

EP-FC-1001 Revision 3

Summary of analysis:

Fort Calhoun Station has entered into the decommissioning process on site. With that, changes to document and procedure titles are taking place. This change is being made to update the Emergency Plan to reference the recent change from the Updated Safety Analysis Report (USAR) to the Defueled Safety Analysis Report (DSAR) recently issued at FCS. Additionally, training and RP procedure changes have been made to transition into the decommissioned training process. The term TLD's was updated to DLR's and organization position title changes were also made. Updating the emergency plan to correctly reference the currently issued procedures, terms, and titles in no way reduces the effectiveness of the FCS emergency plan.

Recently FCS implemented strategies associated with the Fukushima Near-Term task force recommendations in Order EA-12-049 that implements various FLEX/SAFER strategies for beyond design bases external events. Due to FCS ceasing operations and entering a permanently shut down/defueled condition FCS had asked for relief for Order EA-12-049 due to the minimal risk present under current conditions. On June 14, 2017 (NRC-17-031) the NRC withdrew in its entirety Order EA-12-049 for FCS based on information provided by FCS. Due to the removal of any FLEX/SAFER ties and commitments references to INPO are being removed from this procedure. The FLEX ties were the last applicable portion of the INPO Letters of Agreement as FCS is no longer an operating plant nor an active member of INPO. Revising the plan to reflect the current and relevant Letters of Agreement in no way reduce the effectiveness of the Emergency Plan.

**OPPD NUCLEAR
POST-SHUTDOWN
RADIOLOGICAL EMERGENCY
RESPONSE PLAN
FOR FORT CALHOUN STATION**

POST-SHUTDOWN RADIOLOGICAL EMERGENCY RESPONSE PLAN**AREA DESCRIPTION****1.0 PLANT LOCATION**

Fort Calhoun Station is located midway between Fort Calhoun and Blair, Nebraska, on the west bank of the Missouri River. The site consists of approximately 660.46 acres with an additional exclusion area of 582.18 acres on the northeast bank of the river directly opposite the plant buildings. The Fort Calhoun Station includes the Independent Spent Fuel Storage Installation (ISFSI), located within the protected area, centered approximately 200 meters north-northwest of the Containment Building. The distance from the reactor containment to the nearest site boundary is approximately 910 meters; and the distance to the nearest residence is beyond the site boundary. Except for the city of Blair and the villages of Fort Calhoun and Kennard, the area within a ten mile radius is predominantly rural. The land use within the ten mile radius is primarily devoted to general farming. There are no private businesses or public recreational facilities on the plant property. The DeSoto National Wildlife Refuge occupies approximately 7821 acres east of the plant site. This area is open to the public for day use year-round. Visitors to the refuge generally use areas from two to five miles from the plant. Estimates by the U.S. Fish and Wildlife Service place annual usage of the facility at approximately 120,000 for the Visitors Center and 400,000 for the refuge. The expected maximum daily usage of the facility has been placed at 2500 visitors for a winter weekday and 5000 on a summer weekend. The Boyer Chute Federal Recreation Area is a day use facility occupying approximately 2000 acres southeast of the plant site. Visitors to the recreation area generally use areas seven to ten miles from the plant. The estimates for annual usage of this facility is approximately 50,000 visitors.

The State of Nebraska operates the Fort Atkinson State Historic Park five and half miles southeast of the plant site. This day use facility is mostly seasonal and estimates place annual usage at 60,000. The State of Iowa maintains Wilson Island State Park with 275 camping spaces south of the DeSoto National Wildlife Refuge and four miles southeast of the plant site. The estimates for usage of this facility range from 500 on a winter weekday to 1000 on a summer weekend.

Two private facilities lie to the north of the plant along the Missouri River. The Cottonwood Marina is located approximately four and a half miles from the plant. Estimates place summer weekend usage at 200 people. Riverland Resort Park is a private campground lying directly south of Cottonwood Marina and ranging from four to four and a half miles from the plant. The campground has approximately 235 campsites and is open from April to October.

POST-SHUTDOWN RADIOLOGICAL EMERGENCY RESPONSE PLAN

2.0 AREA INDUSTRIES

A listing of various industries located within a ten mile radius of the Fort Calhoun Station, including firm name, product, number of employees, and location from the plant site is contained in the Updated Safety Analysis Report.

3.0 AREA WATER SUPPLIES

Local public drinking water supplies are not taken from the Missouri River in this area. The first downstream intake is the city of Omaha approximately 19.5 miles downstream. Industrial water use is limited to cooling purposes in the Omaha area. Drinking water near the Fort Calhoun Station is obtained from either well or reservoirs. Since the known public and private water supplies originate at elevations higher than the river, radioactive liquids that might be discharged from the plant into the river should not contaminate these supplies.

There are also many private wells in the region which draw primarily upon ground water rather than on springs or other surface sources. Several marinas are located along the Missouri River, between 3 miles upstream from Blair and Omaha, 18 miles downstream. In the event of a significant waterborne release incident from the Fort Calhoun Station, the Nebraska Department of Environmental Control acting in conjunction with the Nebraska Department of Health, Division of Radiological Health and the U. S. Coast Guard are prepared to notify all downstream users of Missouri River water. Notification is made through OPPD management directly to the Metropolitan Utilities District (MUD) in the event of an inadvertent liquid release to the river. Swimming, boating and other recreational activities involving river water can be controlled by the Coast Guard until adequate surveys have been taken to determine when normal activities may be resumed.

POST-SHUTDOWN RADIOLOGICAL EMERGENCY RESPONSE PLAN**PURPOSE OF THE EMERGENCY PLAN**

The purpose of the Fort Calhoun Station "Post-Shutdown Radiological Emergency Response Plan" (PSRERP) is to delineate an organization for coping with emergencies, to classify emergencies according to severity, define and assign responsibilities and authorities, and to clearly outline the most effective course of action and protective measures required to mitigate the consequences of an accident and to safeguard the public and station personnel in the event of an incident. The Emergency Plan Implementing Procedures (EPIPs), Radiation Protection procedures, and other station references are available at the plant to further assist personnel during abnormal occurrences. The various emergency procedures are put into effect whenever a system, component or circuit failure could lead to a personnel hazard or major equipment failure. Procedures are sufficiently detailed so that the plant is maintained in a safe condition. The various procedures include such items as radiation hazards, weather conditions and availability of technical and plant personnel.

POST-SHUTDOWN RADIOLOGICAL EMERGENCY RESPONSE PLAN

ACCIDENT CONSIDERATIONS**1.0 FUEL HANDLING ACCIDENT**

The possibility of an incident during fuel handling is unlikely due to the many physical limitations imposed on fuel handling operations and systems. In addition, administrative restrictions placed on fuel handling procedures provide greater control. Nevertheless, the offsite consequences of dropping a spent fuel assembly and damaging the entire assembly have been evaluated and are documented in the Fort Calhoun Station, Unit No. 1 DSAR, Section 14.18. Emergency onsite and offsite monitoring practices would begin immediately following the accident to determine actual consequences, and appropriate emergency actions would be taken. Emergency procedures addressing a Fuel Handling Incident provide emergency actions for this mishap.

The transfer cask that is used to transfer spent fuel (32 assembly capacity) contained within a dry shielded canister (DSC) from the Auxiliary Building to the ISFSI, has been analyzed for an 80 inch drop accident in the NUHOMS FSAR. The analysis determined that the DSC would retain its leak tight integrity for this 80 inch drop. This bounds the height of the transfer cask while it is being moved by the heavy-haul trailer between the Auxiliary Building and the ISFSI so that a release of radioactivity due to a drop event during transfer operations would not occur.

2.0 FIRES**2.1 Internal Plant Fires (within the Protected Area)**

Internal Plant fires are normally handled by the station's Fire Brigade, comprised of trained individuals from the Operations Department and Radiation Protection Department. All efforts are made to prevent the spread of airborne contamination should the fires occur within the Radiological Controlled Area.

2.2 External Fires (outside the Protected Area)

External fires are controlled by local fire department response. In the event high airborne contamination constitutes a possible hazard to areas outside of the protected area, offsite survey teams/personnel can be dispatched immediately.

POST-SHUTDOWN RADIOLOGICAL EMERGENCY RESPONSE PLAN**3.0 EXPLOSION**

Because of the accumulation of waste gases in the waste gas decay tanks, the possibility and consequences of an explosion have been considered. An explosion could result in an unexpected, uncontrolled release to the atmosphere of radioactive fission gases that were stored in the waste gas system. A failure of any of the waste gas decay tanks or associated piping could also result in a release of gaseous activity. The noble gases stored in the tanks would diffuse and become diluted during their transport to the site boundary. The projected Deep Dose Equivalent (DDE) at the exclusion area boundary would be less than 1.0 Rem. This conservative analysis is based upon 1% fuel cladding defects, and accumulation of all noble gases without release over a full core cycle. Emergency procedures addressing a Waste Gas Incident, would be placed into effect immediately and offsite monitoring teams would be dispatched downwind.

The ISFSI horizontal storage modules (HSM) are designed to protect the DSC's from the effects of explosions to ensure the DSC's retain their leak-tight integrity and prevent a release of radioactivity to the atmosphere. An analysis of the haul route used to transfer the DSC's from the Auxiliary Building to the ISFSI was performed, and it identified administrative controls needed to prevent explosions in the vicinity of the transfer cask (designed to withstand 3 psi overpressure) during spent fuel transfer operations.

4.0 TOXIC CHEMICAL RELEASE ACCIDENTS

The primary toxic chemical release accidents which may result in toxic gas concentrations at Fort Calhoun Station are shown below:

<u>TOXIC CHEMICAL</u>	<u>ACCIDENT</u>
Ammonia (NH ₃)	Rupture of two 25,000 ton offsite refrigerated tanks.
Ammonia	Rupture of two 30,000 gal. offsite non-refrigerated tanks.
Ammonia	Rupture of a 78 ton railroad tank car.
Ammonia	Rupture of a 2 ton tank truck.

The above accidents will not pose a hazard to control room personnel, due to toxic gas monitors located at the fresh air intake of the control room, which isolates the control room before the gases reach the toxic limit. The stringent odor of ammonia makes station personnel immediately aware of any leakage or toxic gas cloud. Spent Fuel storage at the ISFSI relies on passive means of decay heat removal (natural convection), so a toxic gas release does not challenge nuclear safety.

The toxic gas monitors sample for NH₃ and continuously monitor the fresh air to the control room during normal plant operations.

POST-SHUTDOWN RADIOLOGICAL EMERGENCY RESPONSE PLAN

At different phases of plant operation, Hydrogen and/or Nitrogen gases blanket the volume control tank and the waste gas system. Considering that the deleterious effect of these gases is the exclusion of oxygen, a release to the atmosphere diminishes the harmful effect and a serious hazard is eliminated.

In the event of an offsite accidental release of chemicals, within a five (5) mile radius of the Fort Calhoun Station, the Blair Fire Department emergency procedures require notification to the Fort Calhoun Station. The counties of Washington (Nebraska) and Harrison (Iowa) have agreed to notify the Fort Calhoun Station when hazardous chemical accidents occur within five miles of the station. Appropriate action is taken, especially in the control room, to ensure that air remains breathable. For long duration toxic accidents, six (6) hours of compressed air is available for five (5) control room operators coupled with provisions to obtain additional air within this time period.

5.0 PERSONNEL INJURY

A fully stocked First Aid Room is available in the Plant. Immediate and temporary care may be given to the injured person using standard First Aid practices. If the injury involves contamination, efforts to decontaminate the injured person to reasonable levels are made prior to transfer to the First Aid Room or to offsite medical facilities. If decontamination is not practical, the injured person is covered in such a manner as to minimize the spread of contamination until either medical aid can be obtained or until the injured person can be transported to the UNMC Regional Radiation Health Center.

6.0 NATURAL DISASTERS

A natural disaster may occur which could initiate any of the accidents previously discussed. The Spent Fuel Pool and ISFSI are designed to withstand natural phenomena, including the maximum hypothetical earthquake, design basis tornado and tornado-driven missiles, with no release of radioactivity.

ASSIGNMENT OF ORGANIZATIONAL RESPONSIBILITY (ORGANIZATIONAL CONTROL)

1.0 NON-OPPD SUPPORT ORGANIZATIONS

The following organizations may respond to a declared emergency at the Fort Calhoun Station. Each of these groups are capable of 24 hour response and operation. The details of their responsibilities are contained in their respective emergency response plans/procedures or if applicable, a Letter of Agreement between that organization and OPPD. Figure A-1 outlines the organizational interrelationships of various response organizations.

1.1 Law Enforcement Support Organizations

- 1.1.1 Nebraska State Patrol
- 1.1.2 Iowa State Patrol
- 1.1.3 Washington County Sheriff's Department
- 1.1.4 Pottawattamie County Sheriff's Department
- 1.1.5 Harrison County Sheriff's Department
- 1.1.6 Douglas County Sheriff's Department

1.2 Fire and Rescue Support Organizations

- 1.2.1 Blair Fire Department and Rescue Squad
- 1.2.2 Fort Calhoun Fire/Rescue
- 1.2.3 Missouri Valley Fire & Rescue Squad
- 1.2.4 Council Bluffs Fire and Ambulance Department

1.3 Medical Support Organization

- 1.3.1 UNMC Regional Radiation Health Center

1.4 Nebraska's Governmental Support Organizations

- 1.4.1 Nebraska Emergency Management Agency
- 1.4.2 Washington County Emergency Management Agency
- 1.4.3 Douglas County Emergency Management Agency

ASSIGNMENT OF ORGANIZATIONAL RESPONSIBILITY (ORGANIZATIONAL CONTROL)

- 1.4.4 Nebraska Health and Human Services, Regulation and Licensure
- 1.4.5 Region 5/6 Emergency Management Agency
- 1.4.6 Dodge County Emergency Management Agency
- 1.4.7 Sarpy County Emergency Management Agency
- 1.5 Iowa's Governmental Support Organizations
 - 1.5.1 Iowa Homeland Security and Emergency Management Division
 - 1.5.2 Iowa Department of Public Health
 - 1.5.3 Harrison County Emergency Management Agency (via Board of Supervisors)
 - 1.5.4 Pottawattamie County Emergency Management Agency (via Board of Supervisors)
 - 1.5.5 Pottawattamie County Division of Communications
 - 1.5.6 Crawford County Emergency Management Agency
- 1.6 Federal Government Support Organizations
 - 1.6.1 U.S. Coast Guard
 - 1.6.2 Environmental Protection Agency (EPA)
 - 1.6.3 Department of Energy (DOE)
 - 1.6.4 National Weather Service (NWS)
 - 1.6.5 U.S. Nuclear Regulatory Commission (NRC)
 - 1.6.6 Federal Emergency Management Agency (FEMA) Region VII
 - 1.6.7 Federal Aviation Administration (FAA)
 - 1.6.8 Department of the Interior, Branch of Global Seismology

ASSIGNMENT OF ORGANIZATIONAL RESPONSIBILITY (ORGANIZATIONAL CONTROL)

1.7 Industrial Support Organizations

1.7.1 Westinghouse Electric

1.7.2 Union Pacific Railroad

1.8 Other Support Organizations

1.8.1 Metropolitan Utilities District

1.8.2 Nebraska Public Power District (Cooper Nuclear Station)

1.8.3 National Weather Service

1.9 Monitoring and Decontamination Support Organizations

1.9.1 Omaha Fire Department Emergency Worker Decon

2.0 OPPD CONCEPT OF EMERGENCY OPERATIONS

2.1 OPPD's overall goals are to mitigate any emergency conditions which may occur at the Fort Calhoun Station and to provide information and support to State and Local agencies needed to protect the health and safety of the general public.

2.2 A predesignated group is assigned to various roles to ensure capable emergency response and mitigation at the Fort Calhoun Station. These assignments are made to ensure that the administrative, managerial and technical support needed for accident mitigation are met. A sufficient number of individuals are assigned to these positions to ensure around-the-clock and continued long term support.

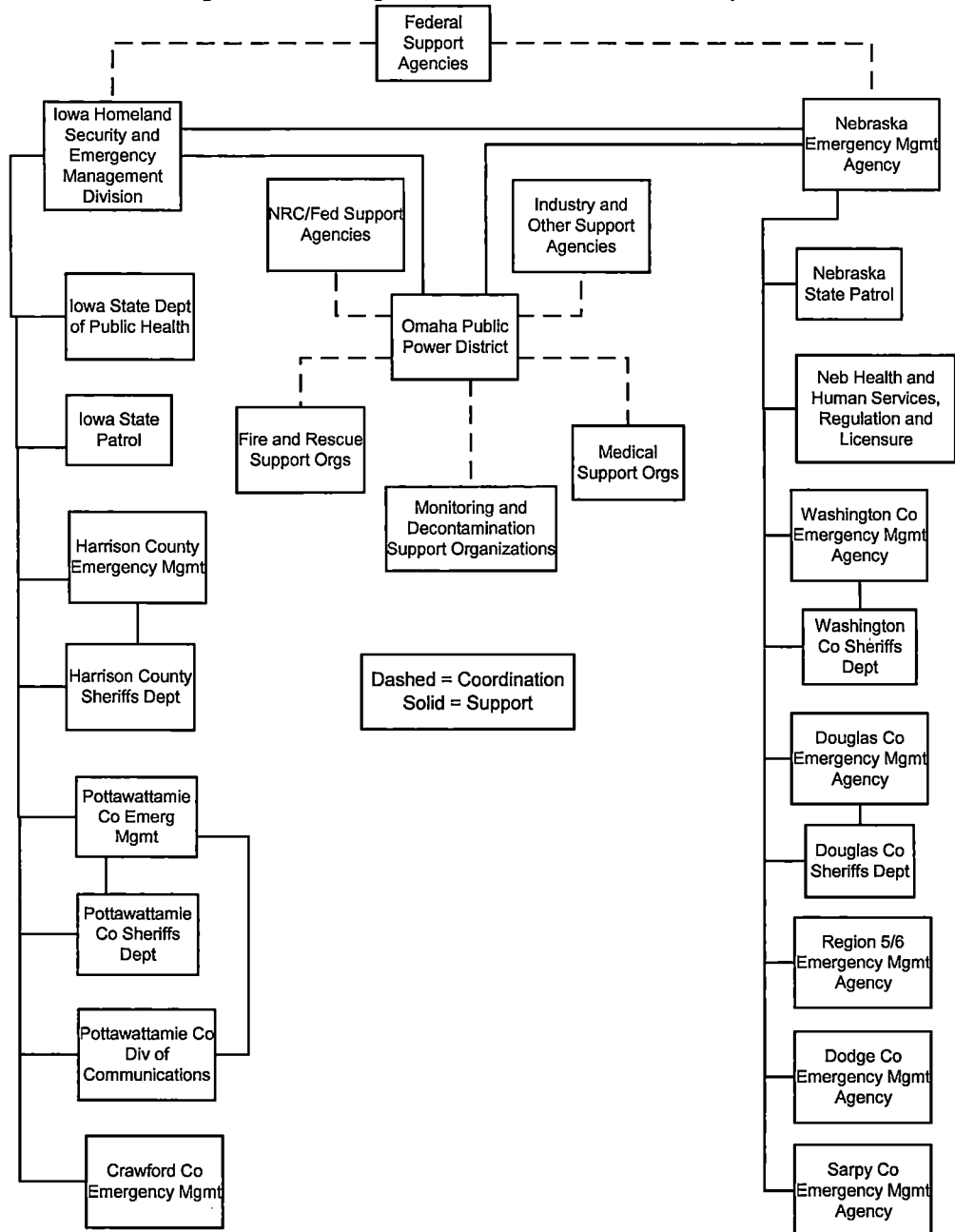
2.3 Responsibility for emergency response initially lies with the Shift Manager. If the Technical Support Center (TSC) is activated, command and control may be transferred to the Site Director. The Emergency Director in the Emergency Operations Facility (EOF) may assume command and control if that facility is activated. The command and control position is responsible for ensuring the continuity of resources throughout an event.

3.0 LETTERS OF AGREEMENT

3.1 Letters of agreement between OPPD and the organizations outlining their roles in the event of an emergency are on file with the Fort Calhoun Station Emergency Planning Department. These letters are reviewed annually in accordance with Emergency Preparedness recurring tasks.

ASSIGNMENT OF ORGANIZATIONAL RESPONSIBILITY (ORGANIZATIONAL CONTROL)

Figure A-1 - Organizational Interrelationships



ORGANIZATIONAL CONTROL OF EMERGENCIES

1.0 PURPOSE AND SCOPE

1.1 Purpose

- 1.1.1 This PSRERP Section establishes the organizational requirements, reporting locations and duties for the Fort Calhoun Station (FCS) Emergency Response Organization (ERO).

1.2 Scope

- 1.2.1 The positions established in this PSRERP Section upon declaration of an emergency will comprise the ERO. The ERO's responsibility is to mitigate the consequences of an event using the facilities and resources described elsewhere in the PSRERP and the supporting Emergency Plan Implementing Procedures (EPIP).

2.0 DEFINITIONS

None

3.0 RESPONSIBILITIES

3.1 Emergency Response Organization (ERO):

- 3.1.1 OPPD has issued a resolution which authorizes the ERO to provide an immediate and decisive response to mitigate the consequences of any nuclear emergency and for the protection of the health and safety of the public. Resolution No. 4731, as approved by the Board of Directors on January 15, 1998, is Appendix D of the PSRERP.
- 3.1.2 The ERO is intended to provide a pre-qualified organization capable of fulfilling the actions described above. The ERO is not confined to utilize only those personnel that are currently listed as qualified. Other OPPD personnel may be assigned and utilized to perform necessary functions at the discretion of the Command and Control positions. Assignment of any non-ERO qualified individual(s) should include adequate instruction to ensure the individual(s) is capable of performing the necessary functions and is knowledgeable of any potential hazards associated with responding to the designated facility.

3.2 Command and Control:

- 3.2.1 The position performing the duties of the Emergency Director is referred to as the Command and Control Position.

ORGANIZATIONAL CONTROL OF EMERGENCIES

- 3.2.2 The Command and Control position has the following responsibilities that cannot be delegated to other personnel. The position may assign other personnel to assist in conducting the actions necessary, but the responsibility of their completion rests with the position, until relieved by another Command and Control position or qualified individual, or the emergency is terminated:
- A. Overall command and control of the ERO.
 - B. Ensuring that the proper classification of the emergency has been made in accordance with the established EAL/Classification scheme and is periodically reviewed to determine if the classification should be upgraded, downgraded or terminated.
 - C. Ensuring that all required notifications are made to appropriate state, local and federal officials.
 - D. Ensuring that appropriate Protective Action Recommendations (PARs) are provided to offsite officials.
 - E. Authorizing OPPD emergency worker exposure extensions beyond the Federal Radiation Protection Guidance.
 - F. Authorizing issuance of Potassium Iodide for OPPD emergency workers.
- 3.2.3 The Command and Control position also has the following responsibilities that can be delegated to other personnel, as necessary:
- A. Requests for assistance from federal agencies.
 - B. Authorizing any emergency information to be released to the media or the general public.
 - C. Coordinating the transfer of the emergency information from the ERO to other OPPD and non-OPPD organizations called upon to assist.
 - D. Ensuring a timely and complete turnover of information to any qualified relief.
 - E. Declaring the termination of an emergency and transfer into a Recovery Operations Organization, when appropriate.
 - F. Providing information to the authorized representatives of the states of Nebraska and Iowa, and associated local governments.
 - G. Ensuring that the plant is in compliance with Technical Specifications and other licensee conditions, and if deviations are necessary to protect the public health and safety, they are approved, as a minimum, by a Senior Reactor Operator/Certified Fuel Handler, prior to taking the action.

ORGANIZATIONAL CONTROL OF EMERGENCIES

4.0 PROCEDURE

4.1 ERO Staff On-Shift

4.1.1 The staffing of the normal operating organization for each shift is shown in Table B-1. This staffing consists of, as a minimum:

- One Shift Manager (Senior Reactor Operator (SRO)/Certified Fuel Handler (CFH))
- One Control Room Operator (SRO or Reactor Operator (RO)/CFH)
- One Equipment Operator/Non-Certified Operator (NCO)
- One Radiation Protection Technician
- Additionally, there are several shift Security personnel assigned

4.1.2 All or part of these shift personnel may comprise the initial ERO, and are responsible for taking immediate protective measures in any emergency and implementing this Post-Shutdown Radiological Emergency Response Plan when necessary.

4.2 Activation of the ERO

4.2.1 At a Notification of Unusual Event (NOUE), the Shift Manager may elect to not activate the ERO. In this instance, a notification to certain management personnel is performed and other personnel may be notified to assist as necessary.

A. If the Shift Manager elects to activate the ERO, the notification process will call out the entire ERO (with the exception of the JIC).

4.2.2 It is OPPD's goal that the ERO personnel can staff their emergency positions within one hour following declaration of an Alert or higher classification. In the event of adverse weather and/or other conditions that may limit or slow response, either manmade or natural, it is understood that staffing time may exceed this goal.

4.3 Facility Activation and Operation

4.3.1 There are some functional group activities that may be performed within an Emergency Response Facility prior to actually activating the facility. To be beneficial to the Command and Control facility, these activities, such as dose assessment and field team functions, are dependent upon the establishment of proper communications between the facilities.

ORGANIZATIONAL CONTROL OF EMERGENCIES

- 4.3.2 OPPD Emergency Response Facilities are considered activated when minimum staffing and basic setup requirements have been attained to allow the facility to provide minimum support to the operating staff and other facilities.
- A. It is OPPD's goal that the OSC, EOF and TSC be activated within one hour following an Alert classification. The JIC will be activated following a Site Area or General Emergency classification, and can be activated at an earlier classification based on the decisions of the Corporate Communications Division.
- 4.3.3 Minimum staffing for activation of the OSC is as follows:
- One OSC Director
 - One Radiation Protection Technician
 - One other person to form a team
- 4.3.4 Minimum staffing for activation of the TSC is as follows:
- One Site Director
 - One TSC Protective Measures Coordinator
 - One Engineering Coordinator
- 4.3.5 Minimum staffing for activation of the EOF is as follows:
- One Emergency Director
 - One EOF COP Communicator
 - One EOF Protective Measures Manager
 - One EOF Dose Assessment Specialist
- 4.3.6 OPPD Emergency Response Facilities are considered augmented when all minimum and augmenting staffing positions are filled.
- 4.3.7 Selected support staff, which assists the minimum and augmenting staff, is shown on Attachment 1 - Table B-1 - OPPD Emergency Response Organization (ERO) Functions and Shift Staff Augmentation Plan. The support staff is intended to supplement and enhance operation of their respective facilities. Additional personnel may respond.

ORGANIZATIONAL CONTROL OF EMERGENCIES

- 4.3.8 If a toxic chemical/hazardous material or other significant event occurs that threatens the habitability of the station, an option exists to have all or part of the TSC and OSC staffs report to the EOF to provide assistance as necessary.
- 4.3.9 Some ERO personnel may elect to maintain an assistant position. This is acceptable when additional coordination of activities is required or to aid in the turnover process. The primary assignee must maintain overall responsibility of the position, and ensure that 24 hour staffing of the position can be implemented.
- 4.4 Command and Control Positions
- 4.4.1 The positions that have Emergency Director Authority are:
- The Shift Manager
 - The Site Director
 - The EOF Emergency Director
- 4.4.2 The Shift Manager ERO duties are to:
- A. Perform as Emergency Director until properly relieved by a qualified position.
 - B. Direct medical and fire response efforts.
 - C. Coordinate in-plant operations response with the TSC and OSC. After being relieved by another Command and Control position, the Shift Manager will provide assistance and direction to the Control Room staff as necessary.
 - D. Ensure Control Room communications are established with the TSC, OSC, and EOF
- 4.4.3 The Site Director position is intended to assume Command and Control functions from the Control Room if the EOF is not available or cannot assume Command and Control. This position may assume Command and Control at any emergency classification. The Site Director may assume Command and Control in the Control Room proper at any time. If the Site Director elects to assume Command and Control within the TSC, the TSC must meet activation requirements.
- A. The Site Director duties are to promptly relieve the Control Room Command and Control position and perform as Emergency Director until properly relieved by a qualified position, if the EOF is not available or cannot assume Command and Control. Additional duties of the Site

ORGANIZATIONAL CONTROL OF EMERGENCIES

Director are to:

1. Manage the onsite activities of the ERO.
2. Keep the Emergency Director informed of those onsite activities as necessary.

4.4.4 The EOF Emergency Director position is intended to assume all Command and Control functions from the plant site. This position may assume Command and Control at any emergency classification, but the EOF must meet activation requirements prior to the transfer of Command and Control duties.

- A. The Emergency Director duties are to promptly relieve the onsite Command and Control position and perform as Emergency Director until properly relieved by a qualified position or termination of the emergency response phase.

4.5 Control Room Positions

4.5.1 The following positions are on-shift staff, and augmenting positions for the Control Room. Additional Control Room support staffing is identified on Attachment 2 - Figure B-2 - Fort Calhoun Station Emergency Response Organization. Control Room on-shift staff positions are:

- A. Shift Managers duties are described in Sections 4.2, 3.2 and 4.4.2.

B. Control Room Operator duties include:

- Assessment of plant conditions,
- Ensuring requirements of the AOPs are met, and
- Notifications as directed by the Shift Manager. These Notifications include the following:
 - Required notifications to the states and counties
 - Notifications to the Emergency Response Organization

C. Equipment Operator/NCO duties include making repairs and corrective actions on plant equipment until augmented plant maintenance staff arrives. NCOs also assist in performing notifications/communications and dose assessment as needed.

D. Shift Radiation Protection Technician duties include conducting radiological accident assessment and support, offsite dose assessment and onsite in-plant surveys.

4.5.2 The Control Room (CR) Operations Liaison is an augmenting position. Duties include transmitting plant status/Control Room information, etc. to the TSC, OSC, and EOF.

ORGANIZATIONAL CONTROL OF EMERGENCIES

4.6 Technical Support Center Positions

4.6.1 The following are minimum staffing and augmenting positions for the Technical Support Center (TSC). Additional TSC support staffing is identified on Attachment 2 - Figure B-2 - Fort Calhoun Station Emergency Response Organization. Minimum staffing positions for the TSC are:

A. Site Director duties are described in Steps 3.2 and 4.4.3.

B. Engineering Coordinator duties include:

1. Directing activities of engineering resources requested by the TSC.
2. Analyzing plant problems and providing recommendations for plant modifications to mitigate the effects of the accident.
3. Evaluating possible radiological release paths to the environment.

C. Protective Measures Coordinator duties include:

1. Coordinating the dispatch of the TSC field team from the site and performing field team direction until the EOF assumes this duty.
2. Monitoring and coordinating on site dose assessment operations performed, and keep the Site Director informed of dose projections and field sample results.
3. Evaluating site radiological conditions, and necessary personnel protective measures.
4. Evaluating and making recommendations for plant evacuation and evacuation routes.
5. Preparing and submitting state update information, including Protective Action Recommendations, to the Site Director for approval and transmittal to state and federal officials if TSC has Command and Control.

4.6.2 Augmenting positions for the TSC are:

A. TSC Field Team duties include providing off-site monitoring in the areas potentially affected by a radiological release.

B. Operations Liaison duties include:

ORGANIZATIONAL CONTROL OF EMERGENCIES

1. Obtaining plant status/Control Room information from the Control Room Operations Liaison and transmitting this information to the TSC staff as needed.
2. Assisting the Site Director in formulating appropriate protective action recommendations when necessary.

4.7 Operations Support Center Positions

4.7.1 The following are minimum staffing and augmenting positions for the Operations Support Center (OSC). Additional OSC support staffing is identified on Attachment 2 - Figure B-2 - Fort Calhoun Station Emergency Response Organization. Minimum staffing positions for the OSC are:

A. OSC Director duties include:

1. Coordinating the development of plans for required maintenance activities.
2. Keeping the Site Director informed of OSC activities.
3. Coordinating emergency team response as requested by the TSC/Control Room to perform search and rescue, damage assessment, damage control, repair and modification, and in-plant radiological monitoring.

B. Radiation Protection Technician duties include coordination of on-site radiation protection activities.

C. One other person to form a team.

4.7.2 Augmenting positions for the OSC are:

A. Chemistry Technician duties include evaluating and performing all chemistry activities on-site.

B. Electrical Maintenance Technician duties include providing repairs and corrective actions for plant electrical equipment as directed.

C. I&C Technician duties include providing repairs and corrective actions to plant instruments as directed.

D. Machinist or Steam Fitter Mechanic duties include providing repairs and corrective actions to plant mechanical equipment as directed.

E. Radiation Protection Technician duties include providing radiological surveys and job coverage to repair and corrective action teams as directed.

