent and transient populations within the Ten-Mile EPZ on such topics as radiation, recommended protective measures, selected evacuation routes and assistance centers, sheltering, respiratory protection, thyroid blocking agents, special needs for the handicapped, tone activated radio operation and contacts for additional information. This program includes written material updated and distributed annually to residences within the Ten-Mile EPZ for reference during an emergency.

Brochures at designated recreational facilities are available to transient populations within the 10-Mile EPZ.

9.1.2 Media Information Program

In addition to Energy Northwest's ongoing media program, special presentations coordinated with county and state emergency management offices are made annually to acquaint the news media with emergency preparedness, radiation hazards, and points of contact for release of public information during an emergency.

9.1.3 Warning Signs

Warning signs are posted and maintained at selected areas frequented by sportsmen within the Ten-Mile EPZ.

The signs inform the transients that upon hearing a steady siren tone to leave the area immediately and tune to the local Emergency Broadcast System frequency.

9.2 PUBLIC INFORMATION DURING EMERGENCIES

9.2.1 Emergency Public Information

During an emergency the Joint Information Center (JIC) Manager is responsible for ensuring an accurate and reliable flow of information. Emergency public information procedures are activated during an emergency and will include provisions for exchange of information between Energy Northwest, the public, and outside agencies.

It is likely that the perceived threat, hence media interest and public concern, will be greater than that actually associated with the emergency. The degree to which the emergency public information program is activated by the JIC Manager will depend upon the classification of the emergency and upon the public perception of the event. Therefore, accelerated operations beyond the requirements expected for the declared class of emergency may be implemented.

9.2.2 Emergency Operations Facility Public Information Operations

The Emergency Operations Facility (EOF) Public Information Officer and news writing staff are responsible for developing media release information, and will work closely with technical personnel in the EOF to assure accurate information.

9.2.3 Public Information Operations

The Joint Information Center, located outside the 10-mile EPZ, can accommodate a large number of media personnel and is activated automatically at an alert or higher classification or at the direction of the JIC Manager.

A News Coordination Team, chaired by the JIC Manager, will be established to issue accurate, coordinated and timely information to the media by conducting media briefings and preparing news releases. This team is composed of representatives from Energy Northwest, the Nuclear Regulatory Commission, the Department of Energy-RL, the Federal Emergency Management Agency (coordinating the rest of the federal agencies), and state and local officials. The team will assure that the spokepersons designated from each group have access to all necessary information, opportunity to exchange information, and have the opportunity to participate in media briefings.

Media briefings will be held at regular intervals. The Joint Information Center has space for briefing over 150 members of the media. Areas in the center will be provided for media work space. Copies of news releases and other support materials will be made available for media use.

A media briefing area is available in the Kootenai Building outside of the EOF. The main media center is located at the Energy Northwest Richland Office Complex in Richland.

9.2.4 Media Telephone Team Operations

A Media Phone Team can be activated and remain operational twenty-four hours per day until the emergency is terminated. This team will respond to incoming media calls with the latest available information. This team may be manned jointly by Energy Northwest, federal, local, and state representatives.

9.2.5 Public Information Telephone Team Operations

Public Information Phone Team operations will begin as directed by JIC Manager. This Team will respond to calls and correct misinformation distributed by the media or other groups. This team may be manned jointly by Energy Northwest, Federal, Local and State Representatives. The Public Information Phone Team, combined with the Media Phone Team, will ensure a comprehensive rumor control effort.

APPENDIX 1

SUPPORTING PLANS AND CONTRACTS

Annually Energy Northwest will review the supporting plans and/or contracts listed below to ensure they remain accurate and applicable relative to Columbia Generating Station activities. The results of this review may be communicated informally, but some form of record will be maintained.

