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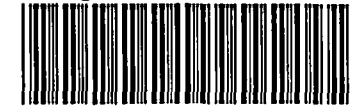
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Please review the changes from the previous revision. Then replace the appropriate Emergency Plan pages below and enter the change number on the "Record of Changes Form."

INSERT	REVISION DATE	REMOVE
Cover Sheet Table of Contents	December 2004	Cover Sheet and i through x
Section 1	December 2004	1-1 through 1-7
Section 2	December 2004	2-1
Section 3	December 2004	3-1
Section 4	December 2004	4-1 through 4-5
Section 5	December 2004	5-1 through 5-20
Section 6	December 2004	6-1 through 6-18
Section 7	December 2004	7-1 through 7-15
Section 8	December 2004	8-1 through 8-8
Section 9	December 2004	9-1 through 9-4
Appendix A	December 2004	A-1 through A-11
Appendix B	December 2004	B-1 through B-21
Appendix C	December 2004	C-1 through C-6

Appendix D	December 2004	D-1 through D-5
Appendix E	December 2004	E-1 through E-2
Appendix F	December 2004	F-1 through F-4
Appendix G	December 2004	G-1 through G-9
Appendix H	December 2004	H-1 through H-9
Appendix I	December 2004	I-1 through I-8
Appendix J	December 2004	J-1 through J-3
Appendix K	December 2004	K-1 through K-2

**MILLSTONE STATION EMERGENCY PLAN
MAJOR CHANGES FROM PREVIOUS REVISION
REVISION 30 UPDATED TO REVISION 31**

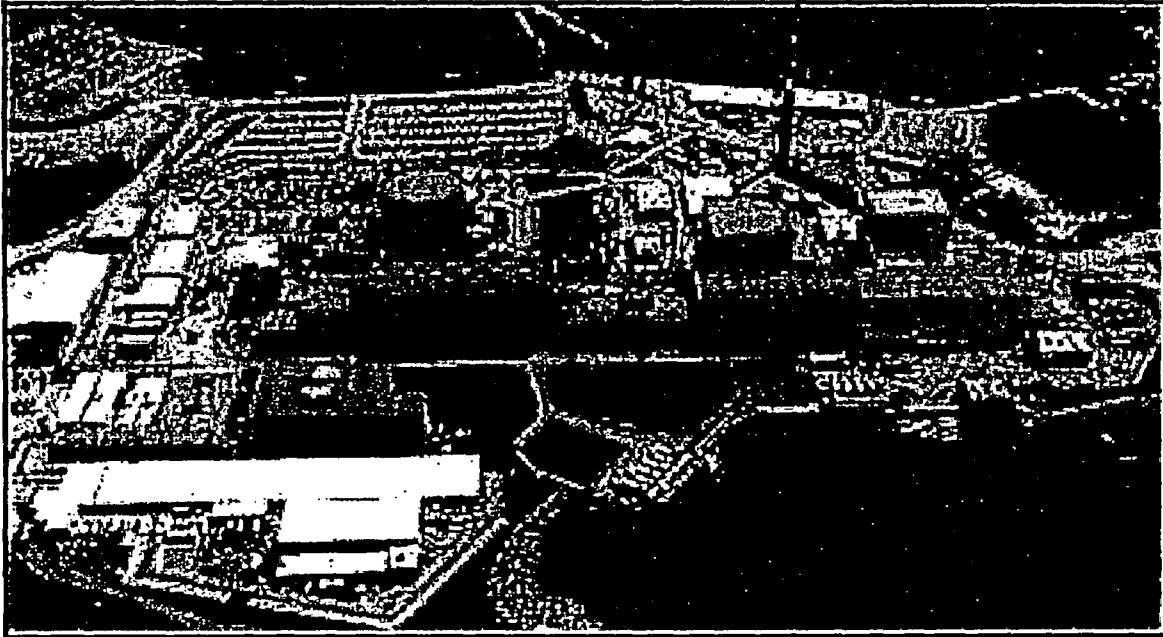
Change No.	Correspondence No. Sender/Receiver/ Date	Correspondence Subject	Section No. Affected	Description of Change
Revision 31	None	NA	Section 1.1	Added ISFSI structure sentence, "Millstone also has an Independent Spent Fuel Storage Installation (ISFSI), which is located east of the facility within the Protected Area."
Revision 31	None	NA	Section 5	Changed Manager Operational Support Center from Unit Specific to Non-Specific. This is an administrative correction from a previous E-Plan change.
Revision 31	None	NA	Table 5-1	Changed OSC Assistant from Unit Specific to Non-Specific.
Revision 31	None	NA	Section 6.1	Under Meteorological conditions, changed (if applicable) to (if available).
Revision 31	None	NA	Section 8	Changed responsibility for conducting Fire Drills from Manager, Training to Manager, Operations.
Revision 31	None	NA	Section 8.4	Deleted description of Information Center and added description of Educational Outreach Program.
Revision 31	None	NA	Appendix A	Added definition for "Confinement Boundary" and "ISFSI". Added "ISFSI" to the Abbreviations and Acronyms list.
Revision 31	None	NA	Appendix B	Reviewed Letters of Agreement. Updated agreement B-14, Town of Waterford Fire Service, added B-21, CYAPCO

MILLSTONE STATION EMERGENCY PLAN
MAJOR CHANGES FROM PREVIOUS REVISION
REVISION 30 UPDATED TO REVISION 31

Revision 31	None	NA	Figure C-5	Added the ISFSI to the "Map of Millstone Evacuation Routes".
Revision 31	None	NA	Appendix I, page 4 of 8	Changed Unit 2 EAL TU2 #7 to include, "or a loaded ISFSI Confinement Boundary".
Revision 31	None	NA	Appendix I, page 4 of 8	Changed Unit 2 EAL GU1 to include, "Fire Affecting a Loaded ISFSI Confinement Boundary NOT extinguished Within 15 Minutes of Notification."

EMERGENCY PLAN

MILLSTONE POWER STATION



UNIT 1 DSAR - SECTION 6.3

UNIT 2 FSAR - APPENDIX 12A

UNIT 3 FSAR - SECTION 13.3

REVISION 31

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1. Concept of Emergency Operations

1.1. Description of the Millstone Emergency Planning Zones

The Millstone Power Station is located on Long Island Sound within the Town of Waterford, Connecticut. Millstone has three nuclear power plants: Unit 1, a boiling water reactor, which is permanently shutdown and defueled¹ and being decommissioned; and Units 2 and 3 which are pressurized water reactors. Millstone also has an Independent Spent Fuel Storage Installation (ISFSI), which is located east of the facility within the Protected Area. Millstone has an approximate 10-mile Emergency Planning Zone (EPZ) for the plume exposure pathway and an approximate 50-mile planning zone for the Ingestion Exposure Pathway (IPZ). Millstone Station occupies approximately 500 acres and is located 3.2 miles west-southwest of New London and 40 miles southeast of Hartford.

Local communities within the Millstone plume exposure pathway EPZ include East Lyme, Fishers Island (NY), Groton City, Groton Town, Ledyard, Lyme, Montville, New London, Old Lyme, and Waterford. The Plum Island Animal Disease Center, while physically located within 10 miles of Millstone, is a non-residential federal facility. There are two states within the plume exposure pathway EPZ, Connecticut and New York. The states within the IPZ are Connecticut, Rhode Island, and New York (see Appendix C). Although a small portion of Massachusetts is within the 50-mile radius of Millstone, this area has intentionally been omitted from the Emergency Plan due to the distance from the site and the insignificant amount of land area involved. The Federal Emergency Management Agency (FEMA) has agreed that Massachusetts shall be excluded from the Millstone approximate 50-mile IPZ.

The Millstone Plume EPZ is primarily a residential area, with some urban sections. Peak population totals, including year round residents, seasonal residents, and transients are approximately 206,000 (based on 2000 census data). Appendix J provides a population distribution within the approximate 10-mile EPZ.

The Millstone approximate 10-mile EPZ contains three major industrial facilities: Dow Chemical Corporation (Ledyard), Pfizer Corporation and Electric Boat Division of General Dynamics Corporation (Groton); an air transportation facility (Groton/New London Airport); four military installations: U.S. Naval Submarine Base (Groton), U.S. Coast Guard Academy (New London), Connecticut National Guard Camp and Stone's Ranch Military Reservation (East Lyme); and the State of Connecticut maintained York Correctional Institute (East Lyme).

¹ In accordance with 10CFR50.82(a)(1)(i) and 10CFR50.82(a)(1)(ii), Millstone Unit 1 submitted certification to the NRC that as of July 1, 1998, power operations had permanently ceased and fuel had been permanently removed from the reactor vessel.

1.2. Interrelationships of State/Local/Licensee Emergency Plans

The objective of the Millstone Power Station Emergency Plan is to delineate assessment and protective actions to be taken to minimize the consequences of an incident to the health and safety of the public. Separate plans exist for the licensee, state and local communities within the plume exposure pathway EPZ and the host communities (Table 1-1) to which populations will evacuate. The plans encompass emergency preparedness actions taken by the licensee, the State (all applicable agencies) and the affected local communities. These plans are linked together by a broad overall concept of operations through mutual planning and common notification and assessment procedures. Various federal agencies including the Nuclear Regulatory Commission (NRC), Federal Emergency Management Agency (FEMA), Department of Energy (DOE), and Environmental Protection Agency (EPA) also respond to an emergency in accordance with established federal plans. The licensee will maintain contact with the NRC, the Connecticut Department of Environmental Protection (DEP), and the Connecticut Office of Emergency Management (OEM). The OEM is responsible for coordinating emergency activities with state and federal agencies and notification of adjoining state governments.

Figure 1-1 illustrates general responsibilities of state, local and licensee emergency organizations. Implementing procedures have been developed to ensure planning effectiveness.

The licensee, state, and local emergency plans include responsibilities and functions and identify resources for each organization. Local radiological emergency response procedures are reviewed and approved by appropriate government officials. State and local emergency preparedness programs include training and periodic drills or exercises.

1.3. Actions

Figure 1-1 outlines responsibilities and actions of the licensee, state, and local communities. Figure 1-2 outlines actions and responsibilities of state and local agencies. Figure 1-3 outlines actions and responsibilities associated with each emergency response facility. The actions escalate through each successive emergency classification.

The licensee response to an incident includes: assessment of plant conditions, incident classification, notification of state and local officials, mitigation of plant system degradation, and assessment of accident consequences. The licensee will classify the incident in accordance with federal guidelines and the State of Connecticut Nuclear Incident Classification Scheme. The licensee will notify designated Connecticut and New York state and local officials and licensee personnel, as appropriate, within 15 minutes of an incident classification. In Connecticut, the state agencies notified are the OEM, the State Police and the DEP, as well as officials in the local EPZ communities. In New York, this notification is provided to Suffolk County and Fishers Island, while a courtesy notification is provided to the State of New York. NRC notification by the licensee is completed via telephone.

After initial classification, the licensee ensures that plant conditions are evaluated and updated information or event reclassification is completed as necessary.

1.4. Assistance

State agencies will mobilize resources as necessary to support local communities in protective action implementation. The Director of OEM is authorized to request assistance from federal agencies as necessary.

The licensee emergency response facilities provide office space for federal agency responders.

1.5. Public Notification

Public protective actions will be implemented by use of the Public Alerting System and the Emergency Alert System (EAS). The Public Alerting System consists of approximately 160 electronic sirens at various locations within the Plume EPZ. Procedures for providing prompt notification and information to the public are contained within the State Radiological Emergency Response Plan (RERP). Local agencies will initiate responses to implement and support the protective actions. In the event evacuation is necessary, reception centers that are greater than 15 miles from the station have been designated (Table 1-1).

1.6. Public Information Program

A public information program has been developed to inform EPZ populations of actions to be taken during an emergency. This program, as described in Section 8.0, has been developed for the media and general population and provides general radiological and emergency response information.

Table 1-1

Off-Site Host Community and Reception Centers

<u>Local Community</u>	<u>Host Community-Reception Facility</u>
East Lyme	New Haven - Southern Connecticut State University Moore Fieldhouse
Fishers Island, New York	Windham - Windham High School
Groton, City of	Norwich - Kelly Middle School
Groton, Town	Norwich - Kelly Middle School
Ledyard	Storrs - University of Connecticut Fieldhouse
Lyme	New Haven - Southern Connecticut State University Moore Fieldhouse
Montville	East Hartford - East Hartford High School
New London	Windham - Windham High School
Old Lyme	New Haven - Southern Connecticut State University Moore Fieldhouse
Waterford	East Hartford - East Hartford High School

Figure 1-1

Emergency Response Organizations Responsibilities

A. Licensee Responsibilities

1. Classification of event.
2. Activation of on-site TSC, OSC and EOF within 60 minutes of ALERT or higher level incident notification
3. Notification of licensee, State of Connecticut, State of New York (Suffolk County) and EPZ communities.
4. On-site mitigation actions.
5. On-site corrective actions.
6. Protective Action recommendations to the State of Connecticut, as required.
7. Off-site radiological monitoring.
8. Assist State of Connecticut environmental sampling program.

B. State of Connecticut Responsibilities

1. Activation of State EOC and Joint Media Center at SITE AREA EMERGENCY or higher level incident notification (standby at ALERT).
2. Notification of host communities.
3. Notification of Rhode Island and New York (50-mile EPZ states).
4. Protective action decision making after declaration of State of Emergency by the Governor.
5. Activation of Emergency Alert System (standby at ALERT, activate at SITE AREA EMERGENCY or higher level incident notification).
6. Off-site radiological monitoring team deployment and environmental sample collection.
7. Implementation of the Traffic Management Plan for affected areas, as required.

C. 10-Mile EPZ Communities

1. Activation of EOCs at SITE AREA EMERGENCY and higher level incident notification (standby at ALERT).
2. Protective action decision making prior to declaration of State of Emergency by Governor.
3. Activation of the Public Alert System (sirens) at SITE AREA EMERGENCY and higher level incident notification in coordination with Emergency Alert System activation.
4. Implementation of protective actions.

D. Host Communities

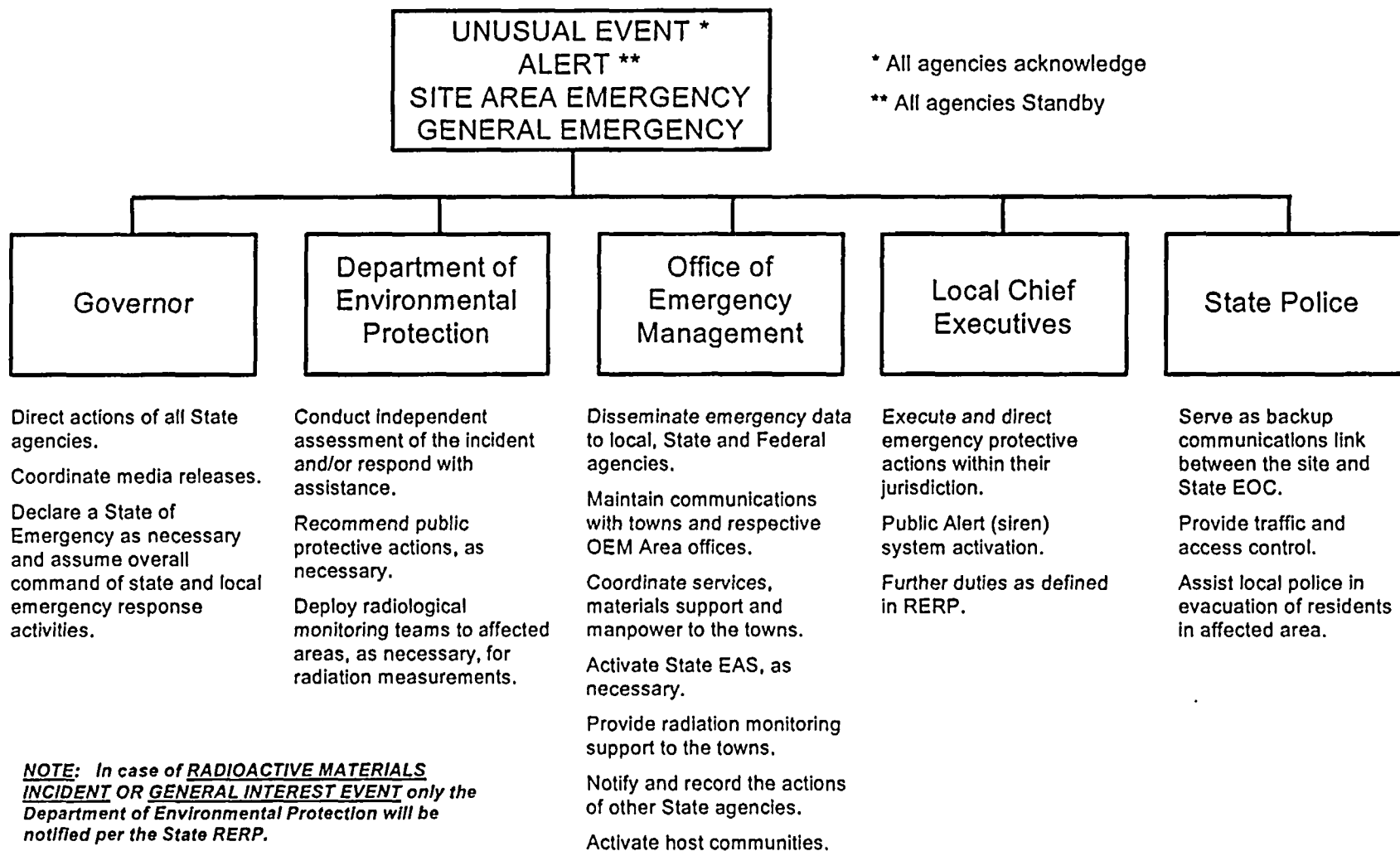
1. Standby at SITE AREA EMERGENCY (as directed)
2. At the direction of the State OEM, activate reception center and shelter areas at GENERAL EMERGENCY incident.

E. 50-mile IPZ States

1. Activate EOCs at SITE AREA EMERGENCY (Standby at ALERT) level.
2. Monitor food pathways.
3. Implement ingestion pathway protective actions.

Figure 1-2

Responsibilities of State and Local Agencies For The Various Incident Classifications



* All agencies acknowledge

** All agencies Standby

Figure 1-3

Licensee Emergency Response Facility Responsibilities (ALERT or higher event classifications)

Control Room

- Initial incident classification²
- Implement mitigation actions
- Implement corrective actions
- Declare incident classification changes, as necessary
- Perform radiopager notifications, develop and transmit incident reports²
- On-Shift Dose assessment
- Initial NRC notification (may be done from EOF)

Emergency Operations Facility (EOF)

- Overall Command and Control
- Declare incident classification changes (Director of Station Emergency Operations)
- Communications with NRC, State EOC, DEP and local communities
- Notify state and local officials (radiopager notifications and incident reports)
- Provide protective action recommendations (PARs) to State DEP
- Direct off-site radiological monitoring teams and dose assessment activities

Co-located Technical Support Center/Operational Support Center (TSC/OSC)

- Provide engineering and accident management support to Control Room and emergency response staff
- Provide input on incident classification changes to Director of Station Emergency Operations
- Prioritize TSC/OSC assessment and repair activities in coordination with Control Room
- Direct on-site mitigation actions
- Direct on-site corrective actions
- Direct on-site protective actions

Operational Support Center Assembly Area (OSC AA)

- Assemble and brief/debrief emergency teams
- Coordinate emergency team activities with the TSC/OSC and Control Room

² Incident classifications of UNUSUAL EVENT require classification, radiopager notification and completion of incident report only.