ORGANIZATIONAL CONTROL OF EMERGENCIES

- F. The Protective Measures Coordinator duties include coordinating all radiation protection activities onsite.

4.8 Emergency Operations Facility Positions

- 4.8.1 The following positions are minimum staffing and augmented positions for the Emergency Operations Facility (EOF). Additional EOF support staffing is identified on Attachment 2 - Figure B-2 - Fort Calhoun Station Emergency Response Organization. Minimum staffing positions for the EOF are:

- A. Emergency Director duties are described in Section 3.2 and 4.4.4.

- B. COP Communicator duties include performing notifications as directed by the Command and Control position. These notifications include the following:

- Required notifications to states and counties
- Required notifications to the NRC
- Notifications to the Emergency Response Organization. This position also assists in maintaining status boards within the EOF

- C. Protective Measures Manager duties include:

1. Directing dose assessment operations performed, coordinating OPPD field teams, and keeping the Emergency Director informed of projections and field survey results.
2. Evaluating site radiological conditions and necessary personnel protective measures.
3. Preparing and submitting state update information, including Protective Action Recommendations, to the Emergency Director, state and federal officials.
4. Coordinating technical briefings for the offsite agencies as requested.
5. Comparing dose projections against field team results.
6. Comparing dose projections and field team results with state and federal agency results.

- D. Dose Assessment Specialist duties include performing offsite dose assessments and submitting the results to the Emergency Director for approval and transmittal to state and federal officials.

ORGANIZATIONAL CONTROL OF EMERGENCIES

4.8.2 Augmenting positions for the EOF are:

A. Administrative Logistics Manager duties include:

1. Coordinating administrative personnel support to the EOF.
2. Coordinating scheduling and callout of ERO personnel for 24 hour coverage.
3. Activating the Alert Notification System as requested.
4. Coordinating OPPD resources for the establishment of emergency logistics for the ERO, such as food, beverages, medical and administrative supplies, transportation, special equipment, etc.

B. The EOF Field Team duties include providing off-site monitoring in the areas potentially affected by a radiological release.

1. Field Team Specialist duties include coordinating the activities of the OPPD and state Field Teams to achieve the most efficient use of teams for plume tracking.

C. Information Specialist duties include:

1. Preparing information for use in periodic press releases.
2. At an Alert or higher emergency classification, submitting all press releases to the Emergency Director (or designee) for approval prior to forwarding the release to the JIC.

D. Operations Liaison duties include: 1) obtaining plant status/Control Room information from the Control Room Operations Liaison and transmitting this information to the EOF and NRC staff as needed; and, 2) assisting the Emergency Director in the review of classifications and formulating appropriate protective action recommendations when necessary.

ORGANIZATIONAL CONTROL OF EMERGENCIES

4.9 Joint Information Center Positions

4.9.1 The Joint Information Center Manager duties include:

- A. Coordinating with government authorities and to provide periodic briefings and news releases to news media personnel.
- B. Providing public inquiry services.
- C. Keeping OPPD personnel, including senior management, informed of the status of the emergency and emergency response effort. OPPD's Corporate Crisis Communication Plan lists other JIC positions.

4.10 Emergency Response Organization Interface with Onsite and Offsite Organizations

4.10.1 Attachment 2 - Figure B-2 - Fort Calhoun Station Emergency Response Organization illustrates the interface between the EOF and other onsite support centers. Attachment 2 - Figure B-3 - Organization Interrelationships illustrates the interface of the EOF with federal, state, and local support agencies.

4.10.2 The EOF interfaces with each of the onsite support centers on a continuous basis. Even though the EOF serves as the primary interface with the various offsite support agencies, the TSC interfaces with various contractors and vendors to gather needed design data, consultation, and evaluation concerning the plant's status.

4.11 Emergency Response Organization Notification

4.11.1 Emergency Response Organization notification occurs as shown in Sections E and M of the PSRERP. The Shift Manager is responsible for initiation of the notification process after an emergency condition has been classified.

4.12 Service Provided by Local Agencies

4.12.1 The Nebraska State Patrol and the Washington County Sheriff's Department have agreed to provide the primary law enforcement support to the Fort Calhoun Station Security Department.

4.12.2 The Blair Volunteer Fire Department has agreed to provide the primary fire support services for the Fort Calhoun Station. The Fort Calhoun Volunteer Fire Department has agreed to provide backup fire response.

ORGANIZATIONAL CONTROL OF EMERGENCIES

- 4.12.3 OPPD vehicles may transport non-injured potentially contaminated personnel. The Blair Volunteer Fire Department has agreed to provide primary rescue and transportation support, for injured and/or contaminated personnel. The Fort Calhoun Volunteer Fire and Rescue, Missouri Valley Fire and Rescue and the Council Bluffs Ambulance and Fire Departments have agreed to provide backup services.
- 4.12.4 The Blair Hospital has agreed to provide medical support for work related injuries. Nebraska Health Services University Hospital in Omaha, maintains a regional Radiation Health Center which provides services for the treatment of radiologically contaminated injuries and radiation exposure evaluation.
- 4.12.5 The majority of the organizations listed in this section maintain a Letter of Agreement with OPPD. These letters are on file in the Emergency Planning Department at the Fort Calhoun Station.

5.0 RETENTION/RECORDS

None

6.0 REFERENCES AND COMMITMENTS

- 6.1 Fort Calhoun Station Analysis of Proposed Post-Shutdown On-Shift Staff, August 2016

7.0 ATTACHMENTS

- 7.1 Attachment 1 - Table B-1 - OPPD Emergency Response Organization (ERO) Functions and Shift Staff Augmentation Plan
- 7.2 Attachment 2 - Figure B-1 - Normal Fort Calhoun Station Management Organization
- 7.3 Attachment 2 - Figure B-2 - Fort Calhoun Station Emergency Response Organization
- 7.4 Attachment 2 - Figure B-3 - Organization Interrelationships

ORGANIZATIONAL CONTROL OF EMERGENCIES

Attachment 1 - Table B-1 - OPPD Emergency Response Organization (ERO) Functions and Shift Staff Augmentation Plan

NUREG 0654			Omaha Public Power District	
Major Functional Area	Major Tasks	Emergency Positions	On Shift Minimum Number/Title	Goals for 1 hour Augmentation Minimum Number/Title
Plant Operations and Assessment of Operational Aspects		Shift Manager (SRO) Shift Foreman (SRO) Control Room Operators Auxiliary Operators	1 Shift Manager (SRO/CFH) 1 Control Room Operator (SRO or RO/CFH)*** 1 Equipment Operator/NCO	
Emergency Command and Control (Emergency Coordinator)*		Shift Technical Advisor, Shift Manager or designated Facility Manager	1** Shift Manager	1 Site Director OR 1 Emergency Director
Notification/Communication	Notify License, State local and Federal personnel and maintain communication		1 Control Room Operator (SRO or RO/CFH)***	1 Communicator in EOF
Radiological Accident Assessment and Support of Operational Accident Assessment	Emergency Operations Facility (EOF) Director	Senior Manager		1 Emergency Director
	Offsite Dose Assessment	Senior Health Physics (HP) Expertise	1 R.P Technician	1 Prot. Meas. Coord
	Offsite Surveys			4 Field Team Technicians
	Onsite (Out of plant) In Plant surveys Chemistry/Radiochemistry			1 R.P. Technician 1 Chemistry Technician
Plant System Engineering, Repair and Corrective Actions	Technical Support Repair and Corrective Actions	Shift Technical Advisor Core/Thermal hydraulics Electrical Mechanical Mechanical Maintenance Electrical Maintenance Instrument and Control (I&C) Technician	 1** Equipment Operator/NCO 1** Equipment Operator/NCO	1 Engineering Coord 1 Machinist OR Steam Fitter Mechanic 1 Equipment Operator/NCO 1 Electrical Maintenance Technician 1 I&C Technician
Protective Actions (Plant)	Radiation Protection: a. Access Control b. HP Coverage for repair, corrective actions, search and rescue, first aid and firefighting c. Personnel monitoring d. Dosimetry	HP Technicians	1 R.P. Technician	1 R.P. Technician
Firefighting			Fire Brigade per SO-G-28, Station Fire Plan	Blair Fire Department
Rescue Operations and First Aid			2** Equipment Operators/NCOs	Blair Rescue Squad
Site Access Control and Personnel Accountability	Security, Firefighting, communications, personnel accountability	Security Personnel	All per Security Plan	

* Emergency Command and Control responsibility is transferred in accordance with Section B of this plan.

** May be provided by Shift personnel assigned other functions.

*** Performs initial notification to NRC.

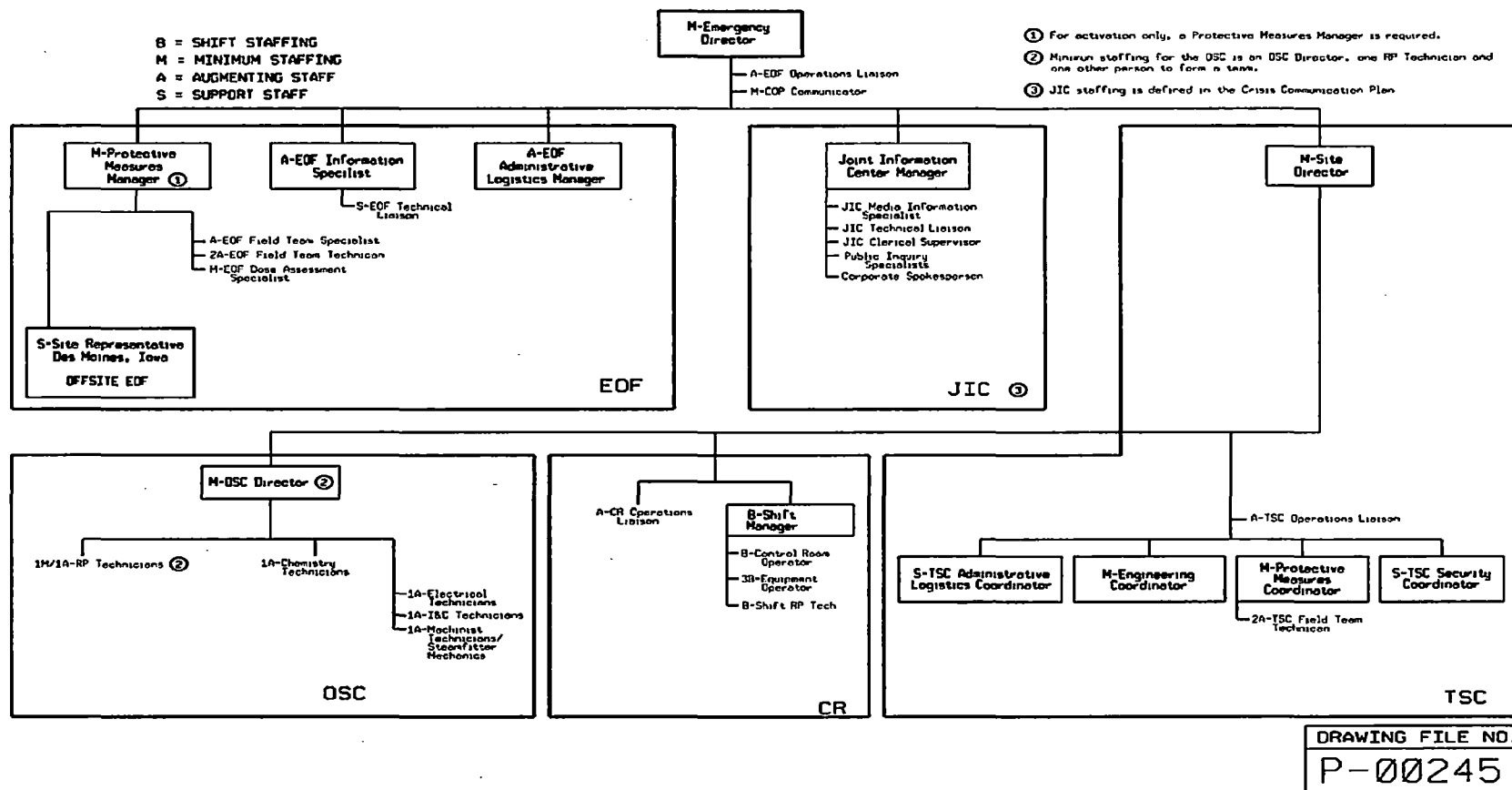
ORGANIZATIONAL CONTROL OF EMERGENCIES

Attachment 2 - Figure B-1 - Normal Fort Calhoun Station Management Organization

The Fort Calhoun Organization is described in Chapter 12 of the DSAR.

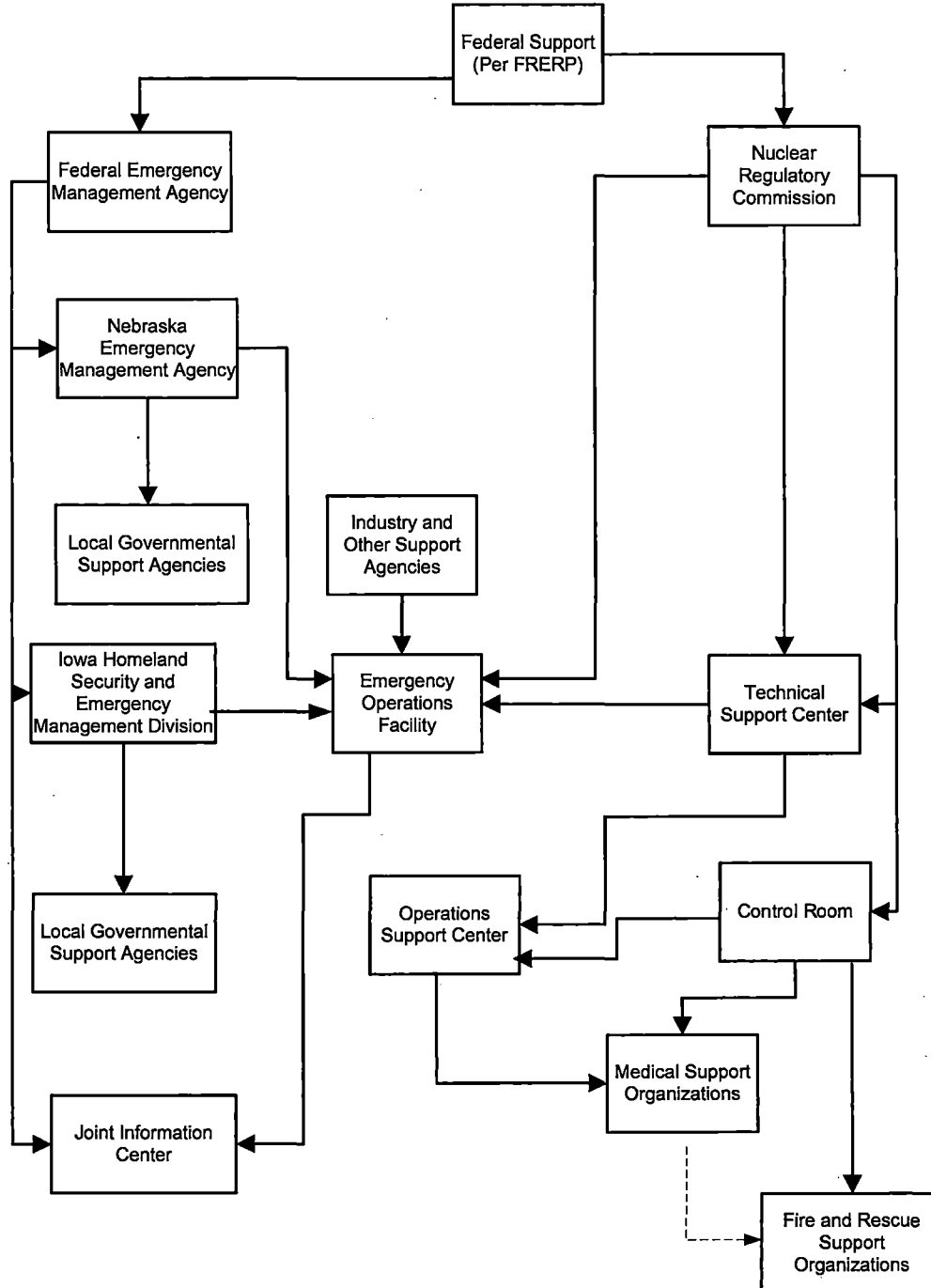
ORGANIZATIONAL CONTROL OF EMERGENCIES

Attachment 2 - Figure B-2 - Fort Calhoun Station Emergency Response Organization



ORGANIZATIONAL CONTROL OF EMERGENCIES

Attachment 2 - Figure B-3 - Organization Interrelationships



EMERGENCY RESPONSE SUPPORT AND RESOURCES

1.0 FEDERAL RESPONSE

1.1 Personnel Authorized to Request Federal Assistance

The Emergency Director typically coordinates with the states to secure federal assistance. However, the Emergency Director may also request federal assistance directly, if timely assistance has not been provided as requested by the states. The states will be kept informed of such requests.

1.2 Federal Response Organizations

The Federal Radiological Emergency Response Plan (FRERP) and the Federal Response Plan (FRP) outline the federal response to any type of emergency, including an emergency at a fixed nuclear facility. Some of the typical federal organizations which could respond to an emergency at the Fort Calhoun Station are as follows:

1.2.1 U.S. Coast Guard

Upon notification, the U.S. Coast Guard will control traffic on the Missouri River in the area of Fort Calhoun Station. They will provide waterborne patrols for extended periods if contamination levels persist.

A U.S. Coast Guard cutter is based at the Florence Boat Yard, approximately 18 river miles downstream of the Fort Calhoun Station.

1.2.2 U.S. Environmental Protection Agency (EPA)

Upon request, the EPA will provide trained manpower to assist in reviewing survey data, offsite evaluations and advise on protective actions for the public. They also provide assistance in the collection and analysis of environmental samples.

EMERGENCY RESPONSE SUPPORT AND RESOURCES

1.2.3 U.S. Department of Energy (DOE)

DOE is the technical support branch of the Federal Radiological Emergency Response Plan (FRERP). DOE would typically be the agency in charge of initial establishment and control of the Federal Radiological Monitoring and Assessment Center (FRMAC).

Some of the capabilities of DOE and the FRMAC operations are as follows:

- A. Support to the state(s) in the coordination of offsite radiological monitoring assessment, evaluation, and reporting activities of all federal agencies during the initial phases of an accident and maintain a technical liaison with the states and local agencies with similar responsibilities.
- B. Ensure the orderly transfer of responsibility for coordinating the intermediate and long term radiological monitoring function at the FRMAC to EPA after the initial phases of the emergency.
- C. Provide the personnel and equipment required to coordinate and perform the offsite radiological monitoring and evaluation activities.
- D. Assist the NRC in assessing the accident potential and in developing technical recommendations on protective measures.
- E. Maintain a common set of offsite radiological monitoring data and provide this data and interpretation to the NRC and to appropriate state and local agencies requiring direct knowledge of radiological conditions and monitoring results.
- F. Provide consultation and support services to all other entities (e.g. private contractors) having radiological monitoring functions and capabilities.
- G. Assist other federal, state and local agencies by providing technical and medical advice concerning treatment of radiological contamination.
- H. Provide telecommunications support and capabilities.
- I. Assist other federal agencies in developing and establishing guidelines on effective systems of emergency radiation detection and measurement, including instrumentation.

EMERGENCY RESPONSE SUPPORT AND RESOURCES

1.2.4 U.S. National Weather Service (NWS)

The National Weather Service operates on a twenty-four (24) hour per day basis. Upon request, this organization can provide the Fort Calhoun Station with meteorological conditions including predicted temperature inversions, precipitation, wind patterns and velocity.

1.2.5 U.S. Nuclear Regulatory Commission (NRC)

The NRC becomes the Lead Federal Agency (LFA) in a response to a fixed nuclear facility, such as the Fort Calhoun Station. In their role as LFA, the NRC will directly coordinate response activities with OPPD and determine the need for appropriate federal response organizations. The NRC will perform the function of LFA from several response locations including the NRC Operations Center, Region IV's Incident Response Center, all OPPD Emergency Response Facilities (once a site team has arrived), and other federal response facilities established.

1.2.6 Federal Emergency Management Agency (FEMA)

FEMA is responsible for coordinating the non-technical federal support to state and local governments which could include such tasks as logistics and telecommunications. The senior FEMA official on the scene will notify the federal agency(ies) most capable of meeting the state and local governmental needs. FEMA would take the lead at the federal Disaster Field Office, if such location is established. Fort Calhoun Station is located within FEMA, Region VII.

1.2.7 Federal Aviation Administration (FAA)

The FAA controls and directs air traffic in and around the affected area. The FAA has the authority to close the area surrounding the Fort Calhoun Station to all non-response air traffic.

1.2.8 U.S. Department of the Interior

The U.S. Department of the Interior, Branch of Global Seismology has the capability to monitor and provide specific seismic activity data should such an event occur in the vicinity of the Fort Calhoun Station.

EMERGENCY RESPONSE SUPPORT AND RESOURCES

1.3 Response Times

It is anticipated that response time will be based on the level of assistance provided. For example, information on upcoming weather conditions would be expected to be available in a matter of minutes over the telephone from the National Weather Service. Conversely, radiological assistance from the Department of Energy would be expected to take considerably longer. It is expected that the federal assistance requested would be available within 8 to 72 hours.

2.0 RESOURCES TO SUPPORT RESPONDING AGENCIES

Resources are provided by OPPD in order to support the various federal organizations which respond to an emergency as follows:

2.1 Air fields are available for the use of the radiological monitoring teams as follows:

- 2.1.1 Eppley Air Field, 18 miles South of Fort Calhoun Station, on Abbott Drive in Sector G.
- 2.1.2 Eagle Field (City of Blair's Air Field), seven (7) miles Southwest of Fort Calhoun Station on State Hwy. 133 in Sector K.
- 2.1.3 North Omaha Airfield, eleven (11) miles South Southeast of Fort Calhoun Station, on North 72nd street in Sector H.

2.2 A laboratory for radioisotopic analysis is available at the Fort Calhoun Station and Cooper Nuclear Station near Brownsville, Nebraska.

2.3 A laboratory for non-radiological chemical analysis is available at the Fort Calhoun Station and OPPD's North Omaha Power Station.

2.4 Onsite and offsite survey teams with necessary radiation monitoring instruments are available.

2.5 A boat is available for obtaining river samples.

2.6 Space and communication lines have been set aside to accommodate some federal agencies at the Control Room, Technical Support Center, Emergency Operations Facility, and Joint Information Center.

2.7 Electrical and communication access is available at the Emergency Operations Facility for the federal mobile analytical laboratory.

EMERGENCY RESPONSE SUPPORT AND RESOURCES

3.0 SITE REPRESENTATIVES

The Nebraska State Governor's Authorized Representative (GAR) reports to the state Field Command Post, located at OPPD's Emergency Operations Facility. The GAR is in direct contact with OPPD personnel and has the authority to approve and issue all protective actions for the public in the State of Nebraska.

The State of Iowa's Governor's Authorized Representative (GAR) typically remains in the State Emergency Operations Center. The Iowa GAR has the authority to approve and issue all protective actions for the public in the State of Iowa. A command and control telephone link exists between this position and OPPD's EOF. If personnel are available, an Iowa liaison is sent to work directly with the staff at the EOF.

An OPPD Site Representative is available for dispatch from the utility to the Iowa State EOC. This position can be staffed on a 24 hour a day basis.

4.0 RADIOLOGICAL ASSISTANCE

4.1 Nebraska Public Power District (Cooper Nuclear Station)

The Cooper Nuclear Station is capable of providing a backup facility in the event Fort Calhoun's radiochemistry laboratory is not functional. The Cooper Station's radiochemistry laboratory is equipped to do gross and isotopic determinations on radionuclides in concentrations and counting geometries necessary for nuclear power plant operation and emergency monitoring. They will provide analysis of liquid, air particulate and cartridges on a priority basis after receiving the sample.

Additionally, Cooper Station could provide monitoring teams equipped with air sampling, radiation and contamination monitoring equipment.

4.2 Contractor Assistance

In the event of an emergency, it is anticipated that further assistance could be contracted directly from firms currently being utilized by OPPD for non-emergency work at the Fort Calhoun Station or through the assistance of such organizations as the Institute of Nuclear Power Operations (INPO).

4.3 The analysis of field monitoring data by the states is specified in each respective state plan. OPPD field monitoring data can be analyzed by an independent facility providing such services.

EMERGENCY CLASSIFICATION SYSTEM

1.0 INTRODUCTION

- 1.1 This section describes the emergency classification scheme adopted by the Omaha Public Power District for Fort Calhoun Station. The Emergency Classification scheme is based on NEI-99-01, Revision 6, Development of Emergency Action Levels for Non-Passive Reactors.
- 1.2 The State of Nebraska and the State of Iowa review the Fort Calhoun Station EALs once per year to ensure that they are consistent with their respective emergency classification schemes in their respective emergency plans. The purpose of this standardized classification is to provide a framework within which all emergency actions can be taken and notifications can be made in response to abnormal plant situations.
- 1.3 Table D-1 shows the projected worst case emergency classification for certain postulated accidents identified in the Fort Calhoun Station Updated Safety Analysis Report.

2.0 CLASSIFICATION OF EMERGENCIES

- 2.1 Emergency conditions are classified into one of four severity levels which cover the spectrum of postulated accidents. The postulated accidents range from precursors to potential degradation of plant safety to those involving actual failure of plant safety systems. Emergency preparedness, including a standardized classification system, is based primarily on preventing or minimizing radiation exposure to individuals onsite and offsite.
- 2.2 The specific Initiating Conditions (ICs) are contained within EP-FC-1001 Addendum 3, Emergency Action Levels For Fort Calhoun Station. The ICs are based on one or more of the key types of initiating conditions, including; symptom based, event based, barrier breach, and essential equipment/system(s) out of service. The ICs at Fort Calhoun Station are presented using six recognition categories as listed below:
 - R - Abnormal Rad Levels/Radiological Effluent
 - C - Cold Shutdown/Refueling System Malfunction
 - E - Events Related to ISFSI
 - F - Fission Product Barrier Degradation
 - H - Hazards and Other Conditions Affecting Plant Safety
 - M - System Malfunction

EMERGENCY CLASSIFICATION SYSTEM

- 2.3 Each one of the recognition categories contains ICs as outlined in EP-FC-1001 Addendum 3, Emergency Action Levels For Fort Calhoun Station . Each specific IC is detailed in individual sections which contain predetermined, site-specific, observable thresholds, such as; instrument readings, equipment status indicators, measurable parameter(s), discrete and observable event(s), results of analysis, entry into specific emergency/abnormal procedures, applicable operating mode(s), and/or any other cautions and/or notes pertaining to that particular IC.
- 2.4 To the extent feasible, the ICs are based on readily available information such as Control Room instrumentation readings, Emergency Response Facility Computer System (ERFCS) output, specific station procedure steps, and/or dose projection results. The intent is to eliminate "ambiguity" for command and control positions in determining appropriate emergency classifications. Immediate actions to be taken in response to conditions involving abnormal plant operating parameters are detailed in the Fort Calhoun Station Abnormal Operating Procedures and Operating Instructions. Other immediate actions and follow-up actions are identified in Section J of this plan and are described in detail in applicable Emergency Plan Implementing Procedures, listed in Appendix C of this plan.
- 2.5 The ICs do not signify the need for immediate implementation of protective or corrective measures. They do, however, signify the need for implementation of dose assessment measures both onsite and offsite and assessment of plant status, as applicable.
- 2.6 In using the ICs as the basis for initiating emergency response activity, there may be instances when the plant staff cannot determine which of two emergency classifications is appropriate for a particular occurrence. In those cases where the appropriate classification cannot be defined in a short period of time, the occurrence should be treated as the higher of the two classifications and the appropriate response for that level should be initiated.
- 2.7 Notification of Unusual Event
- 2.7.1 Notification of Unusual Event (NOUE) – Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs. Some of these events could indicate a potential degradation in the level of plant safety and/or could escalate to a more severe condition if appropriate action is not taken.
- 2.7.2 The primary purpose for this classification is to ensure that the plant staff recognizes the initiating condition, takes appropriate action, such as assessment and verification, and comes to an appropriate state of readiness

EMERGENCY CLASSIFICATION SYSTEM

to respond in the event that the condition worsens.

2.7.3 With the exception of possible assistance by local support groups such as fire departments or medical facilities, activation of offsite facilities by offsite organizations is not anticipated for events within this classification. The command and control position at Fort Calhoun Station has the option to call all or part of the Emergency Response Organization (ERO) for support at this emergency classification.

2.7.4 Notification of Unusual Event will be made to offsite authorities in accordance with Section E of this plan.

2.8 Alert

2.8.1 Alert – Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of **HOSTILE ACTION**. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels. It requires response by the onsite Emergency Response Organization which augments on-shift emergency resources, and constitutes a "standby" initiation of the offsite emergency plan provisions. Generally, offsite emergency response agencies notify their key staff, and may begin to activate offsite response such as activation of facilities and offsite radiological monitoring. Offsite agencies will maintain this level of preparedness until termination or escalation of the Alert classification.

2.8.2 OPPD will augment the Control Room, staff the Technical Support Center and Operations Support Center at the Alert level. Typically, the Emergency Operations Facility staff will also be augmented to be placed in "standby" mode, ready to assume Command and Control if necessary.

2.8.3 Notification to offsite authorities of the Alert will be made in accordance with Section E of this plan.

2.9 Site Area Emergency

2.9.1 Site Area Emergency – Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or security events that result in intentional damage because of intentional malicious dedicated efforts of **HOSTILE ACTION**; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels that exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

EMERGENCY CLASSIFICATION SYSTEM

Offsite response agencies are fully mobilized along with notification to the general public by the sounding of the Alert Notification System (ANS) sirens surrounding the plant site.

2.9.2 OPPD staffs all designated Emergency Response Facilities at a Site Area Emergency or General Emergency. The full Emergency Response Organization will be activated.

2.9.3 Notification to offsite authorities of the Site Area Emergency will be made in accordance with Section E of this plan.

2.10 General Emergency

2.10.1 General Emergency – Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Release can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area. Total activation of the onsite and offsite emergency response organizations is required. Protective actions involving offsite populations are highly probable.

2.10.2 OPPD staffs all designated Emergency Response Facilities at a Site Area Emergency or General Emergency. The full Emergency Response Organization will be activated.

2.10.3 Notification to offsite authorities of the General Emergency will be made in accordance with Section E of this plan.

EMERGENCY CLASSIFICATION SYSTEM

Table D-1 - Emergency Classification of Postulated Accidents

Postulated Accident	Projected Worst Case Emergency Classification	Key Concern
Fuel Handling Accident (in Spent Fuel Pool Area)	General Emergency	Radiological Effluents
Gas Decay Tank Rupture	Site Area Emergency	Radiological Effluents
Waste Liquid Incident	Alert	Radiological Effluents
Control Room Habitability During Toxic Chemical Release Accident	Alert	Plant Control

NOTIFICATION METHODS AND PROCEDURES

1.0 PURPOSE AND SCOPE

1.1 Purpose

- 1.1.1 The purpose of this PSRERP is to provide guidance for notifying state and local response organizations, the Nuclear Regulatory Commission, and members of the OPPD Emergency Response Organization during radiological emergencies.

1.2 Scope

- 1.2.1 This PSRERP applies to OPPD Emergency Response Organization personnel responsible for notifying state and local response organizations, the Nuclear Regulatory Commission and members of the OPPD Emergency Response Organization during a radiological emergency.

2.0 PROCEDURE

2.1 Notifications

- 2.1.1 The decision to make notifications is based on the emergency action levels and corresponding emergency classifications described in Section D of this Plan. As discussed in that section, they are consistent with NEI-99-01, Development of Emergency Action Levels for Non-Passive Reactors, which has been approved by the NRC replacing NUREG-0654, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Appendix 1. The EALs are reviewed annually by the States of Nebraska and Iowa.
- 2.1.2 OPPD is capable of notifying and activating its Emergency Response Organization 24 hours per day. It is also able to make notifications to the states, Nuclear Regulatory Commission and, if required, local counties on a 24 hour per day basis. The applicable state plans detail the provisions for 24 hour per day notification and activation of their response organizations.
- 2.1.3 The Command and Control position is responsible for ensuring appropriate notifications are initiated when an emergency is classified. Fort Calhoun Station personnel in the protected area are notified via the Emergency or Fire Alarm and a public address system message. Personnel outside the protected area are notified by public address systems installed in the Administrative and Training buildings. Site Security personnel may assist in the notification of all other personnel on OPPD property. The OPPD Emergency Response Organization is activated as appropriate for the emergency classification level. This is accomplished by an automated call-out system which activates phone calls, text messages, e-mails, and other functions. Maintenance of telephone numbers is discussed in Section P of this Plan.