Plan	Source
Washington State Fixed Nuclear Facility Emergency Response Plan	Washington Emergency Management
Benton County Fixed Nuclear Facility Response Plan	Benton County Emergency Management
Franklin County Radiological Emergency Response: Energy Northwest	Franklin County Emergency Management
Oregon Columbia Generating Station Emergency Response Plan	Oregon Office of Energy
Hanford Emergency Management Plan	Department of Energy, Richland Operations
Siemens Pre Emergency Plan Manual	Siemens Power Corporation
INPO 86-032, Emergency Resources Manual	Institute of Nuclear Power Operations
Federal Radiological Emergency Response Plan (FRERP)	Federal Emergency Management Agency
NUREG-0845, Agency Procedures for NRC Incident Response Plan (and supplements)	United States Nuclear Regulatory Commission

APPENDIX 2

EMERGENCY PLAN IMPLEMENTING PROCEDURES
Index for Implementation of
Emergency Plan Sections

Procedure	Title	Section of Plan Implemented
	13.1 Emergency Classification	
13.1.1	Classifying the Emergency	4.1 thru 4.4
13.1.1A	Classifying the Emergency - Technical Bases	4.2
	13.2 Protective Measures	
13.2.1	Emergency Exposure Level/Protective Action Guides	5.9
13.2.2	Determining Protective Action Recommendations	5.5
	13.3 Natural Emergency Actions	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.1.1 and the Abnormal Condition Procedures, Section 4.12, of the Plant Procedures Manual.	
	13.4 Notifications	
13.4.1	Emergency Notifications	4.6
	13.5 Evacuation and Accountability	
13.5.1	Localized and Protected Area Evacuations	5.7.2, 5.7.3
13.5.3	Evacuation of Exclusion Area and/or Nearby Facilities	1.6.2 5.7.2, 5.7.3
13.5.5	Personnel Accountability/ Search and Rescue	5.7.5
	13.6 Emergency Security Procedures	
	Procedures in this section were eliminated and response steps/actions incorporated into PPM 13.10.8 and other Security Plan Implementing Procedures.	

Procedure	Title	Section of Plan Implemented
	13.7 Personnel Monitoring, Decontamination, First Aid	
13.7.5	Offsite Assembly Area Operations	5.7.3
	13.8 Offsite Dose Calculations	
13.8.1	Computerized Emergency Dose Projection System Operations	5.3
	13.9 Environmental Field Monitoring	
13.9.1	Environmental Field Monitoring Operations	2.3.3.3, 2.4.4.16, 5.4, 6.2.4
13.9.5	Environmental Sample Collection	5.2.2, 5.4
13.9.8	River Evacuation Monitoring	5.7.4
	13.10 Plant Emergency Facilities	
13.10.1	Control Room Operations and Shift Manager Duties	2.3.1.1 thru 2.3.1.3, 2.3.1.6
13.10.2	TSC Manager Duties	2.3.2.1
13.10.3	Technical Manager and Staff Duties	2.3.2.4, 2.3.2.7
13.10.4	Radiation Protection Manager Duties	2.3.2.2
13.10.5	Operations Manager Duties	2.3.2.8
13.10.6	Plant/NRC Liaison Duties	2.3.2.3
13.10.7	Plant Administrative Manager Duties	2.4.1.1
13.10.8	Security Lieutenant Duties	2.3.1.4
13.10.9	OSC Manager and Staff Duties	2.3.1.8, 2.3.1.9 2.4.1.6, 2.4.1.7 2.10, 2.5.2-11

Procedure	Title	Section of Plan Implemented
13.10.14	Maintenance Manager Duties	2.4.1.2
13.10.16	Chemistry/Effluent Manger Duties	2.14.1.4
	13.11 Emergency Operations Facility	
13.11.1	EOF Manager Duties	2.3.3.1
13.11.2	Assistant EOF Manager Duties	2.4.2.1
13.11.3	Site Support Manager and Staff Duties	2.4.2.8
13.11.7	Radiological Emergency Manager Duties	2.3.3.2
13.11.8	Licensing Manager Duties	2.4.4.18
13.11.10	Security Manager Duties	2.4.2.7
13.11.12	EOF Engineering Manager and Staff Duties	2.4.2.4, 2.4.2.6
13.11.18	Information Coordinator Duties	2.4.1.3
	13.12 Headquarters Emergency Centers	
13.12.19	JIC Management	2.3.4.1
13.12.20	Media and Information Management	6.3
13.12.21	JIC Support Services	6.3
	13.13 Reentry/Recovery	
13.13.1	Reentry	7.2
13.13.2	Recovery Operations	7.3
13.13.3	Intermediate Phase MUDAC Operations	7.3.2
13.13.4	After Action Reporting	4.4