2. Applicability and Supporting Plans

This Plan applies to the Millstone Station Emergency Response Organization in the event of an incident at the Millstone Power Station. This Plan is in agreement with the affected state and local community plans. The supporting plans and their sources are listed in Table 2-1.

Table 2-1
Supporting Plans and Sources

<u>Plan</u>	<u>Source</u>
1. State of Connecticut Radiological Emergency Response Plan	State of Connecticut Office of Emergency Management, State Armory Hartford, Connecticut
2. State Agency Procedures	State of Connecticut Office of Emergency Management, State Armory Hartford, Connecticut
3. New York State Radiological Emergency Preparedness Plan	New York State Disaster Preparedness Commission Albany, New York
4. State of Rhode Island Ingestion Exposure Pathway Emergency Response Plan	Rhode Island Emergency Management Agency Cranston, RI
5. Local Community Procedures: <ul style="list-style-type: none">• Town of East Lyme• City of Groton• Town of Groton• Hamlet of Fishers Island (NY)• Town of Ledyard• Town of Lyme• Town of Montville• City of New London• Town of Old Lyme• Town of Waterford	Local Community Emergency Management Agencies
6. Host Community Procedures: <ul style="list-style-type: none">• Town of East Hartford• UCONN / Storrs• City of New Haven• City of Norwich• Town of Windham	Host Community Emergency Management Agencies
7. Lawrence and Memorial Hospital Master Emergency Preparedness Manual, Section II, Part K, Radiation Accident Plan	Lawrence and Memorial Hospital New London, Connecticut
8. Treating and Decontaminating Injured/Radioactively Contaminated Patients at Middlesex Hospital	Middlesex Hospital Middletown, Connecticut
9. Manual of Protective Action Guides and Protective Actions for Nuclear Incidents	EPA-400-R-92-001 U.S. Environmental Protection Agency

3. Section Intentionally Left Blank (Reserved)

4. Classification System

An UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY or GENERAL EMERGENCY is declared as required by the emergency assessment procedure. Each emergency classification has one or more corresponding state posture codes. Within each classification is a description of the conditions and parameter values which are applicable to classifying the incident. This classification approach is consistent with the NUMARC or NEI methods.

The State RERP requires that incidents be assigned a state posture code at the time of classification. The state plan also defines non-emergency "General Interest Events" and "Radioactive Materials Incidents," which require reporting. This scheme has been adopted by the state agencies and the local communities in the Millstone EPZ. Certain federal classifications and their corresponding posture codes include an associated public protection action recommendation. The station will report the incident classification and a state posture code during an event to local and state authorities.

The emergency classification description, posture codes, discussion, and corresponding licensee actions are also given in Table 4-1 (UNUSUAL EVENT), Table 4-2 (ALERT), Table 4-3 (SITE AREA EMERGENCY) and Table 4-4 (GENERAL EMERGENCY).

The nuclear incident classification description and associated posture code scheme is defined in the State RERP and described in emergency procedures.

Incident classifications are driven by unit specific Emergency Action Level (EAL) tables. Example EAL tables are provided in Appendix I. The examples do not include specific setpoints for each classification category. Complete EAL tables are provided in Emergency Plan Implementing Procedure MP-26-EPI-FAP06, "Classification and PARs." The emergency classification and action level scheme meet 10CFR50.47(b)(4) requirements.

An analysis of the potential radiological impact of an accident at Unit 1 in the permanently defueled condition has been conducted. Based on this analysis, any potential release is not expected to exceed the EPA PAG exposure levels beyond the exclusion area boundary. For this reason, only the UNUSUAL EVENT or ALERT classifications apply at this unit.

Table 4-1

Unusual Event - Licensee Actions

Class Description

NOTIFICATION OF UNUSUAL EVENT (State Posture Code: DELTA-TWO [if radiation release] or DELTA-ONE): Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

Actions

1. Assessment of conditions and initiation of actual corrective responses, as appropriate.
2. Notification of the appropriate Connecticut and New York state agencies and local communities (responsible local officials) within the plume exposure EPZ.
3. Notification of the appropriate licensee personnel and NRC.
4. Augmentation of on-shift resources, as appropriate.
5. Periodic event status updates are provided to off-site authorities.
6. Reassessment of conditions and a revised event classification, as appropriate.
7. A close-out report is provided with verbal summary to off-site authorities, followed by a written summary to the NRC as required by 10 CFR 50.73, as appropriate.

Table 4-2
Alert - Licensee Actions

Class Description

ALERT (State Posture Code: CHARLIE-ONE): Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Actions

1. Assessment of conditions and initiation of actual corrective responses, as necessary.
2. Precautionary dismissal of nonessential station personnel.
3. Notification of the appropriate Connecticut and New York state agencies and local communities (responsible local officials) within the plume exposure EPZ.
4. Activation of the Station Emergency Response Organization (SERO) and appropriate emergency response facilities (ERFs)
5. Establish communications with the State EOC in Hartford, if activated.
6. Notification of the NRC.
7. Deployment of on-site and off-site radiological monitoring teams (RMTs).
8. Periodic event status updates are provided to off-site authorities.
9. Periodic meteorological data summaries and dose assessments are developed and provided to off-site authorities.
10. Reassessment of conditions and a revised event classification, as appropriate.
11. An event report by verbal summary is provided to off-site authorities followed by a written summary to the NRC as required by 10 CFR 50.73, as appropriate.

Table 4-3

Site Area Emergency - Licensee Actions

Class Description

SITE AREA EMERGENCY (State Posture Code: CHARLIE-TWO): Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels except near the site boundary.

Actions

1. Assessment of conditions and initiation of corrective responses, as necessary.
2. Evacuation of nonessential personnel at the station.
3. Implement accountability of station personnel, as required.
4. Notification of the appropriate Connecticut and New York state agencies and local communities (responsible local official) within the plume exposure EPZ.
5. Activation of the Station Emergency Response Organization (SERO) and ERFs.
6. Establish communications with the State EOC in Hartford, when activated.
7. Notification of the NRC.
8. Deployment of on-site and off-site RMTs.
9. Periodic event status updates are provided to off-site authorities.
10. Periodic meteorological data summaries and dose assessments are developed and provided to off-site authorities.
11. Reassessment of conditions and revised event classification, if appropriate.
12. An event report by verbal summary is provided to off-site authorities followed by a written summary to the NRC as required by 10 CFR 50.73, as appropriate.

Table 4-4

General Emergency - Licensee Actions

Class Description

GENERAL EMERGENCY (State Posture Code: ALPHA [significant radiation release] or BRAVO): Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off-site for more than the immediate site area.

Actions

1. Assessment of conditions and initiation of corrective responses, as necessary.
2. Evacuation of nonessential personnel at the station.
3. Implement accountability of station personnel, as required.
4. Notification of the appropriate Connecticut and New York state agencies and local communities (responsible local official) within the plume exposure EPZ.
5. Activation of the Station Emergency Response Organization (SERO) and appropriate ERFs.
6. Establish communications with the State EOC in Hartford, when activated.
7. Notification of the NRC.
8. Deployment of on-site and off-site RMTs.
9. Periodic event status updates are provided to off-site authorities.
10. Periodic meteorological data summaries and dose assessments are developed and provided to off-site authorities.
11. Provide protective action recommendations to the State EOC.
12. An event report by verbal summary is provided to off-site authorities followed by a written summary to the NRC as required by 10 CFR 50.73, as appropriate.

5. Emergency Response Organization

This section describes the Station Emergency Response Organization (SERO). The SERO (Figure 5-1) replaces and prevails over the normal station organization. Information regarding the structure of the normal operating organization is presented in Section 1.0 of the Quality Assurance Program (QAP) Topical Report and is incorporated in this document by reference.

Personnel are assigned to the SERO based on their normal job qualifications and other specialized training. Personnel assigned receive Emergency Plan training based on their specific emergency functions. The Nuclear Training Department maintains a Training Procedure Description that specifies required training for each SERO function.

The SERO consists of on-shift staff, minimum staffing, and full staffing. The minimum SERO staffing necessary to activate the ERFs consists of the on-shift and minimum staffing positions identified in Table 5-1. The DSEO has the discretion to relieve the CR-DSEO and authorize ERF activation with less than minimum staffing when the necessary functional areas are filled. The specified positions are in accordance with NUREG-0654, Planning Standard B, Table B-1. The SERO personnel identified as full staffing are additional personnel beyond the required minimum, used to enhance the emergency response. The full staffing emergency positions will report as soon as possible after acknowledging notification with a goal of filling these positions within 4 hours. The SERO is activated upon declaration of an ALERT, SITE AREA EMERGENCY or GENERAL EMERGENCY. The on-shift SERO personnel are then supplemented by minimum and full staffing, reporting as indicated on Table 5-1. Additional personnel resources, outside the SERO staff, may be activated, as needed.

The SERO is described in Table 5-1 and Figure 5-1. Table 5-1 illustrates the relationship between emergency and normal positions, describes major tasks, functional areas, emergency locations, and indicates the emergency position type (i.e. on-shift, minimum staffing, or full staffing). The normal on-shift staff complement applies to operating modes. During shutdown, refueling or permanently defueled condition, the on-shift staff may be reduced to the minimum shift staff composition delineated in the administrative controls section of the unit Technical Specifications.

Procedures detailing responsibilities for the various SERO staff positions are listed in Appendix D, as applicable.

This section also includes brief descriptions of the state, local and other organizations that would provide assistance upon request.

Appendix B contains copies of letters of agreement from these organizations.

The on-shift/on-site positions are part of the normal station organization, which includes:

- Shift Manager/Certified Fuel Handler (CFH)
- Shift Technical Advisor (Unit 2 and Unit 3)
- Work Control Senior Reactor Operator (SRO)

- Unit Supervisor (Unit 2 and Unit 3)
- Control Operators (Unit 2 and Unit 3)
- Plant Equipment Operators (Unit 2 and Unit 3)
- Health Physics Technicians (same as Radiation Protection Technicians)
- Chemistry Technician
- Security Shift Supervisor and Security Personnel
- Station Duty Officer
- Fire Brigade / EMT

The minimum staffing management positions include the following:

- Director of Station Emergency Operations
- Assistant Director, Emergency Operations Facility
- Assistant Director, Technical Support (Unit 2, 3)
- Manager of Technical Support Center
- Manager of Radiological Consequence Assessment
- Manager of Radiological Dose Assessment
- Manager of Communications (Unit 2, 3)
- Manager of Operational Support Center (2 Positions)
- Chief Technical Spokesperson
- Nuclear News Manager
- Manager of Resources
- Public Information Technical Advisor

The Millstone SERO positions are described below:

5.1. On-Shift Positions

5.1.1. Shift Manager (SM)³

The Shift Manager initially assumes command of the SERO as the Control Room DSEO (CRDSEO) following UNUSUAL EVENT or higher classification. In this position, the Shift Manager has the authority and responsibilities of the DSEO. Due to the numerous responsibilities assigned the Shift Manager at the onset of an emergency, actions shall be prioritized as follows:

- (1) ensure safe operation of the plant,
- (2) ensure immediate notification requirements are met,
- (3) obtain operational and radiological assessment of the emergency, and
- (4) perform additional emergency actions as directed by procedures as time and conditions permit.

An SRO shall assume the responsibilities of the SM if the SM should become incapacitated or otherwise unable to fulfill the responsibilities of CRDSEO. If this is required, some delay in completing the prioritized actions is expected. However, assistance is available from the Station Duty Officer and the unit STA. After being relieved by another qualified DSEO, the Shift Manager becomes the Manager of Control Room Operations (MCRO). The following CRDSEO responsibilities cannot be delegated:

- Event classification⁴
- Initiation of station emergency response
- Authorization of mitigation and repair activities.
- Command and control of station emergency response.
- Approval of off-site Protective Action Recommendations.
- Approval of on-site evacuation.
- Authorization of emergency exposures.
- Authorization of off-site notifications.

For a Unit 1 event, the Unit 2 SM/CFH functions as the CRDSEO.

³ For Unit 2, the SM is also a qualified Certified Fuel Handler (SM/CFH).

⁴ The Unit 2 CR DSEO will also classify events specific to Unit 1.

5.1.2. Shift Technical Advisor (STA)

The STA is responsible for the analysis of operational data⁵.

5.1.3. Manager Of Control Room Operations (MCRO)

The Manager of Control Room Operations responsibilities include control room operations, interface with ADTS concerning plant status and changing conditions and recommendations for classification changes and corrective actions. The Unit 3 MCRO is also responsible for determining entry conditions into the Severe Accident Management Control Room Initial Response Guidelines and implementation of the Severe Accident Management Guidelines as required.

For a Unit 1 event, the Unit 2 CRDSEO becomes the MCRO.

5.1.4. Emergency Communicator

The Emergency Communicator is responsible for conducting emergency notifications and activating ERDS.

5.1.5. On-shift Operators

For an operating unit, the on-shift Unit Supervisor (US), Control Operators (CO) and Plant Equipment Operators (PEO) perform plant related functions in accordance with unit and Station procedures, and as directed by the SM/MCRO. The PEOs provide basic on-shift mechanical and electrical maintenance functions, in addition to Radwaste-operations.⁶

5.1.6. Health Physics Technicians (HP)

The Health Physics Technicians provide initial in-plant and on-site radiological support actions as RMT #1.

5.1.7. Chemistry Technician

The Chemistry Technician provides on-shift dose assessment, chemistry support and is available to assist control room personnel in other actions as directed.

5.1.8. Security Shift Supervisor and Security Personnel

The Security Shift Supervisor performs security related functions in accordance with unit and Station procedures, and as directed by the SM/MCRO. The Security Shift Supervisor is assisted by security personnel in providing site access control and accountability.

⁵ This position is not required for a permanently defueled unit.

⁶ For a permanently defueled unit, an on-shift Unit 2 operator (licensed or non-licensed) performs these functions.

5.1.9. Station Duty Officer (SDO)

The Station Duty Officer or available SRO notifies the NRC, assists with communications, precautionary dismissal, and evacuation or assembly of station personnel.

5.1.10. Fire Brigade / EMT

The Fire Brigade provides immediate response to a fire on-site. EMT qualified personnel assigned to the Fire Brigade provide emergency medical services for on-site personnel injuries.

5.2. Minimum Staffing Positions

5.2.1. Director of Station Emergency Operations (DSEO)

After relieving the CRDSEO, the EOF DSEO assumes overall command and control of the SERO and the licensee emergency response. The DSEO is responsible for classification, notification, release of information to off-site authorities and the public, recommending protective actions to the State of Connecticut, and approval of personnel appointed to fill SERO vacancies during an emergency. The DSEO will ensure that additional SERO staff positions, as determined necessary to effectively respond to the specific emergency, will be staffed within 90 minutes of facility activation. The DSEO will turn over the responsibility to approve news releases to the Chief Technical Spokesperson (CTS) when he is available at the State EOC. The following DSEO responsibilities cannot be delegated:

- Command and control of station emergency response, including coordination of response by off-site agencies.
- Event classification.
- Approval of off-site Protective Action Recommendations.
- Authorization of emergency exposures greater than 25 rem TEDE for lifesaving activities.
- Authorization of off-site notifications.
- Requests for federal assistance to support station response.

5.2.2. Assistant Director, Technical Support (ADTS)

The ADTS reports to the DSEO. The ADTS is responsible for providing command and control of the SERO technical, operational, assessment and repair staff. The MCRO, MRCA, MOSC, MTSC, and MOS report to the ADTS.

The ADTS primary responsibilities include:

- Ensuring actions are taken to mitigate degradation of plant systems.

- Recommending changes in classification to the DSEO.
- Approving accident management strategies and ensuring accident management plan is implemented.
- Ordering station assembly, evacuation, or sheltering.
- Approving on-site personal protective action decisions (PPADs)
- Approving emergency exposure upgrades to 25 Rem TEDE for on-site staff and technical, operational support and security personnel.
- Approving the issue of Potassium Iodide (KI) to emergency personnel assigned to the ADTS, at the recommendation of the MRCA.
- Evaluating conditions for directing entry into Severe Accident Management Guidelines.

5.2.3. Manager of Technical Support Center (MTSC)

The MTSC reports to the ADTS. The MTSC analyzes operating data and provides technical support to the ADTS, MCRO, and the MOSC. The TSC Engineering staff and Accident Management Team report to the MTSC and provide accident assessment functions. The MTSC is assisted by a mechanical engineer, reactor engineer, and an electrical engineer.

5.2.4. Manager of Operational Support Center (MOSC)

The MOSC reports to the ADTS. The MOSC assembles, briefs, equips, deploys, and coordinates Emergency Assessment, Repair, and Search/Rescue Teams. The MOSC assumes control of the Operational Support Center. Personnel assigned to assist in performing these functions report to the MOSC. The MOSC is assisted by OSC assistants, maintenance specialists, and other staff.

5.2.5. Assistant Director, Emergency Operations Facility (ADEOF)

The ADEOF reports to the DSEO in the EOF. The ADEOF is responsible for providing command and control of the offsite radiological assessment and radiological support activities. The MRDA, MOC, MOR, PITA, and Emergency Communicator report to the ADEOF. The ADEOF is also responsible for:

- Providing recommendations for classification changes based on offsite radiological conditions.
- Approving Potassium Iodide (KI) issue to emergency personnel assigned to the ADEOF.
- Developing, recommending and updating off-site PARs to the DSEO.
- Off-site radiological dose assessment.
- Providing logistics support (personnel) from external response agencies.
- Managing the collection and communication of event data and news releases.

- Assuming responsibilities of DSEO, in the event the DSEO becomes incapacitated or otherwise unable to perform the assigned duties.
- Approving emergency exposure upgrades up to 25 Rem TEDE for SERO personnel who perform actions off-site.
- Authorizing contaminated personnel to leave the station.

5.2.6. Manager of Radiological Consequence Assessment (MRCA)

The MRCA reports to the ADTS. The MRCA coordinates health physics activities including on-site radiological assessment, personnel exposure control, recommendations on the issuance of KI to on-site SERO personnel, and radiation protection programs. Personnel assigned to assist in on-site radiological assessment functions include the ARPs and Radiological Communication.

5.2.7. Manager of Radiological Dose Assessment (MRDA)

The MRDA reports to the ADEOF. The MRDA coordinates off-site radiological monitoring, environmental sampling, and dose assessment, and provides recommendations for exposure upgrades and KI issuance to offsite SERO responders. The personnel assigned to assist in performing these functions are the Assistant Managers of Radiological Dose Assessment (AMRDAs), Radiological Assessment Engineers (RAEs), Field Team Data Coordinator (FTDC), and the Meteorological Assistant.

5.2.8. Manager of Communications (MOC)

The MOC reports to the ADEOF. The MOC provides information concerning the operation and status of the plant and radiological conditions to the NRC Headquarters Emergency Operations Center, Bethesda, MD and the NRC Region 1 Emergency Response Center as requested.