NOTIFICATION METHODS AND PROCEDURES

- 2.1.4 Initial notification of the states of Nebraska and Iowa is made within 15 minutes after declaration of an emergency classification. The states, in turn, notify other governmental response agencies as appropriate for the emergency classification. Notification is also made to Washington, Harrison, and Pottawattamie counties within 15 minutes.
- 2.1.5 The primary means of notification to the states and counties is via the Conference Operations Network (COP) which is a dedicated telephone system. The COP and backup communications systems are discussed in Section F of this plan. Provisions have been made for verification of notification messages when communications are via means other than the COP.
- 2.1.6 Notification to the NRC is the next contact made. This notification occurs immediately after state and local notifications, not to exceed one hour after the declaration of the emergency classification. The primary means for this notification is the Federal Telecommunications System, Emergency Notification System lines (FTS-ENS). The FTS-ENS system is maintained by the NRC, however, it is routinely tested by OPPD. If the FTS-ENS is not available, notifications are made using the normal commercial telephone system.

2.2 Emergency Messages

2.2.1 Initial Emergency Message

The Omaha Public Power District and the states of Nebraska and Iowa have established the contents of the initial emergency messages to be sent from Fort Calhoun Station in the event an emergency is declared. These messages contain such information as the class of emergency, whether a release is taking place, potentially affected population and areas, and whether protective measures may be necessary. This information is transmitted by a dedicated telephone system, normal telephone systems or by facsimile. Forms are used to record the information for verbal or hard copy transmission to ensure each organization receives identical information.

NOTIFICATION METHODS AND PROCEDURES

2.2.2 Follow-Up Emergency Messages

- A. The follow-up emergency messages to the states incorporate the majority of the elements of Criteria E.4 of NUREG 0654, Rev. 1, as determined necessary by the states. These messages are transmitted to the states by telephone, dose assessment computer or facsimile. Update messages are sent to the states and counties at least every 60 minutes. Updates may be decreased to shiftily during ongoing events if requested by the states and the status of the event has not changed.
- B. It is the goal of Fort Calhoun to attempt to provide dose assessment updates at 15 minute intervals during a Radiological Release. During a Site Area Emergency or General Emergency, the Conference Health Physics (CHP) Network, a dedicated telephone system, can be used to maintain communications as needed. This ensures rapid transmittal of dose assessment information and protective action recommendations to the states.
- C. Emergency information to the county Emergency Operations Centers (Washington, Harrison and Pottawattamie Counties) is given verbally using the Conference Operation (COP) Network. These messages discuss general conditions of the plant.
- D. The NRC will be kept informed as significant events occur which warrant the upgrading or downgrading of the emergency classification. These communications with the NRC will be via the NRC's FTS-ENS (Emergency Notification System). Dose Assessment personnel will keep the NRC informed of dose assessment information using the NRC's FTS-HPN (Health Physics Network).
- E. OPPD has the capability to transmit key plant parameter information directly to the NRC.
- F. Requests for assistance from local support agencies, and others, are made using normal telephone systems.

NOTIFICATION METHODS AND PROCEDURES

2.3 Alert Notification System

- 2.3.1 A system called the Alert Notification System (ANS) has been designed to provide warning to the public within 15 minutes of the decision by offsite authorities to activate the system. The system includes a series of sirens which provide essentially 100 percent coverage of the population within 10 miles of Fort Calhoun Station.
- 2.3.2 The states Emergency Response Plans provide guidance as to when the system should be activated. The counties will then perform the actual activation.
- 2.3.3 Each county has control of only the sirens located within its borders. The exception is one siren which is located in Douglas County, but activated by Washington County. All sirens within a county are sounded simultaneously, and cannot be activated individually.
- 2.3.4 The sirens are activated by radio signal. The county agencies and the activation locations for the sirens are as follows:
- A. Washington County Emergency Communications Center located in the County Court House, Blair, Nebraska.
 - B. Harrison County Emergency Communications Center located in the County Jail Complex, Logan, Iowa.
 - C. Pottawattamie County Emergency Communications Center located in the County Court House, Council Bluffs, Iowa.
- These locations are continuously staffed, providing the capability to activate the siren system 24 hours per day.
- 2.3.5 The Omaha Public Power District has made provisions to sound the sirens when requested to do so by government officials, should a county be unable to activate its sirens. This process can be accomplished from the Emergency Operations Facility or the E.O.-Communications division offices.
- 2.3.6 It is not intended that county or city governments use the ANS for weather alerts or fire signals as frequent use of the system for other purposes would tend to reduce the effectiveness of the sirens if they are needed for a nuclear power plant incident.
- 2.3.7 In the event that one or more sirens activates during non-emergency conditions, provisions have been made to inform the public that no emergency exists, and initiate repairs to the errant siren(s).

NOTIFICATION METHODS AND PROCEDURES

2.3.8 System operability is tested periodically in accordance with the updated design report to FEMA for the outdoor public warning system and backup alert and notification.

2.3.9 Backup ANS for the EPZ is achieved through route alerting by the affected county.

2.4 Emergency Alert System

2.4.1 Members of the public have been instructed (via the Emergency Planning Booklet discussed in Section G of this Plan) to tune to their Emergency Alert System (EAS) station for emergency instructions when the sirens are activated.

2.4.2 Radio station KGOR- 99.9 FM is the Local Primary 1 (LP1) control station for Omaha, NE. It has the capability to broadcast emergency instructions 24 hours per day. Most other television and radio broadcast stations have the capability of carrying EAS messages during their normal hours of broadcasting.

2.4.3 For messages the risk counties will contact the National Weather Service (NWS) and request that EAS be activated. The NWS will then send out the signal to activate the EAS. KGOR has agreed to pick up this signal and broadcast the message.

2.4.4 While follow-up messages are the responsibility of the states, Omaha Public Power District has the capability to make similar information releases to the media. This is described in Section G of this plan.

3.0 REFERENCES AND COMMITMENTS

3.1 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plant

EMERGENCY COMMUNICATIONS

1.0 INTRODUCTION

This section describes the available communications for use among the principal response organizations and between the Omaha Public Power District emergency response facilities. Provisions for 24-hour per day notification to and activation of the state and local emergency response organizations are discussed in Section E of this plan. Also discussed in Section E are the provisions for activating Omaha Public Power District emergency response personnel. Provisions for periodic testing of the emergency communications system are described in Section N of this plan.

2.0 COMMUNICATIONS SYSTEMS

- 2.1 A number of varied communications systems are available for communications between emergency response facilities. These systems are described in this section and are summarized in Figure F-1.
- 2.2 In the conduct of drills and exercises, OPPD may make use of its training simulator to provide a broad range of Control Room like amenities, without impacting the operating FCS Control Room. The communications equipment in the FCS Control Room is, for the most part, duplicated in the simulator.

EMERGENCY COMMUNICATIONS

- 2.3 Each emergency response facility and the personnel responsible for 24 hour communications in each facility is listed below:

Emergency Facility	Primary/Alternate Communications Responsibility
Control Room Fort Calhoun Station	Shift Manager/Control Room Operator
TSC, Fort Calhoun Station	Site Director
EOF, North Omaha Station	Emergency Director/EOF COP Communicator
EOC, State of Nebraska	Operations Officer/Communications and Warning Officer
Forward Command Post, State of Nebraska	Nebraska Emergency Management Agency Director/Asst Nebraska Emergency Management Agency Director
EOC, Washington County (Nebraska)	Washington County Communications Center/County Emergency Management Director
EOC, State of Iowa	Director, Iowa Emergency Management Division/National Guard Adjutant General
Forward Command Post State of Iowa	Harrison County Sheriff's Department/State Liaison Officer
EOC, Harrison County (Iowa)	Communications Director/Harrison County Sheriff's Department
EOC, Pottawattamie County (Iowa)	Communications Director/County Emergency Management Director

2.4 Fort Calhoun Station Alarm System

2.4.1 Emergency and Fire Alarms

These alarms are sounded from the Control Room when an emergency requiring ERO activation or fire is declared. Their function is to alert personnel within the Protected Area to an emergency condition.

2.5 Fort Calhoun Station Paging Systems

- 2.5.1 The Protected Area paging system (Gaitronics) provides a means of intra-plant communications. Stations on this system provide access to the plant paging system and to intercom lines. These stations and speakers are placed throughout the plant including the Control Room, the Technical Support Center and the Operations Support Center.

EMERGENCY COMMUNICATIONS

- 2.5.2 The Administrative and Training buildings at the Fort Calhoun Station also have public address announcing capabilities. Access to the public address system in either or both locations can be accomplished via the site's telephone system. This system can be used to notify personnel of a plant emergency.

2.6 Local Private Automatic Branch Exchanges (PABX)

2.6.1 Omaha Public Power District PABXs

- A. Company telephone systems link Omaha Public Power District facilities with those located in Omaha, Nebraska. These systems provide intracompany telephone communications and access to the public telephone network.
- B. The Emergency Operations Facility has installed lines designated for emergency use. These lines are dedicated to specific emergency response positions. Telephone sets for all lines are available in the Emergency Operations Facility.
- C. Trunk lines between the company PABX systems in Omaha and the Fort Calhoun Station PABX systems provide the primary means of communication with the plant. Additional lines can be provided by the local telephone company, as requested.
- D. This system also provides a redundant means of providing emergency notifications to the states and counties, and is the primary backup to the Conference Operations Network (COP).

2.6.2 Fort Calhoun Station PABXs

- A. These dedicated telephone systems provide communications within Fort Calhoun Station locations.
- B. The Technical Support Center has designated extensions for use during an emergency. They include extensions designated for use by NRC personnel. Additional lines can be diverted from other office areas as required.
- C. Dedicated lines from this system are extended to the Emergency Operations Facility. This system is also connected to the company telephone system in Omaha to provide intracompany telephone communications which are not affected by the public telephone network.
- D. Redundant routing of access to the public telephone network is provided via links to the public system in Blair, Nebraska as well as Omaha.

EMERGENCY COMMUNICATIONS

2.7 Conference Operations (COP) Network

- 2.7.1 The COP system is primary emergency notification system between OPPD, state and county agencies. It is used to provide initial, and update notifications and for general information flow between these agencies. See Figure F-1 for a list of COP locations.
- 2.7.2 COP is a dedicated system; each location is capable of making group calls or calling station to station within the network. See Figure F-2 for a system diagram.
- 2.7.3 A recorder located at the EOF records all conversations on the COP system. The Nebraska State Patrol and the Iowa Dispatcher also have voice recording capability.

2.8 Conference Health Physics (CHP) Network

- 2.8.1 This network provides a dedicated means for communicating radiological information between the Technical Support Center, Emergency Operations Facility, Nebraska and Iowa Emergency Operations Centers and the Nebraska and Iowa Radiological Emergency Response Team Coordinators. The system is shown on Figure F-3.
- 2.8.2 This system provides the capability for conference conversations between the Technical Support Center or Emergency Operations Facility and any one or all of the agencies on the system. A voice recorder in the Emergency Operations Facility provides a record of conversations on this system.

2.9 Facsimile (FAX) Capability

- 2.9.1 Facsimile machines provide the capability to link the Control Room, Technical Support Center, Operations Support Center, Emergency Operations Facility, Joint Information Center, other OPPD Headquarters facilities, the Nebraska and Iowa Emergency Operations Centers and the Nebraska and Iowa Forward Command Posts. Capability also exists to access any FAX machine via commercial telephone networks.
- 2.9.2 The facsimile machines can be used to transmit health physics, operational and dose assessment information from Omaha Public Power District emergency response facilities to state emergency response facilities. They can also be used to disseminate emergency status information to OPPD management. Some of these extensions have voice capabilities and serve as a backup means of voice communications for those locations.

EMERGENCY COMMUNICATIONS

2.10 800 MHz Radio System

- 2.10.1 An 800 MHz radio communications system links Fort Calhoun Station onsite emergency response facilities, Emergency Operations Facility, plant portable radios, and mobile radios used by radiological monitoring teams. The multi-talk group/channel system is illustrated by Figures F-6, F-7, F-8, F-9 and F-10.
- 2.10.2 Figure F-6 illustrates the talk groups available for the Fort Calhoun Station. Figure F-7 illustrates the dedicated subfleet for the Emergency Response Organization. Figure F-8 illustrates the shared subfleet which the ERO can utilize during emergencies. Figure F-9 provides the details for the "Talk-Around" capability which can be utilized when the 800 MHz trunking system is out of service. Figure F-10 summarizes the subfleets assigned to the Fort Calhoun Station.

2.11 NRC Emergency Notification System (FTS-ENS)

- 2.11.1 This NRC Operations Center is contacted via this telephone network. The FTS-ENS is a portion of the Federal Telecommunications System (FTS) and is located in the Control Room, Technical Support Center and Emergency Operations Facility. It provides plant operations information to the NRC Operations Center, in Rockville, Maryland.

2.12 NRC Health Physics Network (FTS-HPN)

- 2.12.1 The FTS-HPN is a portion of the Federal Telecommunications System (FTS) and is located in the Technical Support Center and Emergency Operations Facility. The network is used to exchange radiological and dose assessment information between NRC facilities and OPPD.

2.13 Priorities System

- 2.13.1 The Technical Support Center establishes priorities for accident mitigation and transmits the priorities to the Operations Support Center and the Emergency Operations Facility for display.

2.14 State of Nebraska Emergency Management Radio System

- 2.14.1 The Emergency Operations Facility is equipped with various radio equipment for use by Nebraska Emergency Management personnel. This equipment may be used either alone or in conjunction with the State of Nebraska Emergency Management Mobile Van.

EMERGENCY COMMUNICATIONS

2.15 State of Iowa Emergency Management Radio System

- 2.15.1 The Emergency Operations Facility can support radio equipment for use by Iowa State Emergency Management personnel. This equipment may be used either alone or in conjunction with the State of Iowa Emergency Management Mobile Van.

2.16 Management Operations (MOP) Network

- 2.16.1 This system (similar to the COP and Ops Liaison Network) provides dedicated conference capability between the Control Room , TSC Site Director, OSC Director, EOF Emergency Director and the JIC Manager. The purpose of the system is to provide information flow between the directors of all the emergency facilities.
- 2.16.2 The system allows conferencing without dialing, each set is capable of conferences and individual call capability. Records of conversations on this system are captured by a voice recorder in Emergency Operations Facility.

2.17 Joint Information Center Hot Line

- 2.17.1 A dedicated telephone circuit is provided between the Emergency Operations Facility and Joint Information Center. The telephone sets are equipped with a blank dial plate. Lifting either handset causes a connecting ring at the other set.
- 2.17.2 This system provides a means for uninterrupted private communications for coordination of information releases to the public.

2.18 NAWAS

- 2.18.1 NAWAS equipment in the Control Room provides a redundant means of providing emergency notifications to the States of Nebraska and Iowa. It also provides the Control Room personnel with weather information.

2.19 Emergency Response Message System (ERMS)

- 2.19.1 A network of computer terminals is used to link the Technical Support Center, Operations Support Center and Emergency Operations Facility. It provides rapid dissemination of plant status information between facilities and ensures consistency of information at all facilities. The JIC is also equipped with a monitor which provides read-only capability. The software used for this function can be any type that provides for electronic log keeping of emergency response actions (WebEOC, ERMS, etc.)

EMERGENCY COMMUNICATIONS

2.20 Telephone Service Pedestal for State Mobile Communication Vehicles

- 2.20.1 A telephone service pedestal is located outside of the Emergency Operations Facility near the designated parking area for the mobile communication vehicles. This pedestal is fed by a 12-pair cable from the Emergency Operations Facility and allows quick connection of various telephone facilities to the mobile vehicles. Several telephone lines and dedicated communication facilities are prewired and operational. Spare pairs are available to add additional telephone facilities quickly as the need arises.

2.21 Telephone Junction Box for NRC Mobile Vehicle

- 2.21.1 A telephone junction box is located on the outside wall of the Emergency Operations Facility near the designated parking area. This junction box is fed by a 12 pair cable and is equipped with four standard modular telephone jacks. These jacks are prewired to a distribution frame and allow quick connection of telephone lines to support the NRC as required. Additional jacks can be added up to the 12 pair capacity of the feeder cable.

2.22 Operations Liaison Network

- 2.22.1 This system provides dedicated conference capabilities between the Fort Calhoun Station Control Room/Simulator, TSC, OSC, EOF and JIC. The purpose of the system is to provide operational information from the Control Room to the other facilities for the purpose of developing response plans, determining emergency classifications and implementing assistance to the Control Room.
- 2.22.2 The system allows conferencing without dialing, and thus permits rapid access to the conference by the Operations Liaisons. Each station is equipped with group call and individual call capability. Records of conversations on this system are captured by a voice recorder in the Emergency Operations Facility.

2.23 Interactive Notification System (INS)

- 2.23.1 This system provides rapid notification to Emergency Response Organization personnel in the event of an emergency where the ERO is activated. The system is also used to perform the Management Notification function, and can be adapted to perform other notification functions as determined necessary by the Fort Calhoun Station. A backup ERO notification process is available in the event of failure of the INS.
- 2.23.2 The system is activated using the internet or contacting a live operator, normally from the Control Room. The system 1) initiates a call-out to ERO members at home, mobile, or work locations, 2) sends text messages to ERO positions that provide a contact number and 3) sends e-mails to ERO

EMERGENCY COMMUNICATIONS

personnel.

2.24 Satellite Phones

- 2.24.1 Satellite Phones are located in the Control Room, Technical Support Center, and Emergency Operations Facility to serve as an alternate communications option in the event normal communications equipment is unavailable.

3.0 COMMUNICATIONS WITH MEDICAL SUPPORT FACILITIES

- 3.1 Fort Calhoun Station emergency response organization personnel can communicate with medical support facilities, Washington County Emergency Communications Center or the University of Nebraska Medical Center, via the site telephone systems described earlier in this section.
- 3.2 Non-OPPD radio systems provide communications between medical support facilities and mobile rescue units as well as inter-unit communications. These radio systems have the capability to use the common medical emergency frequency which ensures coordinated communications.



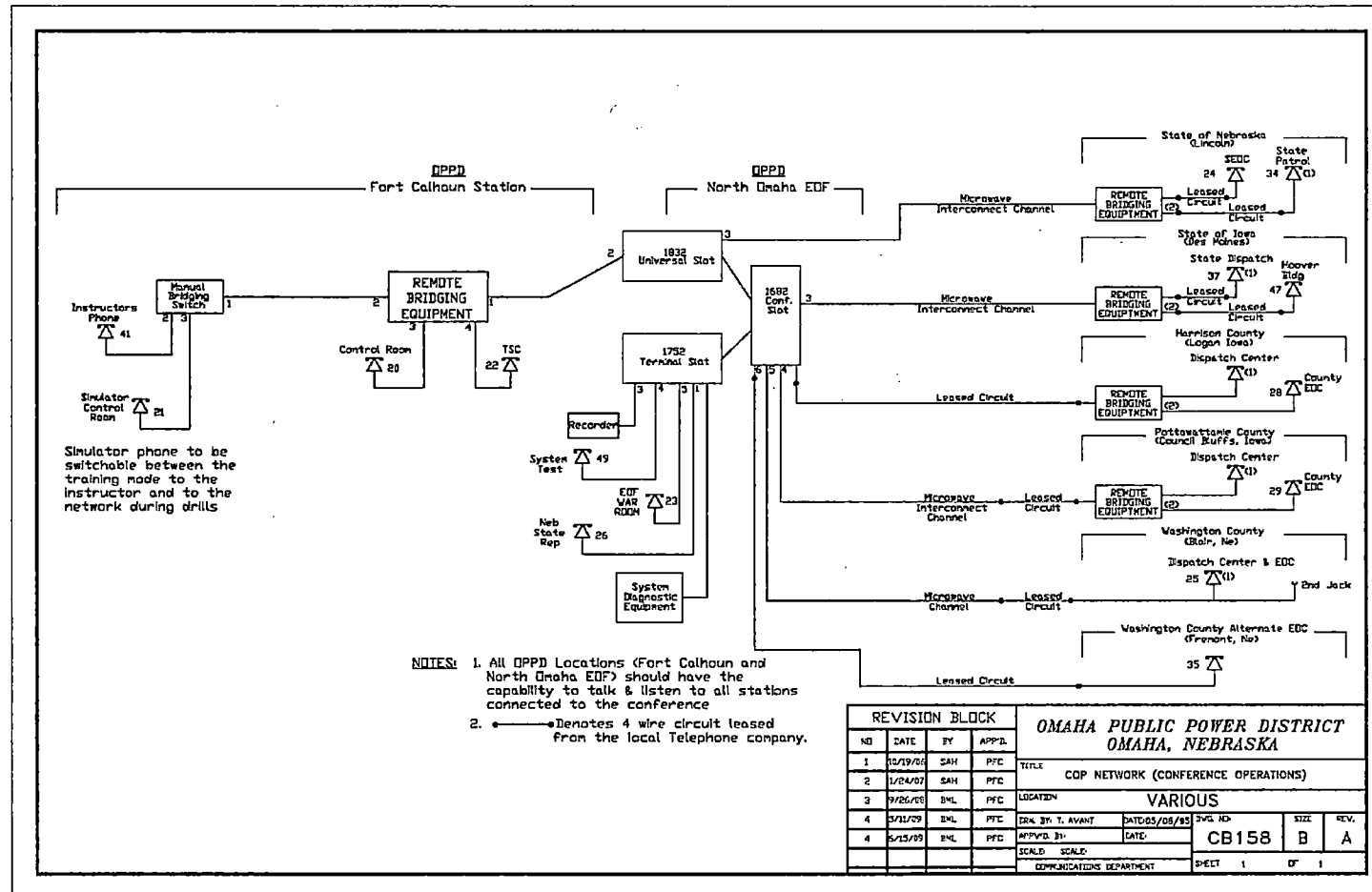
EMERGENCY COMMUNICATIONS

Figure F-1 - Summary of Communications Systems

Drill Communications (Admin 1D)	Control Room	Control Room Simulator (Training)	Technical Support Center	Operations Support Center	Emergency Operations Facility	Joint Information Center	FCS Security	OPPD Headquarters	OPPD Field Monitoring Teams	Nebraska EOC	Nebraska FCP (North Omaha EOF)	Nebraska State Patrol	Washington County EOC	Dodge County – Washington County Backup EOC	Iowa EOC	Iowa FCP (Harrison County EOC)	Iowa Dispatch (Fort Dodge)	Harrison County EOC	Pottawattamie County EOC	NRC - Headquarters	NRC – Region IV	NRC – Resident Inspectors
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EMERGENCY COMMUNICATIONS

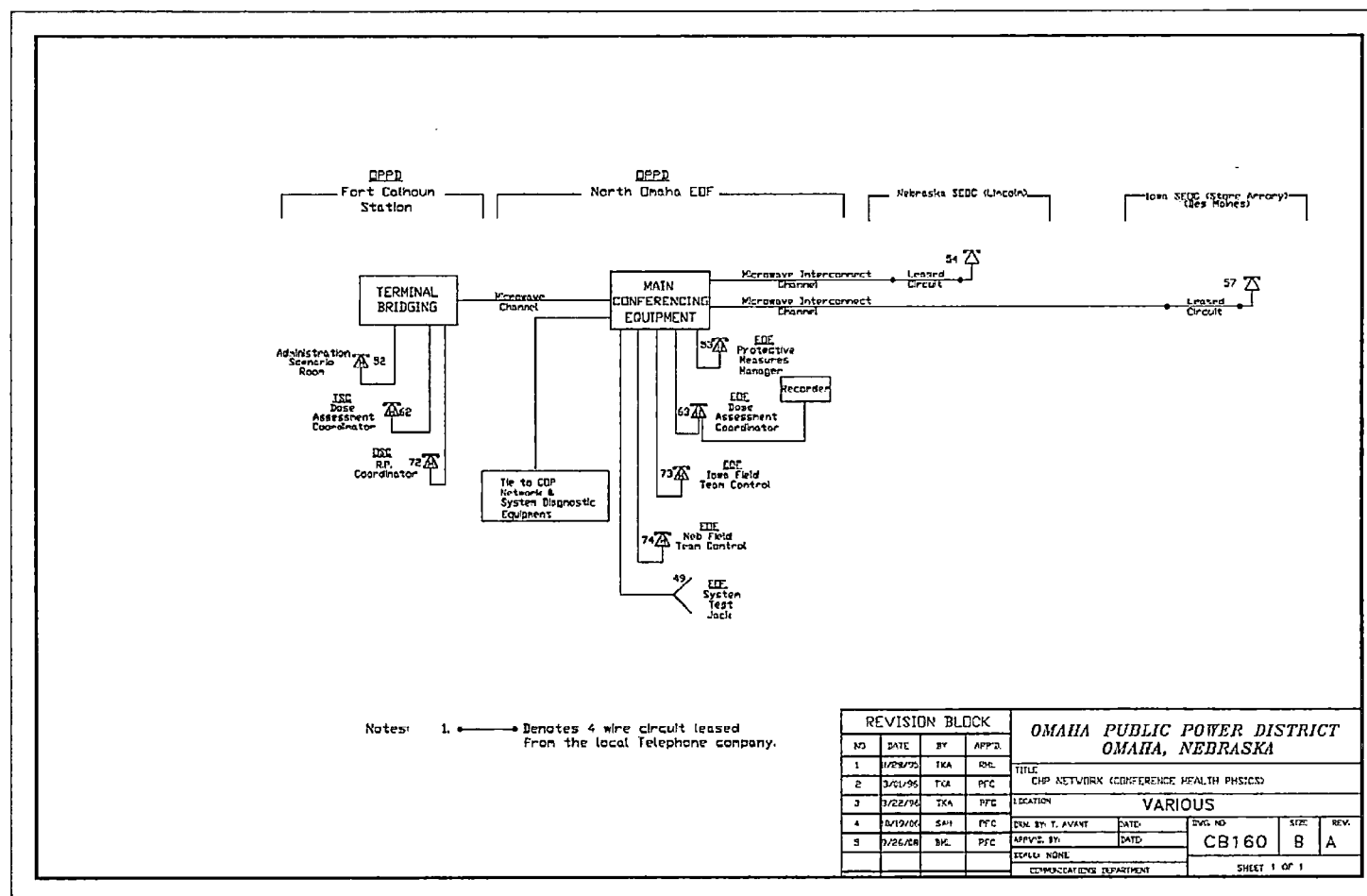
Figure F-2 - Conference Operations Network



REVISION BLOCK				OMAHA PUBLIC POWER DISTRICT OMAHA, NEBRASKA			
NO	DATE	FY	APPR.	TITLE			
1	12/19/84	SAH	PTC	COP NETWORK (CONFERENCE OPERATIONS)			
2	1/24/87	SAH	PTC	LOCATION			
3	9/26/88	BWL	PTC	VARIOUS			
4	5/11/89	BWL	PTC	DR. J. T. AVANT	DATE: 05/08/89	SVL NO.	REV.
4	5/15/89	BWL	PTC	APPROV. BY:	DATE:	CB158	B A
SCALE: SCALE:				COMMUNICATIONS DEPARTMENT			
				SHEET 1 OF 1			

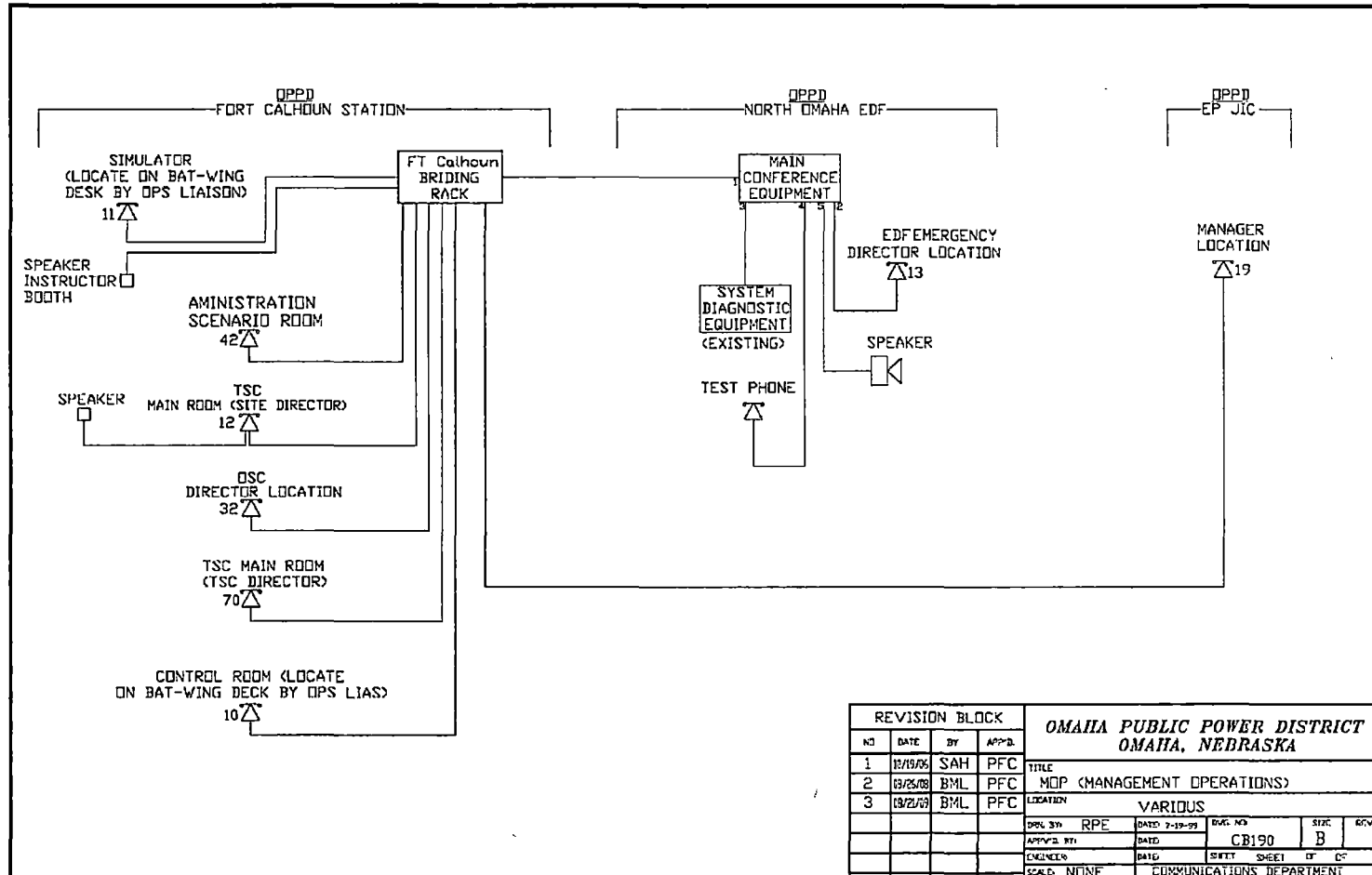
EMERGENCY COMMUNICATIONS

Figure F-3 - Conference Health Physics Network



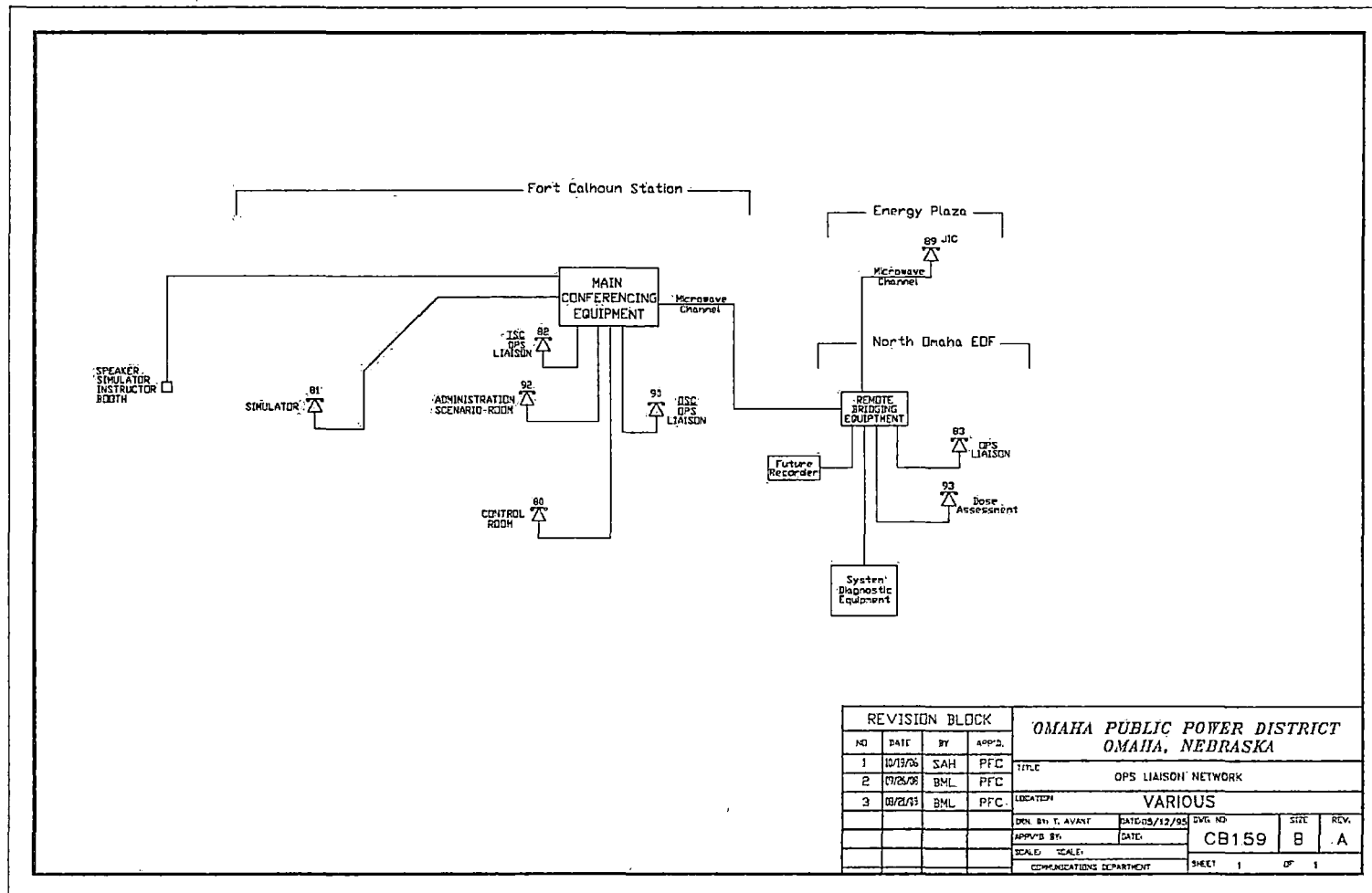
EMERGENCY COMMUNICATIONS

Figure F-4 - MOP (Management Operations)