Procedure	Title	Section of Plan Implemented
	13.14 Supporting Information Procedures	
13.14.1	Nearby Nuclear Facility Emergencies/ Requests for Assistance	4.1
13.14.4	Emergency Equipment	6.4, 8.4
13.14.8	Drills and Exercises Program	8.6
13.14.9	Emergency Program Maintenance	8.1 thru 8.4
SWP-EPP-01	Emergency Response Organization and Training	8.5

APPENDIX 3

EMERGENCY KITS

Columbia Generating Station Fire Brigade Stations

Fire Brigade turnout stations are strategically located inside and outside the Radiologically Controlled Area (RCA). Contents include fire fighter protective equipment, self-contained breathing apparatus (SCBA) units, radios, fire fighter tools and equipment, First Responder medical kits, hazardous materials response kits, and radiological monitoring equipment.

Columbia Generating Station Decontamination Kits

Two decontamination kits are located in the Radwaste Building decontamination area, and one is located in the Yakima Building (GSB) Emergency Equipment Area.

Columbia Generating Station Protective Equipment Kit

A kit containing protective equipment and radiological monitoring equipment is located in the Technical Support Center.

Energy Northwest Field Monitoring Kits

Kits containing protective equipment, radiological monitoring equipment, communications equipment, and emergency supplies for Environmental Monitoring Field Teams are located at the Kootenai Building and Energy Northwest's Office Complex (ENOC). Kits located at ENOC also include a River Evacuation Monitoring Kit.

Hospital Radiological Emergency Kits

Kits containing protective equipment, radiological monitoring equipment, and emergency supplies are located at Kadlec Medical Center in Richland, Our Lady of Lourdes Hospital in Pasco, and Kennewick General Hospital in Kennewick.

APPENDIX 4

AGREEMENT LETTERS

This appendix refers to signed letters of agreement which formalize commitments between Energy Northwest and outside organizations to provide or receive mutual aid and support during emergency conditions.

Listed below are the outside agencies Energy Northwest has agreements with. Agreements are maintained in files by Energy Northwest's Emergency Preparedness Group.

Agreements already in place or provided for in existing response plans provide detailed, formalized commitments to provide or receive mutual aid or support during emergency conditions. These plans are referenced in Appendix 1 of this plan.

In addition, Federal commitment to support Columbia Generating Station is provided in Federal response plans maintained by Nuclear Regulatory Commission and Federal Emergency Management Agency. These plans are listed in section 3.6.1 and 3.6.3, as well as Appendix 1.

Annually, Energy Northwest will review the agreements listed below to ensure they remain accurate and applicable. The results of this review will be communicated to the affected organizations. Acknowledgements for this annual review are requested and maintained in the agreement file. Records of verbal acknowledgements are acceptable and will be maintained.

1. Agreement Letter With Our Lady of Lourdes Hospital

2. Agreement Letter With Kennewick General Hospital

3. Agreement Letter With Kadlec Medical Center

4. (Memorandum of Understanding Between) Department of Energy Richland Operations Office, Hanford Environmental Health Foundation, Emergency Response At the Hanford Site - Use of the Emergency Decontamination Facility