5.2.9. Radiological Monitoring Team (RMT #2-NAP and SAP)

HP Technicians serve as RMT # 2 and provide radiological surveys, HP coverage, and monitoring and decontamination activities associated with site evacuation. The RMT #2 reports to the MRCA.

5.2.10. Radiological Monitoring Team (RMT #3-#4-#5)

RMTs # 3, #4, and #5 are each composed of a driver and monitor and provide offsite radiological surveys in the event of a release. The EOF RMTs will also collect environmental samples as directed by the MRDA. The offsite RMTs report to the MRDA.

5.2.11. EOF HP Technician

The EOF HP Technician provides HP functions for the EOF and supervises operation of the EOF decontamination facility and count-room. The EOF HP Technician reports to the MRDA.

5.2.12. EOF Emergency Communicator

The EOF Emergency Communicator performs notifications of licensee, federal, state and local officials. The EOF Emergency Communicator reports to the ADEOF.

5.2.13. OSC - Assistant Radiation Protection Supervisor (ARPS)

The ARPS reports to the MRCA. The ARPS provides radiological controls for the TSC/OSC and OSC Assembly Area. The ARPS also provides radiological support for emergency teams dispatched from the OSC AA.

5.2.14. Public Information Technical Advisor (PITA)

The PITA reports to the ADEOF. The PITA gathers emergency-related information and transmits it to the Nuclear News Manager and public information staff at the Joint Media Center. The PITA is also responsible for rumor control activities at the site and will issue news releases until the State EOC is staffed by an NNM and CTS.

5.2.15. Chief Technical Spokesperson (CTS)

The CTS reports to the DSEO and acts as the company spokesperson at the State EOC and Joint Media Center, providing face-to-face communications with state officials and representing the licensee at news conferences. The CTS may also provide background information concerning licensee PARs provided to the State DEP. The CTS will relieve the DSEO of the responsibility to approve news releases.

5.2.16. Nuclear News Manager (NNM)

The NNM reports to the CTS and supervises all public information activities. The position of NNM is activated upon declaration of an UNUSUAL EVENT or higher incident classification for purposes of public information releases. The NNM issues news releases from the State EOC.

5.2.17. Manager of Resources (MOR)

The MOR reports to the ADEOF. The MOR fills SERO vacancies and provides 24 hour/day planning for manpower, transportation, food, quarters, equipment and supplies at the site. He/she serves as the coordinator for corporate support.

5.2.18. Technical Support Center-Reactor Engineer

The Technical Support Center-Reactor Engineer (TSCRE) reports to the MTSC and provides expertise in reactivity transients, reactivity management and shutdown margin calculations. The TSC-RE assists the AMT with thermal hydraulic calculations as necessary.

5.2.19. Technical Information Coordinator (TIC)

The TIC reports to the DSEO and is responsible for collecting and entering information and key plant parameter data onto the Critical Parameters status board. The TIC obtains this set of key plant parameters from the Off-Site Facilities Information System (OFIS). This system provides information to the EOF, TSC and the State EOC.

5.2.20. Technical Support Center - Electrical Engineer

The TSC Electrical Engineer (TSCEE) reports to the MTSC. The TSC Electrical Engineer is responsible for providing the MTSC with electrical engineering and general support.

5.2.21. Technical Support Center - Mechanical Engineer

The TSC Mechanical Engineer (TSCME) reports to the MTSC. The TSC Mechanical Engineer is responsible for providing the MTSC with mechanical engineering and general support.

5.2.22. Mechanic, Electrician, I&C Technician

The mechanic, electrician, and I&C technician report to the Manager, OSC and are responsible for assessment, repair, and corrective actions.

5.3. Full Staffing Positions

5.3.1. Control Room Data Coordinator (CRDC)

The CRDC reports to the MCRO and is responsible for communicating plant data and control room activities to the TSC and EOF.

5.3.2. Technical Assistant (TA)

The TA reports to the CTS and provides the CTS with technical information as required.

5.3.3. Meteorological Assistant

The Meteorological Assistant reports to the MRDA and provides meteorological data interpretation, calculations and long term meteorological information to support dose assessment activities.

5.3.4. Technical Support Center- Shift Manager (TSC-SM)

The SRO assigned to the Technical Support Center assists with communications with the control room and provides technical expertise in accident assessment activities. The TSC-SM monitors Emergency Operating Procedure (EOP) progress and assists the ADTS in monitoring plant conditions for possible classification changes.

The Unit 2 TSC-CFH assists with communications to the Unit 2 control room and provides expertise on Unit 1-related activities .

5.3.5. Operational Support Center (OSC) Assistant

The OSC Assistant reports to the Manager, OSC, and provides operational support by coordinating on-site activities and personnel.

5.3.6. CBETS Operator

The CBETS Operator provides computer based exposure tracking information and assists the MRCA with the administrative activities for exposure upgrades and KI issuance. The CBETS Operator reports to the MRCA.

5.3.7. Radiological Assessment Engineer (RAE) {two positions}

The RAE reports to the MRDA and assists the radiological assessment team in dose calculations.

5.3.8. Radiological Communicators {two positions}

The Radiological Communicators report to the MRCA and provide communications for on-site radiological activities. One RadCom is located in the TSC/OSC and the other is in the EOF.

5.3.9. Assistant Manager, Radiological Dose Assessment (AMRDA) {two positions}

The AMRDAs report to the MRDA and assist in performance of radiological monitoring, environmental sampling, and dose assessment.

5.3.10. Field Team Data Coordinator (FTDC)

The FTDC reports to the MRDA and provides communications and information from field teams to the EOF. The FTDC also briefs and deploys field monitoring and environmental sampling teams.

5.3.11. Manager of Security (MOS)

The Manager of Security reports to the ADTS and is responsible for maintaining accountability and site security.

5.3.12. Accident Management Team (AMT)

An Accident Management Team consisting of an AMT-Leader and an AMT Thermal-Hydraulic Engineer report to the MTSC and assist the Technical Support Center in developing accident response strategies. The AMT is also responsible for evaluating conditions and implementing Severe Accident Management Guidelines. During severe accident management implementation, the AMT reports to the ADTS.

5.3.13. Regulatory Liaison (RL)

The RL reports to the ADEOF and is responsible for accommodating the NRC Site Team dispatched to the station, arranging site access for the NRC Team, providing adequate dosimetry, and responding to questions and comments.

5.3.14. Media Center Liaison

The Media Center Liaison reports to the NNM and is responsible for assisting with media response.

5.3.15. Rumor Control Liaison

The Rumor Control Liaison reports to the NNM and is responsible for coordinating with the State Public Information Officer (PIO) to oversee joint rumor and inquiry control activities.

5.3.16. Technical Briefer

The Technical Briefer reports to the Media Center Liaison and is responsible for providing technical, plant specific information to the media during official news briefings.

5.3.17. Radiological Briefer

The Radiological Briefer reports to the Media Center Liaison and is responsible for providing technical radiological information to the media during official news briefings.

5.4. Other Organizations Providing Assistance

5.4.1. State / Local Assistance

During an emergency, assistance from state or local agencies may be required. The State RERP defines responsibilities of the state and local agencies. Details of provided assistance are contained in Letters of Agreement (Appendix B) with the agencies and the State RERP. These letters are updated annually or as necessary to reaffirm agreed-upon assistance and to verify appropriate communications channels.

5.4.2. Private Agency Assistance

Assistance of private agencies may also be required during an accident. Details of the type of services expected are contained in letters of agreement. The letters are updated annually or as necessary to reaffirm agreed-upon assistance and to verify appropriate communications channels. Appendix B contains a listing of operational letters of agreement.

5.4.3. Federal Assistance

Request for off-site federal assistance will be made through the State OEM. The federal agencies contacted can inform the State OEM of their response times.

The licensee does not anticipate need for additional federal support in responding to an accident.

The licensee maintains work centers for both FEMA and the NRC at the Station EOF. Work space is also maintained for NRC personnel in the TSC. Dedicated federal telephone communications and access to licensee communications equipment are provided in this area.

**Table 5-1
Station Emergency Response Organization**

Major Functional Area	Major Tasks	Normal Position/Title ⁽ⁿ⁾	Emergency Position/Title	Emergency Location	On-Shift	Minimum Staffing**		Full Staffing ^(b)	Training Summary (Refer to App K)	Rad Worker	Resp Qual
						30-60 Minutes	60 Minutes				
Unit Operations and assess. of operational aspects, assessment of off-normal operational aspects	Responsible for safe operation of the unit including the implementation of normal & emergency operating procedures	Shift Manager (SM)/CFH	Manager of Control Room Operations	Affected Unit CR	1 ^(d,1)				1, 4, 6, 9, 14	YES	YES
		Shift Technical Advisor, Security Shift Supervisor	Station Duty Officer	"	1				1,4	YES	YES
		Shift Technical Advisor (STA)	Shift Technical Advisor	"	1 ^(a,1)				1,4	YES	YES
		Unit Supervisor (US),	US	"	1 ⁽ⁿ⁾				1, 4, 6, 9, 14	YES	YES
		Control Operator (CO),	CO	"	2 ⁽ⁿ⁾				1	YES	YES
		Plant Equipment Operator (PEO) (Unit 2,3)	PEO	"	2 ⁽ⁿ⁾				1	YES	YES
		Unit 2 Operator (Unit 1 responder)	PEO	Unit 2 CR	1 ⁽ⁿ⁾				1	YES	YES
Emergency Direction and Control, Support of Operational Accident Assessment	Assume command and control of Station Emergency Operations. Event classifications, notifications and PARs.	Manager, Nuclear Operations, Shift Managers/CFH	Director of Station Emergency Operations	Affected Unit Control Room ^(m)	1 ^(m)				1, 4, 6, 9, 14	YES	YES
		Directors, Managers		EOF			1 ⁽ⁿ⁾				
Communications	Management liaison to the State EOC. Coordinates station emergency response actions with that of the State.	Directors, Managers, Nuclear Specialist	Chief Technical Spokesperson	State EOC/Joint Media Center					1, 4, 9, 14		
	Provides information to the Chief Technical Spokesperson	Licensing, Engineers/Process Leadership, Maintenance	Technical Assistant	State EOC/Joint Media Center				1	1, 2, 9		
Public Information	Supervise public information activities. Disseminate information received from Public Information Technical Advisor to appropriate corporate, government officials, media, and general public.	Records Management, Media Relations, External Affairs	Nuclear News Manager	State EOC/Joint Media Center			1 ^{(n)(o)}		1, 4, 9		
Radiological Calculations and Event Communications	Assume command and control of internal/external communications, radiological assessment, and management of the event. Ensures off-site radiological assessments are provided to the State DEP. Recommends PARs to the DSEO.	Managers, Supervisors	Assistant Director Emergency Operations Facility	EOF			1		1, 4, 7, 9, 14		

Table 5-1
Station Emergency Response Organization

Major Functional Area	Major Tasks	Normal Position/Title ⁽ⁿ⁾	Emergency Position/Title	Emergency Location	On-Shift	Minimum Staffing ^{**}		Full Staffing ^(b)	Training Summary (Refer to App K)	Rad Worker	Resp Qual
						30-60 Minutes	60 Minutes				
Decontamination and Radiation Controls	Provide HP controls for the EOF, supervise Decon Facility	HP Tech	EOF HP Tech	EOF			1		1	YES	YES
Notification and Communications	Notify licensee, corporate, federal, state and local officials. Communicate with CR.	Work Control SRO STA/SSS Work Control SRO SRO	Emergency Communicator SDO Emergency Communicator TSC-Shift Manager/CFH	Unit CR Unit CR EOF TSC/OSC	1 ^(c)	1	1	1 ^(g)	1, 3, 4, 9 1, 4, 9 1, 3, 4, 9 1, 4	YES YES YES YES	YES YES YES YES
	Activate ERDS	Work Control SRO	Emergency Communicator	Unit CR					1,3,4,9	YES	YES
Notification and Communications (Technical)	Coordinate technical data communication between EOF, CR, TSC/OSC, and government agencies. Provide information to PITA.	Operator Training Staff	Manager of Communications	EOF			1 ^(g)	1	1, 2, 4, 9		
Technical Information Communications	Obtain plant data for Emergency Response Facilities and Technical Assistant at State EOC as required.	Unit Personnel, Operator Training Staff	Technical Information Coordinator	EOF			1 ^(g)	1	1, 2, 4, 6 or 7, 9		
Public Information	Provide information to the PI staff at State EOC/Joint Media Center. Provide Rumor Control.	Managers, Employee Communications Staff	Public Information Technical Advisor	EOF			1 ⁽ⁿ⁾		1, 4, 9		
Technical Data Communications	Ensure needs for plant data and information are met.	Operator Training Staff	Control Room Data Coordinator	Affected Unit CR				2 ^(g)	1, 2, 4, 9	YES	
On-Site Radiological Accident Assessment	Direct On-site RMTs, sampling program and radiation protection program. Perform dose assessment calculations.	Radiological Protection and Waste Services HP Ops Support HP Ops HP Supervisors	Manager of Radiological Consequence Assessment	TSC/OSC			1		1, 4, 9	YES	
Radiological Surveys	HP coverage and station surveys for repair, corrective actions, Search and Rescue, and fire-fighting. Personnel monitoring, and dosimetry issue.	HP Technician	RMT #1	Affected Unit CR	1 ^(d)	1			1, 4	YES	YES
Radiological Protection	Radio Chemistry Assessments / Initial Dose Assessment	Chemistry Technicians	Chemistry Technicians	CR, OSC AA	2 ^(d, f)				1, 15	YES	YES
	Access control	HP Technician	RMT #2 (A,B,C,D)	NAP/SAP		4			1, 4	YES	YES
Off-site Radiological Dose Assessment	Coordinate off-site sampling program, dose assessment and core damage assessment	Engineers/Manager-Chemistry Supervisors	Manager of Radiological Dose Assessment	EOF			1		1, 4, 5, 7, 9, 11, 12, 13, 14		
	Dose Calculations	Engineers/Analysts/Specialists	Radiological Assessment Engineer	EOF				2	1, 4, 5, 9, 11, 12, 13		

Table 5-1
Station Emergency Response Organization

Major Functional Area	Major Tasks	Normal Position/Title ^(a)	Emergency Position/Title	Emergency Location	On-Shift	Minimum Staffing ^{**}		Full Staffing ^(b)	Training Summary (Refer to App K)	Rad Worker	Resp Qual
						30-60 Minutes	60 Minutes				
	Dose Assessment, Radiological Calculations	Chemistry Supervisors, Chemistry Training Engineers/Analysts/ Specialists	Assistant Manager of Radiological Dose Assessment	EOF				2	1, 4, 5, 7, 9, 11, 12, 13, 14		
Radiological control within the OSC AA	Provides radiological controls within the TSC/OSC, OSC AA and provides radiological support for emergency teams dispatched from the OSC AA.	HP	Assistant Radiological Protection Supervisor	OSC AA			1		1, 4	YES	YES
Radiological Radio Communications	Deploy RMTs, collect data	Site Services, HP Services	Field Team Data Coordinator	EOF				1	1, 4, 5, 9		
Radiological Surveys	Off-site Surveys	HP/Nuclear Oversight	RMT #3-4-5 and Drivers	EOF		2	4		1, 4	YES	YES
Meteorological Services	Provide meteorological data interpretation, calculations, long term meteorological information.	Environmental Specialists	Meteorological Assistant	EOF				1	1, 4, 10		
Environmental Services and/or Health Physics	Plume and Ingestion Pathway Sampling	Environmental/HP Personnel and/or HP REMP Tech	RMT #3-4-5 and Drivers	EOF				2 ^(j)		YES	
Accident Assessment Management and Consequence Mitigation	Assume command and control of the station operating, technical assessment and repair staff. Recommends changes to classifications.	Manager-Operations, Supervisor Nuclear Shift Operations, Supervisor-Operator Training	Assistant Director, Technical Support	TSC/OSC			1 ^(g)	1	1, 4, 6, 8, 9	YES	
Unit System Engineering	Responsible for analysis of operations data, development of procedures, recommend repair, and corrective actions	Manager-Engineering/ Supervisors, Engineers Manager-Site Services	Manager of Technical Support Center	TSC/OSC			1	1	1, 4, 7, 9	YES	
	Assist Manager of Technical Support	Mechanical Engineer	TSC-ME	TSC/OSC			1	1	1, 2, 4	YES	
		Electrical Engineer	TSC-EE	TSC/OSC			1	1	1, 2, 4	YES	
		Reactor Engineer	TSC-RE	TSC/OSC			1		1, 2, 4	YES	
		Nuclear Instrument Technician	Generation Electrical Services (GES) Specialist	OSC AA			1		1	YES	

Table 5-1
Station Emergency Response Organization

Major Functional Area	Major Tasks	Normal Position/Title ⁽ⁿ⁾	Emergency Position/Title	Emergency Location	On-Shift	Minimum Staffing**		Full Staffing ^(b)	Training Summary (Refer to App K)	Rad Worker	Resp Qual
						30-60 Minutes	60 Minutes				
Plant System Engineer Repair and Corrective Action	Assist Manager of Technical Support. Provide accident analysis	Safety Analysis, Nuclear Fuel Engineering	Accident Management Team- Leader	TSC/OSC				1	1, 2, 4, 8	YES	
		Safety Analysis, Nuclear Fuel Engineering	AMT-Thermal-Hydraulic Engineer (T-H)	TSC/OSC				1	1, 2, 4	YES	
Repair and Corrective Actions	Evaluation, repair, and corrective actions	Manager-Maintenance Supervisor	Manager of Operational Support Center	TSC/OSC, OSC AA			1	1	1, 4, 9	YES	
		Mechanic	Mechanic	OSC AA		1	1		1	YES	YES
		Electrician	Electrician	OSC AA		1	1		1	YES	YES
		I&C Technician	I&C Technician	OSC AA		1	1		1	YES	YES
Operational Support	Coordinate on-site activities and personnel	Supervisor-Maintenance	OSC Assistant	TSC/OSC, OSC AA				2	1, 4, 9	YES	
		Supervisor-Maintenance	OSC Assistant	TSC/OSC, OSC AA				2	1, 4, 9	YES	
Resource Acquisition & Personnel Dispatching	Coordinates requests for assistance, organizes station personnel for relief shift work, account SERO personnel. Coordinate acquisition of personnel and equipment from corporate or outside sources.	Supply Chain Management, Quality Assurance	Manager of Resources	EOF			1		1, 4, 9		
Information Resources	Maintain computer availability	IT Personnel	None	Millstone Station				(j)			
Firefighting	Firefighting / Emergency Medical Services	Fire Brigade / EMT	Fire Brigade / EMT	As Required	Per TS (a)		Local Comm Support		1	YES	YES
Search and Rescue Operations	Search and rescue operations	Security Personnel / Station Personnel, as required	Security Personnel / Station Personnel	As Required	Per Sec. Plan				1	YES	YES
External Response Logistics	Provide logistics support for external response personnel. Liaison with NRC Site Response team.	Licensing, Engineering	Regulatory Liaison	EOF				1	1, 4		
Backup SERO Notifications	Communications with ADTS/DSEO. Backup SERO Notification System	Security Personnel	Security Person	CAS/SAS	1				1	YES	YES
Communications	HP Communications	HP Staff	RAD Communicator	EOF, TSC/OSC				2	1, 4	YES	
Exposure Control	Exposure Monitoring	HP Staff	CBETS Operator	OSC AA				1	1, 4	YES	