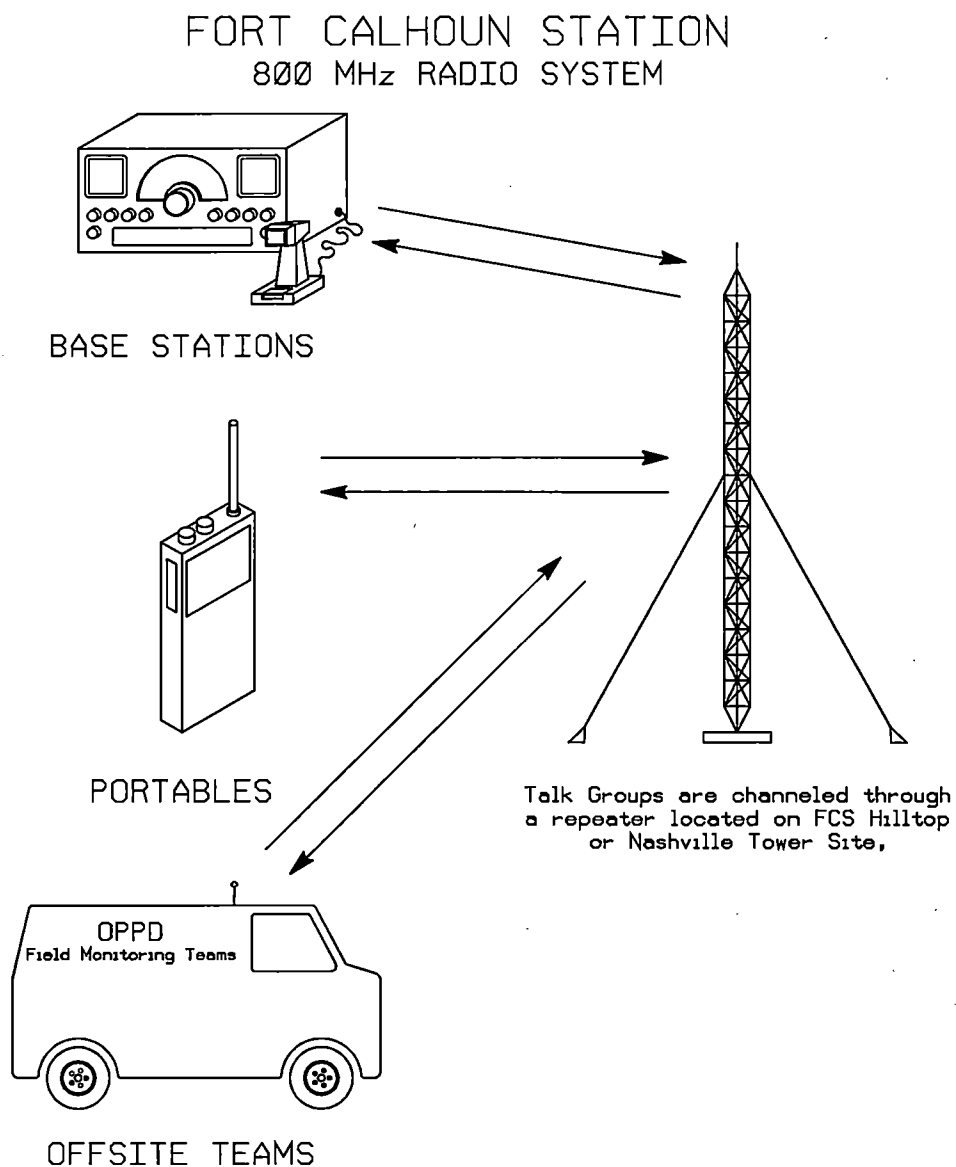
EMERGENCY COMMUNICATIONS

Figure F-5 - Operations Liaison Network



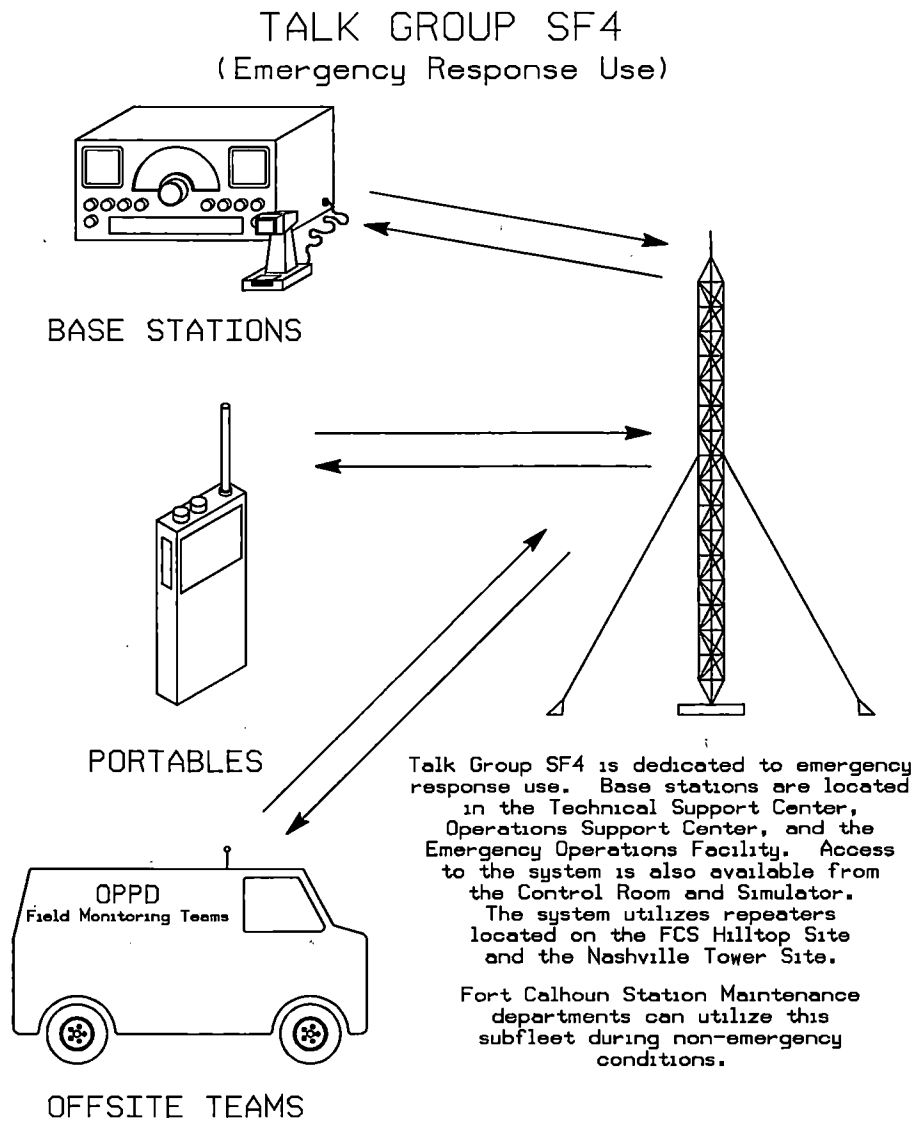
EMERGENCY COMMUNICATIONS

Figure F-6 - OPPD/Fort Calhoun Station 800 MHz Radio System



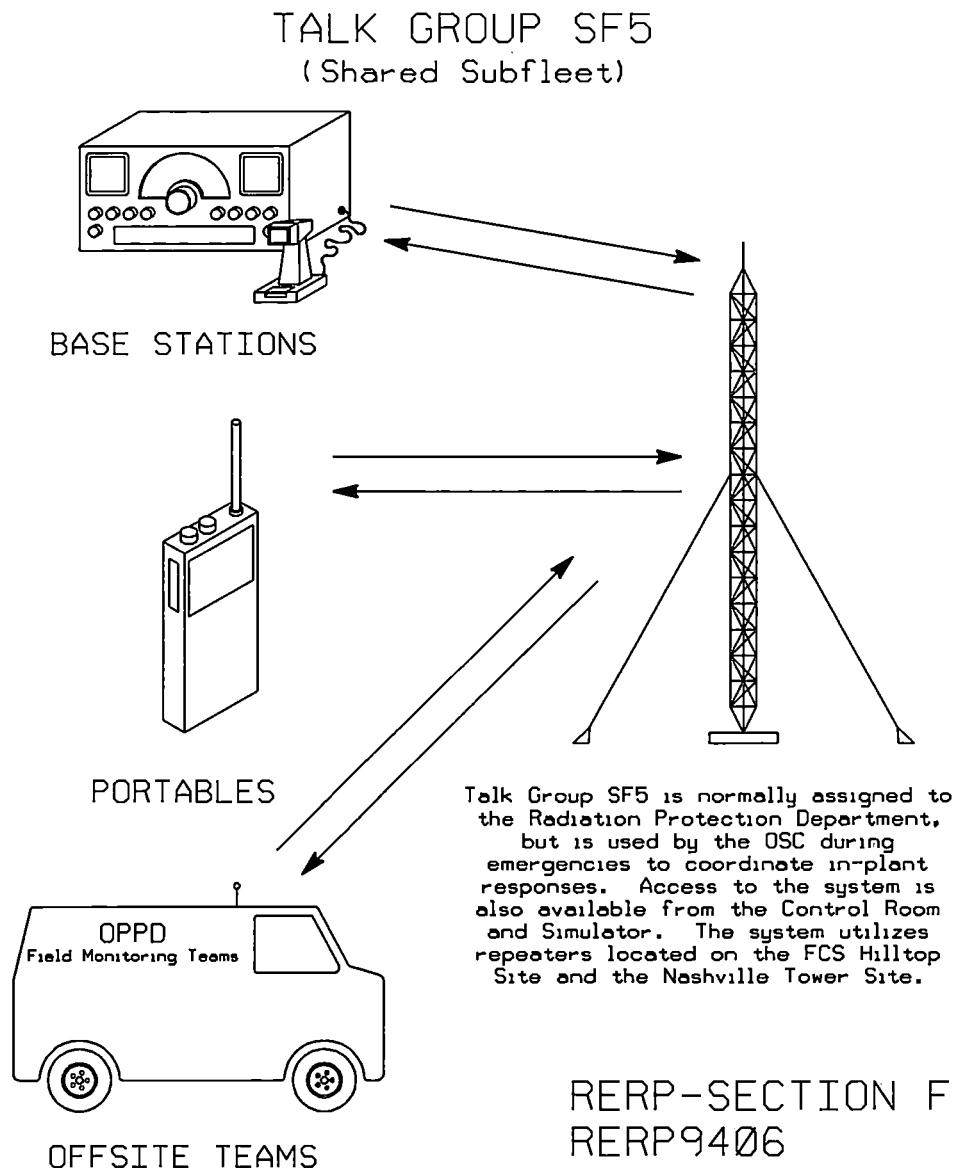
EMERGENCY COMMUNICATIONS

Figure F-7 - Fort Calhoun Station Subfleet - SF4



EMERGENCY COMMUNICATIONS

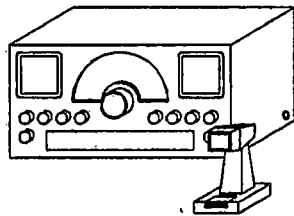
Figure F-8 - Fort Calhoun Station Subfleet - SF5



EMERGENCY COMMUNICATIONS

Figure F-9 - Fort Calhoun Station Talk-Around Channel (TA)

TALK-AROUND CHANNEL (TA)

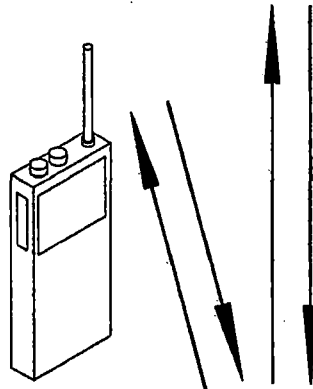


The TA Channel provides an alternate (or back-up) means of radio communications.

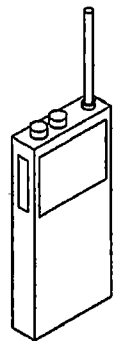
The TA Channel provides radio transmissions without the benefit of a repeater, therefore, the effective range of coverage is greatly reduced. This option is only good for two closely located units to communicate together.

It does not utilize the 800 MHz trunking system.

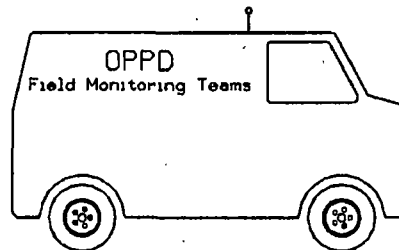
BASE STATIONS



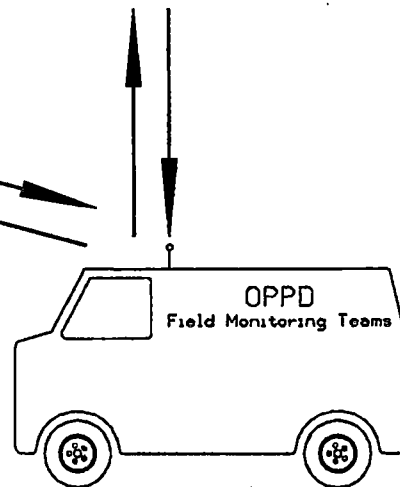
PORTABLES



PORTABLES



OFFSITE TEAMS



OFFSITE TEAMS

EMERGENCY COMMUNICATIONS

Figure F-10 - Summary of 800 MHz Radio Uses

Channel	Display	Normal Use	Emergency Use
1	SF1 Sec 1	Security-Primary	Security-Primary
2	SF2 Sec 2	Security-Secondary	Security-Secondary
3	SF3 Ops	Operations	Operations
4	SF4 EP	Emergency Planning	Field Team Control
5	SF5 RP	Radiation Protection	In-Plant Team Control
6	SF6 Maint.	Maintenance	In-Plant Team Control
7	SF7 ERO	Emergency Planning	Emergency Planning
8	SF8 Work Ch	Work Channel	Available for Use
9	SF9 EP Cntlr	EP Controller	Available for Use
10	Spare 1	Future	
11	Spare 2	Future	
12	Spare 3	Future	
13	Talk Around	Talk Around	Emergency Use
14	Unprogrammed	Not Available	Not Available
15	Unprogrammed	Not Available	Not Available
16	Unprogrammed	Not Available	Not Available

PUBLIC EDUCATION AND INFORMATION

1.0 PUBLIC INFORMATION CONTENT AND DISSEMINATION**1.1 Public Information Content**

The Omaha Public Power District (OPPD) Corporate Communications Division has coordinated with the States of Nebraska and Iowa in the preparation and dissemination of educational information. A brochure entitled Fort Calhoun Nuclear Station Emergency Planning Information incorporates the following information:

- 1.1.1 A description of natural background and manmade radiation, including estimated annual doses from various sources of radiation.
- 1.1.2 Public warning procedures and use of radio and television following an emergency at the Fort Calhoun Station.
- 1.1.3 Radiation protection, including such protective actions as in-house sheltering and evacuation.
- 1.1.4 Special evacuation notes, including special needs of the handicapped, medical and nursing home patients, registration centers, evacuation routes and a Sub Area map of the EPZ.
- 1.1.5 Information concerning the primary Emergency Alert System.
- 1.1.6 Additional protective actions including ad hoc respiratory protective devices.
- 1.1.7 A list of contact points to obtain additional information.

1.2 Public Information Dissemination

The Public Information Brochure is distributed in written form annually by mail to the permanent adult population within an approximate 10-mile radius of Fort Calhoun Station. A general distribution to reach the transient population is achieved by posting information in public areas and by placing supplies of prepared written material in motels, service stations, and government buildings. Media advertisements, utility bill inserts, telephone tape messages, news releases, and public seminars may also be utilized for public education and information.

An Emergency Planning recurring task verifies the content and dissemination of this information.

PUBLIC EDUCATION AND INFORMATION

2.0 NEWS MEDIA COORDINATION AND FACILITIES

There are two (2) locations available for use of the news media. The Joint Information Center (JIC) is the primary facility for the release of all information; the Emergency Operations Facility (EOF) has limited space for press briefings and may be used on a selective basis. The Corporate Crisis Communication Plan provides the guidance for the operation of the Joint Information Center during emergencies. This plan is reviewed annually in accordance with an Emergency Planning Test.

2.1 Joint Information Center (JIC)

The primary information point is the Joint Information Center located within OPPD's Energy Plaza at 444 South 16th Street Mall, Omaha, Nebraska. This center is activated for either a Site Area Emergency or General Emergency and will accommodate Joint Information Center personnel as well as local, State and Federal public information personnel.

For Classifications below Site Area Emergency, the Division Manager-Corporate Communications shall determine the corporate response for media coordination efforts.

The Joint Information Center also serves as the public inquiry center for OPPD, State and Federal authorities.

2.2 Emergency Operations Facility Briefing Room

A secondary facility is located in the Emergency Operations Facility located at the North Omaha Power Station. However, the Joint Information Center is the preferred point of news media information.

The EOF Briefing Room was constructed as working space for 25 news correspondents. It is anticipated that space in this facility will be for the local media which routinely cover OPPD activities. Remaining space will be allocated to the national and regional media on a pool basis.

PUBLIC EDUCATION AND INFORMATION

3.0 EMERGENCY CLASSIFICATION INFORMATION RELEASES

Following the classification of an emergency, Corporate Communications Division representatives will be informed of the emergency action level invoked at the plant and the reason or reasons thereof. Once such notification has been made, release of information to the news media will be coordinated by the Division Manager - Corporate Communications or the Joint Information Center Manager. That position will also coordinate the timely exchange and release of information with the official spokespersons for Federal and State agencies. The JIC Manager will report directly to the Emergency Director. A JIC Technical Liaison at the Joint Information Center will assist in nuclear related information matters. The JIC Technical Liaison will also be in direct contact with the EOF Information Specialist or the EOF Technical Liaison who will provide prompt and accurate information regarding plant status. The Corporate Crisis Communication Plan activates and augments the JIC staff. During all emergency classifications, the Corporate Spokesperson is the official designated spokesperson for OPPD.

4.0 NEWS MEDIA EXPOSURE TO EMERGENCY PLANNING INFORMATION

The Corporate Communications Division mails an annual information packet or conducts an annual seminar to acquaint the local news media with the operation of Fort Calhoun Station and its emergency plan, including the public information procedures to be followed in an emergency. The mailing\seminar also provides educational information concerning radiation, and nuclear related subjects deemed appropriate. An Emergency Planning recurring task verifies the transmittal of the information packet or conduct of the seminar to the local news media outlets.

EMERGENCY FACILITIES AND EQUIPMENT

i	<p style="text-align: center;"><u>NOTE</u></p> <p>This section lists the Emergency Response Facilities (ERF) available for activation in the event of an emergency at the Fort Calhoun Nuclear Station, including the ISFSI. General equipment and staffing of emergency facilities are also included in this section. Communications equipment is covered in Section F. Assessment equipment is covered in Section I.</p>	i
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1.0 **TECHNICAL SUPPORT CENTER (TSC)**

1.1 Facility Function and Description

- 1.1.1 The TSC's primary function is the collection, analysis, and distribution of technical data required to support plant personnel during an emergency. This support is provided from a separate and distinct center, thus reducing personnel congestion in the Control Room. The TSC has the capability to perform EOF functions and responsibilities until that facility can be fully activated.
- 1.1.2 The TSC building is located on the north side of the Auxiliary Building. (See Figure H-1). The north wall of the auxiliary building is shared as the south wall of the TSC. To the east of the building is the maintenance shop. To the north and west of the TSC is the Chemistry/Radiation Protection Building. The TSC building was designed to meet the criteria of NUREG 0696 and is less than a two minute walk from the Control Room.
- 1.1.3 The TSC is composed of a protected area and an equipment area. It is comprised of heavy concrete mat construction with 1-1/2 foot thick reinforced concrete walls and ceiling. This part of the structure is kept at positive pressure and the building air can be filtered through a pre-filter, HEPA filter and charcoal filter. Flood barriers in various locations of the plant protect the TSC from flooding and are designed for a 100 year recurrence frequency.
- 1.1.4 An "L" shaped equipment area is located to the east and south of the TSC protected area. The equipment area has concrete footings and common steel construction with concrete block walls. Items included in the equipment area are the batteries and UPS power distribution systems, HVAC and HEPA filters.

EMERGENCY FACILITIES AND EQUIPMENT

1.2 Equipment and Supplies

1.2.1 The TSC is typically equipped with the following items:

- A. System Drawings for the nuclear power plant and the ISFSI
- B. Vendor Manuals
- C. An official copy of the Fort Calhoun Station Operating Manual. (This includes the Operating Procedures and Instructions, the Post-Shutdown Radiological Emergency Response Plan and Emergency Plan Implementing Procedures.
- D. Defueled Safety Analysis Report (DSAR) for the nuclear power plant and the NUHOMS Storage System FSAR for the ISFSI (electronically)
- E. Technical Specifications for the nuclear power plant and the ISFSI (electronically)
- F. Direct and Airborne Radiation Monitoring Equipment which is permanently installed:
 - 1. Area Monitor (RM-093):

The area monitor in the TSC is a GM detector (or equivalent) that detects gamma radiation.
 - 2. Particulate, Iodine and Noble Gas (PING) Monitor:

The sampler and detector subsystem contains a combined particulate, iodine and noble gas sampler in one compact, lead-shielded assembly. Three read-outs contain all alarm functions of alert, high and failure, along with check source actuation controls. The PING is piped directly to the TSC ventilation system to monitor TSC supply air at all times.
- G. Emergency Response Facilities Computer System/Safety Parameter Display System (ERFCS/SPDS).
- H. Personal Computer(s) with printers.
- I. Emergency Response Message System.
- J. Sign-in Board with identification tags.
- K. Emergency logs.

EMERGENCY FACILITIES AND EQUIPMENT

L. The ability to provide output displays to the OSC and EOF.

M. Status boards.

1.3 Staffing

1.3.1 The TSC affords ample space and equipment to support the Emergency Response Organization (ERO) as stated in Section B and additional TSC personnel as defined in the Fort Calhoun ERO Roster. In addition, space has been allocated for NRC representatives.

2.0 EMERGENCY OPERATIONS FACILITY (EOF)

2.1 Facility Functions and Description

2.1.1 The function of the Emergency Operations Facility is to serve as the support facility for the licensee's overall management of emergency response activities (including coordination with Federal, State and local officials), the central collection and coordination point for all off-site radiological and environmental samples and assessments in order to make public protective action recommendations (PARs).

2.1.2 The Emergency Operations Facility is located 17 miles from the Fort Calhoun Station at the North Omaha Power Station. This site was chosen to ensure continuous habitability and is the only Emergency Operations Facility in the district. The building is capable of providing working space for a minimum of 35 persons consistent with the requirements of NUREG-0696, Revision 1. Space for data systems equipment, communications and storage activities is also available.

2.1.3 The alternative facility maintains the capability for staging the TSC/OSC emergency response organization personnel in the event of a hostile action. The alternative facility has the capability for communications with the control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities. The EOF will satisfy the offsite notification responsibilities for the alternative facility. The EOF staff will support offsite notification responsibilities while the TSC/OSC ERO are performing activities supported by the alternate facility. The alternate facility is co-located with the EOF at OPPD's North Omaha Station.

EMERGENCY FACILITIES AND EQUIPMENT

2.2 Equipment and Supplies

2.2.1 The EOF is typically equipped with the following emergency response items:

- A. Emergency Status Boards
- A. 10-Mile EPZ Maps
- B. Emergency Monitor Kits
- C. Assignment Board with identification tags
- D. Portable Calculator(s)
- E. Emergency Telephone Books
- F. Emergency Logs
- G. Personal Computers and Printers
- H. Technical Specifications for the nuclear power plant and the ISFSI (electronically)
- I. System Drawings for the nuclear power plant and the ISFSI
- J. Complete latest revision of the Fort Calhoun Station Operating Manual. (This includes the Operating Procedures and Instructions, the Post-Shutdown Radiological Emergency Response Plan and Emergency Plan Implementing Procedures).
- K. Emergency Response Facilities Computer System/Safety Parameter Display System (ERFCS/SPDS)
- L. Emergency Response Message System (ERMS)

2.3 Staffing

2.3.1 The EOF affords ample space and equipment to support the Emergency Response Organization as stated in Section B. In addition, space has been allocated for NRC Representatives.

EMERGENCY FACILITIES AND EQUIPMENT

3.0 OPERATIONS SUPPORT CENTER (OSC)

3.1 Facility Function and Description

3.1.1 The Operations Support Center (OSC) is an onsite facility, separate from the Control Room (CR) and the Technical Support Center (TSC) where support personnel assemble and prepare to perform investigative or corrective actions as deemed necessary by the CR or TSC.

3.1.2 The OSC communicates with the CR and the TSC and is located in the TSC Building.

3.2 Equipment and Supplies

3.2.1 Equipment lockers are provided in the OSC for storage of instruments, SCBAs, supplies and reference documents.

3.3 Staffing

3.3.1 OSC management is comprised of an OSC Director and three technicians representing the radiation protection, chemistry and maintenance disciplines. (See Section B of this plan for a comprehensive organization definition).

4.0 CONTROL ROOM

4.1 Facility Description and Function

4.1.1 The Control Room functions as the onsite location from which the FCS systems are monitored and controlled and from which any ISFSI operations are coordinated. It is large enough to contain all the instrumentation, controls and displays for the nuclear systems, reactor coolant systems, steam systems, electrical systems, safety and accident monitoring systems. The Control Room plays a vital role in the Emergency Response Organization by providing the initial response actions needed to react to any emergency situation. The Control Room personnel will respond to all emergency situations in an attempt to mitigate the emergency and minimize the impact on the surrounding environment, health and safety of the public as well as plant personnel and equipment.

EMERGENCY FACILITIES AND EQUIPMENT

4.2 Equipment and Supplies

4.2.1 The Fort Calhoun Station Control Room is typically supplied with the following emergency supplies:

- Emergency Locker (Computer Room)
- Operating and Emergency Procedures and Manuals
- Radiological Monitoring Equipment
- Technical Specifications for FCS and the ISFSI (electronically)
- System Drawings for the nuclear power plant and the ISFSI (electronically)

4.3 Staffing

4.3.1 In addition to normal CR personnel, additional positions are called out in the event of an emergency situation as stated in Section B.

5.0 EMERGENCY KITS

5.1 The emergency kits and equipment are inventoried in accordance with Fort Calhoun Station Surveillance Tests Procedures. Extra quantities of equipment, spare parts and supplies are located at the Fort Calhoun Station Warehouse to support extended emergencies.

5.2 Radiological Emergency Kits

5.2.1 These kits include protective equipment, radiological monitoring equipment and emergency supplies. Kits are located in the Control Room, Technical Support Center, Operations Support Center and the Emergency Operations Facility.

5.2.2 The Radiation Protection Department establishes the method and frequency for instrument calibration. Individual instruments are calibrated using approved calibration procedures. Repair/replacement of equipment is coordinated through the Radiation Protection Department.

5.3 Dosimetry Kits

5.3.1 These kits include dosimetry, dosimeter chargers and appropriate paperwork. Kits are located in the Control Room, Technical Support Center, Operations Support Center and Emergency Operations Facility.

EMERGENCY FACILITIES AND EQUIPMENT

5.4 Medical Kits

5.4.1 First Aid Equipment and Supply Kits

- A. First aid equipment and supplies are located in the First Aid Room. Trauma and primary response kits are available throughout the plant. These kits are inspected and maintained by the Industrial Safety Coordinator.

5.4.2 Contaminated/Injured Person Kit

- A. These kits are located in the Operations Support Center and near the RP Count Room. These kits are maintained by the Radiation Protection Department.

5.5 Decontamination Area

- 5.5.1 Decontamination equipment and supplies are located in the main warehouse and the radiation protection work area.

5.6 Field Monitoring Kits

- 5.6.1 OPPD maintains two vehicles designated for emergency use, each vehicle is equipped with radiological monitoring equipment, emergency supplies, and other equipment/supplies that may be used by teams monitoring radiological conditions on and off site. Each vehicle also has a permanently installed communications system as described in Section F.
- 5.6.2 Radiological equipment or other equipment that is/or may be affected by climate changes may be stored in a designated storage area.
- 5.6.3 Use of these emergency vehicles is authorized by the Manager-Emergency Planning or designee. In the event a vehicle requires servicing every effort will be made to have it returned on the same day. A sign reminding users that the vehicle shall be returned to its home base in the event of a declared emergency at Fort Calhoun Station is posted in each vehicle.