5. Law Enforcement Agency Agreement - Benton County

6. Hanford Site Support Services, Fire and Ambulance

APPENDIX 5

NUREG-0654

CROSS-REFERENCE

NUREG-0654 CROSS-REFERENCE

II. Planning Standards and Evaluation Criteria

A. Assignment of Responsibility (Organizational Control)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1.a.	Each plan shall identify organizations that are intended to be part of the overall response. (See Appendix 5)	Sect. 2 X Sect. 3	X	X
b.	Specify its concept of operations, and its relationship to the total effort.	X Sect. 3	X	X
c.	Illustrate these interrelationships in a block diagram.	1.6.5 X Table 1-1	X	X
d.	Identify a specific individual by title who shall be in charge of the emergency response.	X 2.1	X	X
e.	Provide for 24-hour per day emergency response, including manning of communications links	X 2.2, 2.3	X	X
2.a.	Specify the functions and responsibilities for major elements and key individuals by title. (See Section B for licensee.)		X	X
b.	The legal basis for such authorities.		X	X
3.	Include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations.	X App. 4	X	X
4.	Shall be capable of continuous (24-hour) operations for a protracted period.	X 2.1	X	X

B. Onsite Emergency Organization

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Specify the onsite emergency organization of plant staff personnel.	2.2 X 2.3		
2.	Designate an individual as emergency coordinator who shall be on shift at all times.	X 2.2		
3.	Identify a line of succession for the emergency coordinator.	X 2.1		
4.	Establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated.	X 2.11		
5.	Specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1.	Sect. 2, Table 2-1		
6.	Specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram.	X Sect. 3, Figure 21		
7.	Specify the corporate management, administrative, and technical support personnel who will augment the plant staff.	X 2.4		
a.	logistics support for emergency personnel;	2.4.1.1, X 2.4.2.8		

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
B. Onsite Emergency Organization (Cont'd.)	Licensee	State	Local
b. technical support for planning and reentry/recovery operations;	X 2.3.3.1		
c. management level interface with governmental authorities; and	X 2.3.3.1		
d. release of information to news media during an emergency.	X 2.3.3.1		
8. Specify the contractor and private organizations who may be requested to provide technical assistance	X 3.3		
9. Identify the services to be provided by local agencies for handling emergencies. Provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan.	3.2 X App. 4		

C. Emergency Response Support and Resources

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Make provisions for incorporating the Federal response capability into its operation plan, including the following:			
a. specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.	2.3.3.2, X 3.6.2	X	

C. Emergency Response Support and Resources (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
b.	specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and	X 3.6.2	X	
c.	specific licensee, State and local resources available to support the Federal response.	X 3.6.2	X	X
2.a.	Each principal offsite organization may dispatch representatives to the licensee's near-site Emergency Operations Facility.		X	X
b.	Prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.	X 3.1		
3.	Identify radiological laboratories and their general capabilities and expected availability.	3.3.1 3.3.2 3.3.3 X 3.6.2	X	
4.	Shall identify nuclear and other facilities, organizations or individuals which can be relied upon.	3.3 X App. 4	X	X

D. Emergency Classification System

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee.	X 4.1, 4.2, 4.4		
2.	The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the FSAR.	X 4.1		

D. Emergency Classification System (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
3. Establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.		X	X
4. Have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility.		X	X

E. Notification Methods and Procedures

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish procedures which describe mutually agreeable bases for notification of response organizations.	4.6 X Table 4-2	X	X
2. Establish procedures for alerting, notifying, and mobilizing emergency response personnel.	X 4.6.1	X	X
3. Establish the contents of the initial emergency messages to be sent from the plant.	X 4.6.5		
4. Make provisions for followup messages from the facility.	X 4.6.6		
5. Establish a system for disseminating to the public appropriate information.		X	X
6. Establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public.	X 4.6.4	X	X

E. Notification Methods and Procedures (Cont'd)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
7.	Provide written messages intended for the public, consistent with the licensee's classification scheme.	X 4.6.5	X	X

F. Emergency Communications

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Establish reliable primary and backup means of communication.			
a.	provision for 24-hour per day notification to and activation of the State/local emergency response network;	X 4.6	X	X
b.	provision for communications with contiguous State/local governments within the Emergency Planning Zones;	X 4.6.3	X	X
c.	provision for communications as needed with Federal emergency response organizations;	X 4.6	X	X
d.	provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations centers, and radiological monitoring teams;	X Table 6-1	X	X
e.	provision for alerting or activating emergency personnel in each response organization; and	X 4.6.1	X	X