Table 5-1
Station Emergency Response Organization

Major Functional Area	Major Tasks	Normal Position/Title ⁽ⁿ⁾	Emergency Position/Title	Emergency Location	On-Shift	Minimum Staffing ^{**}		Full Staffing ^(b)	Training Summary (Refer to App K)	Rad Worker	Resp Qual
						30-60 Minutes	60 Minutes				
Site access control & personnel accountability	Establish EOF security. Directs Security Personnel in support of emergency operations (firefighting communications, personnel accountability) assist in personnel accountability	Security Personnel	Manager of Security	TSC/OSC				1	1, 4, 7, 9	YES	
Site access control and personnel accountability	Establish station security. Support emergency operations and perform personnel accountability	Security Personnel	Security Personnel		Per Security Plan				1	YES	YES
Site access control & personnel accountability	Supervise on-site security operations	Security Shift Supervisor	Security Shift Supervisor		1				1, 7	YES	
				Totals Unit 1	10 ^(k, l)	11	27 ^(e)	29			
				Unit 2/Unit 3	15 ^(k, l)	11	27 ^(e)	29			

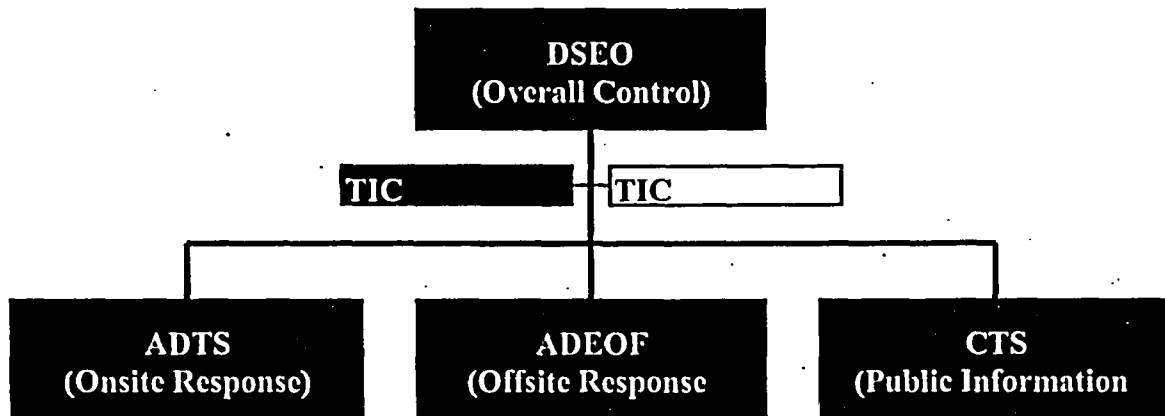
Table 5-1 Notes:

- a May be provided by shift personnel assigned other function.
- b Full staffing are beyond minimum required for facility activation which constitute a fully augmented SERO. Personnel respond as soon as possible upon notification with a goal of filling these positions within 4 hours.
- c Station position (Counted as affected unit resource).
- d One for Unit 1/Unit 2; one for Unit 3; (for Chemistry and Health Physics, two each per site)
- e Assigned, affected unit resources, additional SERO staff will respond from non-affected units.
- f Overall station resource (accounts for additional personnel from the unaffected units).
- g One needed for Unit 2 and one needed for Unit 3 (only 1 required for minimum staffing for activation).
- h Carries out independent responses at time of incident notification.
- i Only one senior reactor operator, reactor operator and non-licensed operator are required on shift under non-operating conditions (shutdown and refueling). For a permanently defueled condition, only one certified fuel handler and one equipment operator are required on shift.
- j Call-in specialized resource- (Non-SERO personnel).
- k Total does not include Security staff or Fire Brigade personnel on-shift.
- l On-Shift total reflects Shift Manager / Affected Unit Control Room DSEO as one position.
- m For a Unit 1 event the Unit 2 SM/CFH becomes the CRDSEO; after transferring responsibilities to the ADTS and EOF DSEO, the Unit 2 CRDSEO becomes the MCRO.-
- n Higher level organization personnel may be used to fill these roles as necessary.
- o A 90-minute goal has been established for the Chief Technical Spokesperson and Nuclear News Manager who report to the CT State EOC.
- A 30 to 60-minute goal has been established for the identified individuals. It is expected that some of these individuals will report within about 30 minutes, with the remainder arriving at various times during the next 30-minute interval.
- * Indicated Staff response times are from the time of notification to report to emergency assignments.

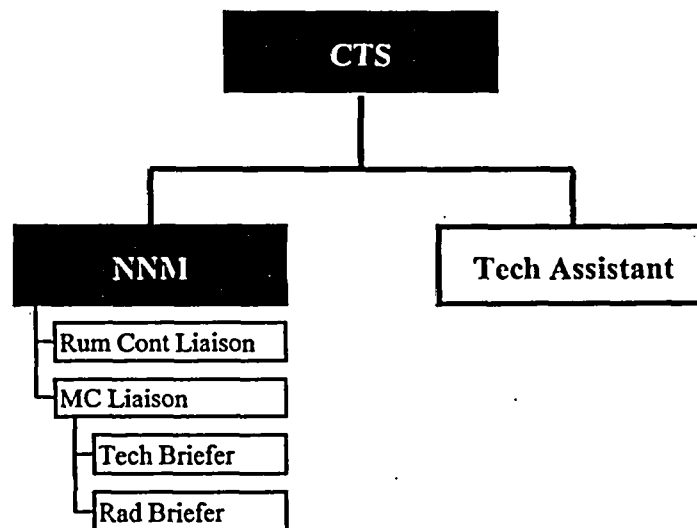
Figure 5-1

Organization and Location of Station Emergency Management Personnel
(page 1 of 3)

Senior SERO Management Structure



Public Information SERO Structure



- Indicates positions necessary for facility activation.
- Indicates fully augmented organization positions.

Figure 5-1

Organization and Location of Station Emergency Management Personnel
(page 2 of 3)

Onsite SERO Structure

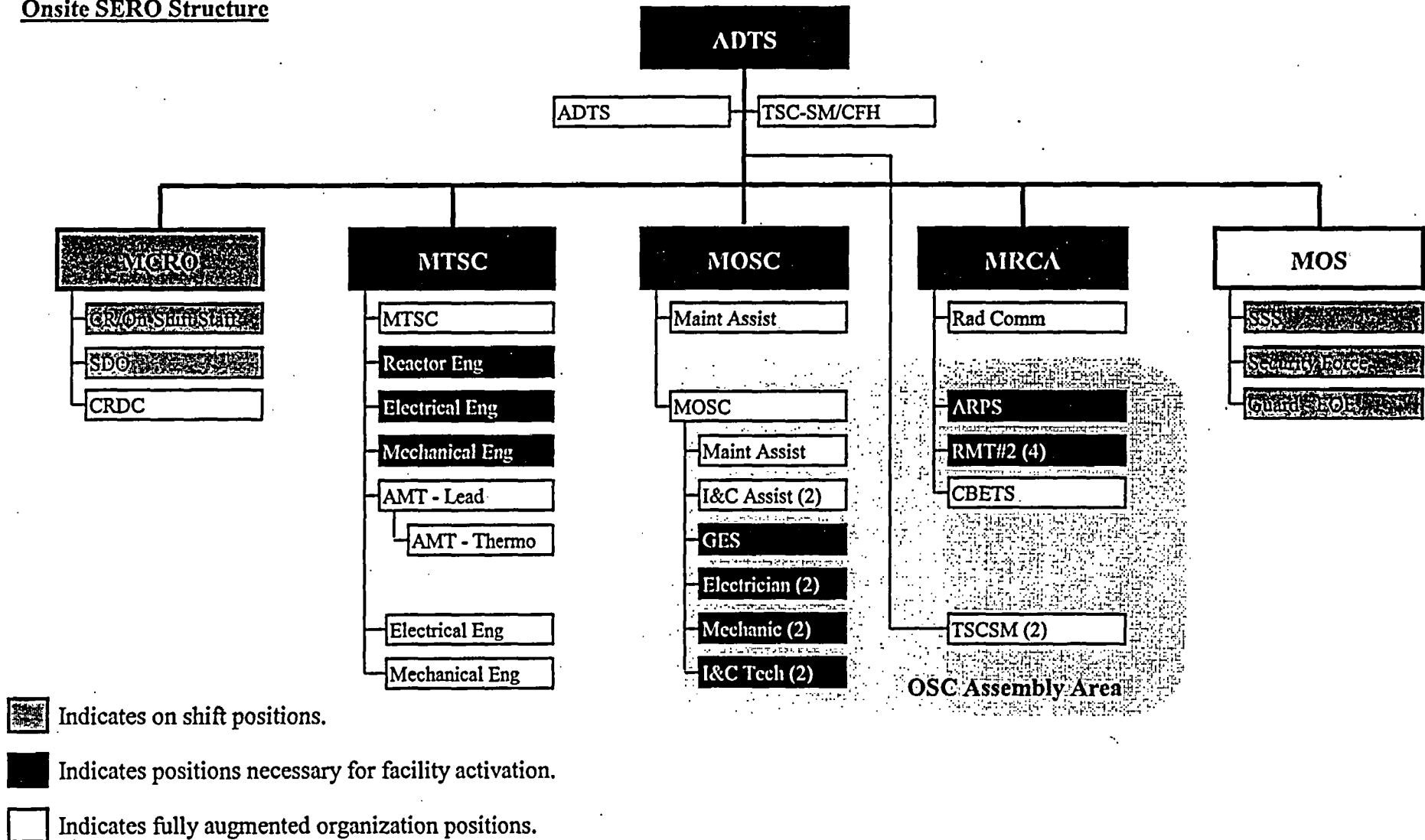
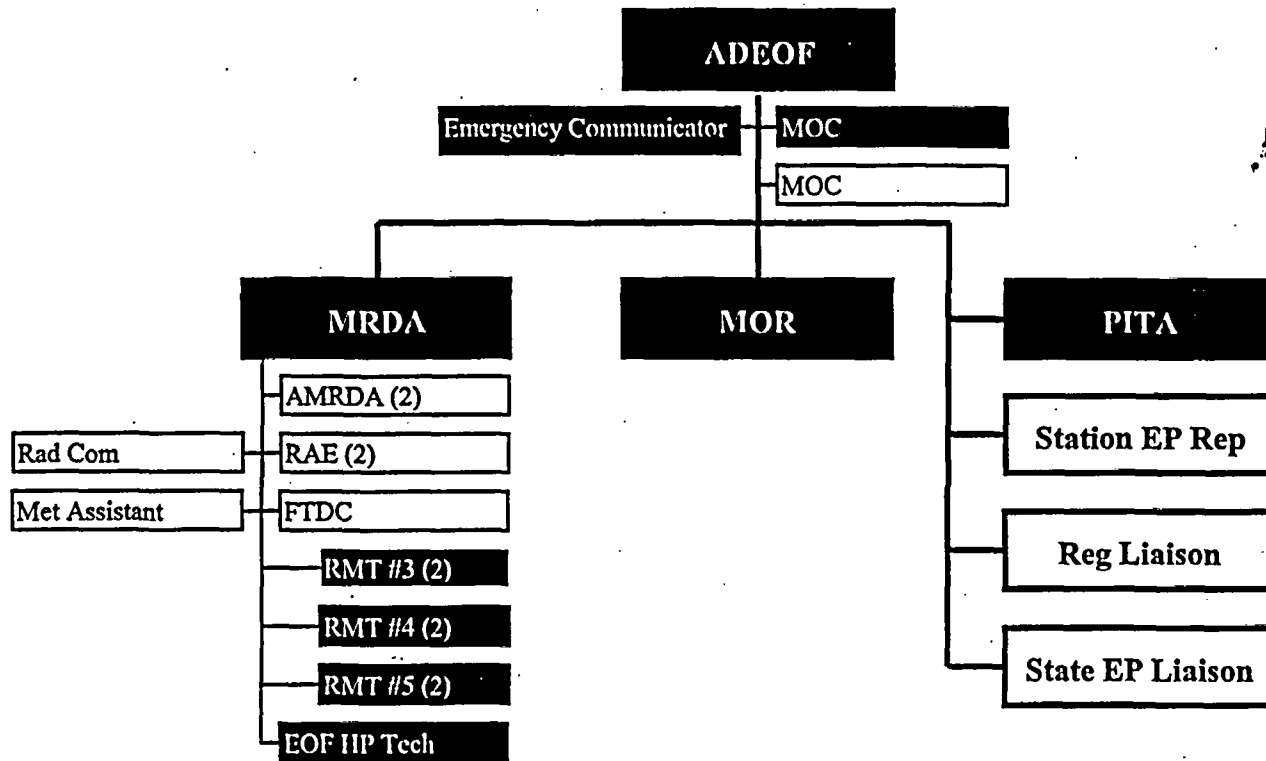


Figure 5-1

Organization and Location of Station Emergency Management Personnel
(page 3 of 3)

Offsite SERO Structure



■ Indicates positions necessary for facility activation.

□ Indicates fully augmented organization positions.

6. Emergency Measures

Emergency measures begin with the identification and classification of an emergency and the activation of the appropriate emergency organizations. Emergency measures include assessment actions, corrective actions, and recommendation of protective actions. The Emergency Action Levels (EALs) have predetermined values or conditions which, when met or exceeded, require declaration of an emergency classification, notification of the licensee emergency response organization, state and local officials, and corrective and/or protective actions. A general outline is presented as follows:

6.1. Notification and Activation of Emergency Organizations

The authority and responsibility for initially classifying and declaring emergencies, initiating notification to emergency organization personnel, state and local officials, the NRC and initiating immediate actions necessary to limit the consequences of the emergency reside with the Shift Manager (SM), who is on site 24 hours a day.

The SM initially assumes command and control of the SERO as the Control Room Director of Station Emergency Operations (CRDSEO). The SM will function as CRDSEO until relieved by the EOF DSEO, a shift relief occurs, or the event is terminated. After relief by the EOF DSEO, the SM assumes responsibility as Manager of Control Room Operations (MCRO). For a Unit 1 event, the Unit 2 SM functions as the CRDSEO. After a turnover with the EOF DSEO and ADTS, the Unit 2 SM assumes MCRO responsibilities.

The CRDSEO / DSEO is responsible for ensuring that timely and appropriate notifications are made.

SERO responsibilities may be transferred during a normal shift rotation when a qualified relief reports on site and is fully briefed on current and past conditions.

For emergencies that are not unit-specific, the Unit 3 Shift Manager assumes the position of DSEO until relieved, or the event is terminated.

The SERO is activated by a combination of public address (PA) system announcement, Station emergency alarm actuation and pager message. The PA announcement can include the incident location, emergency classification and personnel information. Initially, the emergency organization consists of normal on-shift personnel. Notification of the emergency organization and state and local officials is by the Emergency Notification and Response System (ENRS) which is initiated by Control Room personnel. If a failure of either system should occur, notifications will be made using commercial telephone lines. The Connecticut State Police will assist with backup notifications to state and local officials, as necessary.

Following the declaration of a "State of Emergency" by the Governor, OEM may direct the DSEO to discontinue use of the ENRS for further state and local notifications and directly communicate with the State EOC for classification changes or event updates. The State OEM will then assume responsibilities for notification of the local communities. The State EOC will coordinate activation of the Public Alerting System sirens with the local governments, as needed. The ENRS consists of computer based systems. When activated, a pager tone alert and a message are transmitted to the pagers. The ENRS system is used for notification of emergency events and decreases the time necessary to notify off-site officials. The radiopager message satisfies the 15-minute notification requirement for state and local officials. The state and local officials call a dedicated telephone number which records the time the call was completed and provides more detailed incident information. A goal of 15 minutes has been established for completing the initial SERO notification sequence.

Radiopager messages include the following information:

- Station and unit identification
- Event classification (including State Posture Code)

The initial or reclassification messages are received by off-site officials calling the dedicated telephone numbers provided to each responder. The information above is repeated and additional information is provided as follows:

- Date and time of event classification
- Name and Title of communicator
- Verbal summary of incident details (major and minor EAL headings)
- Current release information
- Meteorological conditions (if available)
- Classification change, update, termination

Message updates which are provided as plant status and conditions change include forecast meteorological conditions, plant status, any offsite services requested, and whether or not access to the site has been restricted.

Details concerning release type, quantities and actual or projected dose rates will be developed, as appropriate, and provided to responsible officials, when requested.

The ENRS provides initial event notification to the emergency organizations. When emergency facilities are activated, various communications systems are used. These systems allow transmission of detailed technical information of the event in progress as well as direct voice communications between facilities and decision makers. Detailed radiological information will be relayed to the DEP at the State EOC for analysis and decision making.

A representative from the State DEP responds to the EOF and provides a liaison with the EOF and State EOC staff.

The Chief Technical Spokesperson, Technical Assistant, and Nuclear News Manager respond to the State EOC. They are supported by the Rumor Control Liaison, Media Center Liaison, Technical Briefer, and Radiological Briefer.

Work space and communications for federal agencies and the Town of Waterford are located in the EOF. The TSC provides a work area and limited communications for the NRC.

The State of Connecticut EOC in Hartford uses various communication systems to provide information to the OEM Area Coordinators and the local community EOCs. The systems are used to transmit technical, radiological, administrative and resource data between the local community EOCs and the State EOC. Radio, telephone, and FAX devices are used to provide continuous contact with the affected areas. The State EOC coordinates the Public Alerting System siren activation to immediately precede Emergency Alert System (EAS) broadcast messages.

The primary notification (radiopager and dedicated telephone lines) contacts and the continuing lines of communication between on-site emergency response facilities and off-site emergency response centers are indicated in Figures 7-1a through 7-1c.

6.2. Assessment Actions

6.2.1. Initial Assessment

Event classification is based on EALs. The EAL tables provide an incident classification based on instrument readings available in the control room or other observations. The NRC incident classification and corresponding state posture codes are transmitted to state and local officials via the ENRS.

On-Shift dose calculations are conducted, when appropriate, and used to validate the incident classification and any PAR if applicable.

The Shift Technical Advisor (STA) provides independent assessment of emergency actions. When activated, the TSC assumes a more expanded role and responsibility beyond that of the STA.

Additional technical services and support are obtained as necessary from a combination of station personnel, corporate personnel, and off-site assistance companies/agencies. The State DEP does an independent assessment of plant conditions and off-site dose assessment.

6.2.2. Protective Action Recommendations (PARs)

The State RERP includes procedures for use by state and local community officials for public protective actions in the plume exposure pathway. Public PARs requiring evacuation are to be initiated only for GENERAL EMERGENCY events.

PARs beyond those associated with the event classification are developed using dose assessment or plant conditions in accordance with "NUREG-0654, Supplement 3" guidance for severe reactor accidents. The licensee will provide a PAR to state and local authorities.

If PARs are warranted from the Control Room before activation of the station response organization, the state posture code will automatically initiate actions out to 5 miles. If actions are necessary beyond 5 miles, the appropriate PARs will be transmitted directly to the State DEP Duty Officer. Following activation of the station response organizations, PARs are developed and issued directly to the State EOC. The provided PAR will be revised if changing conditions warrant.