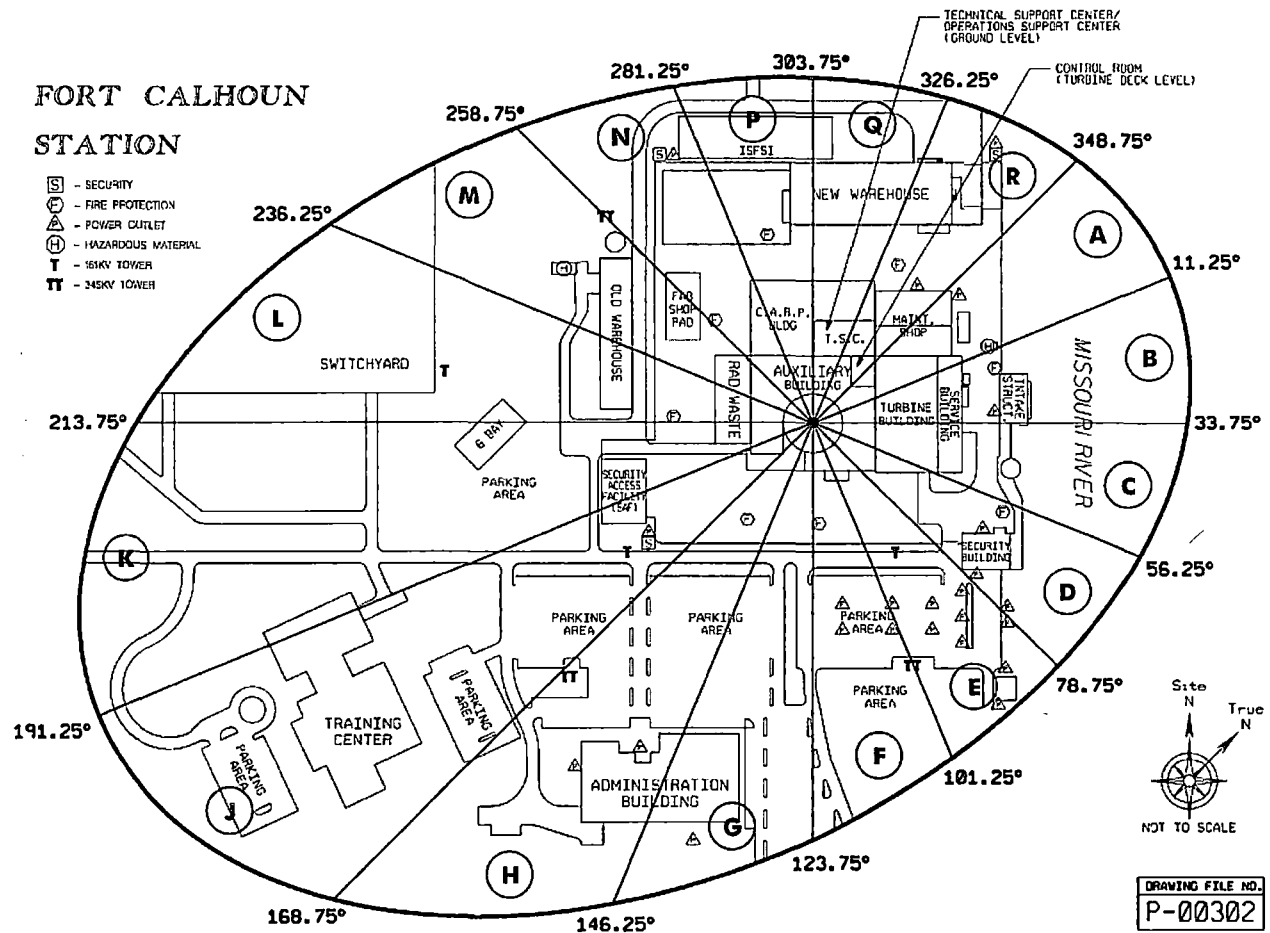
EMERGENCY FACILITIES AND EQUIPMENT

5.7 Other OPPD Resources

- 5.7.1 OPPD has other facilities and resources that may be useful in support of an emergency at Fort Calhoun Station. Examples are:
- A. Fort Calhoun Station Simulator could be used to model plant transients or serve as an alternate location for support and technical personnel. The simulator has the following communications equipment: Conference Operation Network (COP), Operations Liaison Network, FTS-ENS Phone, Gai-tronics, remote radio base station, regular phone systems, computer terminal for dose assessment, and FAX machine.
 - B. The FCS Training Center, the FCS Administration Building, and Energy Plaza make available resources such as: briefing rooms, classrooms, technical libraries, a chemistry laboratory, a radiation protection laboratory, communications, computers, food storage and preparation facilities, alternate water supply, and shop areas.

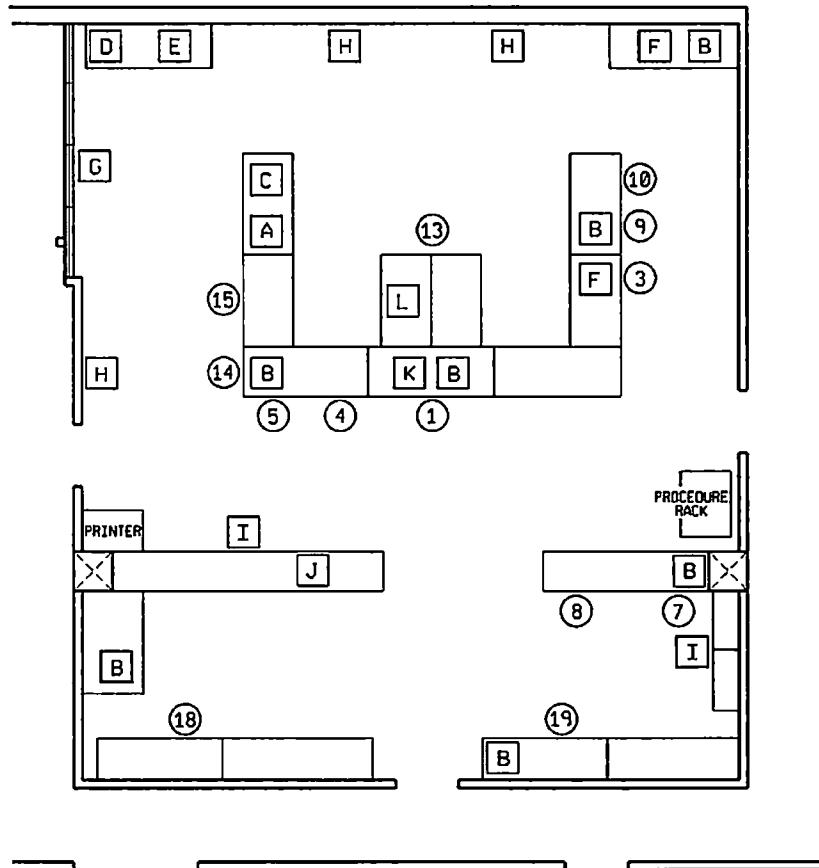
EMERGENCY FACILITIES AND EQUIPMENT

Figure H-1 - Onsite Emergency Response Facilities



EMERGENCY FACILITIES AND EQUIPMENT

Figure H-2 - Typical Technical Support Center Layout



LEGEND

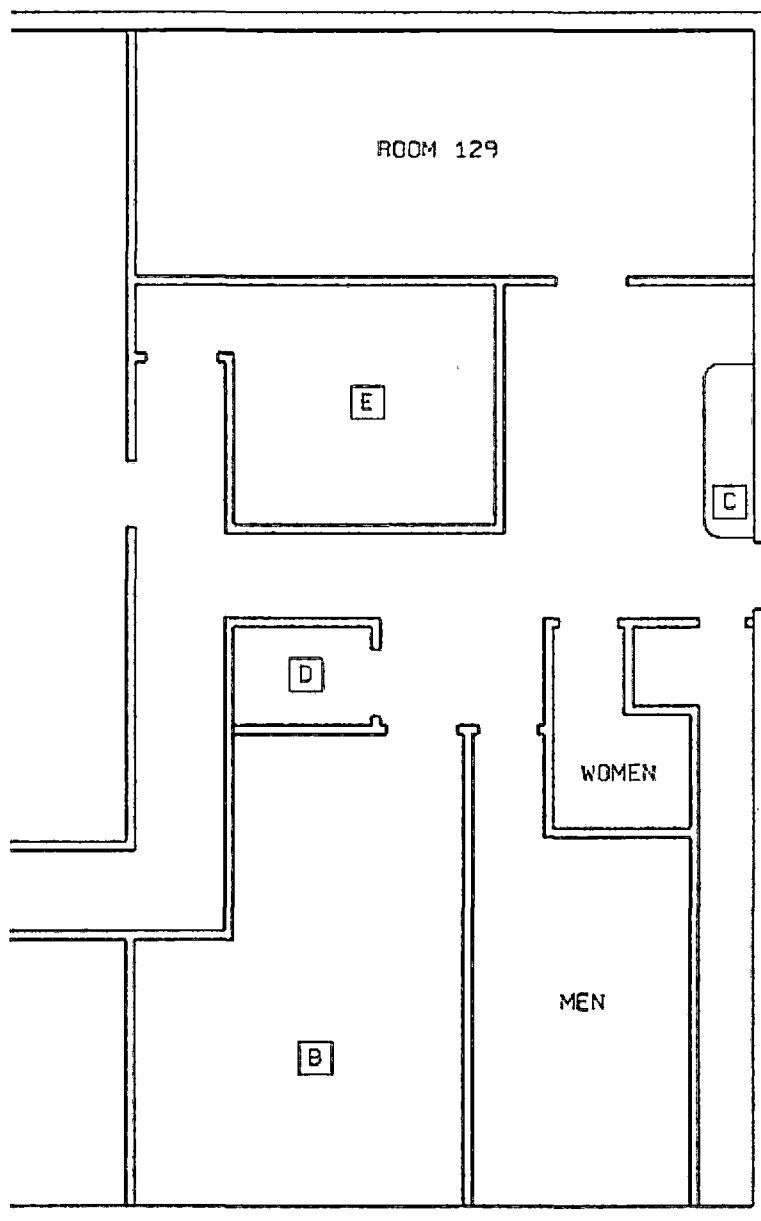
- | | |
|-------------------------------------|--|
| A - DOSE ASSESSMENT WORKSTATION | G - EPZ MAP |
| B - ERF WORKSTATION | H - STATUS BOARD |
| C - CHP | I - PROCEDURES (OFFICIAL COPIES) |
| D - FAX MACHINE | J - P & IDS |
| E - COP | K - MOP |
| F - ENS PHONE | L - ERMS |
| 1 - SITE DIRECTOR | 13 - TSC ADMIN LOGISTICS CORRD. |
| 3 - TSC OPS. LIAISON | 14 - NRC SITE PROTECTIVE MEASURES COORD. |
| 4 - NRC RESIDENT INSPECTOR | 15 - PROTECTIVE MEASURES COORDINATOR |
| 5 - NRC SITE TEAM LEADER | 18 - NRC REACTOR SYSTEMS SPECIALIST |
| 7 - ENGINEERING COORDINATOR | 19 - NRC CORE DAMAGE ASSESSOR |
| 8 - NRC REACTOR SAFETY COORD. | |
| 9 - TSC SECURITY COORDINATOR | |
| 10 - NRC SAFEGUARDS/SECURITY COORD. | |

TSC ROOM

DRAWING FILE NO.
P-00243

EMERGENCY FACILITIES AND EQUIPMENT

Figure H-3 - Typical TSC Entry/Briefing Area



LEGEND

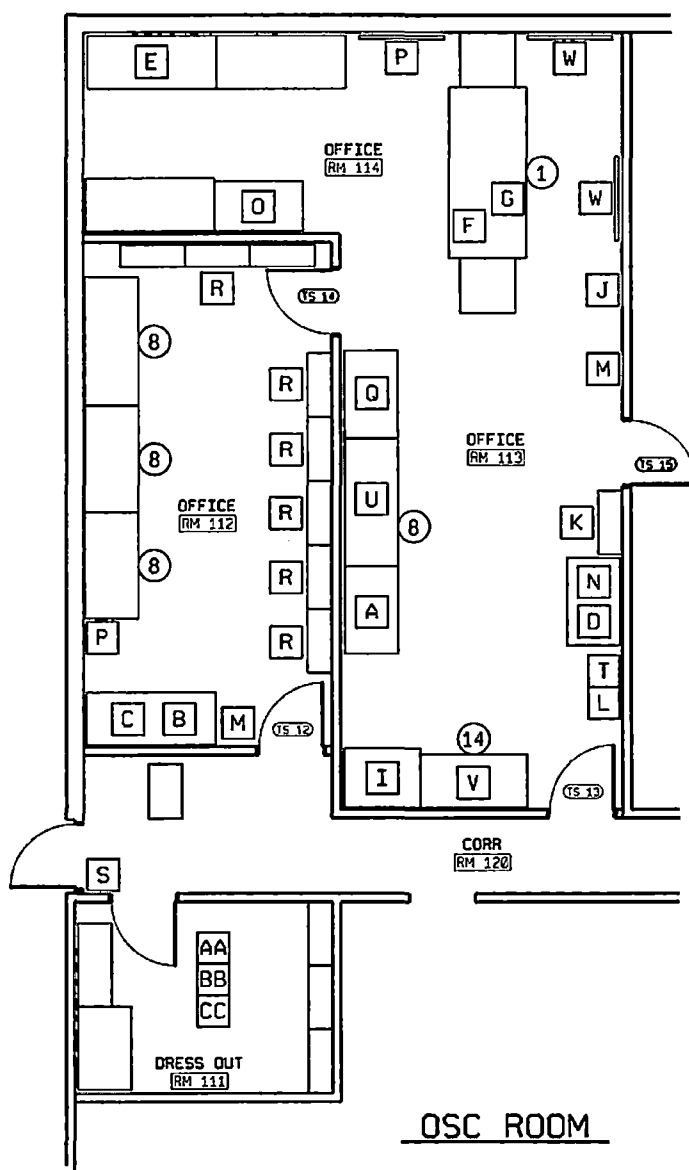
- B - BRIEFING ROOM
- C - TSC CARD READER
- D - ADMIN. SUPPLIES
- E - NRC CONFERENCE ROOM

DRAWING FILE NO.
P-00273

TSC ENTRY / BRIEFING AREA

EMERGENCY FACILITIES AND EQUIPMENT

Figure H-4 - Typical Operations Support Center Layout



LEGEND

- A - ERF COMPUTER
- B - ERMS
- C - OSC BASE RADIO
- D - DOSIMETRY ISSUE KIT
- E - CENTRAL MONITORING STATION
- F - MOP
- G - CHP
- I - PLOTTER PRINTER
- J - EGG MAP
- K - PROCEDURE RACK
- L - SIGN IN BOARD
- M - GAITRONICS
- N - HIS-20 SYSTEM
- O - FAX MACHINE
- P - TEAM STATUS BOARD
- Q - ERMS NETWORK PRINTER
- R - TECHNICAL LIBRARY
- S - OSC CARD READER
- T - OSC BADGES
- U - DOSE ASSESSMENT WORKSTATION
- V - MICROFILM READER
- W - 60 INCH MONITOR

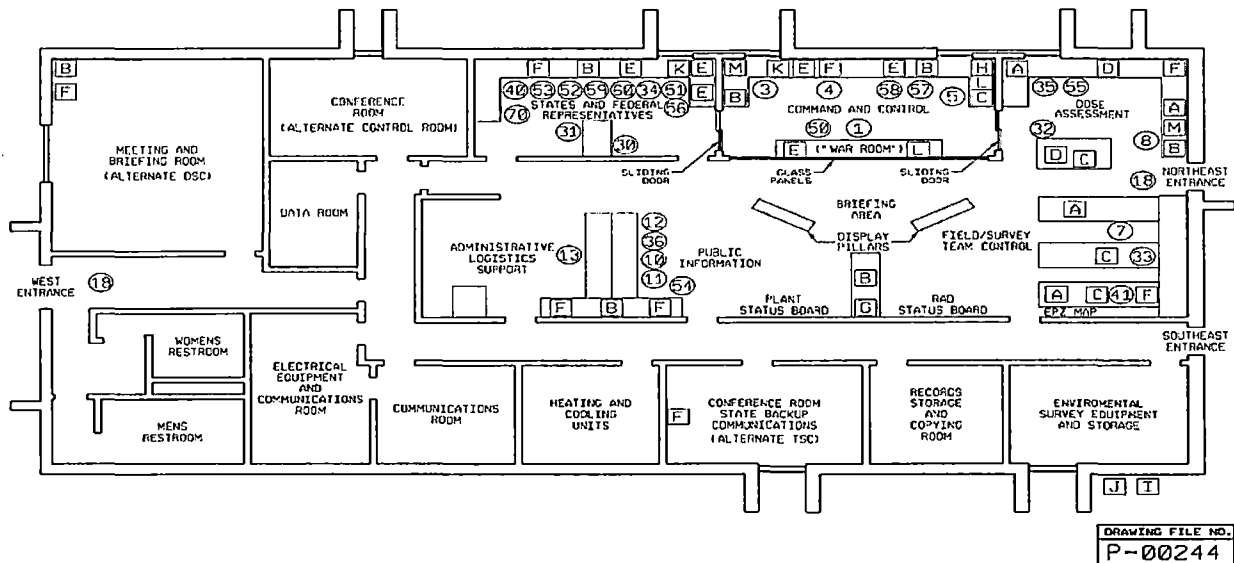
- 1 - OSC DIRECTOR
- 8 - OSC TECHNICIANS
- 14 - DOSE ASSESSMENT SPECIALIST
(ALTERNATE LOCATION)

- AA - RESPIRATORS/AIR TANKS
- BB - SCBA's
- CC - RP INSTRUMENTS/PROTECTIVE CLOTHES

DRAWING FILE NO.
P-00272

EMERGENCY FACILITIES AND EQUIPMENT

Figure H-5 - Typical Emergency Operations Facility Layout



- | | | | |
|--|-------------------|--|-----------------------------|
| A. Dose Assessment Terminals | E. ENS Phones | I. NRC Van Elect/Tele Hookup | M. Operations Liaison Phone |
| B. ERF Terminals | F. Fax Machines | J. Nebr. "CRUSH" Elect/Tele Hookup | |
| C. CHP Phones | G. ERF Printer | K. COP Phone | |
| D. HPN Phones | H. Siren Terminal | L. Mop Phone | |
| 1. Emergency Director | | 30. NE. Governor's Authorized Representative | |
| 3. EOF Operations Liaison | | 31. NE. GAR Advisor | |
| 4. EOF COP Communicator | | 32. NE. Manager | |
| 5. Protective Measures Manager | | 33. NE. RAD. Team Coordinator | |
| | | 34. NE. Recorder | |
| | | 35. NE. Dose Calculations | |
| 7. EOF Field Team Specialist | | 36. NE. Public Information Officer | |
| 8. EOF Dose Assessment Specialist | | 40. IA. Representative | |
| | | 41. IA. RAD. Team Coordinator | |
| 10. EOF Information Specialist | | 50. NRC Site Team Leader/DSO/MCL | |
| 11. EOF Technical Liaison | | 51. NRC Emergency Response Coordinator | |
| 12. Des Moines Site Representative | | 52. NRC Status Summary Coordinator | |
| 13. EOF Administrative Logistics Manager | | 53. NRC Governmental Liaison Coordinator | |
| | | 54. NRC Public Information Representative | |
| | | 55. NRC Dose Assessment Representative | |
| | | 56. NRC Reactor Safety Coordinator/RSCL | |
| | | 57. NRC Protective Measures Team Leader | |
| | | 58. NRC Protective Measures Coordinator/PMCL | |
| | | 59. NRC Status Summary Communicator | |
| | | 60. NRC Emergency Response Assistant | |
| | | 70. FEMA Representative | |
| 18. EOF Security Personnel | | | |

ACCIDENT ASSESSMENT

1.0 ACCIDENT ASSESSMENT SUMMARY

Accident assessment is divided into initial and long term phases. At the beginning of an event initial assessments are performed in the Control Room. These early assessments are used as a basis for classifications, immediate actions and emergency response. The Shift Manager is responsible for initial event assessment, classification and initiation of appropriate notifications. Initial dose assessment with recommended protective actions can be performed and evaluated as soon as practical by onsite staff. These projections will be made available to offsite governmental agencies.

Initial assessments using plant parameters or other indicators are compared to pre-determined emergency action levels to select the proper emergency classification. The plant parameters may be system conditions, system configuration, radiological parameters, etc. The Control Room is equipped with adequate monitoring equipment to determine these parameters for rapid assessment and decision-making.

The long term or continuing accident assessment is performed using the Control Room monitoring equipment and other methods made possible by additional resources from the Emergency Response Organization and offsite organizations. This includes radiological information gathered from field monitoring and environmental monitoring teams.

2.0 ASSESSMENT CAPABILITIES

2.1 Resources for Detection/Assessment of Non-Radiological Events

2.1.1 Fire Detection

The fire detection system is detailed in the Station Fire Plan.

2.1.2 Seismic Monitoring

Plant seismic instrumentation is provided to determine the response of the containment and auxiliary building structures in the event of an earthquake so that such response can be compared with that used as the basis of design.

Should a seismic disturbance occur in the neighborhood of the plant, the accelerations recorded within the plant will be the basis for a decision as to continued plant operation.

Seismic information is also available offsite through the U.S. Department of the Interior, United States Geologic Survey, National Earthquake Information Service, Boulder, Colorado.

ACCIDENT ASSESSMENT

2.1.3 River Level

River level is available from local read-out in the intake structure, the plant computer and offsite sources.

2.2 Resources for Detection/Assessment of Radiological Releases

2.2.1 Plant Process Radiation Monitors

This instrumentation, a part of the Radiation Monitoring System (RMS), is provided to monitor systems in strategic locations throughout the plant for normal and emergency conditions. The monitors are used for trending, determining radioactive material release permit limits, initiating safety signals to limit releases and assessing release rates during an emergency.

The channels of this system provide data both in the Control Room and on the Emergency Response Facility Computer System (ERFCS).

Depending on the type, the various monitors in the system can be used to detect particulate and gaseous radioactivity levels at release points throughout the plant, including containment. The system also provides accident range capability on the Auxiliary Building Ventilation Stack and the Main Steam line.

2.2.2 Area Radiation Monitors

Area Radiation Monitors are strategically located throughout the plant to monitor gamma radiation levels.

2.2.3 Meteorological Instrumentation

The plant has a permanent 110m meteorological tower with detectors at 10 and 60 meters, and a redundant power supply; the sole output of information from the tower is the ERFCS. In the event of failure of this system, wind speed and direction can be obtained from the National Weather Service in Valley NE, or the Offutt Air Force Base.

The DSAR Section 2.5 discusses the terrain around Fort Calhoun Station and its effects on an airborne plume. Historical meteorological data is also available from the plant computer. This data will be made available by OPPD to the appropriate government agencies.

ACCIDENT ASSESSMENT

2.2.4 Water Analyses

Analyses of plant liquid systems may be performed to help ascertain the nature of problems detected by other instrumentation (prior to an emergency situation). The samples will be collected and analyzed per applicable Fort Calhoun Station procedures.

2.2.5 Post Accident Sampling

Methods have been established to collect and analyze samples from the building ventilation duct pathways, spent fuel pool and waste disposal systems, and the occupied areas. These methods are described in applicable Fort Calhoun Station procedures.

2.3 Field Monitoring**2.3.1 Monitoring Operations**

In the event of an unplanned airborne materials release following an accident, field monitoring teams will be dispatched to evaluate activity levels.

River water samples can be collected and analyzed in the event radioactive water or liquid is discharged without proper monitoring per the Environmental Monitoring Program. The Metropolitan Utilities District will be notified when accidental liquid discharges occur.

The primary objective of the emergency onsite and offsite field monitoring teams is to survey areas downwind of the plant site in order to determine the extent and magnitude of any unplanned release of radioactive material following an incident.

The task of each monitoring team is to collect air samples and survey data and transmit information and results to the appropriate emergency response facility. This information will be used to define affected areas, and assess the extent and significance of the release. Surveys are done per the applicable Radiation Protection or Emergency Plan procedures.

2.3.2 Personnel**A. Onsite Field Monitoring**

The onsite field monitoring teams focus is primarily on obtaining radiological data within the protected area. These teams are typically dispatched from either the Control Room or Operations Support Center.

ACCIDENT ASSESSMENT

B. Offsite Field Monitoring

The offsite field monitoring team(s) focus is on obtaining radiological data outside the owner controlled area. Primary direction of the off-site field monitoring teams is from the EOF, with back up capability at the TSC.

C. Environmental Monitoring

Environmental monitoring may be done as a function of recovery from an emergency. Types of sample media and team makeup are dependent upon the needs determined by management personnel.

2.3.3 Equipment

Section H of this plan and the applicable station procedures list the Emergency Kit locations.

3.0 ASSESSMENT OF RADIOLOGICAL RELEASES

3.1 Methods of Assessment

The methods used for the assessment of radioactivity released to the environs are detailed in the Emergency Plan Implementing Procedures.

PROTECTIVE RESPONSE

1.0 PUBLIC INFORMATION CONTENT AND DISSEMINATION

1.1 Notification

- 1.1.1 Onsite personnel are notified of a nuclear emergency via the emergency alarm. This alarm is identified by an intermittent howl and is distinguished from the fire alarm which is a continuous howl. Once the emergency alarm is sounded, the command and control position will give the emergency classification, with other pertinent information, using the intra-plant communication system (Gaitronics). If the owner-controlled area is to be evacuated, personnel will be notified by: 1) Gaitronics System, 2) Administration and Training Building paging systems, 3) Security Personnel, and/or 4) Alert Notification System, if used.

1.2 Evacuation

- 1.2.1 If the emergency requires Protected Area evacuation, all onsite personnel considered nonessential to the mitigation of the event will normally proceed to a designated location or to their homes. If a release has occurred or there is reason to suspect contamination the evacuees will be sent to the OPPD Elkhorn Center.
- 1.2.2 Approximately 600 persons might be evacuated during normal work hours and operation; approximately 900 persons might be evacuated during a major outage. During normal operating off-shift hours, no evacuation of onsite individuals is expected. Both OPPD and personal vehicles are used for site evacuation transportation. Agreements with the State of Nebraska and specifically the State Patrol guarantee professional handling and control of traffic. Normal travel time to Elkhorn Center is 37 minutes using the normal evacuation route and 53 minutes using the alternate evacuation route at an average speed of 40 mph. Personnel at the Elkhorn Center will coordinate personnel/vehicle monitoring and decontamination activities, if required.
- 1.2.3 Security and RP personnel inspect the owner controlled area after a site evacuation has taken place. If any persons other than emergency workers are in the owner controlled area during or after site evacuation, they will be given specific directions and/or escorted off-site.

PROTECTIVE RESPONSE

1.3 Security and Accountability

1.3.1 Security

- A. The security program is designed to deter, delay and detect an intruder. The Security Area of the plant site is enclosed by an eight foot security fence topped by three strands of barbed wire. All gates to the fence are normally kept locked. An inner perimeter consists of personnel doors, roof hatches, and overhead doors equipped with magnetic alarm switches.
- B. Personnel assigned by the Site Director to enter the plant must pass through the main gate which is guarded. It is extremely unlikely that any unauthorized person would be able to enter the site undetected even during an emergency condition.

1.3.2 Accountability

- A. If accountability of onsite personnel is necessary, the onsite command and control position will notify personnel onsite by announcements on the Gaitronics System, and by sounding the Emergency Alarm (if required). At the completion of the notification(s), the accountability process begins, to be completed within 30 minutes.
- B. Accountability is a process taking place in several areas:
 - 1. Accountability of personnel reporting to the Control Room, TSC, or OSC for emergency response will be performed by personnel using the card readers at these locations.
 - 2. Accountability of security force personnel will be accomplished using established security procedures.
 - 3. Once initial accountability is complete, the command and control position will be notified of the results.
 - 4. Accountability is maintained by the use of rosters at the Control Room, OSC and TSC. Persons must sign in and out as they enter and leave. These rosters will be compared to a list of personnel who accessed the protected area whenever necessary. Continuous accountability of security personnel is accomplished using established security procedures.

PROTECTIVE RESPONSE

1.4 Protective Measures

- 1.4.1 It is the policy of OPPD to keep personnel radiation exposure within federal regulations, and station limits and guidelines, beyond that, to keep it As Low As Reasonably Achievable (ALARA). Every effort will be made to keep their exposures within the limits of 10 CFR 20.
- 1.4.2 Personnel monitoring devices are required for all personnel meeting the conditions specified in 10 CFR 20 Section 20.1502, Technical Specifications Section 5.11 and in Radiation Protection Procedures. During emergency conditions, implementing procedure EP-FC-113 will be utilized.
- 1.4.3 Dosimeters and DLRs are typically located in each of the emergency lockers in the Control Room, EOF, OSC and the TSC. Additional dosimeters and DLRs may be obtained from the dosimetry group.
- 1.4.4 Clothing
 - A. Protective clothing is a normal use item utilizing both washable and disposables. For entry into affected areas, the OSC has approximately 50 complete sets of protective clothing available. The Control Room has approximately 12 complete sets available. Additional sets are available at the Radiation Control Point. Approximately 2000 sets are ready for use and a large supply of washable and/or disposable coveralls is maintained in the warehouse and RP storage areas. Water-proof protective clothing is also a standard stock item.
- 1.4.5 Respiratory Protection
 - A. Respiratory protective devices may be required where an airborne radioactivity condition is potential or existent. In such cases, the air will be monitored and the necessary protective devices specified according to the concentration and type of airborne contaminants present. Monitoring and issue of respiratory protection equipment will be conducted in accordance with Radiation Protection Manual Procedures. Precautions will be taken to keep airborne contamination to a minimum through the use of proper engineering controls and decontamination.
 - B. Limits for inhalation of radionuclides are established in Appendix B, Table 1 of 10CFR20. The Radiation Protection Manual establishes the station's administrative limits for inhalation which will be adhered to in emergencies if possible.
 - C. Types and recommended use for each type of respirator is specified in the Radiation Protection Manual.
 - D. Approximately 35 self-contained breathing apparatus are maintained

PROTECTIVE RESPONSE

onsite. Of these, a portion is maintained for fire brigade use, or normal use, and the remainder for emergency response. Spare bottles are also stored in some locations. The site has the capability to refill bottles with a compressor/air bank unit, with a cascade tank unit as a backup. Full-face respirators are maintained in some emergency gear lockers. Respirators are staged for use in plant radiation areas. The onsite Stores warehouse stocks approximately 150 full-face respirators for reserve supply.

1.4.6 Radioprotective Drugs

- A. The need for issuance of radioprotective drugs, specifically potassium-iodide, is determined using appropriate procedures.
- B. Radioprotective drugs in the form of potassium iodide tablets are available in the Control Room, Technical Support Center, Operations Support Center, Emergency Operations Facility and the Field Team equipment lockers. Each bottle contains dosage supply for 14 days. Emergency workers are instructed on the advantages and disadvantages of taking the tablets to provide thyroid blockage. The final decision for use of the potassium iodide is made by the emergency worker.

2.0 PROTECTIVE RESPONSE FOR RESIDENTS WITHIN THE PLUME EXPOSURE PATHWAY

2.1 Protective Action Recommendations

2.1.1 OPPD Guidelines

- A. Fort Calhoun Station is designed and equipped with a series of safety systems engineered to meet all of 10 CFR 100 criteria for reactor safety. OPPD recognizes that in any accident situation, it would be prudent and logical to make every effort to further reduce and minimize exposure to the public. OPPD management will recommend to appropriate State and local authorities that protective actions be initiated if any person is expected to receive an emergency exposure in excess of Environmental Protection Agency (EPA) guidelines.
- B. Tables J-1¹ through J-4¹ provides some information and guidance on formulating Protective Action Recommendations (PAR's). Table J-1¹ summarizes the considerations for selecting the evacuation Protective Action Guides (PAG's). Table J-2¹ outlines the early (plume) phase PAG's due to exposure of airborne and deposited radioactivity. Table J-3¹ summarizes the considerations for selecting relocation PAG's. Table J-4¹ outlines the immediate (relocation) phase PAG's due to exposure to deposited radioactivity.

PROTECTIVE RESPONSE

- C. During the early (plume) phase of a radiological emergency, professional judgement will be required in the application of PAG's, due to varying characteristics, such as; plant conditions, evacuation time estimates, environmental conditions, affected population groups, etc. In all cases, the PAR's transmitted by OPPD to the states of Iowa and/or Nebraska are strictly recommendations. The respective government agencies in each state have the ultimate responsibility for implementing necessary protective actions for the general public.

1 Taken from "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." EPA-400-R-92-001, Revised May, 1992.

- D. Tables J-5 and J-6 provide information pertaining to emergency worker exposure limits and health risks associated with exposure to higher dose levels.

2.1.2 Initiation of Recommendations

- A. Recommendations will originate from an Emergency Response Facility based upon data derived from implementing procedure, EP-FC-110, Assessment of Emergencies. This procedure establishes a method for determining projected doses to the population-at-risk. Protective action recommendations based on radiological parameters or plant conditions are determined using EP-FC-111, Emergency Classification and Protective Actions. Total population exposure can be estimated using projected or known dose values and population densities.

2.2 Notification

- 2.2.1 In the event public notification is required, both transient and resident population within the plume exposure pathway will be initially notified through the Alert Notification System (reference Section E) and as described in state and county radiological emergency plans. Information will be provided for transient and resident population as well as the general public outside the EPZ through the Emergency Alert System.
- 2.2.2 Information brochures describing notification, protective actions and general radiological education are provided to residents by mail and by public service posting to transients within the EPZ. The States of Iowa and Nebraska will issue messages describing the incident and recommended public protective actions.

PROTECTIVE RESPONSE

2.3 Evacuation

2.3.1 Evacuation Time Estimate Study

- A. Studies estimating the time required to evacuate the residents in the plume exposure pathway from the emergency planning zone were conducted in accordance with NUREG-0654, Rev. 1, Appendix 4 criteria. These studies are supporting documents to this Plan. Summaries of the Nebraska and Iowa evacuation time estimate studies are outlined in KLD Engineering, P.C., Fort Calhoun Nuclear Station, Development of Evacuation Time Estimates (EP-FC-1001 Addendum 2). Reference Figure 6-1, Tables 7-1 through 7-6, and Table 3-7.