F. Emergency Communications (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
f. provision for communication with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.	4.6.3 X 6.5.3		
2. Ensure that a coordinated communication link for fixed and mobile medical support facilities exists.	X 3.2.2	X	X
3. Conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).	X 6.6	X	X

G. Public Education and Information

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
1. Provide a coordinated periodic (at least annually) dissemination of information to the public.	X 9.1.1	X	X
2. Provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material. Shall also be used to disseminate to any transient population appropriate information that would be helpful if an emergency or accident occurs.	X 9.1.1, 9.1.3	X	X
3.a. Designate the points of contact and physical locations for use by news media during an emergency.	X 9.2.3	X	X

G. Public Education and Information (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
b. Provide space which may be used for a limited number of the news media at the nearsite Emergency Operations Facility.	X 9.2.3		
4.a. Designate a spokesperson who should have access to access to all necessary information.	X 9.2.3	X	X
b. Establish arrangements for timely exchange of information among designated spokespersons.	X 9.2.3	X	X
c. Establish coordinated arrangements for dealing with rumors.	X 9.2.5	X	X
5. Conduct coordinated programs at least annually to acquaint news media with the emergency plans	X 9.1.2	X	X

H. Emergency/Facilities and Equipment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
1. Establish a Technical Support Center and an onsite operations support center	6.1.2 X 6.1.3		
2. Establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out.	X 6.2		
3. Establish an emergency operations center for use in directing and controlling response functions.		X	X

H. Emergency/Facilities and Equipment (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
4.	Provide for timely activation and staffing of the facilities and centers described in the plan.	6.5.6 X 6.5.9	X	X
5.	Identify and establish onsite monitoring systems that are to be used to initiate emergency measures, as well as those to be used for conducting assessment.	5.1, X 5.2		
	The equipment shall include:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	5.1 X 5.2		
b.	radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	5.1.2 X App. 3		
c.	process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and	6.3 X 5.1.1		
d.	fire and combustion products detectors.	X 5.1.1		
6.	Make provisions to acquire data from or for emergency access to offsite monitoring and analysis equipment including:			
a.	geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);	X 5.1.1		
b.	radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided; and	X 5.2.2		
c.	laboratory facilities, fixed or mobile.	X 5.4.5		

H. Emergency/Facilities and Equipment (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.	X 5.4.3	X	X
8. Provide meteorological instrumentation and procedures, and provisions to obtain representative current meteorological information from other sources.	X 5.2.1		
9. Provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies.	X 6.1.3		
10. Make provisions to inspect, inventory, and operationally check emergency equipment/instruments at least once each calendar quarter and after each use.	6.4 X 8.4	X	X
11. Each plan shall, in an appendix, include identification of emergency kits by general category.	X App. 3	X	X
12. Establish a central point for the receipt and analysis of all field monitoring data and coordination of sample media.	6.2.4 6.2.8 X 6.2.10	X	X

I. Accident Assessment

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents	Table 4-1 X 5.1		

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans Licensee	State	Local
2. Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident.	5.1 thru X 5.3		
3. Establish methods and techniques to be used for determining:			
a. the source term of releases of radioactive material within plant systems.	X 5.3.1		
b. the magnitude of the release of radioactive materials.	X 5.3.2		
4. Establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.	X 5.3.2		
5. Have the capability of acquiring and evaluating meteorological information.	5.2.1 X 6.2.4		
6. Establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.	X 5.3.1		
7. Describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone.	X 5.4	X	X
8. Provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.	5.1 5.3 X 5.4	X	X

I. Accident Assessment (Cont'd)

Abbreviated Evaluation Criteria	Licensee	State	Local
9. Have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uCi/cc.	X 5.4.4	X	
10. Establish means for relating the various measured parameters and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.	5.9.3 X 5.5	X	
11. Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.		X	