When authorized, protective actions are implemented by state and local officials using the Public Alerting System sirens in conjunction with the EAS. The Governor of Connecticut is responsible for public protective action decisions after a state of emergency is declared. Before a state of emergency declaration, local chief executives are authorized to take the public protective actions associated with the GENERAL EMERGENCY posture codes.

When emergency response facilities are activated, the State DEP will collect and process information to independently verify and recommend changes, if necessary, to the licensee provided PARs.

Radiological assessments by the SERO include determination of radiation exposure rates by both analytic and direct measurement methods. Direct measurements are performed by RMTs deployed to field monitoring locations. The analytic methods use computerized dose calculation models. Projected dose estimates are calculated for different downwind directions and distances. The results may require reclassification of the emergency. Further assessments are performed as required and updates are provided to off-site authorities. On-site radiation protection activities are coordinated by the MRCA. Off-site RMT activities are coordinated by the FTDC under the direction of the MRDA. Field data and projected dose information is transmitted to the State DEP, as necessary.

The emergency plan procedures contain methods for relating the various measured parameters to dose rates for the accident conditions.

Dose assessment is performed by licensee personnel assigned to the control room or EOF who perform the calculations. Information from dispatched field monitoring teams and plant conditions are then used to verify incident classification.

a. Use of Station Monitors

The station has an extensive system for monitoring radioactive materials released to the environment. As a general requirement, the various process monitors are capable of initiating appropriate alarms and/or actuating control equipment to provide containment of radioactive materials if pre-established limits are reached.

High range containment monitors have been installed in the Unit 2 and Unit 3 containments to be used to determine containment atmosphere curie inventory. Procedures have been established for converting these monitor readings into potential dose assessment data.

For Unit 2 and Unit 3, high-range radiation monitors have been installed at the potential effluent points to determine effluent release rates if existing normal range stack monitors should go off-scale or become inoperative during an emergency. These high-range monitors cover the entire postulated range of releases and exceed the values specified for a GENERAL EMERGENCY. These systems allow for monitoring releases during emergency conditions. Procedures have been established for converting these monitor readings into release rates. RMT surveys are taken to verify release rates.

Unit 1 gaseous effluent releases are continuously monitored for radioactive gases by a Spent Fuel Pool Island (SFPI) radiation monitoring system. Gaseous effluent is sampled for radioactive particulates by a continuous sampling system which collects samples for periodic analysis.

The site has a permanent meteorological installation that records wind speed, direction, and temperature differences continuously in the Unit 2 and Unit 3 Control Rooms and at 15-minute intervals via a computer system.

b. Use of Emergency Action Levels (EALs)

Unit 2 and Unit 3 EALs contain effluent monitor radiation levels which correspond to predetermined dose assessments and appropriate emergency classification levels.

Unit 1 EALs contain effluent monitor release limits established in the Radiation Effluent Monitoring Manual.

c. Dose Estimates for Radioactive Releases

Upon determination of an emergency or potential emergency condition that is anticipated to have off-site consequences, off-site doses are estimated. The critical exposure pathways for short-term emergency actions are the external dose due to noble gases and the internal thyroid dose due to inhalation of radioactive iodine. In these cases, estimated release rates are combined with meteorological dispersion estimates in order to predict off-site doses. Station emergency plan procedures include a method to calculate the distances at which the Environmental Protection Agency protective action guide (PAG) limits may occur.

When the station EOF is activated and radiological dose assessment personnel have arrived, estimates of off-site doses based on more sophisticated techniques and by analysis of actual RMT data can be provided.

a. Noble Gas Release Rate Estimates

Gaseous effluent readings for Unit 2 and Unit 3 are obtained and converted to release rates by multiplying the readings by an appropriate factor. If the monitors are off-scale, the high-range radiation monitors are used to determine release rates. The high-range radiation monitor readings are converted to a release rate using a predetermined factor. Grab sample results, if available, may be more accurate than gross monitor readings. Release rates based on actual samples, if available, will be used in lieu of monitor based calculations.

If no release estimates based on fixed monitors are available, the release rate will be estimated using field monitoring results.

Unit 1 noble gas release estimates for accidental releases out the SFPI vent will use an area monitor and conversion factors to determine the quantity of Kr-85 being released.

b. Radioactive Iodine Release Rate Estimates

If radioactive iodine grab sample results are available, they may be used to calculate the total iodine release rate. If grab samples are not available, the total noble gas release rate is multiplied by a predetermined iodine-to-noble gas ratio (depending on the plant conditions) to obtain the iodine release rate.

c. Core Damage Estimates

Core damage estimations serve several roles within the Millstone Emergency Preparedness Program. For planning purposes, core damage considerations are used as the bases for several of the Emergency Action Level (EAL) initiating conditions and as the threshold for the declaration of a General Emergency (the definition of a General Emergency specifies conditions which involve 'substantial' core degradation or melting as one of the bases for classification). From an implementation perspective, core damage estimations provide a means of realistically differentiating between the four core states (no damage, clad damage, overheat, and melt) to:

- Evaluate the status of the fuel barriers and how their status relates to the risks and possible consequences of the accident.
- Determine the potential quality (type) and/or quantity (%) of source term available for release in support of projected offsite doses and protective action recommendations.
- Provide information which quantifies the severity of an accident in terms that can be readily understood and visualized.

- Support the determination of radiological protection actions that should be considered for long term recovery activities.

The assessment methodologies used by Millstone Station are intended to provide a rapid best estimate of core damage which, when evaluated together, help to develop an overall picture of the extent of core damage. The methods used to estimate the amount or type of core damage occurring under accident conditions include the following:

- Core Uncovery Time: An indirect method used to indicate the type of core damage (clad failure or fuel melt). Applicable for all types of accidents. Provides a relatively accurate estimate of the core state early in the event. Valid any time following an accident.
- Core Temperatures: An indirect method used to indicate the type of core damage. Applicable for all types of accidents. Does not provide numerical estimations but is useful as a yes/no indicator or as confirmation of other methods. Valid any time following an accident.
- Containment and Main Steam Line Radiation Levels: An indirect method used to determine the amount of core damage. Applicable to LOCA type accidents. Based upon an end-of-life source term and static nuclide ratio assumptions yielding a limited accuracy. Valid any time following an accident.
- Containment Hydrogen Concentration: An indirect method used to establish the type of core damage. Applicable to LOCA type accidents where all the hydrogen generated by the metal-water reaction is released into containment. Valid any time following an accident.
- Sample Analysis - Isotopic Ratio Comparison: A direct method used to establish the type of core damage. Compares expected isotopic ratios with a sample to determine a general core state. Applicable under all types of accidents. Valid any time following an accident.
- Sample Analysis - Presence of Abnormal Isotopes: A direct method used to indicate a degree of fuel melt by the presence of unusually high concentrations of the less volatile fission products. Applicable under all types of accidents. Valid any time following an accident.
- Sample Analysis - Concentration Evaluation: A direct method which yields the most accurate numerical estimations. Applicable for all types of accidents. Requires the sampled system(s) be in a steady state which usually prevents its use until the plant is in a stable condition.

d. Meteorological Data

Input to the meteorological section of the procedures includes effective release height, temperature differential, wind speed, and wind direction based on actual or projected readings.

Meteorological data, acquisition and flow are described in Section 7.13.

e. Total Effective Dose Equivalent (TEDE)

The calculated TEDE contributions will include plume external exposure, ground external exposure and inhalation exposure. TEDE doses are calculated for various downwind distances using computerized methods.

f. Committed Dose Equivalent (CDE)-Thyroid

The radioactive iodine release rate and meteorological data are used in computerized methods to obtain the projected maximum off-site CDE thyroid dose at various downwind distances.

g. Verification

When appropriate, dose rates are verified by on-site and off-site RMTs which have been deployed with portable emergency radiological instrumentation and communication equipment.

h. RMT Mobilization and Monitoring

1. Notification/Coordination Methods - When notified by radiopager and/or the station evacuation alarm, the RMT members report to the EOF, Control Room, North Access Point (NAP), South Access Point (SAP), or other areas as assigned. The teams are then dispatched by the appropriate SERO managers.
2. Composition - Each of the off-site RMTs consists of two persons, at least one is a health physics technician. The on-site RMTs are health physics technicians.
3. Transportation - Three dedicated company vehicles are used for transporting off-site RMTs.
4. Monitoring and Equipment - A general list of radiological monitoring kit equipment is included in Appendix E. Complete inventories are provided in station procedures. The kits are provided with appropriate radiological monitoring equipment to measure radioiodine concentrations in air as low as 10^{-7} $\mu\text{Ci/cc}$.

Environmental Thermoluminescent Dosimeters (TLDs) and air particulate samples, air sample cartridges, goat milk, cow milk, soil, vegetation, and water are collected by Environmental Services (ES), Health Physics personnel, or HP REMP Tech.

5. Deployment Time- The off-site RMTs can be deployed in approximately one hour. The on-site RMTs can be deployed immediately after equipment checks.
6. RMT Communication- The RMTs report information via radio communications or telephone.

i. Off-site Monitoring by DEP

The State DEP dispatches off-site monitoring teams of state personnel.

j. Plume Monitoring Over Water

Millstone Environmental Lab vessels may be used to provide transportation for plume monitoring over water. RMT personnel will be assigned to perform over water monitoring as necessary.

6.2.5. Secondary Dose Assessment

Long-term off-site radiological dose assessment (secondary assessment) is provided by the State DEP. The State DEP is assisted, as necessary, by Millstone and other agencies. After the assessment has been completed, the State DEP recommends protective actions to the Governor for approval.

6.3. Corrective Actions

Corrective actions are implemented by the use of detailed station procedures. These procedures prioritize actions to prevent or mitigate the consequences of an accident.

The instrumentation, control systems monitors, and radiation monitoring systems provide indications of the safe and orderly operation of the unit. These systems provide the operator with the information and controls needed to start up, operate at power, and shut down the plant. They further provide the means to cope with an abnormal operating condition should it occur. Control of plant systems and information displays are centralized in the control room. This instrumentation provides the basis for initiation of corrective actions.

The following additional corrective actions are implemented during emergency situations as necessary.

6.3.1. Fire Fighting

Procedures for responding to fire emergency situations are in place. Firefighting strategies for plant areas are available for use by responding personnel. The Shift Fire Brigade Captain, with assistance from the operations Fire Brigade Technical Advisor, is in charge of extinguishing the fire.

Applicable health physics, security, and safeguards procedures apply. If outside assistance is needed, the Waterford Fire Department is called.

6.3.2. Damage Control, Repair and Decontamination

Station personnel normally provide decontamination, repair and damage control services. For ALERT, SITE AREA EMERGENCY and GENERAL EMERGENCY operations, the support of specialized outside contractors is obtained, as required. Decontamination of personnel and equipment is conducted in accordance with approved procedures.

6.4. Protective Actions

Protective actions are taken when an incident has occurred, or may occur, that could result in concentrations of airborne radioactivity or radiation levels that exceed normal limits for a specific area or areas and cannot be readily controlled, or personnel safety from other causes is threatened. Emergency procedures provide guidance for protective actions, such as evacuation, assembly or sheltering.

6.4.1. On-site Protective Actions

Persons in the owner-controlled area of the site, but outside the protected area, are considered members of the general public. Persons within the protected area are either station personnel, contractor personnel, or visitors. If the protected area has been evacuated, Security will inspect locations outside the protected area to ensure all personnel have evacuated.

The radiological protective actions specified in this section and in Emergency Plan Procedures are augmented by the normal health physics procedures and are used during an emergency unless different actions are identified and authorized by the ADTS. The MRCA establishes radiological control areas (RCAs) in response to the incident. Access to the RCA is controlled by the emergency team briefing process unless immediate access is authorized by the ADTS to facilitate emergency repairs.

a. Notification

The actuation of radiation monitoring alarms, the station emergency alarm, fire alarms, and public address announcements alerts personnel to hazardous conditions and response actions.

b. Security and Site Access Control

If station access has been restricted, traffic is diverted through a security checkpoint in the EOF parking lot. Site access roads will be manned and barricaded as necessary. Station access controls will be supported by the Waterford Police department and the Connecticut State Police, as necessary.

Personnel accessing the protected area must be authorized by the ADTS.

Station security procedures provide detailed guidance for responding to an emergency.

c. Precautionary Dismissal of Non-Essential Personnel

A precautionary dismissal of non-SERO personnel occurs at the Alert level declaration and can be initiated from the Control Room or TSC. The CR DSEO or ADTS can elect NOT to conduct the precautionary dismissal if the nature of the event warrants such judgement.

A precautionary dismissal directs all non-essential Millstone employees, contractors, and visitors to leave the site.

d. Evacuation

A site evacuation is initiated at the SITE AREA EMERGENCY or GENERAL EMERGENCY classification levels. Site evacuation may be called for at the ALERT level classification depending on the environmental conditions at the time of the event. All non-essential personnel are instructed to leave the Owner Controlled Area. Personnel can be evacuated in about 30 minutes. Evacuation may be suspended or deferred during certain situations (e.g., Security-related, toxic gas), until the threat is resolved. Evacuation will be implemented as quickly as possible thereafter, given the specific situation.

Evacuation can involve the movement of large numbers of personnel out of the Protected Area through the turnstiles at the NAP or SAP. An evacuation alarm actuator is located in the Unit 2 and Unit 3 control rooms. A public alert system is in place in the protected area to communicate evacuation messages in the event of a station emergency.

Evacuation may warrant station egress control by Security. Following discussion with the Connecticut State Police and the Waterford Police Departments, Security will provide specific instructions to exiting personnel as requested by off-site authorities. As part of evacuation, station personnel may be directed to a specific location for monitoring and decontamination.

Other situations which involve the evacuation of personnel from occupied localized areas onsite must be controlled on a case-by-case basis.

e. Local Area Evacuation

Local area evacuation is an evacuation of a building, area, unit, or multi-units for the immediate protection of station personnel from a hazard with limited exposure potential. It is a standard response immediately taken by control room personnel upon acknowledging the hazard.

f. Sheltering

Sheltering is a short-term action taken in specific situations where there is insufficient time available to conduct an evacuation due to the hazard being short lived or threatening the safety of the evacuating population. If a release or hazard is projected to occur within 30–60 minutes, sheltering in place with subsequent staggered movement of personnel may be considered.

g. Assembly

Assembly occurs upon declaration of an ALERT or higher emergency classification level. Minimum staffing and full staffing SERO positions report to their emergency response facilities (control room, EOF, TSC/OSC, OSC AA). SERO personnel assigned to the State EOC (SEOC) report to Hartford. Non-essential personnel are not involved in assembly activities. The Assembly Areas are used to retain SERO personnel who may be needed in the near term to support the event.

h. Accountability

Accountability is conducted at a SITE AREA or GENERAL EMERGENCY and may be conducted at the Alert level following SERO activation and the completion of the precautionary dismissal.

Accountability is the process of verifying the location of personnel who are inside the Protected Area. That is, any unaccounted for person that has keyed into the Protected Area (NAP/SAP) and is not keyed into a vital area, the TSC/OSC, or the OSC Assembly Area (cafeteria) will be identified as missing. Accountability is required to be completed within 45 minutes of its initiation (the names of any missing persons identified to the DSEO or ADTS and announced over the PA).

If precautionary dismissal or evacuation could endanger plant personnel, these actions may be deferred until the condition has been resolved. When conditions warrant, dismissal, evacuation and accountability will be performed, as appropriate.

i. Personnel Monitoring

All personnel within the Protected Area are monitored for radioactive contamination before leaving the Owner-Controlled Area. Portal monitors and RMTs will be used for monitoring personnel. An off-site monitoring location will be established if radiological conditions on site prohibit adequate monitoring.

Each ERF has radiation detection equipment.

The MRCA will establish decontamination areas as necessary. Decontamination facilities are available at the EOF and other areas within the station. The Haddam Neck Plant may be used for monitoring and decontamination if conditions prohibit on-site monitoring. Transportation to an off-site facility will be provided, as necessary. Monitoring and decontamination procedures are detailed in the Radiation Protection Manual (RPM).

Documentation of personnel contamination surveys will be maintained. Any person suspected or known to have ingested radioactive material will receive bioassay examinations as specified by the RPM.

6.4.2. Use of On-site Protective Equipment and Supplies

Protective equipment and supplies are used to minimize external and internal radiological exposure and contamination of personnel entering the station. Detailed procedures on the use of protective equipment and supplies are referenced in Appendix D.

6.4.3. Contamination Control Measures

- a. Detailed guidance for controlling radioactive contamination of personnel and equipment is provided in the RPM.
- b. During accident conditions, the MRCA may approve conditional release of items from the RCA, in excess of RPM release limits. Special controls for release of this equipment will be instituted.
- c. Personnel are advised not to consume on-site drinking water and food supplies during an accident, until sampling and analysis are completed.
- d. For areas outside the station protected area, RMTs will be used to identify radiation control areas and security will be used to control access. Public access areas of the site will be controlled to off-site radiological criteria.
- e. Radiological waste material will be controlled, stored and shipped in accordance with the RPM.

- f. Off-site surface contamination and other radiological control criteria are detailed in the state and local RERP.

6.4.4. Personnel Radiation Dose Determination

Health Physics (HP) coverage is provided 24 hours per day to support normal Station operations. During accident conditions, HP technicians may accompany emergency workers, as needed, during RCA entries.

Emergency dosimetry (i.e. self-reading Pocket Ion Chamber dosimeters (PICs) or alarming dosimeters) and permanent recording dosimeters (TLDs) are used by the initial SERO responders, as necessary. Additional dosimetry is distributed by HP personnel and is issued to individuals, including off-site individuals arriving at the EOF.

TLDs are available from and analyzed by the Dosimetry Laboratory. The individual integrated dose records are maintained by the HP Department. Exposure information is recorded from self-reading dosimeters and provides personnel exposure tracking until TLD results become available. The TLD results will be used as a permanent exposure record.

Permanent dosimetry will usually be read when it is determined that the emergency workers have received an exposure near their administrative limit or if an overexposure is suspected. All other dosimetry is read on a schedule established by the MRCA.

6.5. Aid to Affected Personnel

Provisions are made to assist personnel who are injured and/or have received high radiation exposures. EMT qualified personnel, assigned to the Fire Brigade, provide on-site emergency medical services. First aid and decontamination facilities are available on-site and off-site. The following subsections describe measures to be used to provide necessary assistance.

6.5.1. Exposure Control Guidelines

In the event of an ALERT, SITE AREA EMERGENCY or GENERAL EMERGENCY, emergency worker exposure limits are automatically increased in accordance with EPA 400. This limit remains in effect until mission-specific limit upgrades are required and authorized by the appropriate emergency manager (refer to Table 6-1). The use of radioprotective Potassium Iodide will be evaluated for administration to on-site and off-site SERO personnel in accordance with emergency procedures. Exposures are commensurate with the significance of the objective and are held to the lowest levels that the emergency permits. In all situations, every reasonable effort is made to minimize exposure to emergency personnel.

Planned actions are carefully examined by weighing the risks and consequences of potential exposure and injury against the probability of success and the benefits to be gained from these actions.

Emergency worker exposure limits and KI issuance for State and local agency responders (i.e., National Guard, police) onsite are controlled by the State of CT or applicable agency.