2.3.2 Evacuation of Areas within the EPZ

- A. The Governor (or Governor's Authorized Representative) of Nebraska can authorize the Nebraska State Patrol and Emergency Management Agency, based on recommendations of the State Health Department, to evacuate Nebraska residents to the reception center in Fremont, Nebraska.
- B. The Governor (or Governor's Authorized Representative) of Iowa can authorize the Iowa State Patrol and the Emergency Management Division to evacuate Iowa residents to Denison, Iowa, based upon recommendations of the Iowa Department of Public Health.
- C. Evacuees from the Nebraska portion of the EPZ should go to the Fremont Reception Center. Evacuees from the Iowa portion of the EPZ should proceed to the Denison Reception Center. Figure J-5 shows the boundaries and highways leading to the Reception Centers.
- D. The relocation centers for the host areas are as follows:
- Fremont
Fremont Middle School
540 Johnson Rd
 - Denison
Denison Community High School, North 16th
- E. The ingestion planning zone (IPZ) encompasses a 50 mile radius as illustrated in Figure J-6. Population for the IPZ is presented in Figure J-7 by sectors.

PROTECTIVE RESPONSE

- F. The plume exposure EPZ encompasses an approximate 10 mile radius as illustrated in Appendix H, (EP-FC-1001 Addendum 2). The EPZ includes portions of Harrison and Pottawattamie Counties in Iowa, Washington and Douglas Counties in Nebraska. The States of Iowa and Nebraska are separated by the Missouri River. Table 3-5 through 3-8, (EP-FC-1001 Addendum 2), shows the total population within the EPZ, and population totals for each Sub Area. This includes showing Estimated Transient population.

2.4 Protective Methods (Other than Evacuation)**2.4.1 Sheltering**

- A. Remaining indoors during the passage of a radioactive cloud affords the dweller a reduction in the quantity of radionuclides inhaled, as well as providing shielding. Figure J-9 shows the ratio of the inhaled dose inside a shelter to that outside the shelter as a function of the ventilation rate. A ventilation rate survey showed a rate variance of 0.07 to 3.0 per hour. The ventilation rate is affected by temperature differential, wind speed and direction, quality of construction and topographical setting.
- B. Walls of buildings absorb and scatter gamma rays, thus providing a lower dose to the occupants. The shielding factor of a building is the ratio of the interior dose to the exterior dose. Shielding factor estimates applicable to residential housing units were made using the shielding technology by Z. G. Burson and A. E. Profio (1975). Table J-7² summarizes shielding factors for designated structures/locations from a gamma cloud source.
- C. ^{1,2,3} Table J-8³ summarizes the shielding factors for designated structures/locations from surface deposition of radioactive material. Burson and Profio proved that the fallout shielding technology developed via nuclear weapons tests could be directly applied to radioactivity deposited on surfaces after a reactor accident. The shielding factors listed in Table J-8 assume uniform distribution of the radioactive fallout.
- D. In each of the cases discussed, inhalation and shielding factors from a gamma cloud source and shielding factors from surface deposition of radioactive material, it is noted that the shielding factors using sheltering as a method of protection ranges from 0.6 to 0.005. Although the best protection seems to be the basement of large multi-structured buildings, the basement of any house has been proven to provide significant shelter from airborne and surface deposited radioactive material.

1 Taken from WASH-1400(NUREG-75/014), October 1975, Figure VI.11-4.

2 Taken from WASH-1400(NUREG-75/014), October 1975, Figure VI-11-7.

3 Taken from WASH-1400(NUREG-75/014), October 1975, Figure VI-11-8.

PROTECTIVE RESPONSE

2.5 Radiological Environmental Monitoring

2.5.1 In the event of an emergency, the permanent air particulate stations are first utilized for immediate data, concerning airborne releases. Background radiation stations (DLRs) provide short term exposure data and are periodically replaced. See the specific Radiological Environmental Monitoring Surveillance Test for more information. DLR use can be increased during the longer term as the District maintains a DLR services contract with an off-site vendor. The environmental laboratory personnel perform accelerated collection and analysis of samples as their primary responsibility after an emergency occurs. Sampling requirements will be determined by the environmental laboratory personnel.

2.5.2 Sample analysis will be performed by the station and at offsite facilities as deemed necessary.

3.0 REFERENCES AND COMMITMENTS

3.1 EP-FC-1001 Addendum 2, Evacuation Time Estimates KLD TR-535

3.2 EP-FC-1001, Evacuation Time Estimates

- Table 1, 50 Mile 2010 Population Table
- Table 3-5
- Table 3-7, Summary of Population Demand
- Table 3-8
- Table 7-1 through Table 7-6, Time to clear the Indicated Area of 90% of the Affected Population
- Figure 1, 50 Mile 2010 Population Rose
- Figure 5-2, Evacuation Mobilization Activities
- Figure 6-1, FCNS EPZ Sub Areas
- Appendix K

PROTECTIVE RESPONSE

Table J-1 - Summary of Considerations for Selecting the Evacuation PAG's¹

DOSE Rem (mrem)	Consideration(s)
50 Rem (50000 mrem)	Assumed threshold for acute health effects in adults.
10 Rem (10000 mrem)	Assumed threshold for acute health effects in the fetus.
5 Rem (5000 mrem)	Maximum acceptable dose for normal occupational exposure for adults.
5 Rem (5000 mrem)	Maximum dose justified to average members of the population, based on the cost of evacuation.
0.5 Rem (500 mrem)	Maximum acceptable dose to the general population from all sources from nonrecurring, non-accidental exposure.
0.5 Rem (500 mrem)	Minimum dose justified to average members of the population, based on the cost of evacuation.
0.5 Rem (500 mrem)	Maximum acceptable dose ² to the fetus from occupational exposure of the mother.
0.1 Rem (100 mrem)	Maximum acceptable dose to the general population from all sources from routine (chronic) non-accidental exposure.
0.03 Rem (30 mrem)	Dose that carries a risk assumed to be equal to or less than that from evacuation.
¹ Taken, in part, from Table C-8, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-400-R-92-001, May, 1992 ² This is also the dose to the 8 to 15 week-old fetus at which the risk of mental retardation is assumed to be equal to the risk of fatal cancer to adults from a dose of 5 rem.	

PROTECTIVE RESPONSE

Table J-2 - Protective Action Recommendations Based on
Dose Assessment/Field Team Radiological Data

Instructions: Compare URI or Field Team Dose Assessment results to the following table.
Expand PAR to include downwind sectors in accordance with EP-FC-111-AD-F-02.

Projected Dose	Protective Action Recommendation (PAR)
< 1 rem TEDE < 5 rem CDE (thyroid)	NONE (No Par Required) And continue monitoring radiological conditions
≥ 1 rem TEDE ≥ 5 rem CDE	Evacuate *see note And continue monitoring radiological conditions
≥ 50 rem SDE (skin)	Evacuate And continue monitoring radiological conditions
NOTE: SHELTERING may be considered for doses up to 5 rem TEDE in special situations such as (1) the presence of severe weather (2) competing disasters (3) institutionalized people who are not readily mobile; and (4) other local factors, which may impede evacuation.	

PROTECTIVE RESPONSE

Table J-3 - Summary of Considerations for Selecting PAG's for Relocation¹

DOSE Rem (mrem)	Consideration(s)
50 Rem (50000 mrem)	Assumed threshold for acute health effects in adults.
10 Rem (10000 mrem)	Assumed threshold for acute health effects in the fetus.
6 Rem (6000 mrem)	Maximum projected dose in first year to meet 0.5 Rem in the second year ² .
5 Rem (5000 mrem)	Maximum acceptable dose for normal occupational exposure for adults.
5 Rem (5000 mrem)	Minimum dose that must be avoided by one year relocation based on cost.
3 Rem (3000 mrem)	Minimum projected first-year dose corresponding to 5 Rem in 50 years ² .
3 Rem (3000 mrem)	Minimum projected first-year dose corresponding to 0.5 Rem in the second year ² .
2 Rem (2000 mrem)	Maximum dose in first year corresponding to 5 Rem in 50 years from a reactor incident, based on radioactive decay and weathering only.
1.25 Rem (1250 mrem)	Minimum dose in first year corresponding to 5 Rem in 50 years from a reactor incident, based on radioactive decay and weathering only.
0.5 Rem (500 mrem)	Maximum acceptable single-year dose to the general population from all sources from non-recurring, non-incident exposure.
0.5 Rem (500 mrem)	Maximum acceptable dose to the fetus from occupational exposure of the mother.
0.1 Rem (100 mrem)	Maximum acceptable annual dose to the general population from all sources due to routine (chronic), non-incident, exposure.
0.03 Rem (30 mrem)	Dose that carries a risk assumed to be equal to or less than that from relocation.
¹ Taken, in part, from Table E-5, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", EPA-400-R-92-001, May, 1992. ² Assumes the source term is from a reactor incident and that simple dose reduction methods are applied during the first month after the incident to reduce the dose to persons not relocated from contaminated areas.	

PROTECTIVE RESPONSE

Table J-4 - Protective Action Guides for Exposure to Deposited Radioactivity¹

Protective Action	PAG (projected dose in first year) ²	Comments
Relocate the general population ³	≥ 2 Rem (≥ 2000 mrem)	Beta dose to skin may be up to 50 times higher.
Apply simple dose reduction techniques ⁴	< 2 Rem (< 2000 mrem)	These protective actions should be taken to reduce doses to as low as practicable levels.
¹ Taken, in part, from the "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", EPA-400-R-92-001, May, 1992. ² The projected sum of total effective dose equivalent (TEDE) from external gamma radiation and committed effective dose equivalent (CEDE) from inhalation of resuspended materials, from exposure or intake during the first year. Projected dose refers to the dose that would be received in the absence of shielding from structures or the application of dose reduction techniques. These PAG's may not provide adequate protection from some long-lived radionuclides. ³ Persons previously evacuated from areas outside the relocation zone defined by this PAG may return to occupy their residences. Cases involving relocation of persons at high risk from such action (e.g., patients under intensive care) should be evaluated individually. ⁴ Simple dose reduction techniques include scrubbing and/or flushing hard surfaces, soaking or plowing soil, minor removal of soil from spots where radioactive materials have concentrated, and spending more time than usual indoors or in other low exposure rate areas.		

PROTECTIVE RESPONSE

Table J-5 - Emergency Worker Exposure Limits

Dose Limit	Activity	Condition(s)
≤ 500 mrem TEDE	All Activities	Declared Pregnant Emergency Workers
≤ 5 Rem TEDE	All Activities	Non-Pregnant Emergency Workers
≤ 10 Rem TEDE	Protecting Valuable Property	A lower dose is not practicable
≤ 25 Rem TEDE	Life Saving or Protection of Large Populations	A lower dose is not practicable
>25 Rem TEDE	Life Saving or Protection of Large Populations	Only on a voluntary basis to persons fully aware of the risks involved. (See Table J-6)

PROTECTIVE RESPONSE

Table J-6 - Summary of Risks Involved with Higher Dose Limits
(taken from EPA 400 R-92-001, May, 1992)

Health Effects Associated with Whole-Body Absorbed Doses Received Within a Few Hours^a

Whole Body Absorbed Dose (rad)	Early Fatalities ^b (percent)	Whole Body Absorbed Dose (rad)	Prodromal Effects ^c (percent affected)
140	5	50	2
200	15	100	15
300	50	150	50
400	85	200	85
460	95	250	98
(a) Risks will be lower for protracted exposure periods.			
(b) Supportive medical treatment may increase the dose at which these frequencies occur by approximately 50 percent.			
(c) Forewarning symptoms of more serious health effects associated with large doses of radiation.			

Approximate Cancer Risk to Average Individuals from 25 Rem Effective Dose Equivalent Delivered Promptly

Age at Exposure (years)	Approximate Risk of Premature Death (deaths per 1,000 persons exposed)	Average Years of Life Lost in Premature Death Occurs (years)
20 to 30	9.1	24
30 to 40	7.2	19
40 to 50	5.3	15
50 to 60	3.5	11

PROTECTIVE RESPONSE

Table J-7 - Representative Shielding Factors from Gamma Cloud Source

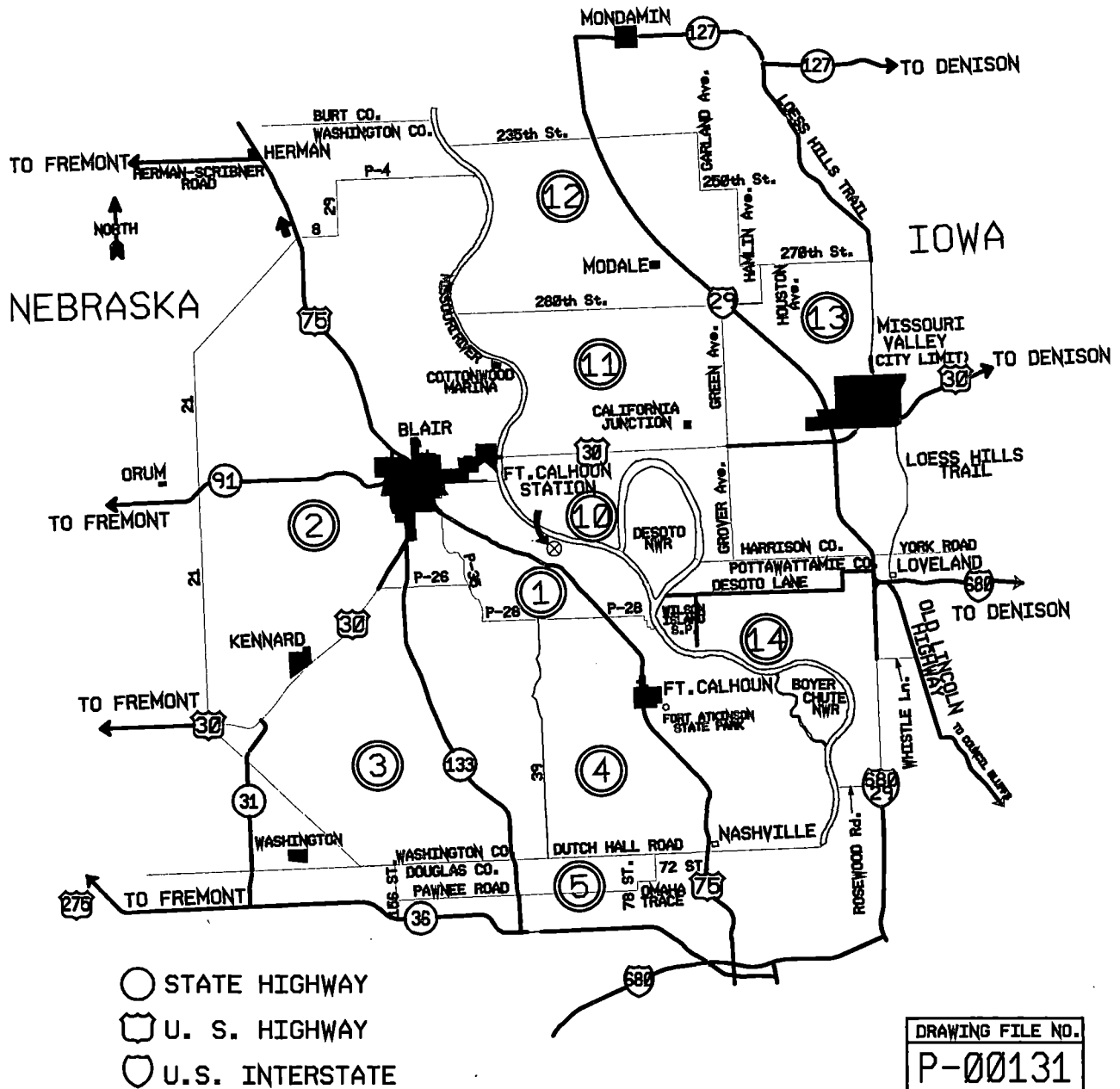
Structure or Location	Shielding Factor ^(a)	Representative Range
Outside	1.0	-----
Vehicles	1.0	-----
Wood - frame ^(b) (no basement)	0.9	-----
Basement of wood house	0.6	0.1 to 0.7 ^(c)
Masonry house (no basement)	0.6	0.4 to 0.7 ^(c)
Basement of masonry house	0.4	0.1 to 0.5 ^(c)
Large office or industrial building	0.2	0.1 to 0.3 ^(c,d)
<p>(a) The ratio of the interior dose to the exterior dose.</p> <p>(b) A wood frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.</p> <p>(c) This range is mainly due to different wall materials and different geometries.</p> <p>(d) The reduction factor depends on where the personnel are located within the building (e.g., the basement or an inside room).</p>		
<p>NOTE: Consideration is limited to gamma radiation since beta and alpha particles cannot penetrate the walls of structures.</p>		
<p>* Taken from WASH-1400 (NUREG-75/104), October 1975.</p>		

PROTECTIVE RESPONSE

Table J-8 - Representative Shielding Factors for Surface Deposition

Structure or Location	Representative ^(a) Shielding Factor	Representative Range
1 m above an infinite smooth surface	1.00	----
1 m above ordinary ground	0.70	0.47 - 0.85
1 m above center of 50-ft roadways, half contaminated	0.55	0.4 - 0.6
Cars on 50-ft road:		
Road fully contaminated	0.5	0.4 - 0.7
Road 50% decontaminated	0.5	0.4 - 0.6
Road fully decontaminated	0.25	0.2 - 0.5
Trains	0.40	0.3 - 0.5
One and two-story wood-frame house (no basement)	0.4 ^(b)	0.2 - 0.5
One and two-story block and brick house (no basement)	0.2 ^(b)	0.04 - 0.40
House basement, one or two walls fully exposed:	0.1 ^(b)	0.03 - 0.15
One story, less than 2 ft of basement, walls exposed	0.3 ^(b)	0.03 - 0.07
Two stories, less than 2 ft of basement, walls exposed	0.3 ^(b)	0.02 - 0.05
Three or four-story structures, >5,000 ft ² per floor:		
First and second floor	0.05 ^(b)	0.01 - 0.08
Basement	0.01 ^(b)	0.001 - 0.07
Multistory structures, >10,000 ft ² per floor:		
Upper floors	0.01 ^(b)	0.001 - 0.02
Basement	0.005 ^(b)	0.001 - 0.015
^(a) The ratio of the interior dose to the exterior dose.		
^(b) Away from doors and windows.		

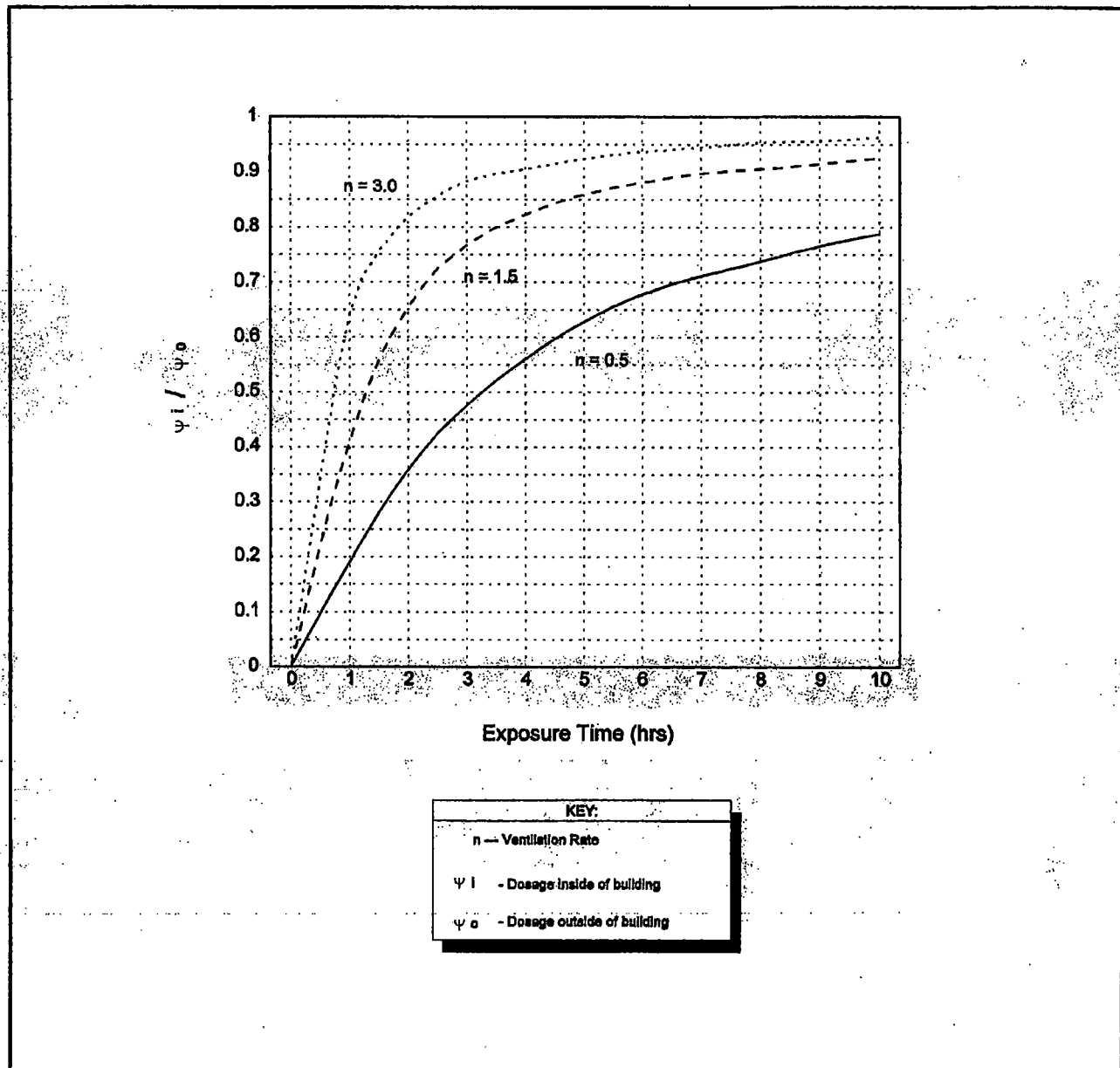
Figure J-9 - Routes to Relocation Centers





PROTECTIVE RESPONSE

Figure J-11 - Ratio of Inhaled Dose Inside a Shelter to that Outside the Shelter as a Function of Ventilation Rates



RADIOLOGICAL EXPOSURE CONTROL

1.0 EXPOSURE GUIDELINES

- 1.1 It is OPPD policy to comply with the ALARA concept, and all efforts shall be made to keep all workers within normal Fort Calhoun Station limits, as listed in the Radiation Protection Manual. However, if it is expected that workers may exceed these limits, any dose received during emergency conditions in excess of 5 Rem TEDE will be assigned as once in a lifetime exposure.
- 1.2 The facility directors, Shift Manager in the Control Room, Site Director in the TSC, the OSC Director in the OSC or the Emergency Director in the EOF may authorize dose extension up to 5 Rem TEDE per year during declared events for workers in their facility.
- 1.3 The Command and Control position shall authorize any extensions beyond normal occupational exposure limits and direct that any dose received in excess of these limits be assigned as once in a lifetime exposure. The following guidance is from the FCS Radiation Protection Manual, and the Manual of Protective Action Guidelines and Protective Action for Nuclear Incidents, EPA-400-R-92-001.
 - 5 Rem TEDE for all emergency workers
 - 10 Rem TEDE when action is necessary to reduce a hazard potential to acceptable levels or to prevent substantial loss of property
 - 25 Rem TEDE when action is necessary to perform lifesaving functions or to reduce the potential hazards to the health and safety of the public
 - >25 Rem TEDE on a voluntary basis and only to save a life or reduce potential hazards to the health and safety of the public
- 1.4 Plant personnel that require access to Radiation Controlled Areas are issued DLRs on a frequency specified by Radiation Protection. Many ERO positions are also issued DLRs depending on the likelihood of having to enter a Radiation Controlled Area under emergency conditions. DLR requirements for ERO positions are identified on the ERO Roster.
- 1.5 Personnel responding to the site that require, but do not have, dosimetry will be issued dosimetry by Security or Radiation Protection personnel. The following ERO positions can also issue dosimetry when necessary:
 - Control Room: Shift RP Technician or OSC RP Technicians
 - TSC: OSC RP Technicians
 - OSC: The OSC RP Technicians

RADIOLOGICAL EXPOSURE CONTROL

2.0 CONTAMINATION CONTROL

- 2.1 If actual or potential contamination problems exist onsite, ERO management may elect to establish contamination control and monitoring measures. These may consist of some or all of the following:
- Each Emergency Response Facility onsite has the capability to establish control boundaries to minimize contamination spreading into the facility.
 - Monitoring of personnel evacuating the affected area using installed monitors in the Security Building or personnel with portable equipment. Portable equipment for this purpose is stored both in the warehouse and at the EOF.
- 2.2 If personnel decontamination becomes necessary, the site maintains two facilities for this purpose. One is located in the Auxiliary Building entry/exit point, and is frequently used. It drains to the Radwaste System. The second facility is located in the Warehouse and is designated for emergency use only. It drains to a holding tank, which is controlled after emergency use to ensure that the contents are monitored and processed if necessary.
- 2.3 Contaminated personnel that are evacuated will be decontaminated as determined by Radiation Protection personnel. Additional decontamination facilities are available at state decontamination facilities and at the UNMC Regional Radiation Health Center.
- 2.4 Tools and equipment that become contaminated will be decontaminated as determined by Radiation Protection personnel.
- 2.5 Areas that become contaminated will be decontaminated as determined by Radiation Protection personnel.
- 2.6 Priorities for decontaminating tools, equipment and areas will be established by ERO management, with top priority given to contamination within areas that are or will be inhabited by emergency workers. Decontamination of non-essential areas, tool and equipment should be delayed to allow for natural decay of radioactive materials.
- 2.7 Potable water, normally supplied from the City of Blair, and onsite food supplies can be chemically and radiologically monitored prior to use by emergency workers.
- 2.8 Contamination limits, contamination control, and decontamination criteria may be adjusted based on professional radiological evaluation by the ERO using guidance in the Radiation Protection Manual.
- 2.9 Radioactive waste from any decontamination effort will be prepared and shipped in accordance with Radiation Protection Manual requirements.

MEDICAL AND PUBLIC HEALTH SUPPORT

1.0 ONSITE FIRST AID

1.1 There are generally four types of response considered at the Fort Calhoun Station:

- 1) Minor injury, no contamination
- 2) Minor injury, contaminated
- 3) Major injury (requiring offsite treatment), no contamination
- 4) Major injury, contaminated

1.2 The order of medical treatment will be:

- 1) Care of severe physical injuries
- 2) Decontamination of personnel
- 3) First aid to other injuries
- 4) Monitor for internal contamination
- 5) Definitive treatment and subsequent therapy as required

1.3 All injuries at the station must be immediately reported to the Shift Manager, who will initiate response according to SA-FC-15-0007, Medical Emergencies. When the OSC is activated the OSC Director will be responsible for response to medical emergencies.

1.4 When personnel are severely injured and contaminated, first aid shall take precedence over decontamination. In cases where internal exposure is suspected, a bioassay program may be performed as directed by the Radiation Protection Manual.

1.5 First Aid Facilities

1.5.1 A First Aid Room is located in the Maintenance Building. This room is equipped with various medical supplies to provide emergency first aid to injured personnel.

1.5.2 Other equipment located throughout the plant include first aid kits, Emergency Medical Technician (EMT) kits, personnel carriers, a wheelchair, and contaminated/injured personnel response kit. Site Licensed EMT's inspect and maintain this equipment.

MEDICAL AND PUBLIC HEALTH SUPPORT

1.6 Medical Response

1.6.1 Minor Injury, No Contamination

- A. The Shift Manager or other evaluators will determine the extent of medical response required. This could include:
 - 1. On the spot treatment by the individual or first aid qualified responders.
 - 2. On the spot treatment by EMT qualified personnel (if available).
 - 3. Movement of the injured party to the first aid room by medical responders for access to additional equipment.
 - 4. Other response determined necessary by responding personnel.

1.6.2 Minor Injury, Contaminated

- A. Personnel that are injured and are potentially contaminated will be treated as explained above, and will also be monitored for contamination by Radiation Protection personnel. Monitoring and decontamination will be performed in accordance with Radiation Protection procedures.

1.6.3 Major Injury, No Contamination

- A. Medical responders will be dispatched to the scene to perform first aid as required. The Shift Manager or designee will notify offsite authorities to provide victim transport to an available medical facility. Both air and ground transportation are available.

1.6.4 Major Injury, Contaminated

- A. Personnel that are severely injured and are potentially contaminated will be treated as explained above, and will also be monitored for contamination by Radiation Protection personnel. If feasible, monitoring and decontamination will be performed in accordance with Radiation Protection Procedures. If decontamination is successful, the victim may be transported to any available medical facility for treatment.
- B. If decontamination is not successful or not feasible, the victim will be transported to the UNMC Regional Radiation Health Center, unless the responding Emergency Medical Services (EMS) personnel deem it medically necessary to proceed to a closer facility. If another facility other than UNMC is used, additional Radiation Protection personnel should be sent to the facility to assist in monitoring, decontamination and clean up.

MEDICAL AND PUBLIC HEALTH SUPPORT

2.0 MEDICAL TRANSPORTATION

2.1 Blair Fire Department and Rescue Squad

The Blair Fire Department and Rescue Squad Station is located less than four miles from the Fort Calhoun Station. The Rescue squad furnishes transportation for the injured and administers first aid enroute to the hospital.

2.2 Fort Calhoun Fire and Rescue Squad

The Fort Calhoun Fire and Rescue Squad headquarters is located approximately 3-1/2 miles from the Fort Calhoun Station. This rescue squad serves as backup to the Blair Fire Department and Rescue Squad.

2.3 Missouri Valley Fire and Rescue Squad

The Missouri Valley Fire and Rescue Squad is located approximately fifteen miles from the plant.

2.4 Additional support is available to both the Blair Fire Department and Rescue Squad and the Fort Calhoun Fire and Rescue Squad by request through the Tri-Mutual Aid Association (Douglas, Sarpy, and Washington Counties).

2.5 Other Modes of Transportation

If necessary, there are other modes of transportation for delivering injured personnel to appropriate medical facilities.

2.5.1 Medical Ambulance helicopter

2.5.2 Onsite company vehicles

2.5.3 Private autos of company personnel

3.0 OFFSITE MEDICAL SUPPORT

3.1 Non-Contaminated Personnel

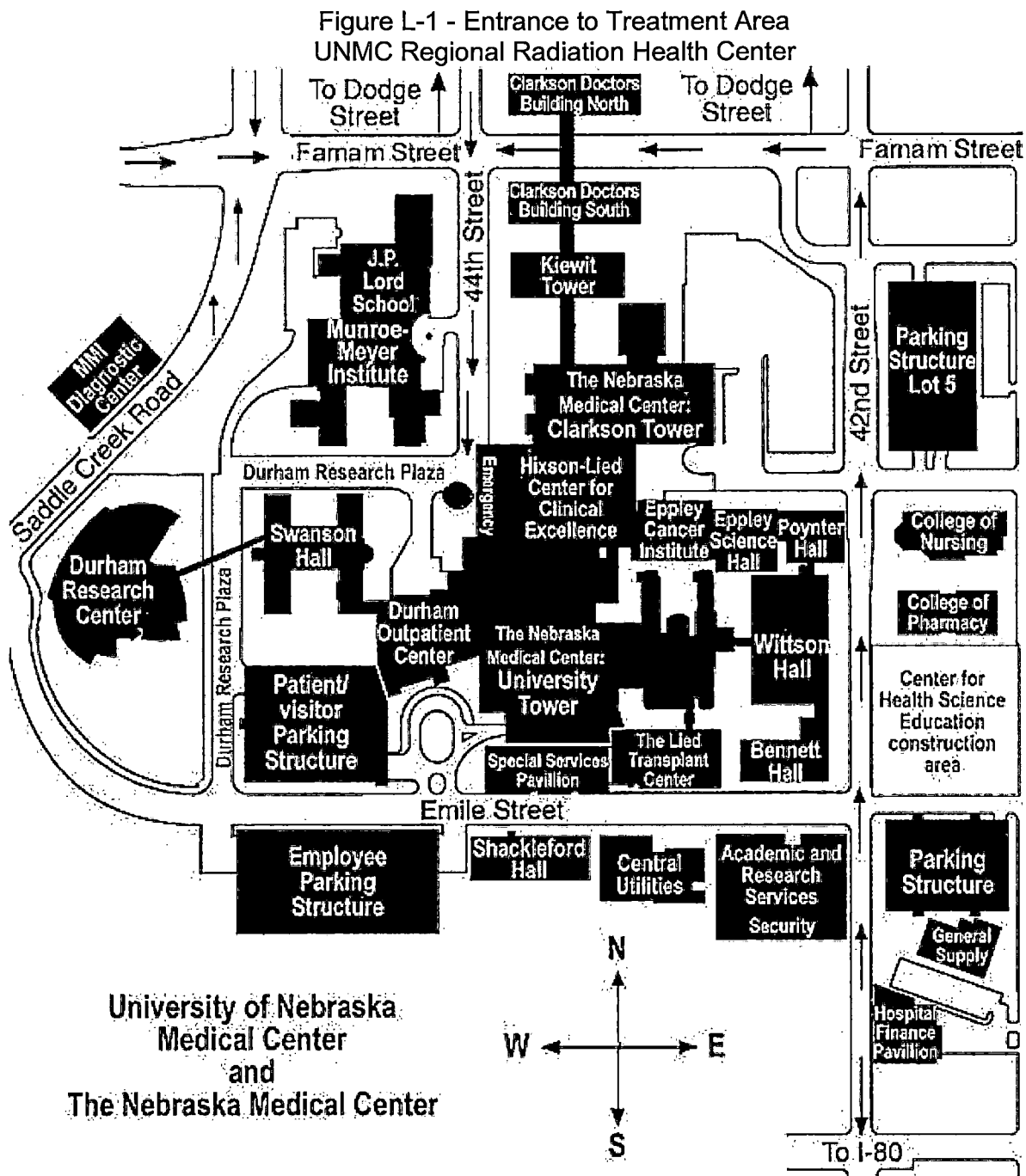
The nearest medical facility is the Blair Memorial Community Hospital which is located five miles from the plant. A physician is readily available as a general medical consultant. Other facilities may be used as determined necessary by medical response personnel.