J. Protective Response

Abbreviated Evaluation Criteria	Licensee	State	Local
1. Establish the means and time required to warn or advise:			
a. Employees not having emergency assignments;	X 5.7.3		
b. Visitors;	X 5.7.3		
c. Contractor and construction personnel; and	X 5.7.3		
d. Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.	3.2.3 X 5.7.3		

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
2.	Make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.	5.7.2 X 5.7.3		
3.	Provide for radiological monitoring of people evacuated from the site.	X 5.7.4		
4.	Provide for the evacuation of onsite non-essential personnel and shall provide a decontamination capability at or near the monitoring point specified in J.3.	X 5.7.3		
5.	Provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.	X 5.7.5		
6.	Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:			
a.	Individual respiratory protection;	X 5.9.6		
b.	Use of protective clothing; and	X 5.9.4.2		
c.	Use of radioprotective drugs, (e.g., individual thyroid protection).	X 5.9.7		
7.	Establish a mechanism for recommending protective actions to the appropriate State and local authorities.	X 5.9.3		

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria		Applicability and Cross Reference to Plans		
		Licensee	State	Local
8.	Contain time estimates for evacuation within the plume exposure EPZ.	Table 5-1 X 5.8		
9.	Establish a capability for implementing protective measures based upon protective action guides and other criteria.		X	X
10.	The organization's plans to implement protective measures for the plume exposure pathway shall include:			
a.	Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	Fig. 5-1 Fig. 5-2 X Fig. 5-5	X	X
b.	Maps showing population distribution around the nuclear facility;	Fig. 5-3 X Fig. 5-4	X	X
c.	Means for notifying all segments of the transient and resident population;	X 5.8.2	X	X
d.	Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;		X	X
e.	Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.		X	X

J. Protective Response (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	Include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;		X	X
g.	Means of relocation;		X	X
h.	Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone;		X	X
i.	Projected traffic capacities of evacuation routes under emergency conditions;		X	X
j.	Control of access to evacuated area and organization responsibilities for such control;		X	X
k.	Identification of and means for dealing with potential impediments to use of evacuation routes, and contingency measures;		X	X
l.	Time estimates for evacuation of various sectors and distances; and		X	X
m.	The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions.	X 5.5.1	X	

J. Protective Response (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
11. Specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food-stuffs. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained.		X	
12. Describe the means for registering and monitoring of evacuees at relocation centers in host areas.		X	

K. Radiological Exposure Control

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Establish onsite exposure guidelines for:			
a. removal of injured persons;	X 5.9.3		
b. undertaking corrective actions;	X 5.9.3		
c. performing assessment actions;	X 5.9.3		
d. providing first aid;	X 5.9.3		
e. performing personnel decontamination;	X 5.9.3		

K. Radiological Exposure Control (Cont'd.)

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
f.	providing ambulance service; and	X 5.9.3		
g.	providing medical treatment services.	X 5.9.3		
2.	Provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.	X 5.9		
3.a.	Make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X 5.9.5	X	X
b.	Ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records.	X 5.9.5.2	X	X
4.	Establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides.		X	X
5.a.	Specify action levels for determining the need for decontamination.	X 5.9.4.2	X	X
b.	Establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.	X 5.9.4.3	X	X
6.	Provide onsite contamination control measures including:			
a.	area access control;	X 5.9.4.1		

K. Radiological Exposure Control (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
b. drinking water and food supplies;	X 5.9.4.4		
c. criteria for permitting return of areas and items to normal use.	X 7.1		
7. Provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.	X 5.9.4.3		

L. Medical and Public Health Support

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X 3.2.2	X	X
2. Provide for onsite first aid capability.	6.1.5 X 6.2.9		
3. Develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities		X	
4. Arrange for transporting victims of radiological accidents to medical support facilities.	X 3.2.2.3	X	X

M. Recovery and Reentry Planning and Postaccident Operations

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.	Develop general plans and procedures for reentry and recovery.	X Sect. 7	X	X
2.	Plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization.	X 7.3		
3.	Specify means for informing members of the response organizations that a recovery operation is to be initiated.	X 7.3.2	X	
4.	Establish a method for periodically estimating total population exposure.	X 5.3.3	X	