6.5.2. Emergency Exposure Control Guidelines for Off-Site Personnel

If off-site emergency personnel are required during a nuclear incident to support combating fires, provide emergency first aid, or transport injured and/or contaminated injured to off-site medical treatment facilities, exposure limits as specified in Table 6-1 are applied. Appropriate dosimetry will be issued to all off-site responders in accordance with the RPM.

Off-site medical facility staff personnel performing medical treatment on injured and/or contaminated injured persons shall control exposure in accordance with facility emergency procedures. Medical staff shall be issued appropriate dosimetry (i.e., TLD and pocket dosimeter).

All dosimetry will be evaluated to determine and document the actual exposure received responding to the emergency.

For security-related events, offsite emergency responders such as the National Guard and State Police will report to the site with their own dosimetry. Dosimetry will be processed by a State contractor. Exposures received will be reported to the individuals and the station, as requested. Exposure control will be through the State of CT or local agency.

6.5.3. Decontamination

Radiological decontamination of personnel, supplies and equipment and waste disposal is conducted in accordance with the RPM, under direction of HP personnel.

Unit 2 and Unit 3 have decontamination facilities which may be used to decontaminate emergency response personnel.

The EOF is the principal decontamination facility during emergencies. A shower with holding tank and supplies for personnel decontamination are provided. If on-site areas are not usable because of inclement weather or continuing releases, the Haddam Neck Plant with similar facilities may be used.

6.5.4. First Aid

EMT qualified personnel are available to assist ill or injured personnel on-site 24 hours per day. If necessary, a physician may be requested to provide medical assistance on-site.

6.5.5. Medical Transportation

Injured or radioactively contaminated injured personnel requiring hospitalization are transported using local community ambulance services. The ambulance may be requested via dedicated or commercial telephone. The ambulance crews are trained to respond to radiological incidents. Personnel qualified in radiation protection are directed to report to the receiving hospital or accompany the injured, contaminated patients to the hospital. If necessary, the receiving hospital will be provided details of patients being transported. Station procedures provide detailed instructions for personnel responding to personnel injuries or contamination.

6.5.6. Medical Treatment

Arrangements for the primary care of injured, or radioactively contaminated injured personnel are made with the Lawrence and Memorial Hospital in New London and Middlesex Hospital in Middletown. Communications will be by commercial telephone lines. The hospital staff is trained annually and the facility is equipped to treat contaminated injured patients. Contaminated wounds are treated and decontaminated as necessary by the hospital staff.

6.6. Public Information

The public information emergency response personnel consist of the Public Information Technical Advisor (PITA), the Nuclear News Manager (NNM), the Chief Technical Spokesperson (CTS) and supporting staff. The PITA reports to the ADEOF at the Station EOF. The PITA gathers and transmits accident information to the NNM at the State EOC. The NNM reports to the Chief Technical Spokesperson and manages public information activities at the EOF and Joint Media Center. The Chief Technical Spokesperson represents the licensee in communications with state and media officials.

Table 6-1
Emergency Exposure Limits

<u>Category</u>	<u>TEDE</u>
Annual Part 20	5.0 Rem ⁽¹⁾
Mission to protect valuable property	10.0 Rem ⁽²⁾
Mission to save a life or prevent/mitigate a severe accident	25.0 Rem ⁽³⁾
Voluntary mission to save a life or prevent/mitigate a severe accident	>25.0 Rem ⁽⁴⁾

NOTES:

- (1) Automatic exposure up to 5 Rem is allowed in a declared emergency. Members of the SERO responding to on-site emergency response facilities are designated emergency workers subject to NRC 10 CFR 50.47(b).11 radiation exposure controls which are the EPA guidelines for on-site emergency workers.
 - (2) In accordance with EPA 400, emergency workers can be authorized for an exposure up to 10 Rem TEDE for operations necessary to protect valuable property.
 - (3) Depending on station radiological conditions, authorized emergency workers may receive exposures up to a job/mission-specific designated limit, not to exceed 25 Rem TEDE.
 - (4) Exposures above 25 Rem may be received for life saving activities on a volunteer basis and with full awareness of the risk involved.
- It is recognized by NRC and EPA that an accident involving significant radiation exposure is a low probability occurrence. An exposure level below 25 Rem is not considered to be life-threatening and will occur once in a lifetime. ALARA principles will be applied when possible.
 - Dose received during an emergency is administratively tracked/controlled in accordance with 10 CFR 20 requirements following termination of the event.
 - Total Effective Dose Equivalent is defined as part of the station health physics program.

7. Emergency Facilities and Equipment

This section identifies, describes, and gives the locations of emergency operation centers, support centers, communication systems, and first aid and medical facilities. Diagrams of the station emergency response facilities (ERFs) are provided in Appendix F. Locations of the on-site emergency response facilities (ERFs) are indicated in Table 7-1. The various facilities and equipment are controlled and surveilled, using MP-26-EPA-FAP05, "Emergency Planning Facility Manual," and MP-26-EPA-FAP01, "Management Program for Maintaining Emergency Preparedness." These documents provide detailed lists of equipment and schedules for conduct of facility/equipment surveillance. Equipment inspection and inventories are conducted quarterly or after known or suspected use of equipment occurs in accordance with this procedure. Operational checks of emergency equipment are completed at specified intervals and during activation of the emergency response organization.

7.1. Control Room

The Control Room is the primary facility where conditions of the plant are monitored, controlled and corrective actions are taken to mitigate any abnormal conditions. The Unit 1 Central Monitoring Station (CMS) houses a Programmable Logic Controller (PLC), two control stations in "monitor mode" only (they can be reconfigured to the control mode), and an alarm printer. No control functions are available in the "monitor mode." The Unit 2 control room contains one control station (SM's work station) and two monitors which provide all control and monitoring functions remotely. Both locations provide indications and alarms for Unit 1.

The Control Room provides the main communications link between the Station and the other ERFs concerning system problems as well as long-term and short-term corrective actions. The Control Room is the primary operations center during events classified as UNUSUAL EVENT, and prior to the activation of the other ERFs for ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY classifications. The SM/CRDSEO can initiate and coordinate appropriate procedures from the Control Room until additional assistance is available.

Emergency lighting, power, ventilation systems, and shielding enable operators to remain in the Control Room to ensure the station can be maintained in a safe condition. In addition, the operators are able to evaluate station conditions and relay pertinent information and data to appropriate emergency facilities, personnel, and agencies during all emergencies. To ensure that operating shift and other personnel can remain self-sufficient, portable radiation monitors, respiratory equipment, portable lighting, and alternate communication systems are maintained in the Control Room.

The Unit 2 and Unit 3 control rooms use the Off-site Facilities Information System (OFIS) as the primary data communications link to the ERFs. In addition, the Unit 2 and Unit 3 Control Rooms have Safety Parameter Display System (SPDS) terminals.

The Unit 2 control room contains one SM's work station and two monitors which provide indications and alarms for various parameters applicable to Unit 1's decommissioned condition, including the Spent Fuel Pool Island.

7.1.1. Normal Operations

The Control Room is the on-site location from which the nuclear power plant is operated. For Unit 2 and Unit 3, the control room contains the instrumentation, controls, and displays, as applicable to the unit, for:

- Reactor coolant and Auxiliary systems
- Balance of Plant and Nuclear Steam Supply systems
- Electrical systems
- Safety systems (including engineered safety features), and
- Accident monitoring systems

The Unit 2 control room is the on-site location from which the defueled plant is monitored and controlled. It contains instrumentation or displays for the Spent Fuel Pool, Balance of Plant, and Accident Monitoring Systems. If the Unit 2 control station console should become inoperable, the Unit 1 CMS may be used for control and monitoring.

7.1.2. Alert and Notification

The Unit 2 and Unit 3 control rooms are equipped with an ENRS terminal from which personnel transmit radiopager messages. State and local emergency response personnel call in and acknowledge radiopager notification. They can receive a voice-recorded summary report describing the nature of the incident and the plant status.

7.1.3. Communications

In addition to regular direct-dial telephone lines and on-site extensions, the Unit 2 and Unit 3 Control Rooms are equipped with reliable emergency communication systems (dedicated telephone lines and radios) necessary to alert station and other essential licensee, state, and local community personnel and maintain communications with the station ERFs throughout an emergency. The Unit 2 and Unit 3 Control Rooms, the TSC, and the EOF have a dedicated telephone system to communicate with the NRC.

7.2. Emergency Operations Facility

7.2.1. Function

The EOF serves as a near-site support facility for the management of the overall site emergency response, the coordination of radiological and environmental assessments, and determination of recommended public protective actions. It is the primary on-site communication center and contains appropriate communication links to on-site data sources and off-site organizations.

Emergency radiological monitoring and decontamination equipment and supplies, protective clothing, and respiratory protective devices are also located in the EOF. In addition, the EOF contains a facility for limited analyses of radiological data.

The EOF is activated during events classified as ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY and is the primary interface between the SERO and off-site agencies.

If an event occurs which prohibits staffing the EOF (i.e., Security threat), designated locations are available for EOF SERO response. Full activation may not be possible until the threat conditions have been resolved.

7.2.2. Location

The EOF is located approximately one (1) mile north of the station protected area on the west side of the access road, approximately 800 feet inside the site boundary (refer to Appendix F, Figure F-2).

7.2.3. Structure and Habitability

The EOF is designed for continuous operation during an emergency. It is a rectangular, one-level above-ground, structure having 2-foot thick steel reinforced concrete walls and ceiling. It provides approximately 7,000 ft² of working space and has a protection factor greater than 500 from a semi-infinite noble gas cloud airborne source and a protection factor of 133 for Iodine 131.

The heating, ventilation, and air conditioning (HVAC) system is rated at 2,000 CFM and is located inside the EOF. Operating in the filtered recirculation mode, the system provides a habitable environment for the designed occupancy of 250 people.

The EOF has manually activated airtight doors, decontamination facilities and a dedicated emergency diesel to provide backup AC power.

7.2.4. Layout

The EOF functional areas are indicated in Appendix F, Figure F-2.

7.2.5. Communications

The EOF is the primary communications center at the station during an emergency. The EOF is provided with communications to the control rooms, TSC/OSC, State EOC, Joint Media Center, and NRC.

An ENRS terminal is available as well as radios, dedicated telephones, normal telephones and facsimile machines.

7.2.6. Power Supplies

Normal power is provided to the EOF from the station power grid. Emergency power is provided automatically by an emergency diesel generator, capable of meeting all EOF power requirements.

7.2.7. Technical Data and Data Systems

The EOF receives plant operational data via the Offsite Facility Information System (OFIS) and direct voice communications with other ERFs. Facsimile machines provide hardcopy communications between ERFs.

7.2.8. Records Availability and Management

An administratively controlled library of station and plant specific drawings and procedures is maintained in the EOF. This information is stored at the EOF in hard copy or electronic form.

7.3. Technical Support Center/Operational Support Center

7.3.1. Function

The TSC provides technical support to plant operations personnel in the Control Room, OSC (co-located with the TSC) and EOF during an emergency. The TSC is activated within 60 minutes of notification of an ALERT or higher event.

TSC personnel are under the direction of the ADTS. The MTSC will use communication networks, data system networks, and available documents to analyze the plant behavior throughout the incident. TSC personnel will also research, collect, and interpret plant parameter data, perform detailed calculations, trend data, determine probable consequences of proposed plant corrective actions and provide engineering recommendations to mitigate plant system degradation. The MTSC communicates with the MCRO to evaluate plant conditions, and recommends corrective action via the ADTS.

If an event occurs which prohibits staffing the TSC (i.e., Security threat), designated locations are available for TSC SERO response. Full TSC activation may not be possible until the threat conditions have been resolved.

The ADTS, located in the TSC, provides guidance and direction to the control room operating personnel. The MTSC coordinates with the MOSC to brief emergency repair teams.

The NRC dispatches representatives to the TSC to monitor plant conditions and station emergency technical support activities, and to maintain communications with the NRC Director of Site Operations.

7.3.2. Location

The TSC is located inside the protected area, adjacent to the west side of the Unit 3 control building.

7.3.3. Structure and Habitability

The TSC/OSC is a 2000-ft² below-ground facility with one-foot thick (minimum) exterior walls and ceiling. It was designed and built in accordance with the Connecticut State Building Code. It is able to withstand the most adverse conditions reasonably expected during the design life of the station.

A dose consequence study for the TSC/OSC revealed that the calculated 30-day integrated doses to personnel in the TSC/OSC following a design basis accident at any of the three units are within 10CFR50 Appendix A, General Design Criteria 19 guidelines and the NRC Standard Review Plan for Control Room Habitability:

	<u>Limit</u>
Thyroid	30 Rem
Whole body gamma	5 Rem
Beta skin dose	30 Rem

The HVAC system is rated for 2,000 CFM and located in the TSC/OSC penthouse, which is above ground level. The facility receives an isolation signal initiating HVAC operation from the Unit 3 control building isolation (CBI) signal. This system is designed to maintain habitability for facility occupants.

7.3.4. Layout

Work centers exist to enable OSC and TSC personnel to monitor plant data on the OFIS, SPDS terminals, and provide technical assistance. The critical safety functions may be continuously monitored on provided SPDS displays.

The NRC work area provides a space for the NRC to establish local area network communications and monitor OSC and TSC activities. NRC dedicated telephone system connections are provided in addition to site telephone access.

7.3.5. Communications

The OSC and TSC are provided with reliable communications to the control rooms and EOF. A facsimile machine is provided for hard copy data transmission.

7.3.6. Power Supplies

The TSC/OSC is powered from the Unit 3 normal power bus. The Security system emergency diesel generator provides reliable backup power to meet all TSC requirements.

7.3.7. Technical Data and Data Systems

The TSC will initially receive plant operational data via the Unit 2 or Unit 3 SPDS and/or OFIS system and telephone communications between the TSC and the control room. OFIS automatically records plant system variables and provides history, data trending and graphic print capability to the ERFs.

7.3.8. Records Availability

An administratively controlled library of station and plant specific drawings and procedures is maintained in the TSC. This information is stored in hard copy or electronic form.

7.4. Operational Support Center (OSC) and OSC Assembly Area

7.4.1. Function

The OSC is a protected area facility, co-located within the same structure as the TSC. Emergency response personnel will assemble in the OSC during an emergency to provide support to the affected control room.

The OSC Assembly Area provides a staging area for emergency teams being dispatched during accident conditions, as well as space for additional SERO personnel outside the TSC/OSC.

7.4.2. Location and Size

The OSC is located within the TSC/OSC facility adjacent to the west side of the Unit 3 control building. The OSC is approximately 23 feet by 26 feet.

The OSC Assembly Area accommodates support personnel not located in the TSC/OSC facility.

The OSC Assembly Area is located in the William Ellis Technical Support Center (B475), Conference Room C-102, which is approximately 50 yards west of the TSC/OSC (see Figure F-3).

7.4.3. Structure and Habitability

The OSC has the same habitability as the TSC.

The OSC Assembly Area has no specific habitability criteria.

7.4.4. Communications

The MOSC will maintain communications with the OSC Assembly Area using normal or dedicated telephones in the OSC. The MOSC will directly communicate with the ADTS.

7.4.5. Emergency Equipment

In order to support the OSC function, the following emergency equipment is located in OSC storage locations:

- Radiation Monitoring Team Kit
- Portable Radios
- Protective Clothing
- Respiratory Protection

Access to additional HP and maintenance equipment is readily available to obtain specific materials required to perform OSC functions.

The OSC AA contains the following equipment:

- Dosimetry issue equipment
- Portable radios
- Hotlines and fax machines

7.5. Emergency Equipment

Emergency equipment is stored at various on-site locations, including the control rooms, TSC/OSC, access points and the EOF.

For a representative list of emergency equipment, see Appendix E. Emergency equipment is maintained in accordance with station procedures including MP-26-EPA-FAP01 and MP-26-EPA-FAP05.

7.5.1. Emergency Response Data System (ERDS)

The ERDS, established in accordance with regulatory guidance, is provided via electronic data transfer. An ERDS link is initiated within an hour of an ALERT or higher emergency classification. An ERDS link is not provided for Unit 1.

7.6. Security Posts

The security posts that are established and used during an emergency are addressed in general terms to avoid disclosing safeguards information. More specific information is contained in the proprietary Security Plan and procedures.

The Station Security Department primary objectives during an emergency are to maintain adequate station security, facilitate the precautionary dismissal and evacuation of the protected area and outlying areas, and assist with emergency communications, as necessary.

Either the Central or Secondary Alarm Station will become the Security Command Console if an emergency occurs and will function as an on-site emergency communications center during the first 60 minutes while the SERO is being activated. Security computer keycard reader units are used to perform accountability for the protected area.

7.7. Joint Media Center

The Joint Media Center is located within the State EOC in Hartford, Connecticut. The Joint Media Center is activated by the State OEM as the principal media contact point for the utility, the state and local communities during a SITE AREA EMERGENCY, GENERAL EMERGENCY, or other incidents that may generate high media interest. State and licensee plans do not include use of the Station EOF for a media center; however limited space is available for media briefings or conferences at the facility.

7.8. Alternate Location

An alternate location is designated for off-site officials who are unable to reach the EOF due to radiological or environmental conditions near the EOF. The Alternate Location is physically located at the State EOC (Armory) in Hartford, Connecticut. The Alternate Location has communications capability with the site emergency response facilities (i.e., EOF, TSC, control room, etc.). There is enough space to accommodate off-site officials requiring access to site emergency managers.

7.9. Communication Systems

The communication links between emergency response centers and off-site agencies are shown in Figures 7-1a through 7-1c. These systems provide reliable communications and consist of a combination of the station PA system, emergency alarm, intraplant telephones, computer terminals, dedicated hotlines, commercial and utility (tie-line) telephones, facsimile machines, and two-way radios including utility, State Police, Waterford Police, and ISO New England radio communications. In addition, the Station has NRC dedicated telephone system lines installed in the Unit 2 and Unit 3 control rooms, EOF and TSC.

Two-way radio communications are used to maintain communication between the EOF and RMTs. Police and utility radio communication are used by the Control Room in the event of the failure of the telephone system for off-site communications. Backup power is maintained for selected communication links in the protected area and the EOF.

Ambulances are equipped with radios and can communicate with the hospital. Normal communication between the station and off-site medical facilities will be over commercial telephone. There are also hotline telephones between the Central Alarm Station and TSC/OSC to the State Police, Waterford Police / Waterford Emergency Communications Center.

The states of New York and Rhode Island are within the 50-mile ingestion pathway EPZ and are contacted through the Connecticut OEM and State Police as described in the State RERP. Fishers Island and Plum Island, New York, are within the plume exposure EPZ and are notified of emergency events via ENRS radiopager.

7.10. Assessment Facilities

Appropriate on-site and off-site monitoring instruments and laboratory facilities needed to analyze an accident are available 24-hours per day and are listed in Appendix H, Tables H-1 and H-2. The MRDA and MRCA will coordinate the collection of sample media by the Radiological Monitoring Teams (RMTs). The RMTs will return samples to the EOF for analysis when directed. Appendix B provides letters of agreement with private laboratory facilities specified in Table H-2. Post-accident environmental samples are collected by responsible state agencies and analyzed by the State Health Department laboratory. The licensee will assist the State of Connecticut in the collection of environmental samples under direction and control of the Department of Environmental Protection, as requested.