MEDICAL AND PUBLIC HEALTH SUPPORT

3.2 Contaminated Personnel

- 3.2.1 Omaha Public Power District maintains an agreement with the UNMC Regional Radiation Health Center to supply 24-hour treatment for all injuries involving contamination and/or personnel radiation exposure. The Regional Radiation Health Center is located approximately 25 miles from the plant in Omaha, Nebraska. The facility is part of the UNMC complex, and was established specifically for the treatment of injuries occurring from nuclear and radiation related incidents. An entrance (Figure L1) is available for the ingress and egress of contaminated victims to a special assessment and decontamination facility. Patients can also be transported to the facility via medical ambulance helicopters.
- 3.2.2 The UNMC Regional Radiation Health Center staff administers medical, decontamination, internal bioassay, and other nuclear medicine capabilities. The staff maintains an appropriate "Standard Operating Procedures Manual" which describes their responsibilities and roles. If additional hospital beds should be required during a major incident, the hospital maintains a mutual agreement with several other Omaha area hospitals to assist with decontaminated patients.
- 3.2.3 Due to the large, highly qualified staff, the distance from the plant, the specialized capabilities, and the overall size of the UNMC complex, the Fort Calhoun Station was granted an exemption from requiring a backup medical facility by the Federal Emergency Management Agency.

MEDICAL AND PUBLIC HEALTH SUPPORT



RECOVERY AND REENTRY PLANNING AND POST ACCIDENT OPERATIONS

1.0 RECOVERY ORGANIZATION (RO)

1.1 Responsibilities

The Recovery Organization (RO) responsibilities include the overall coordination and management of the recovery effort and has provisions for technical and administrative services, design work, scheduling, planning, quality control/assurance, construction and vendor support.

1.2 Staffing

The Recovery Organization would be composed of all the necessary technical, administrative, managerial, and support personnel required for the recovery phase of emergency response. This organization would be capable of 24 hour a day sustained operation.

The lead position in the Recovery Organization would be the Recovery Operations Manager. This individual would be appointed by the Command and Control Position of the Emergency Response Organization. The staffing positions of the rest of the Recovery Organization would be dependent upon the needs based on accident type and magnitude.

The responsibilities of the Recovery Operations Manager and the functions of possible staff members are detailed in the Emergency Plan Implementing Procedures.

1.3 Activation

The activation of the Recovery Organization is through the directions given in the Emergency Plan Implementing Procedures governing the downgrading and termination of the emergency response phase. Downgrading and termination is achieved through a checklist format of considering not only the current and past conditions but also those conditions which have the potential to occur.

The ultimate decision for activation of the Recovery Organization rests with the Emergency Command and Control Position.

RECOVERY AND REENTRY PLANNING AND POST ACCIDENT OPERATIONS

1.4 Transition

The transition from Emergency Response Organization to Recovery Organization would consist of turning over functions that would continue while terminating other functions that would not be necessary. The extent of the turnover would be based upon the size of the Recovery Operations which would be dependent upon the type and magnitude of the emergency.

As a minimum, the facility directors at each of the Emergency Response Facilities will make an announcement concerning the shift to the Recovery Organization and direct all Emergency Response Organization Members to turn in all pertinent logs and forms to the administrative manager in each facility. A critique would follow at each facility while recovery operations were commencing.

2.0 REENTRY

2.1 Purpose

The purpose for a reentry plan is to provide a means to regain access to an onsite or offsite area that was previously made inaccessible due to an emergency.

2.2 Responsibility

The Command and Control Position has the responsibility for authorizing reentry into a previously evacuated area. This could be the Shift Manager, Site Director, or Emergency Director depending on the stage that emergency response has reached.

2.3 Implementation

The implementation of the reentry plan is carried out by the Emergency Response Organization. Reentry is normally expected to be accomplished by teams dispatched from the Operations Support Center.

2.4 Emergency Radiation Exposure

OPPD is committed to keeping exposure "as low as reasonably achievable" (ALARA). It is understood that there are emergency situations which transcend the normal requirements for limiting exposure. When such situations exist, the Command and Control Position will make the determination as to the amount of radiation exposure that will be permitted based on the guidelines set forth in Section K of this Plan.

EXERCISES AND DRILLS

1.0 EXERCISES

An emergency preparedness exercise is an event that tests the integrated capability and a major portion of the basic elements existing within the Post-Shutdown Radiological Emergency Response Plan (PSRERP), associated Emergency Plan Implementing Procedures (EPIPs) and the various organizations associated with the implementation of the PSRERP. Typically, an emergency preparedness exercise shall simulate an emergency that results in offsite radiological releases which would require response by offsite authorities. However, whenever the State of Nebraska and the State of Iowa are not participating in a particular exercise, the scenario should concentrate on realistic in-plant emergencies with less emphasis on offsite response.

Periodic emergency preparedness exercises can be conducted to evaluate major portions of emergency response capabilities. Also, exercises provide the opportunity to identify further improvements to the emergency preparedness program. Areas of improvement, weaknesses and deficiencies noted as a result of an exercise will be evaluated and corrected, as appropriate.

Normally, an exercise is not considered a "training function", as the participants are not guided, nor "coached", during an exercise. Interaction between controller/observers and participants is not allowed during an exercise, except for delivery and explanation of scenario information and data.

Exercises are conducted biennially, as a minimum. The states of Iowa and Nebraska, along with associated local governmental agencies, are invited to participate in all training drills and exercises, and are required to participate in the biennial exercise under evaluation by the Federal Emergency Management Agency. The Nuclear Regulatory Commission also performs routine inspections to evaluate licensee emergency response performance. The Resident Inspector(s) or other NRC personnel may observe licensee performance during training drills or non-evaluated exercises.

Drill and Exercise procedures are used to verify the following criteria:

- 1.1 State and local personnel and resources capability to respond to a radiological emergency response scenario.
- 1.2 Scenario variance from year to year in order to provide optimum training for radiological emergency response personnel.
- 1.3 Variance of hours in which the radiological emergency exercise is performed.
- 1.4 Joint radiological emergency exercise involving plant and Federal, State and local support groups, including any that involve a time variance.

EXERCISES AND DRILLS

2.0 DRILLS

A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular ERO position, function, center, or operation. A drill can be used as a specific training component of an exercise, if the exercise objectives identify and authorize such component. Drills will be supervised and evaluated by appropriate emergency planning personnel or other personnel with specific expertise pertaining to the drill or function being observed.

Periodic emergency preparedness drills are conducted to develop and maintain key skills within the ERO. Also, drills provide the opportunity to identify further improvements to the emergency preparedness program. Areas for improvement, weaknesses and deficiencies noted as a result of a drill will be evaluated and corrected, as appropriate.

At least one drill between biennial exercises will involve a combination of some of the principal functional areas of the onsite Emergency Response Organization, such as; command and control, accident assessment and classification, protective action recommendation decision making, and plant system and component repair and corrective actions. Simultaneous activation of all of the licensee's emergency response facilities during training drills is not necessary. Special functional drills can be developed and used to; focus on accident management strategies; supervised instruction periods for special or newly developed activities and/or procedures; allow resolution of problems (success paths) by ERO members, and; focus on identified onsite training objectives.

Normally, a drill is considered a "training function", as the participants are guided or "coached" during the actual drill. Interaction between controller/observers and participants is encouraged during a drill, except for instances where specific knowledge and memory are being tested.

EXERCISES AND DRILLS

2.1 Communication Drills

Emergency Planning procedures provide for communication checks with appropriate agencies to ensure availability and operability of all channels of communication necessary for adequate response to a radiological emergency requiring off-site support. These tests outline those agencies to be contacted, the person (by name or title) who is responsible for verifying that adequate communication exists, the required frequency for which communication is to be checked, and a procedure for accomplishing the test. Below is the communication schedule for these checks or drills to be performed:

- 2.1.1 Communications are checked monthly from the EOF at the North Omaha Power Station with the States of Nebraska and Iowa and the local governments of the Counties of Harrison, Pottawattamie, and Washington and the NRC using dedicated communications equipment and backup systems. A functional check of the ERFCS is also performed on a monthly basis.
- 2.1.2 Communications are checked monthly from the Fort Calhoun Station Technical Support Center with the State of Nebraska and Iowa EOCs.
- 2.1.3 Communications are checked quarterly with Federal response agencies and the States of Nebraska and Iowa within the ingestion exposure pathway EPZ. Also verified are communications with the JIC and functional checks of the FAX Network, radio system, and the ERF paging systems. Quarterly communications checks are performed from the Control Room with the NRC using the FTS-ENS phone line.
- 2.1.4 Communications are checked annually between the Fort Calhoun Station, the States of Nebraska and Iowa and local Emergency Operations Centers and field teams.

2.2 Fire Drills

Fire drills are conducted by plant personnel on a quarterly basis. The drills are held to test the plant's firefighting capability. The drills are varied in order to test all phases of firefighting techniques.

The Blair Fire Department is annually invited to conduct a drill onsite. Onsite drills assist in familiarizing the fire department members with the types and locations of equipment available to mitigate plant fires.

EXERCISES AND DRILLS

2.3 Medical Emergency Drills

The Nebraska Health Center, University Hospital Radiation Health Center is invited to participate in an annual exercise and/or scheduled drill(s) to demonstrate and practice the receipt and treatment of contaminated patients. The extent of the Center's participation depends on their work load and schedule for hospital patients at the time the exercise or drill is declared.

2.4 Health Physics and Radiological Monitoring Drills

Emergency Planning procedures develop guides for the preparation, execution, and documentation of health physics and radiological monitoring drills. Execution of these procedures is shared by Emergency Planning and Radiation Protection.

There are two (2) types of drills performed by Chemistry and Radiation Protection Departments:

- 2.4.1 Semi-annually, a health physics drill is conducted to monitor the response to and analysis of simulated elevated airborne releases, and direct radiation measurements in the environment. Normally, this drill is conducted in conjunction with a quarterly training drill.
- 2.4.2 Annually a drill is held which involves the collection of a type of environmental sampling media by the Chemistry Departments Environmental Group.

The NRC waived the requirement for a Reactor Coolant liquid sample drill in the SER related to Technical Specification (T.S.) Amendment 200. Amendment 200 deleted the Post Accident Sampling System (PASS).

2.5 Augmentation Call Out Drill

Notification and/or Augmentation Drills will be conducted at least every 12 months. The drills shall evaluate the licensee's capability to notify the minimum staffing positions in the Technical Support Center, Operations Support Center and the Emergency Operations Facility, in addition to meeting the staffing requirements of Table B-1 in PSRERP, Section B.

EXERCISES AND DRILLS

3.0 SCENARIOS

Scenarios for a drill are developed by either Emergency Planning or the group responsible for conducting the specific drill. Each drill should include a basic objective and appropriate evaluation criteria.

A special group is assigned the scenario development for the biennial exercise. An Emergency Planning procedure develops the plan for the preparation, execution, and documentation of the biennial exercise. This procedure requires input from major Federal, State, and local agencies, as well as OPPD staff, in order to define the objectives to be accomplished in the exercise. The scenario is then prepared to describe the following features:

- Objectives of the exercise.
- Date, time period, location, and participants.
- Simulated events.
- Time schedule of real and simulated events.
- Summary describing conduct of exercise.

Preparation of the scenario may include such items as identifying Control Room alarms, sequence of alarms, and instrument readings required to initiate the planned emergency exercises essential components.

A strong attempt is made to allow only key officials of Federal, State, and local support agencies to share scenario information in advance of exercises, in order that their participation in the exercise can be developed properly to demonstrate their maximum capabilities without losing confidentiality of exercise information.

4.0 CRITIQUES

In addition to the OPPD observers, offsite support agencies may provide observers for the biennial exercise. Observers are given information of the accident scenario prior to the exercise so that they may evaluate participants effectively.

Observers, evaluators, controllers and participants submit their comments and recommendations during a critique that is held after all drills and exercises. An Emergency Planning procedure is used to document and classify all significant comments and issues. Significant observations are incorporated into the plants Corrective Action Program for resolution.

5.0 ACTUAL EMERGENCIES

In the event of an actual emergency, credit for the response may be substituted for a drill or exercise if the event is properly documented according to the guidelines set forth in 10 CFR 50.47 and NUREG-0654, Rev.1/FEMA-REP-1.

RADIOLOGICAL EMERGENCY RESPONSE TRAINING

1.0 **FIRST AID TRAINING**

Personnel assigned the responsibility for responding to a medical emergency at the Fort Calhoun Station receive the American Red Cross Standard First Aid Training Program, or equivalent. Normally, these are members of the Fort Calhoun Station Fire Brigade which consists of Operations personnel assigned to shift crews. To maintain qualifications in accordance with the American Red Cross, CPR and First Aid Training are given once every two years. The training is conducted in accordance with American Red Cross standards and the associated training records are maintained in accordance with Training Department procedures.

2.0 **FIRE BRIGADE TRAINING**

Fire Brigade training is outlined in the TQ-DC-FC-206, Emergency Services Training Programs.

3.0 **GENERAL EMPLOYEE TRAINING**

An overview of the Emergency Plan is given to all personnel allowed unescorted access into the protected area at Fort Calhoun Station. Personnel receive this information during initial training and are requalified on an annual basis. This training includes identification of the emergency alarm, the fire alarm and the steps to follow for a plant and site evacuation.

4.0 **EMERGENCY PREPAREDNESS TRAINING PROGRAM**

TQ-DC-FC-113, ERO Training and Qualification identifies the initial and continuing training requirements for emergency response personnel.

As appropriate, members of the onsite emergency response organization are qualified to wear respiratory equipment, including self-contained breathing apparatus (SCBA) through the General Employee Training, Level III, Respiratory Protection Training Program.

5.0 **EMERGENCY RESPONSE ORGANIZATION TRAINING**

Requirements for initial training and continuing training of personnel assigned to the Emergency Response Organization is accomplished in accordance with TQ-DC-FC-113, ERO Training and Qualification.

Requirements for initial training and continuing training of security personnel are outlined in the Security Training and Qualification Plan.

FCS Management is responsible to ensure all members of the Emergency Response Organization receive the required initial training and continuing training.

RADIOLOGICAL EMERGENCY RESPONSE TRAINING

6.0 LOCAL SUPPORT SERVICES PERSONNEL TRAINING**6.1 Fire and Rescue Squads**

The Blair Fire Department and Rescue Squad and the Fort Calhoun Fire/Rescue are offered annual training by the Nebraska Emergency Management Agency. The Missouri Valley Fire and Rescue Squad and the Council Bluffs Fire and Ambulance Squad are offered annual training from the Iowa Homeland Security and Emergency Management Division. OPPD will provide assistance with training as requested.

This training normally includes an overview of the plant facility in order to familiarize them with the general area where their assistance may be requested, a review of the basic emergency classification levels, and a review of proper contamination control procedures.

6.2 Offsite Organizations

Lead representatives and selected responders falling under the jurisdiction of the following offsite response organizations shall be offered annual training/retraining.

- Washington County Emergency Management
- Harrison County Emergency Management
- Pottawattamie County Emergency Management
- Douglas County Emergency Management
- Nebraska Region 5/6 Emergency Management

Members of the Fort Calhoun Station may assist with the state of Nebraska Emergency Management Agency and the state of Iowa Homeland Security and Emergency Management Division in preparing and presenting, on an annual basis, training to their Emergency Management agencies in radiological emergency response. Both states have outlined in their respective emergency plans the type of training to be given. Their training is not limited to Emergency Management agencies, but may also include key public officials and emergency services management as well as the state and police agencies and hospitals.

State and local Emergency Management groups are invited to participate in the biennial exercise conducted by the plant. Their participation in the biennial exercise supplements the annual training.

6.3 Law Enforcement Agencies

Training for law enforcement agencies is typically conducted by the states of Iowa and Nebraska.

7.0 DOCUMENTATION OF TRAINING

FCS training procedures outline the process to document training of the Fort Calhoun Station Emergency Response Organization. An Emergency Planning procedure is used to verify training received by offsite organizations.

RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW AND DISTRIBUTION

1.0 RESPONSIBILITY FOR RADIOLOGICAL EMERGENCY RESPONSE PLANNING

- 1.1 The Plant Manager and subordinates are responsible for the implementation of actions required to periodically exercise the Post-Shutdown Radiological Emergency Response Plan (PSRERP), and the Implementing Procedures and for maintaining an effective Emergency Response Organization (ERO) staff.
- 1.2 The Plant Operations Review Committee is responsible for the review and approval of revisions to the PSRERP and the Implementing Procedure used for emergency classification in accordance with EP-FC-120 Attachment 2, EP Document Structure and Revision Process.
- 1.3 The Plant Manager is responsible for the final approval of PSRERP and the Implementing Procedure used for emergency classification, and for maintaining an effective emergency response capability at Fort Calhoun Station.
- 1.4 Nuclear Organization Responsible Management Contacts are responsible for selecting and proposing personnel to fill ERO positions and for ensuring support of the Post-Shutdown Radiological Emergency Response Plan.
- 1.5 The Manager- Site Emergency Planning is responsible for the development, administration and maintenance of the PSRERP, Implementing Procedures, and EP-FC procedures, review and approval of all Implementing Procedure changes (with the exception of the Implementing Procedure used for emergency classification), planner training, the overall development and implementation of the FCS ERO Training and Qualification Program and coordination of off-site emergency preparedness activities in the states of Iowa and Nebraska.
- 1.6 The Manager-Operations Training is responsible for the independent review and approval of the FCS ERO Training and Qualification Program.
- 1.7 The Emergency Planning Department is responsible for the preparation of all revisions to the PSRERP, Implementing Procedures and for coordinating the review processes necessary prior to the implementation of the revisions.

2.0 MAINTENANCE OF THE PSRERP AND IMPLEMENTING PROCEDURES

- 2.1 Emergency Planning personnel shall review the PSRERP and Implementing Procedures annually. Any changes found to be necessary as a result of the review shall be submitted using the established procedure change process.
- 2.2 Comments and recommendations made as a result of drills/exercises may require procedure changes to be initiated. These processes are detailed in the drill and exercise program.

RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW AND DISTRIBUTION

- 2.3 Recurring tasks ensure that copies of the annual review and annual audit reports are reviewed by the Manager-EP and any changes incorporated as necessary.
- 2.4 Changes to the plan will be submitted to the NRC within 30 days in accordance with 10CFR50.54(q). The Radiological Emergency Response Plan and approved changes to the plan will also be forwarded to appropriate organizations and individuals with responsibility for implementation of the plan. A new edition of the Post-Shutdown Radiological Emergency Response Plan will be issued when major technical and significant philosophical changes are required.
- 2.5 All emergency telephone numbers are updated quarterly.

3.0 AUDITS

- 3.1 The Nuclear Oversight Department will coordinate an independent audit of the Emergency Preparedness Program at intervals not to exceed 24 months or more frequently as required by 10CFR50.54(t)(1). The audit shall include the Radiological Emergency Response Plan, implementing procedures, practices, drills, exercises, training, readiness testing, equipment and interfaces with state and local governments. The results of this audit along with the recommendations for improvement must be documented and reported to the licensee's corporate and plant management. Copies of pertinent sections of the audit will be forwarded to appropriate state and local governments. This audit shall fulfill the requirements of 10CFR50.54(t). The results of this audit shall be retained for a minimum of five years.

LETTERS OF AGREEMENT

1.0 LETTERS OF AGREEMENT REVIEW

- 1.1 Written agreements establishing the concept of operations developed between Fort Calhoun Station and other support organizations having an emergency response role within the EPZs have been developed. These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. Agreement letters are not necessary with Federal Agencies who are legally required to respond based on Federal law; however, agreements are necessary if the agency was expected to provide assistance not required by law. Letters of Agreement with private contractors and others who provide services in support of Fort Calhoun Station shall be maintained on file. Letters of Agreement, as a minimum, state that the cooperating organization will provide their normal services in support of an emergency at the affected station. A contract/purchase order with a private contractor is considered acceptable in lieu of a Letter of Agreement for the specified duration of the contract.

Organizations deemed to be First Responders, who are identified as Local Law Enforcement Agency (LLEA), Volunteer Fire Fighting Organizations, Emergency Medical Services (EMS), and the University of Nebraska Medical Center (UNMC), will contain wording to ensure they will respond to a Radiological event to include a Hostile Action Based event.

LLEA will support Fort Calhoun Nuclear Station during a Radiological or Hostile Action Based event, in conjunction with the National Incident Management System upon notification by the station in accordance with established communications protocol.

Fire Fighting Organizations will respond to a Radiological Event, including a Hostile Action Based Event, in conjunction with the National Incident Management System in accordance with established response and communication protocol. Fire Fighting Organizations may be requested to obtain and provide fire response, fire apparatus, and fire personnel.

EMS Support will provide Emergency Medical Services in response to a Radiological Event including a Hostile Action Based Event. This includes transportation of patients from the Fort Calhoun Nuclear Station, including those who may have been exposed to radiation or may have injuries complicated by radioactive contamination, to the University of Nebraska Medical Center by use of established communication protocol.

UNMC agrees in the event of a Radiological event, including a Hostile Action Based Event, to ensure the capability for the evaluation of radiation exposure and uptake, including assurance that persons providing these services are

LETTERS OF AGREEMENT

adequately prepared to handle contaminated individuals and capable of providing medical support for any contaminated individual.

A contract/purchase order with a private contractor is considered acceptable in lieu of a Letter of Agreement for the specified duration of the contract.

i	<p style="text-align: center;"><u>NOTE</u></p> <p>Copies of Current Letters of Agreement are on file in the Emergency Planning Department.</p>	i
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1.2 Law Enforcement Support Organizations

- Nebraska State Patrol
- Iowa State Patrol
- Harrison County Sheriff's Department
- Washington County Sheriff's Department
- Pottawattamie County Sheriff's Department
- Douglas County Sheriff's Department

1.3 Fire and Rescue Support Organizations

- Blair Fire Department
- Fort Calhoun Fire and Rescue
- Missouri Valley Fire Department

1.4 Medical Support Organizations

- UNMC Regional Radiation Health Center

1.5 Nebraska's Governmental Support Organizations

- State of Nebraska Emergency Management
- State of Nebraska-Department of Health and Human Services, Regulation and Licensure
- Washington County Board of Supervisors
- Nebraska Game and Parks Commission
- Douglas County Emergency Management Agency

LETTERS OF AGREEMENT

1.6 Iowa's Governmental Support Organizations

- Iowa Homeland Security and Emergency Management Division
- Harrison County Board of Supervisors
- Pottawattamie County Board of Supervisors
- Pottawattamie County Division of Telecommunications

1.7 Industrial Support Organizations

- Union Pacific Railroad
- Westinghouse Electric

1.8 Other Support Organizations

- Nebraska Public Power District
- Metropolitan Utilities District
- National Weather Service
- Tierney-Blair LLC

1.9 Monitoring and Decontamination Support Organizations

- Omaha Fire Department Emergency Worker Decon

SUPPORTING EMERGENCY PLANS

The following is a list of plans for organizations that support or supplement emergency response to the Fort Calhoun Station. These are maintained in the EOF.

State

Iowa Radiological Emergency Response Plan, Part 2, Nuclear Power Plant Accident/Incident, Annex P of the Iowa Emergency Response Plan.

State of Nebraska - "Radiological Emergency Response Plan for Nuclear Power Plant Incidents"

Local

Crawford County (Iowa) - "Radiological Emergency Response Plan"

Dodge County (Nebraska) - "Radiological Emergency Reception Plan for Nuclear Power Plant Incidents"

Douglas County (Nebraska) - "Douglas County Supplement to Washington County Radiological Emergency Response Plan for Nuclear Power Plant Incidents"

Harrison County (Iowa) - "Radiological Emergency Response Plan for Nuclear Power Plant Incidents"

Pottawattamie County (Iowa) - "Radiological Emergency Response Plan"

Sarpy County (Nebraska) - "Radiological Emergency Response Plan for Nuclear Power Plant Incidents"

Washington County (Nebraska) - "Radiological Emergency Response Plan for Nuclear Power Plant Incidents"

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

PSRERP Appendix C provides a cross reference to track OPPD's implementation of the guidance provided by NUREG 0654, FEMA REP 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Rev. 1.

OPPD generally conforms to the guidance of NUREG-0654 in its Post-Shutdown Radiological Emergency Response Plan (PSRERP), Emergency Plan Implementing Procedures (EPIP) and other supporting documents. However, OPPD has and may make exceptions to NUREG-0654 guidance providing it does not reduce the effectiveness or intent of the PSRERP or EIPs.

For Section D, Emergency Classification System, OPPD uses the guidance of NEI-99-01, Development of Emergency Action Levels for Non-Passive Reactors. This variance from NUREG-0654 has been approved by the NRC.

All changes to the PSRERP are subject to a 10 CFR 50.54(q) screening, 10 CFR 50.47(b) and 10 CFR 50 Appendix E reviews. If the reviews determine that the change does not reduce the effectiveness or intent of the plan, the Plant Operating Review Committee (PORC) must then approve the change before it is implemented and sent to the NRC for review. If the screening process finds that the change does reduce the effectiveness or intent of the plan the change must be submitted to NRC for pre-approval prior to implementation.

All changes to EIPs and other documents governed by the PSRERP are also subject to 10 CFR 50.54(q) screening. If it is determined that the proposed EPIP or other plant document change requires a PSRERP change a full 10 CFR 50.47(b), 10 CFR 50 Appendix E review and PORC approval is required prior to implementation and submittal to the NRC for review. NRC pre-approval must be obtained if a change is determined to reduce the effectiveness or the intent of the plan.

Refer to Attachment 1 – PSRERP Titles, for names of PSRERP Sections

Refer to Attachment 2 – EPIP Titles, for names of EPIP's

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
A. Assignment of Responsibility			
A.1.a	Identify the State, Local, Federal and private sector organizations (including utilities) intended to be a part of the ERO.	A 1.1-1.8	N/A
A.1.b	Each organization shall specify its concept of operations and its relationship to the total effort.	A 2.0, C 1.0, 2.0, 3.0, 4.0 Appendix A	EP-FC-112, Crisis Communication Plan
A.1.c	Block diagram of organizational interrelationships.	FIG. A-1	N/A
A.1.d	Identify a specific individual (by title) who shall be in charge of the emergency response.	A 2.0	EP-FC-112
A.1.e	Provide for 24-hr per day response, including communications links.	A 1.0	EP-FC-112
A.2.a	State/Local applicability	N/A	N/A
A.2.b	State/Local applicability	N/A	N/A
A.3	Letters of Agreement	Appen. A	EP-FC-120 (Verification of PSRERP-Appendix A)
A.4	Capability of continuous 24-hour operations. Identify, by title, the individual in the principal organization responsible for continuity of resources.	A 1.0, 2.0	EP-FC-112

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
B. Onsite Emergency Organization			
B.1	Specify the onsite emergency organization of plant staff personnel for all shifts and its relation to the responsibilities and duties of the normal staff complement.	B 2.1, Table B-1	EP-FC-112-100, EP-FC-112-200, EP-FC-112-300, EP-FC-112-400, EP-FC-112-500
B.2	Designate an individual as emergency coordinator who is on shift at all times.	B 7.1, 7.2	EP-FC-112-100
B.3	Identify a line of succession for the emergency coordinator position and identify the specific conditions for higher level utility officials assuming this function.	B 7.0	EP-FC-112
B.4	Specification of responsibilities, and designation of which may not be delegated.	B 6.2	EP-FC-112
B.5	Positions or titles and major tasks to be performed by the persons assigned to the functional areas of emergency activity.	B 8/9/10/11/12, Table B-1	EP-FC-112-100, EP-FC-112-200, EP-FC-112-300, EP-FC-112-400, EP-FC-112-500, Crisis Communication Plan
B.6	Interfaces between and among the onsite, offsite, corporate, state and local government response organizations.	B-13, Table B-3	N/A
B.7	Each licensee shall specify the corporate, management, admin., and technical personnel who will augment plant staff in Table B-1 and in the following areas:	Table B-1 B 4.0	EP-FC-112-100, EP-FC-112-200, EP-FC-112-300, EP-FC-112-400, EP-FC-112-500
B.7.a	Logistics support, e.g., trans, comm, quarters, food, water, special equipment and supplies purchase;	B 9.0, 11.0 Table B-2	EP-FC-112-200-F-03, EP-FC-112-400-F-07
B.7.b	Technical support for planning reentry and recovery operations;	B 6.0	EP-FC-115
B.7.c	Management level interface with government authorities; and	B 13	EP-FC-112
B.7.d	Release of information to news media during an emergency (coordinated with governmental authorities).	B 12,13	EP-FC-112 Crisis Comm. Plan
B.8	Specification of contractor and private organizations to provide assistance.	A 1.0, B-13, B-15, Fig. B-3, Appen A	EP-FC-112-200-F-03, EP-FC-112-400-F-07, EP-FC-120 (Verification of PSRERP-Appendix A)
B.9	Expected services from local agencies e.g., police, fire, ambulance, medical, hospital.	A 1.0 Appen A B 15, Table B-1, Fig B-3 PSRERP Sec L	EP-FC-120 (Verification of PSRERP-Appendix A)

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
C. Emergency Response Support and Resources			
C.1	Incorporation of Federal response into the operational plan:	C1	
C.1.a	Specific persons to request Federal assistance (See A.1.d and A.2.a)	C1.1, B 6.3.1	EP-FC-112
C.1.b	Specific Federal resources expected and expected times of arrival, and	C 1.2-1.3	N/A
C.1.c	Specific licensee, state, local resources to support Federal response, air fields, command posts, tel lines, radio frequencies, and telecommunications centers.	C 2.0	N/A
C.2.a	State/Local Applicability	N/A	N/A
C.2.b	Licensee representative to offsite EOC's	C 3.0	EP-FC-112-400
C.3	Radiological laboratories, general capabilities and expected availability to provide radiological monitoring and analyses services which can be used in an emergency.	C 2.2 4.0	N/A
C.4	Identify Nuclear and other facilities, organizations or individuals which can be relied upon in an emergency to provide assistance. Such assistance shall be identified and supported by appropriate letters of agreement.	C 4.0, Appen A	EP-FC-112-200-F-03, EP-FC-112-400-F-07, EP-FC-120 (Verification of PSRERP Appendix A)

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
D. Emergency Classification System			
D.1 *	Establish an Emergency Action Level Scheme and Emergency Classification scheme.	D 2.0	EP-FC-1001 Addendum 3
D.2 *	Initiating conditions shall include NUREG-0654, Appendix 1 conditions and all FSAR postulated accidents.	D 1.0	EP-FC-1001 Addendum 3
D.3	State/Local applicability	N/A	N/A
D.4	State/Local applicability	N/A	N/A
* NEI-99-01 Guidance has replaced NUREG-0654 Appendix 1 guidance.			