N. Exercises and Drills

	Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
		Licensee	State	Local
1.a.	Exercises shall be conducted as set forth in NRC and FEMA rules.	X 8.9	X	X
b.	Provide for a critique of the evaluated exercise by Federal and State observers/ evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested. Each organization should make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. once each six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.	8.6.1 X 8.8	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans: Licensee	State	Local
2. Conduct drills, in addition to the annual exercise at the frequencies indicated below.	X Table 8-1		
a. Communication Drills			
Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually.	X Table 8-1	X	X
b. Fire Drills			
Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.	8.7.2 X Table 8-1		
c. Medical Emergency Drills			
A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies shall be conducted annually.	8.7.3 X Table 8-1		X
d. Radiological Monitoring Drills			
Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually.	8.7.4 X Table 8-1	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
e. Health Physics Drills			
(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.	X 8.7.5 Table 8-1	X	
(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.	X 8.7.5 Table 8-1		
3. Describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.			
a. The basic objective(s) of each drill and and exercise and appropriate evaluation criteria;	X 8.6.2	X	X
b. The date(s), time period, place(s) and participating organizations;	X 8.6.2	X	X
c. The simulated events;	X 8.6.2	X	X
d. A time schedule of real and simulated initiating events;	X 8.6.2	X	X
e. A narrative summary describing the conduct of the exercises or drills;	X 8.6.2	X	X
f. A description of the arrangements for and advance materials to be provided to official observers.	X 8.6.2	X	X

N. Exercises and Drills (Con'td.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
4. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.	X 8.6.1	X	X
5. Each organization shall establish means for evaluating observer and participant comments on areas needing improvement.	X 8.6.1	X	X

O. Radiological Emergency Response Training

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Each organization shall assure the training of appropriate individuals.	X 8.5	X	X
a. Provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.	X 8.5.1		
b. Each offsite response organization shall participate in and receive training.		X	X
2. The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills.	X 8.5.1		
3. Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.	6.1.6 X 8.5.1.1		

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
4. Establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs shall be provided in the following categories:			
a. Directors or coordinators of the response organizations;	X 8.5.1.1	X	X
b. Personnel responsible for accident assessment;	X 8.5.1.1	X	*
c. Radiological monitoring teams and radiological analysis personnel;	X 8.5.1.1	X	*
d. Police, security and fire fighting personnel;	X 8.5.2	*	X
e. Repair and damage control/correctional action teams (onsite);	X 8.5.1.1		
f. First aid and rescue personnel;	X 8.5.1.1	*	X
g. Local support services personnel including Civil Defense/Emergency Service personnel;	X 8.5.2		X
h. Medical support personnel;	X 8.5.2	X	X
i. Licensee's headquarters support personnel;	X 8.5.1.2		
j. Personnel responsible for transmission of emergency information and instructions.	X 8.5.1.1	X	X

*NRC and FEMA encourage State and Local Governments which have these capabilities to continue to include them in their training programs.

O. Radiological Emergency Response Training (Cont'd.)

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
5. Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.	X 8.5.2	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
1. Provide for the training of individuals responsible for the planning effort.	X 8.1	X	X
2. Identify by title the individual with the overall authority and responsibility for radiological emergency response training.	X 8.1	X	X
3. Designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X 8.1	X	X
4. Update its plan and agreements as needed, review and certify it to be current on an annual basis.	X 8.2	X	X
5. Changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans.	X 8.2	X	X
6. Each plan shall contain a detailed listing of supporting plans and their source.	X App. 1	X	X

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Abbreviated Evaluation Criteria	Applicability and Cross Reference to Plans		
	Licensee	State	Local
7. Each plan shall contain as an appendix listing, by title, procedures required to implement the plan.	X App. 2	X	X
8. Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.	Table of Contents X App. 5	X	X
9. Arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.	X 8.3		
10. Provide for updating telephone numbers in emergency procedures at least quarterly.	X 6.5.3	X	X