7.11. First Aid and Medical Facilities

24-hour per day first aid services are provided by EMT qualified personnel. First aid supplies and equipment are stored in various locations throughout the station. The Site Medical Facility is also available during selected hours, which may provide equipment and personnel to assist in medical emergencies.

7.12. Damage Control Equipment

Damage control equipment consisting of fire hydrants, fire hose stations, fire extinguishers, and portable lanterns are provided throughout the station for fire fighting. Self-contained breathing apparatus is located strategically throughout the station for fire fighting and entry into airborne radioactivity or toxic gas areas. Selected equipment spare parts are stored in the warehouse for emergency repairs. Tools and equipment required for equipment maintenance are available in the maintenance shops.

7.13. Meteorological Data Acquisition

The Millstone site has a primary meteorological installation consisting of a 450-foot instrumented tower, a climate-controlled shelter, and a computerized data acquisition system. Wind speed and direction are measured at four different levels: 33, 142, 374, and 447 feet. Vertical temperature difference is measured at 142, 374, and 447 foot levels: the vertical interval in all three cases is measured from a baseline height of 33 feet. The critical parameters of wind speed, wind direction, and a measure of atmospheric stability are continuously available in the Unit 2 and Unit 3 Control Rooms and at the base of the meteorological tower. Other non-critical meteorological parameters are also measured.

The site has a backup meteorological monitoring system located near the training facility. The system consists of a 10-meter instrumented mast, a climate-controlled shelter, and a backup computerized data acquisition system. Additional information may be obtained from a weather service organization, listed in Appendix B.

The primary source of meteorological data used by the meteorological team is the EDAN system, an electronic data acquisition network. If EDAN is inoperative, the critical data may be obtained over the telephone from operators reading Unit 3 Plant Process Computer data. If the primary meteorological tower instruments are not operating properly, the backup meteorological installation located near the training building may be used. If both on-site systems are inoperative, arrangements have been made to obtain information from the assisting weather service organization.

Table 7-1

Locations Of Emergency Response Centers

<u>On-site</u>	<u>Location</u>
1. Control Room	Unit 2 and 3 Control Room
2. OSC Assembly Area (OSC AA)	Cafeteria, Bldg 475
3. Technical Support Center/Operational Support Center (TSC/OSC)	Adjacent to and below Unit 3 Control Bldg.
<u>Off-site</u>	<u>Location</u>
1. Emergency Operations Facility	Just off the Site Access Road
2. Assembly Area	Simulator Foyer in the Training Building
3. Joint Media Center	Connecticut State Armory (Hartford)
4. State Emergency Operations Center	Connecticut State Armory (Hartford)
5. Local Community Emergency Operations Centers	Refer to the Local Community Radiological Emergency Response Procedures
6. Alternate Location	State EOC (Armory) Hartford, Connecticut

Figure 7-1a

Notification of Emergency Response Organizations

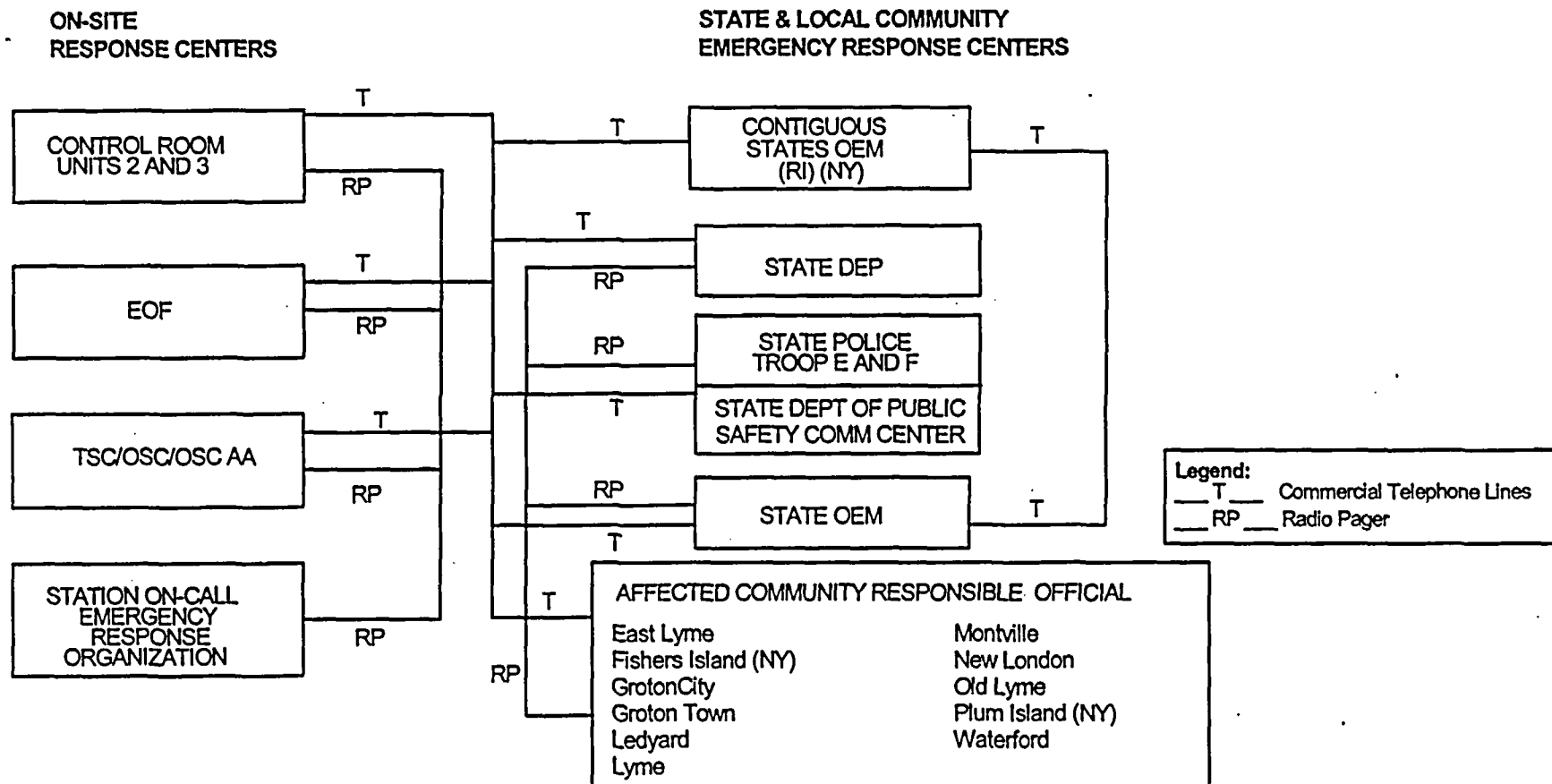
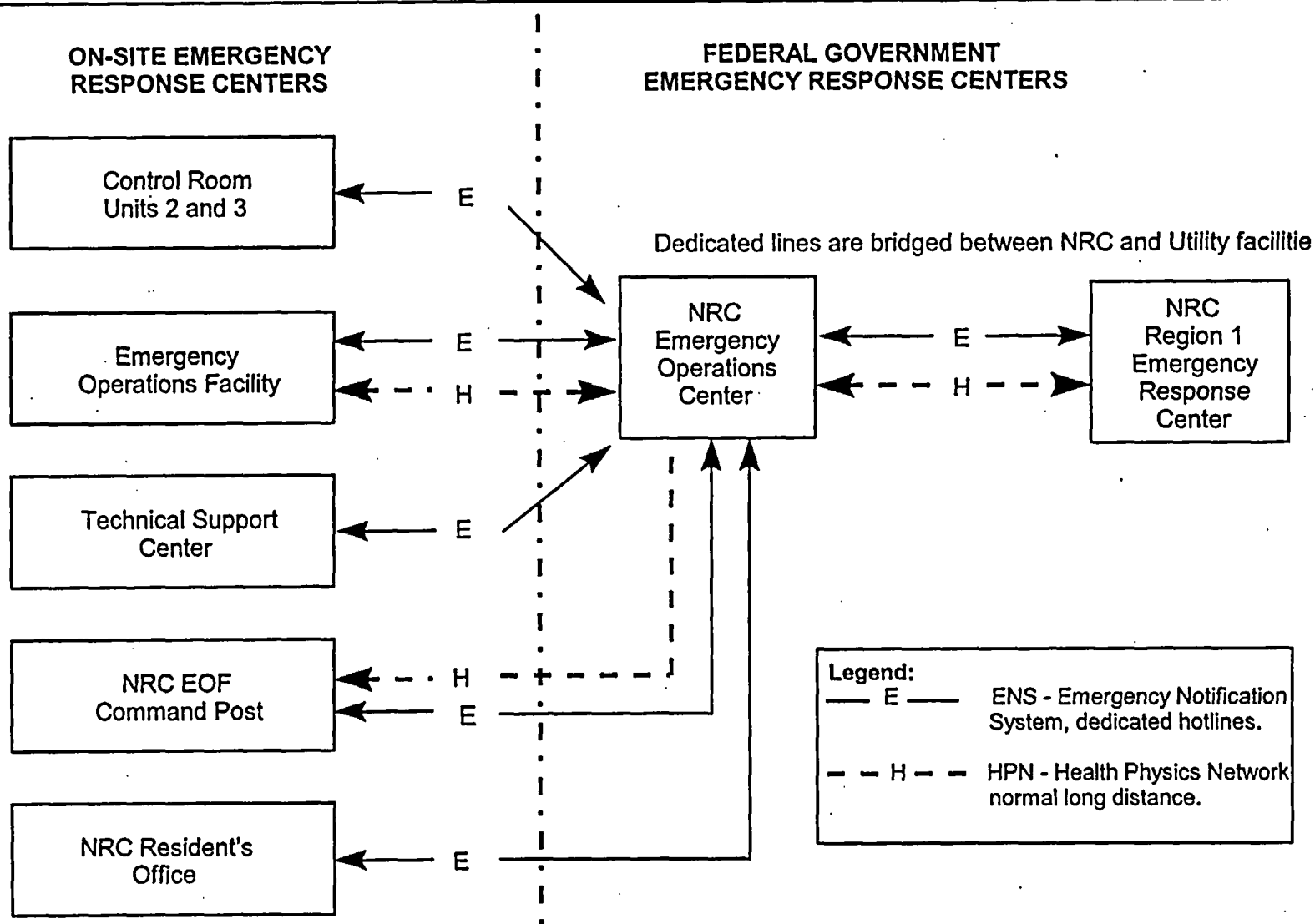


Figure 7-1b

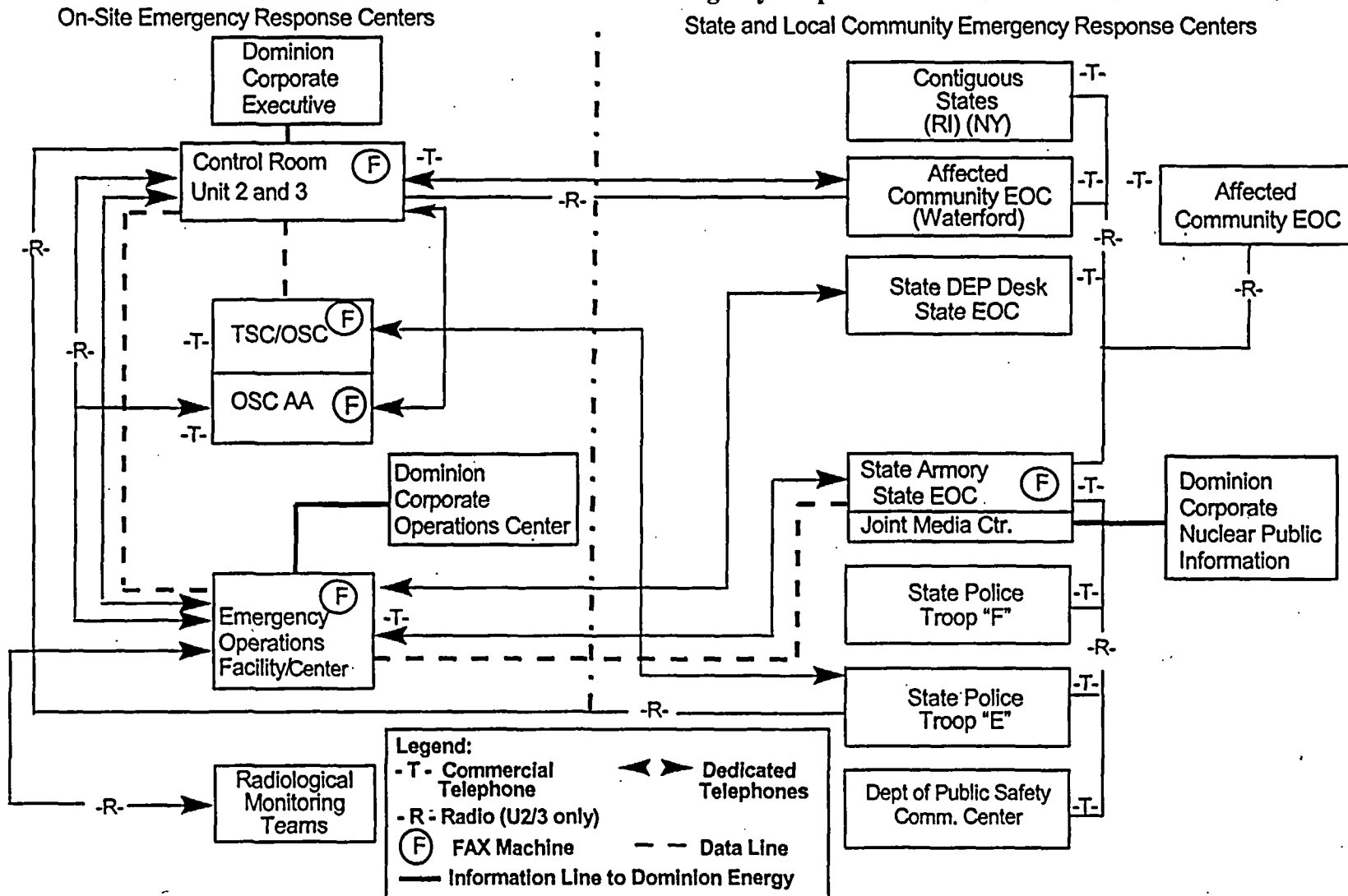
NRC Emergency Notification System (ENS) And Health Physics Network (HPN) Millstone Station



MPEPLAN6.PPT

Figure 7-1c

Lines of Communications Between Emergency Response Centers Millstone Station



8. Maintaining Emergency Preparedness

Station management is responsible for the staffing of the SERO and approval of station emergency plan procedures.

The Manager, Emergency Preparedness is responsible for the following:

- Maintenance and readiness of the on-site emergency response facilities and equipment.
- Maintenance and development of the Station Emergency Plan and implementing procedures (Appendix D).
- Preparation and conduct of emergency plan drills and exercises.
- Training off-site emergency response personnel.
- Providing input to SERO training.
- Coordination of licensee, state and local emergency plans and procedures.
- Assisting station management to ensure effective emergency plan implementation.
- Collecting and reviewing additional EP-related information such as severe accident management research, and NRC regulations and industry research, for incorporation into the EP Program.

The Manager, Emergency Preparedness is assisted by the EPD staff. Appropriate EPD staff training is ensured by attendance at NRC/FEMA seminars/meetings, academic institutions, industry conferences/meetings, on-the-job training, and supervised work assignments. Administration and management of emergency preparedness programs is detailed in MP-26-MMM, "Radiological Emergency Preparedness." In addition, MP-26-EPA-FAP01, "Management Program for Maintaining Emergency Preparedness," outlines responsibilities for Station personnel and Departments in maintaining emergency preparedness.

The Manager, Nuclear Training, is responsible for scheduling, coordinating, and conducting SERO training using Nuclear Training Department personnel. The Manager, Nuclear Training, will obtain assistance as necessary from discipline managers in the conduct of discipline-specific training. In addition, the Manager, Nuclear Training, is responsible for supporting chemistry drills and health physics drills. The Manager, Operations is responsible for conducting required fire drills.

8.1. Training

8.1.1. SERO Training

The goal of the Emergency Plan Training Program is to provide SERO personnel with the additional skills and knowledge necessary for them to effectively respond to an emergency at the station. The SERO Training Program provides both initial and requalification training on an annual, calendar year basis.

Appendix K provides a summary listing of training topics for SERO personnel. Section 5, Table 5-1 lists the topics for personnel by SERO position. Detailed training lesson plans and administrative requirements for SERO personnel are contained in NTP 7.212 and MP-26-EPA-FAP01.

8.1.2. Off-Site Emergency Response Training

Training for local off-site emergency response personnel, such as local fire, police, mutual aid responders and emergency management officials is offered annually. Training for off-site agencies consists of radiation protection, emergency classification, notification, emergency plan overview and general plant access information. Local ambulance and hospital emergency room staff are trained annually in plant access and the medical treatment of contaminated, injured patients.

State personnel, representing agencies at the State EOC, are trained in specific procedures through participation in periodic drills. In addition, responsible state agencies are trained in emergency classification. Field monitoring and sampling team personnel are trained annually in radiation protection, monitoring and ingestion sampling procedures.

Host community emergency organizations are trained in radiation monitoring and protection, activation and operation of evacuee reception centers.

8.1.3. Additional Emergency Preparedness Training

a. Plant Access Training (PAT)

Employees obtaining unescorted access to the station for the first time receive general instruction on the Emergency Plan as part of their plant access training. This includes a review of the purpose of emergency planning, the emergency classification system, and the precautionary dismissal, and evacuation. This information is reviewed annually as part of the employee's Plant Access Training Program. Company and contractor personnel obtaining unescorted access to the station receive general instruction on the Emergency Plan as part of their plant access training.

b. Fire Brigade Training

The Fire Brigade is composed of dedicated station firefighting personnel. Initial and annual refresher training is provided to Firefighter Technicians and Brigade Captains in accordance with training department procedures. Station EMTs receive certification and training through the State of Connecticut, Office of Emergency Medical Services.

8.2. Tests, Drills, and Exercises

Drills and exercises are conducted to ensure that the participants are familiar with their emergency duties and responsibilities; to verify the adequacy of and methods used in station emergency plan procedures and other emergency procedures; and to verify emergency equipment function.

Drills are conducted for SERO personnel at intervals throughout the year. The drills may be combined with classroom refresher training for each SERO position. Drills may be conducted as an evaluated event or a training drill, where controllers provide immediate correction of erroneous performance. Guidance for the conduct of drills and exercises is provided in regulatory guides published by NRC and FEMA. Detailed methodology for the structure, administration and conduct of drills is contained in MP-26-EPA-FAP03, "Drill and Exercise Manual." Drill comments are also tracked and dispositioned using the station Corrective Action process.

8.2.1. Off-Site and On-Site Testing of the Notification, Communication, and Alerting Systems

a. Communication Tests

Communications tests shall include an aspect of understanding message content as well as testing the equipment.