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
E. Notification Methods and Procedures			
E.1	Notification procedures consistent with EALs including a means for verification of messages.	E 2.0	EP-FC-114
E.2	Procedures for alerting, notifying and mobilizing emergency response personnel.	E 2.0	EP-FC-112-100-F-06
E.3	Licensee and state/local establish content of the initial messages, and shall contain: class, release, potentially affected population, and if PARs are needed.	E 3.1	EP-FC-114
E.4	Provisions for follow-up messages, and shall contain the following:	E 3.2	EP-FC-114
E.4.a	Location of incident, and name and telephone number (or communications channel identification) of caller;	E 3.2	EP-FC-114
E.4.b	Date/time of incident;	E 3.2	EP-FC-114
E.4.c	Class of emergency;	E 3.2	EP-FC-114
E.4.d	Type of actual/projected release, and estimated duration/impact times;	E 3.2	EP-FC-114
E.4.e	Estimate of radioactive material released or being released and the points and height of releases.	E 3.0	EP-FC-110-200
E.4.f	Chemical and physical form of material, estimates of quantities/concentration of noble gases, iodines, and particulates;	E 3.0	EP-FC-110-200
E.4.g	Met conditions at appropriate levels: wind speed, direction (to and from) stability, precip, if any;	E 3.0	EP-FC-114
E.4.h	Type of actual projected does rates at site boundary, projected integrated dose at site boundary;	E 3.0	EP-FC-110-200
E.4.i	Projected dose rates and integrated dose at 2, 5, and 10 miles, include the sector(s) affected;	E 3.0	EP-FC-110-200
E.4.j	Estimate of any surface contamination inplant, onsite, offsite;	E 3.0	EP-FC-110-200
E.4.k	Licensee emergency response actions underway;	E 3.0	EP-FC-114
E.4.l	Recommended emergency actions, including protective measures;	E 3.2	EP-FC-114
E.4.m	Request for any needed onsite support by offsite organizations, and;	E 3.0	EP-FC-114
E.4.n	Prognosis for worsening/termination based on plant information.	E 3.2	EP-FC-114
E.5	State/Local applicability	N/A	N/A
E.6	Notification/prompt instructions to the public. (ANS)	E 4.0	EP-FC-112, EP-FC-121
E.7	Written messages for the public, consistent with the EALs, to include ad hoc PARs.	E 5.0	EP-FC-112

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
F. Emergency Communications			
F.1.a	Provision for 24 hour notification to and activation of the State/local ER network, with telephone link and backup, and 24-hour manning of communication links that initiate emergency response actions;	E 2.0 F 1.0 F 2.0 F 2.3 F 2.4	EP-FC-114
F.1.b	Communications with contiguous states/locals;	F 2.0, 2.3, 2.4, Fig F-1, F-2	EP-FC-114
F.1.c	Communications with Federal EROs;	F 2.3, 2.9, 2.10, F 2.12, F 2.13, Fig. F-1	EP-FC-114
F.1.d	Communication between the plant, EOF, state and local EOCs, and rad monitor teams;	F 2.4, 2.5, 2.8, 2.11, 2.17, Fig. F-1, Fig. F-2	EP-FC-112
F.1.e	Provision for alerting or activating emergency personnel in each response organization, and	E 2.0	EP-FC-112-100-F-06
F.1.f	Communication (by licensee) with NRC HQ and Regional Office EOC and the EOF and Rad Mon Team Assembly area.	F 2.3, 2.8, 2.9, 2.10, F-2.12, 2.22	EP-FC-112-400
F.2	Each organization shall ensure that a coordinated comm link for fixed and mobile medical support facilities exists.	F 3.0	EP-FC-112-300-AD-F-04, SA-FC-15-0007
F.3	Each organization shall conduct periodic testing of the entire emergency communications system. (See also H.10, N.2.a and Appendix 3).	N 2.1	EP-FC-124

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
G. Public Education and Information			
G.1	Each organization shall provide a coordinated periodic (at least annually) dissemination of information to the public re: how they will be notified, and what their actions should be.	G 1.0	Corporate Crisis Communication Plan; EP-FC-120
G.2	The public information program shall provide permanent and transient adult population within the EPZ an adequate opportunity to become aware of the information annually. This section also makes reference to: Signs, decals, posted notices, for hotel, motels, gas stations, and phone booths).	G 1.0	Corporate Crisis Communication Plan; EP-FC-120
G.3.a	Media contact point during an emergency (i.e., JIC, etc).	G 2.0	Corporate Crisis Communication Plan
G.3.b	Space for limited number of news media at the EOF.	G 2.0	Corporate Crisis Communication Plan
G.4.a	Each organization shall have a spokesperson.	G 3.0	Corporate Crisis Communication Plan
G.4.b	Each organization shall establish arrangements for timely exchange of information among designated spokes persons.	G 3.0	Corporate Crisis Communication Plan
G.4.c	Each organization shall establish coordinated arrangements for dealing with rumors.	G 2.1	Corporate Crisis Communication Plan
G.5	Each organization shall conduct coordinated programs at least annually to acquaint news media with the emergency plans, information concerning radiation, and points of contact for release of public information in an emergency.	G 4.0	EP-FC-120

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
H. Emergency Facilities and Equipment			
H.1	Each licensee shall establish a TSC and an OSC.	H 1.0, 3.0	EP-FC-112
H.2	Establish an EOF.	H 2.0	EP-FC-112
H.3	State/Local applicability	N/A	N/A
H.4	Timely activation of the facilities and centers described in the Plan.	H 1.3, 2.3, 3.3, 4.3	EP-FC-112
H.5	Each licensee shall identify and establish onsite monitoring systems that are to be used to initiate emergency measures, in accordance with Appendix 1, as well as those used to conduct assessment. The equipment shall include:		
H.5.a	Geophysical phenomena monitors, (e.g., met, hydrological, seismic);	I 2.0, I 2.1.2, I 2.1.3, I 2.2.3, I 2.3.2(c)	EP-FC-1001 Addendum 3
H.5.b	Rad monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);	H.1.2, 2.2, 3.2, 4.2, 5.0 I 2.2.1 I 2.2.2	EP-FC-1001 Addendum 3 EP-FC-110 EP-FC-112-500 EP-FC-113 RP-3500
H.5.c	Process monitors (e.g., reactor coolant system pressure and temp, containment pressure and temp, liquid levels, flow rates, status or lineup of equipment components); and	I 2.2	EP-FC-1001 Addendum 3 EP-FC-121
H.5.d	Fire and combustion products detectors.	I 2.1.1	EP-FC-1001 Addendum 3 SO-G-28, Station Fire Plan
H.6	Each licensee shall make provision to acquire data from or for emergency access to offsite monitoring and analysis equipment, including:		
H.6.a	Geophysical phenomena monitors (e.g., met, hydrologic, seismic):	I 2.1.2 2.1.3 2.2.3	EP-FC-1001 Addendum 3
H.6.b	Radiological monitors including ratemeters and sampling devices. Dosimetry shall be provided and shall meet, as a minimum, the NRC Rad Assessment Branch Tech Position for the Environmental Rad Monitoring program; and	H 2.2 5.2 5.3 5.6	EP-FC-112-500 EP-FC-113 RP-7000
H.6.c	Laboratory facilities, fixed or mobile.	C 2.0, C 4.0	EP-FC-112-500
H.7	Each organization, where appropriate, shall provide for offsite rad monitoring equipment in the vicinity of the plant.	I 2.3.3 J 2.5	EP-FC-112-500

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
H.8	Each licensee shall provide met instrumentation and procedures which satisfy the criteria in Appendix 2, and provisions to obtain representative current met data from other sources.	I 2.2.3	EP-FC-110-200 EP-FC-110-201
H.9	Each licensee shall provide for an onsite OSC which shall have adequate capacity and supplies, including, for example, respiratory protection, protective clothing, portable lighting, portable radiation monitoring equipment, cameras and communications equipment for personnel present in the OSC.	H 3.0	EP-FC-112-300
H.10	Inspect/inventory/operationally check equipment at least quarterly and after each use. There shall be sufficient reserves of instruments/equipment to replace those which are removed from emergency kits for calibration or repair.	H 5.0	EP-FC-124 RP-7000
H.11	Identify emergency kits, by general category (i.e., protective equipment, comm equipment, rad monitoring equipment.	H 5.0	EP-FC-124
H.12	Each organization will establish a central point for receipt and analysis of all field monitoring data and coordination of sample media.	H 2.1	EP-FC-112-500

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
I. Accident Assessment			
I.1	Identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents, and shall identify the plant parameter values or other information which correspond to the example initiating conditions of Appendix 1.	Sec D I 1.0 2.0	EP-FC-1001 Addendum 3
I.2	Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident shall include post accident sampling capability, radiation and effluent monitors, in-plant iodine instrumentation and containment radiation monitoring.	I 1.0 2.0	EP-FC-1001 Addendum 3 EP-FC-110-200 EP-FC-110-201
I.3	Each licensee shall establish methods and techniques to be used for determining:		
I.3.a	The source term of releases of radioactive material within plant systems.	D 1.0 Table D-1	EP-FC-110-200 EP-FC-110-201
I.3.b	The magnitude of the release of radioactive materials based on plant system parameters and effluent monitors.	D 2.0	EP-FC-111-AD-F-02 EP-FC-110-200 EP-FC-110-201
I.4	Each licensee shall establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various met conditions.	D 2.0	EP-FC-111-AD-F-02 EP-FC-110-200 EP-FC-110-201
I.5	Each licensee shall have the capability of acquiring and evaluating met information sufficient to meet the criteria of Appendix 2.	I 2.2.3	EP-FC-111-AD-F-02 EP-FC-110-200 EP-FC-110-201
I.6	Each licensee shall establish the methodology for determining the release rate/projected doses of the instrumentation used are offscale or inoperable.	I 3.1	EP-FC-111-AD-F-02 EP-FC-110-200 EP-FC-110-201
I.7	Field monitoring plans.	I 2.3	EP-FC-112-500
I.8	Provide methods, equipment and expertise to make rapid assessment of the actual or potential magnitude of any rad hazard through liquid or gaseous release pathways.	I 3.0	EP-FC-111-AD-F-02 EP-FC-110-200 EP-FC-110-201
I.9	Each organization shall have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} $\mu\text{Ci/cc}$ under field conditions.	I 3.0	EP-FC-112-500

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
I.10	Each organization shall establish means for relating the various measured parameters (e.g. contamination levels, water and air activity levels) to dose rates for key isotopes and gross radioactivity measurements.	I 3.0	EP-FC-110-200 EP-FC-110-201
I.11	Arrangements to locate and track the plume.	I 2.3	EP-FC-112-500 EP-FC-110-200 EP-FC-110-201

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
J. Protective Response			
J.1	Each licensee shall establish the means and time required to warn or advise individuals within the owner-controlled area, including:	J 1.3.2 J 1.1	
J.1.a	Employees not having emergency assignments;	J 1.1 J 1.3.2	EP-FC-113
J.1.b	Visitors;	J 1.1 J 1.3.2	EP-FC-113
J 1.c	Contractor and construction personnel, and	J 1.1 J 1.3.2	EP-FC-113
J 1.d	Other persons who may be in the public access areas or passing through the site or within the owner-controlled area.	J 1.1 J 1.3.2	EP-FC-113
J.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 rad conditions.	J 1.2 Table J-9	EP-FC-113
J.3	Each licensee shall provide for radiological monitoring of people evacuated from the site.	J 1.2	EP-FC-113
J.4	Each licensee shall provide for the evacuation of onsite non-essential personnel in the event of a Site Area or General Emergency and shall provide a decon capability at or near the monitoring point specified in J.3, above.	J 1.2	EP-FC-113
J.5	Each licensee shall provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names or missing individuals within 30 minutes of the start of the emergency and account for all onsite individuals continuously thereafter.	J 1.3.2	EP-FC-113 SY-FC-101-121
J.6	Each licensee shall, for people remaining onsite, make provisions for:		
J.6.a	Individual respiratory protection;	J 1.4.4	EP-FC-113 RP Manual
J.6.b	Use of protective clothing;	J 1.4.3	EP-FC-113 RP Manual
J.6.c	Use of KI.	J 1.4.5	EP-FC-113
J.7	Each licensee shall establish a mechanism for recommending PAs to State and locals.	J 2.1.1	EP-FC-114

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
J.8	Each licensees plan shall contain an ETE. These shall be in accordance with Appendix 4.	J 2.3	EP-FC-1001 Addendum 2
J.9	State/local applicability	N/A Table J-9 J-10	N/A
J.10	The organizations plans to implement protective measures for the EPZ shall include:		
J.10.a	Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas;	J 2.3.2 Fig J-1 J-2	EP-FC-113 ANS Map 10-Mile EPZ Map
J.10.b	Maps showing pop distribution around the Nuclear facility. This shall also be by evacuation areas;	J 2.3.3 Fig J-4 J-7 J-8	EP-FC-1001 Addendum 2
J.10.c	Means for notifying all segments of the transient and resident population;	J 2.2	EP-FC-121
J.10.d	State/local applicability	N/A	N/A
J.10.e	State/local applicability	N/A	N/A
J.10.f	State/local applicability	N/A	N/A
J.10.g	State/local applicability	N/A	N/A
J.10.h	State/local applicability	N/A	N/A
J.10.i	State/local applicability	N/A	N/A
J.10.j	State/local applicability	N/A	N/A
J.10.k	State/local applicability	N/A	N/A
J.10.l	State/local applicability	N/A	N/A
J.10.m	The basis for the choice of recommended protective actions from the EPZ during emergency conditions.	J 2.1 Table J-2 J-3 J-4	EP-FC-111
J.11	State applicability	N/A	N/A
J.12	State/local applicability	N/A	N/A

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
K. Radiological Exposure Control			
K.1	Each licensee shall establish onsite exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity PAGs for:		
K.1.a	Removal of injured persons;	K 1.0	EP-FC-113, RP Manual
K.1.b	Undertaking corrective actions;	K 1.0	EP-FC-113, RP Manual
K.1.c	Performing assessment actions;	K 1.0	EP-FC-113, RP Manual
K.1.d	Providing first aid;	K 1.0	SA-FC-15-0007 RP Manual
K.1.e	Performing personnel decon;	K 1.0	EP-FC-113, RP Manual
K.1.f	Providing ambulance service; and	K 1.0	EP-FC-113 SA-FC-15-0007RP Manual
K 1.g	Providing medical treatment services.	K 1.0	EP-FC-113 SA-FC-15-0007RP Manual
K.2	Each licensee shall provide an onsite rad protection program to be implemented during emergencies, including methods to implement exposure guidelines.	K 1.0	EP-FC-113 RP Manual
K.3.a	24 hour capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	K 1.2	RP Manual EP-FC-113
K.3.b	Each organization shall ensure that dosimeters are read at appropriate frequencies.	J 1.4.2 K 1.2	RP Manual
K.4	State/local applicability	N/A	N/A
K.5.a	Action levels for determining the need for decon.	K 2.1	RP-3500
K.5.b	Decon of personnel wounds, supplies, instruments and equipment and for waste disposal.	K 2.0, 3.0	RP-3500
K.6	Each licensee shall provide onsite contamination control measure including:		
K.6.a	Area access control;	K 2.0	RP-3500
K.6.b	Drinking water and food supplies;	K 2.4	EP-FC-112-200-F-14
K.6.c	Criteria for permitting return of areas and items to normal use (see ANSI 12.13).	K 2.5	RP-3500
K.7	Each licensee shall provide the capability for decon of relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination given to radiiodine contamination of the skin.	K 2.1, 2.2, 2.3 L 3.2	EP-FC-113

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
L. Medical and Public Health Support			
L.1	Each organization shall arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake, including assurances that persons providing these services are adequately prepared to handle contaminated persons.	L 3.0	RP-2200 SA-FC-15-0007
L.2	Each licensee shall provide for onsite first aid capability.	L 1.0	SA-FC-15-0007
L.3	State applicability	N/A	N/A
L.4	Each organization shall arrange for transportation of rad victims to medical support facilities.	L 2.0	SA-FC-15-0007

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
M. Recovery and Reentry Planning and post-Accident Operations			
M.1	Each organization shall develop plans and procedures for reentry and recovery and describe the means by which decisions to relax protective measures are reached.	M 1.3 2.0	EP-FC-115
M.2	Each licensee plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the recovery organization.	M 1.2	EP-FC-115
M.3	Each licensee and state plan shall specify the means for informing members of the response organizations that a recovery operation is to be initiated, and of any changes in the organizational structure that may occur.	M 1.2	EP-FC-115
M.4	Each plan shall establish a method for periodically estimating total population exposure.	I 3.0	EP-FC-200

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
N. Exercises and Drills			
N.1.a	Exercises shall be conducted as set forth in NRC and FEMA rules.	N	EP-FC-122
N.1.b	An exercise shall include mobilization of State and local personnel and resources...shall provide for a critique by federal and state observers/evaluators...scenario varied from year to year....6:00 PM and Midnite/Midnite and 6:00 AM exercises....under various weather conditions....some unannounced.	N 1.0	EP-FC-122
N.2.a	Communications drills:		
	Comm with State and Locals (monthly)	N 2.1	EP-FC-122
	Comm with Federal EROs and states within the IPZ (quarterly)	N 2.1	EP-FC-122
	Comm between the plant, state and local EOCs, and field assessment teams (annually)	N 2.1	EP-FC-122
N.2.b	Fire Drills	N 2.2	OP-FC-201-005
N.2.c	Medical Emergency Drills	N 2.3	EP-FC-122
N.2.d	Rad Monitoring Drills	N 2.4	EP-FC-122
N.2.e	HP Drills		
	Shall be conducted semi-annually which involve response to and analysis of simulated elevated airborne and liquid samples and direct rad measurements. The state drills need not be at each site.	N 2.4	EP-FC-122
	Analysis of inplant liquid samples with actual elevated rad levels including use of the PASS shall be included in HP drills by licensees annually.	N 2.4	EP-FC-122
N.3	Each organization shall describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives.The scenarios shall include, but not be limited to, the following:		
N.3.a	Basic objectives and appropriate evaluation criteria;	N 1.0, 2.0, 3.0	EP-FC-122
N.3.b	Dates, time periods, places, and participating organizations;	N 1.0, 2.0, 3.0	EP-FC-122
N.3.c	The simulated events;	N 1.0, 2.0, 3.0	EP-FC-122
N.3.d	Time schedule of real and simulated initiating events;	N 1.0, 2.0, 3.0	EP-FC-122
N.3.e	A narrative summary;	N 1.0, 2.0, 3.0	EP-FC-122

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
N.3.f	A description of arrangements and advance materials for official observers.	N 1.0, 4.0	EP-FC-122
N.4	An exercise critique.	N 4.0	EP-FC-122
N.5	Evaluating the comments from observers and participants.	N 4.0	EP-FC-122

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
O. Radiological Emergency Response Training			
O.1	Each organization shall assure training of appropriate individuals.	O 4.0 5.0	TQ-DC-FC-113
O.1.a	Each facility shall train members of the ERO.	O 5.0	TQ-DC-FC-113
O.1.b	State/local applicability	O 6.0	N/A
O.2	Training shall include drills.	N 2.0	TQ-DC-FC-113
O.3	Licensee training for First Aid teams to include ARC Multi-Media or equivalent.	O 1.0	TQ-DC-FC-206
O.4	Each organization shall establish a training program for ERO. Training shall be in the following categories:		
O.4.a	Directors or coordinators of EROs;	O 5.0	TQ-DC-FC-113
O.4.b	Accident assessment personnel;	O 5.0	TQ-DC-FC-113
O.4.c	Rad Mon Teams and rad analysis personnel;	O 5.0	TQ-DC-FC-113
O.4.d	Police, security and fire fighting personnel;	O 6.0	EP-FC-10 SY-FC-150
O.4.e	Repair and damage control/correctional action teams (onsite);	O 5.0	TQ-DC-FC-113
O.4.f	First aid and rescue personnel;	O 1.0 6.0	TQ-DC-FC-206
O.4.g	Local support services personnel, including CD/Emergency Services personnel;	O 6.0	EP-FC-10
O.4.h	Medical Support Personnel;	L 3.2 O 6.0	TQ-DC-FC-206
O.4.i	Licensee Headquarters support personnel;	O 4.0	TQ-DC-FC-113 Crisis Communication Plan
O.4.j	Personnel responsible for transmission of emergency information and instructions.	O 4.0	TQ-DC-FC-113
O.5	Initial and annual retraining.	O 5.0	TQ-DC-FC-113

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

NUREG Section	NUREG Criteria	PSRERP Section	Implementing Procedure(s)
P. Responsibility for the Planning Effort; Development, Periodic Review and Distribution of Emergency Plans			
P.1	Each organization shall provide for the training of individuals responsible for the planning effort.	P 1.0	EP-FC-11
P.2	Each organization shall identify by title the individual with overall planning authority;	P 1.0	EP-FC-11
P.3	Each organization will designate an Emergency Planning Coordinator.	P 1.0	EP-FC-11
P.4	Each organization shall update its plan and agreements as needed, review and certify it to be current on an annual basis. Changes will take into consideration items from drills and exercises.	P 2.0	EP-FC-120
P.5	Plans and plan changes shall be forwarded to all organizations and appropriate persons with EP responsibility. Revised pages dated and marked to show changes.	P 2.0	EP-FC-120
P.6	List supporting plans and source.	APPEN B	N/A
P.7	Each plan shall contain an appendix listing procedures required to implement the plan. The listing shall include the sections of the plan to be implemented by each procedure.	APPEN C	N/A
P.8	Each plan shall contain a table of contents. Plans submitted for review should be cross-referenced to these criteria.	APPEN C	N/A
P.9	Independent review of the plans.	P 3.0	EP-FC-120
P.10	Quarterly update of plan telephone numbers.	P 4.0	EP-FC-124

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

Attachment 1 – PSRERP Titles

Document	Document Title
PSRERP	Post-Shutdown Radiological Response Plan For Fort Calhoun Station
PSRERP-SECTION A	Assignment of Organizational Responsibility (Organizational Control)
PSRERP-SECTION B	Organizational Control of Emergencies
PSRERP-SECTION C	Emergency Response Support and Resources
PSRERP-SECTION D	Emergency Classification System
PSRERP-SECTION E	Notification Methods and Procedures
PSRERP-SECTION F	Emergency Communications
PSRERP-SECTION G	Public Education and Information
PSRERP-SECTION H	Emergency Facilities and Equipment
PSRERP-SECTION I	Accident Assessment
PSRERP-SECTION J	Protective Response
PSRERP-SECTION K	Radiological Exposure Control
PSRERP-SECTION L	Medical and Public Health Support
PSRERP-SECTION M	Recovery and Reentry Planning and Post Accident Operations
PSRERP-SECTION N	Exercises and Drills
PSRERP-SECTION O	Radiological Emergency Response Training
PSRERP-SECTION P	Responsibility for the Planning Effort: Development, Periodic Review and Distribution
PSRERP-APPENDIX A	Letters of Agreement
PSRERP-APPENDIX B	Supporting Emergency Plans
PSRERP-APPENDIX C	NUREG/PSRERP/Implementing Procedure Cross Reference List
PSRERP-APPENDIX D	OPPD Resolution #4731, Radiological Emergency Response Plan Authority
PSRERP-APPENDIX E	Definitions and Abbreviations

NUREG/PSRERP/IMPLEMENTING PROCEDURE CROSS REFERENCE LIST

Attachment 2 – EPIP Titles

Document	Document Title
EP-FC-1001 Addendum 3	EMERGENCY ACTION LEVELS FORT CALHOUN STATION
EP-FC-110	ASSESSMENT OF EMERGENCIES
EP-FC-111	EMERGENCY CLASSIFICATION AND PROTECTIVE ACTION RECOMMENDATIONS
EP-FC-112	EMERGENCY RESPONSE ORGANIZATION (ERO) EMERGENCY RESPONSE FACILITY (ERF) ACTIVATION AND OPERATION
EP-FC-112-100	CONTROL ROOM OPERATIONS
EP-FC-112-200	TSC ACTIVATION AND OPERATION
EP-FC-112-300	OPERATIONS SUPPORT CENTER ACTIVATION AND OPERATION
EP-FC-112-400	EMERGENCY OPERATIONS FACILITY ACTIVATION AND OPERATION
EP-FC-112-500	EMERGENCY ENVIRONMENTAL MONITORING
EP-FC-112-700	ALTERNATE FACILITY OPERATION
EP-FC-113	PERSONNEL PROTECTIVE ACTIONS
EP-FC-114	NOTIFICATIONS
EP-FC-115	TERMINATION AND RECOVERY

OPPD RESOLUTION # 4731, RADIOLOGICAL EMERGENCY RESPONSE PLAN
AUTHORITY



BOARD OF DIRECTORS

Board Action

January 13, 1997

ITEM

Renewal and Update of Board Resolution No. 3083 for the Fort Calhoun Station (FCS) Radiological Emergency Response Plan (RERP).

PURPOSE

Update the current Board Resolution which is Appendix D to the FCS RERP to reflect the development of several guidance documents for radiological emergency preparedness that has been implemented since the initial issuance of NUREG-0654/FEMA-REP-1, Revision 1, dated November 1980. Nuclear power facilities are no longer required to maintain strict adherence to the specific criteria in NUREG-0654/FEMA-REP-1.

FACTS

- a. Requirements for strict adherence to NUREG-0654/FEMA-REP-1 were removed from Section 10 of the Code of Federal Regulations, Part 50, in the late 1980's.
- b. The Fort Calhoun Station has adopted several response concepts from other emergency preparedness documents, including: the Nuclear Regulatory Commission's (NRC) Response Technical Manual, the Nuclear Energy Institute's Alternative Emergency Action Levels as approved by the NRC, various radiological emergency preparedness guidance documents issued by the Federal Emergency Management Agency, and other alternative guidance which has been approved by the NRC.
- c. 10CFR50, Appendix E, Section IV.A.2.a. requires a "detail discussion" of, "Authorities, responsibilities, and duties of the individual(s) who will take charge during an emergency." The positions identified within the FCS RERP that must have full authority to take all necessary initial emergency response actions are classified as "Command and Control" positions.

ACTION

Board approval of the Resolution.

RECOMMENDED:

A handwritten signature in dark ink, appearing to read "W. G. Gates", is written over a horizontal line.
W. G. Gates

APPROVED FOR BOARD CONSIDERATION:

A handwritten signature in dark ink, appearing to read "F. M. Petersen", is written over a horizontal line.
F. M. Petersen

WGG:llz

Attachment: Resolution

OPPD RESOLUTION # 4731, RADIOLOGICAL EMERGENCY RESPONSE PLAN
AUTHORITY



OMAHA PUBLIC POWER DISTRICT

**CERTIFIED COPY OF
RESOLUTION NO. 4731**

WHEREAS, the United States nuclear industry has refined activities, personnel training, equipment and facilities required for immediate response to a nuclear incident since the March 28, 1979 accident at the Three Mile Island nuclear electric generating facility, and

WHEREAS, Title 10, Code of Federal Regulations, Part 50, entitled "Energy," contains the minimum requirements for a Radiological Emergency Preparedness (REP) program at any U.S. nuclear power reactor site, and

WHEREAS, additional guidance documents, such as, NUREG-0654, FEMA-REP-1, Revision 1, Nuclear Regulatory Commission's (NRC) Response Technical Manual, Federal Emergency Management Agency's various REP documents, and others, also contain activities which may be incorporated into a nuclear power reactor's radiological emergency preparedness (REP) program, and

WHEREAS, minimum REP acceptance criteria requires that each licensee shall designate personnel who shall have the authority and responsibility to immediately and unilaterally initiate any emergency actions, without prior Board approval, including awards of emergency related contracts and expenditures of District funds, as deemed absolutely necessary.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Omaha Public Power District authorizes and directs the President and Chief Executive Officer of Omaha Public Power District, or designee, to appoint and train emergency "Command and Control" positions to take immediate and decisive actions following any occurrence at the Fort Calhoun Station, which results in an emergency classification per the station's NRC approved Radiological Emergency Response Plan, to mitigate the consequences of the occurrence as to protect the health and safety of the public and plant personnel and minimize any impact to the environment.

I HEREBY CERTIFY THAT THE FOREGOING IS A TRUE AND CORRECT COPY OF RESOLUTION NO. 4731 ADOPTED BY THE BOARD OF DIRECTORS OF THE OMAHA PUBLIC POWER DISTRICT AT A MEETING HELD ON JANUARY 15, 1998.




Assistant Secretary

DEFINITIONS AND ABBREVIATIONS

1.0 DEFINITIONS AND ABBREVIATIONS

- 1.1 ALARA - As Low As is Reasonably Achievable - Means making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest
- 1.2 ANS - Alert Notification System - Described in Section E
- 1.3 AR - Action Request
- 1.4 Assessment Actions - The appropriate actions taken during or following an accident evaluation before implementing the specific corrective and/or protective actions
- 1.5 CDE - Committed Dose Equivalent - (H_{T50}) The dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50 year period following the intake
- 1.6 CFR - Code of Federal Regulations
- 1.7 CHP - Conference Health Physics Network - Described in Section E
- 1.8 Committed Effective Dose Equivalent - (H_{E50}) Sum of the products of the weighing factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to these organs or tissues
- 1.9 Control Room - Functions described in Section H
- 1.10 COP - Conference Operations (Phone) Network- Described in Section E
- 1.11 Corrective Actions - Measures taken to correct or mitigate an emergency condition at its origin in order to prevent an uncontrolled release of radioactive material or reduce the magnitude of the release.
- 1.12 CR - Control Room - Functions described in Section H
- 1.13 Deep Dose Equivalent - (DDE or H_d) applies to external whole-body exposure, is the dose equivalent at a tissue depth of 1 cm (1000 mg/cm²)
- 1.14 ΔT - Delta Temperature - The difference in temperature between points 10 meters and 60 meters above the ground in units of centigrade. The value displayed on the ERFCS equates to; $100m \Delta T = [(T @ 60m - T @ 10m) \times 2]$

DEFINITIONS AND ABBREVIATIONS

- 1.15 DLR – Dosimeter of Legal Record - A device worn by plant personnel to measure the amount of radiation received.
- 1.16 DOE - Department Of Energy - Role is discussed in Section C
- 1.17 Drill - Described in Section N
- 1.18 DSAR - Defueled Safety Analysis Report
- 1.19 DSC – Dry Shielded Canister
- 1.20 DSO - Director of Site Operation (NRC)
- 1.21 EAD Electronic Alarming Dosimeter
- 1.22 URI/RASCAL - Emergency Assessment of Gaseous and Liquid Effluent-Section E
- 1.23 EAL - Emergency Action Level - Described in Section D
- 1.24 EAS - (Emergency Alerting System) - Described in Section E
- 1.25 ECCS - Emergency Core Cooling System
- 1.26 ENS - (FTS-ENS) Federal Telephone System Emergency Notification System - Described in Section F
- 1.27 EOC - Emergency Operations Center - Discussed in Sections C and F
- 1.28 EOF - Emergency Operations Facility - Functions described in Section H
- 1.29 EPA - Environmental Protection Agency - Role Discussed in Section C
- 1.30 EPIP - Emergency Plan Implementing Procedures
- 1.31 EPT - Emergency Plan Test - Described in Section P
- 1.32 EPZ - Emergency Planning Zone - Described in Section J
- 1.33 ERFCS - Emergency Response Facilities Computer System - Described in Section H
- 1.34 ERO - Emergency Response Organization - Duties Described in Section B
- 1.35 Exercise - Described in Section N
- 1.36 FAA - Federal Aviation Administration - Role discussed in Section C
- 1.37 FEMA - Federal Emergency Management Agency - Role described in Section C

DEFINITIONS AND ABBREVIATIONS

- 1.38 FTS - Federal Telecommunications Systems (NRC Phone Circuits) - Discussed in Section F
- 1.39 GAR - Governor's Authorized Representative - Authorized by letters in Appendix A
- 1.40 HPN - Health Physics Network - Described in Section F
- 1.41 HSM – Horizontal Storage Module
- 1.42 ISFSI – Independent Spent Fuel Storage Installation
- 1.43 IPZ - Ingestion Pathway Zone - Discussed in Section J
- 1.44 JIC – Joint Information Center - Functions discussed in Section B
- 1.45 NAWAS - National Warning System - Functions described in Section F
- 1.46 NRC - Nuclear Regulatory Commission - Role discussed in Section C
- 1.47 NWS - National Weather Service - Role discussed in Section C
- 1.48 Operation Liaison Network- Described in Section F
- 1.49 OSC - Operation Support Center - Functions described in Section H
- 1.50 PABX - Private Automatic Branch Exchanges - Function described in Section H
- 1.51 PAG - Protective Action Guideline - Discussed in Section J
- 1.52 PAR - Protective Action Recommendation - Discussed in Section J
- 1.53 Protective Actions - Discussed in Section J
- 1.54 REM - The special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rems is equal to the absorbed dose in rads multiplied by the quality factor (1 rem = .01 sievert).
- 1.55 SDE - Shallow Dose Equivalent - Is the dose equivalent at a tissue depth of 0.007 cm or 7 mg/cm² averaged over an area of 10 cm². It applies to the external exposure of the skin or an extremity.
- 1.56 TEDE - Total Effective Dose Equivalent - The sum of the deep-dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures). This represents the combined dose (DDE+CEDE) to a worker.
- 1.57 TSC - Technical Support Center - Functions described in Section H
- 1.58 UNMC Regional Radiation Health Center - Role discussed in Section L