- The site emergency alarms and emergency responder notification systems tests are conducted monthly.
- Communications with specific state and local officials within the plume exposure pathway EPZ are tested at least monthly.
- Telephone numbers in emergency plan procedures are reviewed quarterly and corrected as necessary.
- The NRC dedicated telephone systems are tested monthly.
- Communications capability between the RMTs and emergency centers are tested quarterly and during drills or exercises.
- Communications with federal emergency response organizations and states within the ingestion pathway EPZ are tested quarterly by the State OEM.
- The ERDS system for Unit-2 and Unit-3 is tested quarterly.

b. Off-site Public Alerting System Testing

The testing of the Public Alerting System (sirens) and communications is detailed in the State and local RERPs. Silent and growl tests are conducted quarterly, and a full-load test of the Public Alerting System is conducted annually. This test may take place during the full or partial-participation exercise. Records on siren availability are kept by the Emergency Preparedness Department and summaries are forwarded to the State OEM on an annual basis.

8.2.2. Additional Tests, Drills, and Exercises

The schedule for conducting drills and exercises is as follows:

a. Fire Drills

Fire drills will be conducted in accordance with the unit technical requirements manuals. The Station Fire Marshall is responsible for the review and approval of all fire drill scenarios, in advance of their use. The Station Fire Marshall shall evaluate and take appropriate actions for observed fire drill discrepancies. The Station Fire Marshall shall also review and disposition, as necessary, comments from fire drill critiques.

b. Medical Emergency Drills

The Manager, Emergency Preparedness is responsible for conducting annual medical drills. Arrangements for training and drills are made through the Lawrence and Memorial Hospital or Middlesex Hospital Emergency Departments, as applicable. A medical exercise, involving simulated contaminated and injured worker(s), local ambulance service personnel, station security, health physics and hospital emergency staff is conducted annually.

c. Radiological Monitoring Drills

Environmental radiological monitoring drills (on-site and off-site) are conducted annually and can be conducted as part of the annual exercise. These drills include collecting and analyzing environmental samples. Communications and record-keeping procedures are also checked during these drills.

d. Health Physics Drills

Health physics drills are conducted semi-annually and involve response to and analyses of simulated elevated airborne and liquid samples and direct radiation measurements.

c. Emergency Plan Training Drills

The Emergency Preparedness Department is responsible for scheduling two emergency plan training drills annually for Unit 2 and Unit 3, and one for Unit 1. These drills generally include functional areas identified in Table 5-1. (These include the annual rehearsal and exercise.) The Emergency Preparedness Department will also conduct drills involving severe accident management implementation at intervals established by the 6-year schedule.

f. Exercises

Emergency Preparedness exercises are conducted in accordance with 10 CFR 50.47(b) and 10 CFR 50 Appendix E requirements.

The Emergency Preparedness Department is responsible for coordinating exercises to test station, state(s), and local emergency plans. Station procedures ensure 6 year exercise cycle objectives are met.

Millstone Power Station shall exercise the emergency plan annually.

Millstone Power Station shall exercise the emergency plan with off-site authorities (state and local government) every two (2) years, with full or partial-participation by state and local governments within the plume exposure pathway EPZ. The level of participation shall be as follows:

- The State of Connecticut shall at least partially participate in each off-site exercise at Millstone Power Station.
- The State of Connecticut shall fully participate in at least one off-site exercise every two (2) years.
- Partial participation by a local government is acceptable, with FEMA approval, when the local government is fully participating in a biennial exercise at another site, or a combination of the following enable demonstration of all exercise objectives:
 - 1) FEMA credits actual incident response for required objectives.
 - 2) The local government cannot demonstrate exercise objectives due to conflicting schedules and required objectives can be demonstrated out-of-sequence with the main exercise.

- 3) Compensatory measures can be demonstrated by another entity.
- The states of Rhode Island, Connecticut and New York, which are responsible for emergency responses within the 50 mile ingestion exposure pathway EPZ, shall exercise their plans and preparedness related to ingestion exposure pathway measures at least once every six (6) years.
 - The licensee shall enable any state or local government located within the plume exposure pathway EPZ to participate in an annual exercise when requested by such state or local governments.
 - The licensee shall make provisions to conduct an off-hours exercise between the hours of 6:00 p.m. and 4:00 a.m. every six years.

Remedial exercises will be required if the plan is not satisfactorily tested during the biennial exercise, such that NRC, in consultation with FEMA, cannot find reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency. The extent of state and local participation in remedial exercises must be sufficient to show that appropriate corrective measures have been taken regarding planning elements not properly demonstrated during the previous exercise.

g. Post-Exercise Critique

An in-house, post-exercise critique will be conducted.

An off-site post-exercise critique will be scheduled at the conclusion of each exercise by FEMA to allow official observers and evaluators from federal agencies and state and local communities to evaluate the performance of the various emergency response organizations. The critique will be chaired by the Chairperson of the Regional Assistance Committee. Additionally, the critique is open to the public and news media.

Exercise evaluators will discuss emergency response observations during the critique. The exercise observations and comments shall be compiled into a formal exercise evaluation report by the Emergency Preparedness Department.

The Emergency Preparedness Department is responsible for tracking corrective actions for exercise critique comments.

The Emergency Preparedness Department will evaluate comments, assign responsibilities and track the resolution process. Station management will ensure corrective actions are completed as necessary.

8.3. Administration of Station Emergency Plan and Procedures

The Station Emergency Plan contains elements of planning that involve assistance and coordination of governmental agencies and intra-company groups. In order to achieve and maintain the most efficient course of emergency action, liaison is continuously maintained with state and local agencies responsible for public safety.

The Station Emergency Plan and letters of agreement are reviewed on an annual basis and updated as appropriate. Changes to the Emergency Preparedness Program are evaluated in accordance with MP-26-EPA-FAP02 for 10 CFR 50.54(q) prior to implementation. Changes to the Station Emergency Plan and implementing procedures are undertaken in accordance with station administrative procedures and subject to evaluation under 10 CFR 50.54(q).

10CFR50.54(t) reviews of the Emergency Preparedness Program are performed annually by the licensee oversight group or an industry peer evaluation team. The reviews include the Emergency Plan, implementing procedures and practices, training, readiness testing, equipment, an evaluation of the adequacy of interfaces with state and local government and the conduct of drills and exercises. The reviewer completes a written report that details the items reviewed and corrective actions to be taken. The report is sent to the Manager, Emergency Preparedness and to corporate and station management. The Manager, Emergency Preparedness is responsible for evaluating and correcting report findings. Documentation of report findings and corrective actions shall be maintained for a period of no less than five years. Applicable portions of the report will also be made available to federal, state, and local organizations. The Chairperson of the Management Safety Review Committee (MSRC) receives the report. Unresolved findings from the review are identified to the oversight group management in writing. Review items are not closed until final corrective actions are taken.

8.4. Public Information Programs

Specific emergency instructions for residents and the transient population are distributed annually within the plume EPZ via the primary telephone directory serving each EPZ community. The telephone directories are distributed to residences, government offices, commercial establishments and other locations with telephones, and are available to the transient populations within the EPZ. The telephone book information includes detailed instructions to follow in an emergency, a description of the Public Alerting System, a list of applicable Emergency Alert system stations, sheltering and evacuation checklists, host communities and reception centers, emergency assistance (special needs) registration instructions, and a map of evacuation routes. Contact points for additional information concerning nuclear power, radiation and emergency planning are also provided.

General information about radiation is distributed within the Plume EPZ on a periodic basis.

The State of Connecticut OEM is provided with information for posting or distribution, as appropriate, at selected public areas within the EPZ.

Other on-going elements of the Public Information program include:

- 1) Educational Outreach Programs. These programs are conducted out of the Nuclear Training Center. The Outreach Program provides public informational and educational activities throughout the EPZ.
- 2) The Nuclear Speaker's Bureau, comprising a variety of company employees from many disciplines and operational functions, provides information on nuclear power to numerous institutions, civic and professional groups, and other organizations.

8.5. Media Information Program

A media information program is offered annually to acquaint the news media with emergency plans, information concerning radiation, and points of contact for release of public information in an emergency.

A media manual, developed to meet the needs of the news media, contains plant specific information and general information concerning emergency planning, nuclear power and radiation. The manual is distributed to the local media and is available for issue at the Joint Media Center at the time of an emergency.

9. Recovery

9.1. Recovery Phase

The Organization for Recovery Operations (ORO) is activated by the DSEO.

The recovery phase occurs after the plant is brought to a long-term stable state. When this occurs the emergency organization will no longer be required to take corrective or mitigating actions to respond to the accident.

If the unit is damaged and the recovery actions require extensive resources and/or will last from months to years, the ORO will replace the SERO. If normal resources are adequate to recover the plant to normal operations, the emergency organization is disbanded and a Director of Recovery Operations will be designated to convene an event review meeting and investigate the cause.

Recovery actions are described in emergency plan procedures.

9.2. Recovery Organization

The ORO is illustrated in Figure 9-1.

9.2.1. The Site Vice President - Millstone is responsible for coordinating the station recovery operations.

9.2.2. The Director of Recovery Operations (DRO) is responsible for overall direction of recovery operations and reports to the Site Vice President - Millstone.

The Director of Recovery Operations (DRO), as well as those managers reporting directly to him, are chosen by station management. They possess competent managerial skills and are experienced in their areas of responsibility.

9.2.3. Manager of Technical Support is responsible for the following:

- Providing necessary technical support services.
- Analyzing core parameters and other technical information.
- Performing reactor systems analysis.
- Providing a central facility for collecting, retaining, and retrieving data.
- Providing post accident data analysis timeline for the accident.
- Developing recovery procedures.
- Developing and approving proposed modifications to procedures, systems and equipment.

- Determining recovery activities needed to be documented in accordance with the Quality Assurance (QA) program.

9.2.4. Manager of Plant Operations is responsible for the following:

- Supervising and maintaining a station support staff during the recovery operation.
- Maintaining an effective station security program.
- Implementing maintenance and repair operations with station staff.
- Coordinating Site Operations Review Committee activities as necessary.

9.2.5. Manager of Radiation Control/Radwaste is responsible for the following:

- Assisting the State DEP as necessary in off-site recovery phase sampling, survey measurements and data analysis to determine re-entry and recovery actions for off-site areas.
- Developing and performing evaluations of health physics equipment and procedures for recovery operations.
- Performing special dosimetry evaluations or providing specialized dosimeters.
- Developing plans and procedures to sample, process, and control liquid, gaseous, and solid radioactive waste, and coordinating waste disposal activities.
- Maintaining an ALARA program.
- Developing decontamination plans.
- Assisting the State DEP in determining total integrated population doses by using various inputs.

9.2.6. Manager of Engineering Systems is responsible for the following:

- Providing required engineering support services.
- Interface and consultation with engineering and technical experts, as needed.
- Acquisition and coordination of manpower and equipment to support repair activities.
- Acquisition of housing, office, and construction equipment to support recovery operations.
- Arranging for the purchase of legal and insurance assistance.
- Providing general administrative support.
- Scheduling and expediting recovery operations.

- Assisting the DRO in planning activities.
- Coordination of recovery staff meetings.
- Tabulating, expediting and closing out commitment lists in support of recovery operations.
- Establishing cost control procedures.

9.2.7. Advisory support staff personnel provide support to the DRO in various areas.

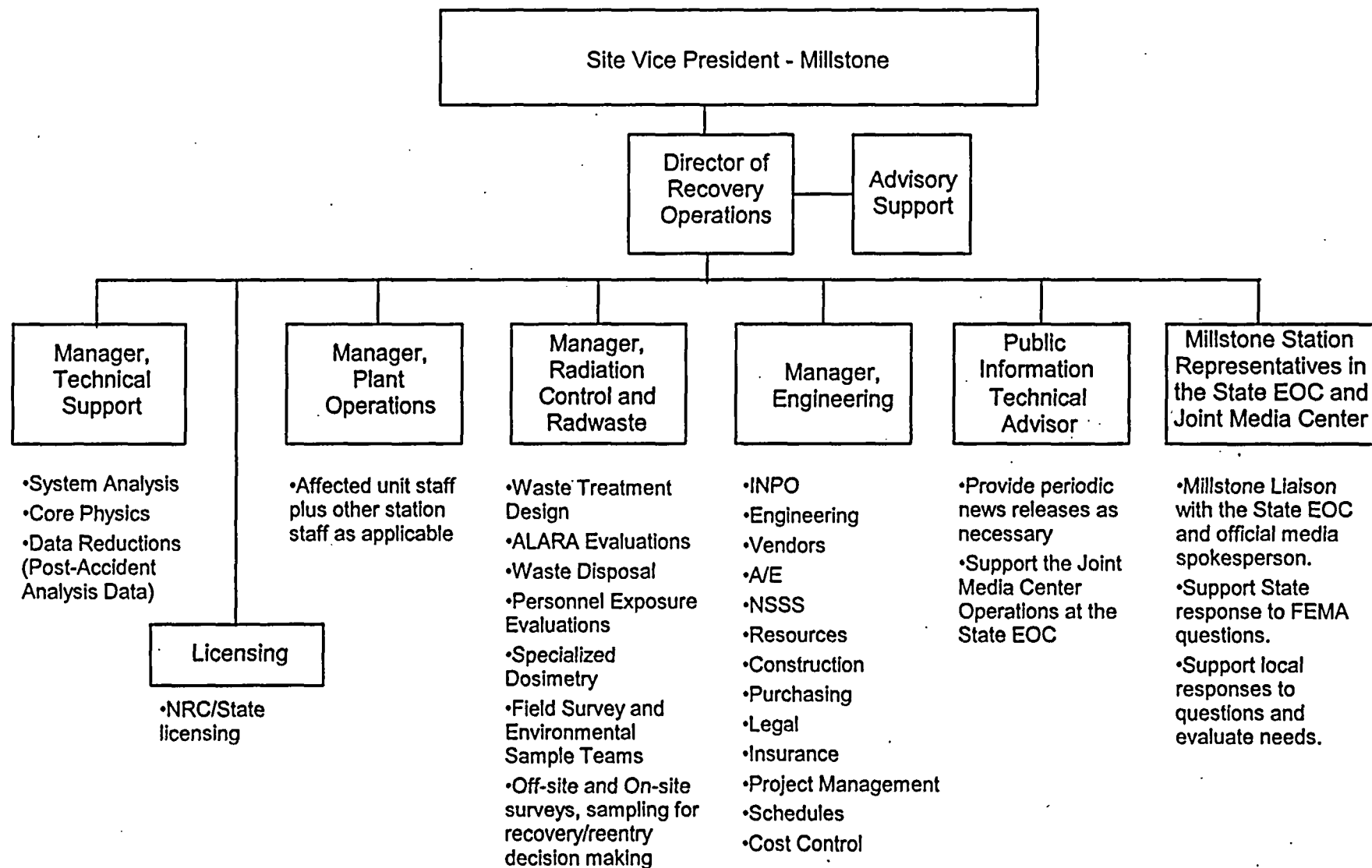
9.2.8. The Public Information Technical Advisor provides liaison with the media.

9.2.9. The Licensing Department interfaces with the NRC and other regulatory agencies on licensing issues.

9.2.10. The Millstone Representative in the state EOC and Joint Media Center provides advisory support to state and local communities.

Figure 9-1

Recovery Organization



Appendix A

APPENDIX A

DEFINITIONS, ABBREVIATIONS AND ACRONYMS

Appendix A

This section provides definitions of commonly used terms that are applicable to this Emergency Plan.

DEFINITIONS

Absorbed Dose

The quantity of energy imparted from ionizing radiation per unit mass of tissue.

Alternate Location

A designated facility (State EOC [Armory]) where off-site officials can communicate with company officials if access to the EOF is impaired.

Actions

Assessment Actions

Those actions taken during or after an incident to obtain and process information that is necessary to make decisions to implement specific emergency measures.

Corrective Actions

Those emergency measures taken to improve or terminate an emergency situation.

Emergency Actions

Actions taken as a result of reaching an Emergency Action Level.

Protective Actions

An action taken to avoid or reduce a projected dose.

Recovery Actions

Actions taken after an emergency to restore the station to pre-emergency condition and decide on re-entry of the public affected areas.

Airborne Radioactivity

Any radioactive material dispersed in the air in the form of dusts, vapors, gases, etc.

Area

Clean Area

An area free of contamination or with levels of contamination below the specified limits.

Appendix A

Owner Controlled Area

The area within the site boundary including the protected area.

Protected Area

The area within the Millstone Power Station security fence.

Radiological Control Area (RCA)

An area of the Station where dosimetry is required.

Background Radiation

Radiation arising from material other than the one directly under consideration such as from cosmic rays, the ground, the air, building materials, etc.

Barrier

One of the three fission product barriers: fuel clad, RCS pressure boundary and containment.

Barrier Based EALs

A table of symptoms defining the loss or potential loss of a barrier, e.g., the Barrier Reference Table. A combination of barrier losses defines an emergency classification level.

Central Monitoring Station (CMS)

The Unit 1 facility from which indications and alarms are monitored and control functions performed, if necessary.

Certified Fuel Handler

A non-licensed operator who has qualified in accordance with an approved fuel handler training program.

Condition (also called initiating condition)

A description of a nuclear power plant event where either the potential exists for a radiological emergency, or such an emergency has occurred; e.g., loss of both batteries for greater than 15 minutes is a condition with a category of events titled Loss of Power.

Confinement Boundary

The sealed dry cask storage canister that provides the spent fuel cladding protection. The barrier between areas containing radioactive substances and the environment.

Appendix A

Contamination (Radioactive)

The deposition of radioactive material in any place where it is unwanted (e.g., on persons, products or equipment).

Control Room

The Control Room is the primary location where conditions of the unit are monitored, controlled and where corrective actions are directed to mitigate any emergency.

Curie

The unit of radioactivity which is equivalent to 3.7×10^{10} disintegrations per second; millicurie (mCi) = one-thousandth curie; microcurie (μ Ci) = one-millionth curie; picocurie (pCi) = one-millionth microcurie.

Decontamination

The reduction or removal of contaminating radioactive material from a person, area or object by cleaning or washing.

Dosimeter

A device that records radiation exposure.

Emergency

Any abnormal condition that could affect the health and safety of people or safe operation of equipment.

Emergency Action Levels (EALs)

Thresholds for initiating emergency actions such as designating a particular class of emergency, initiating a notification procedure, or initiating a particular protective action.

Emergency Classification System

A system that arranges abnormal conditions in order of severity. They are listed as follows in order of increasing severity:

- UNUSUAL EVENT (State Posture Code, DELTA ONE/DELTA TWO)
- ALERT (State Posture Code, CHARLIE-ONE)
- SITE AREA EMERGENCY (State Posture Code, CHARLIE-TWO)
- GENERAL EMERGENCY (State Posture Code, BRAVO/ALPHA)

Appendix A

Emergency Operations Facility (EOF)

A facility located on the site access road from which station activities related to an emergency will be carried out and from which information will be provided to the corporate, federal, state officials and local community chief executive officers.

Emergency Planning Zone (EPZ)

An area surrounding the Millstone Power Station for which planning is conducted to ensure that prompt and effective actions can be taken to protect the public in the event of an accident. For the plume exposure pathway, the EPZ has a corresponding radius of about 10 miles; and for the ingestion exposure pathway, the EPZ has a corresponding radius of about 50 miles.

Emergency Medical Technician (EMT)

Personnel assigned to the Fire Brigade which maintain EMT certification with the State of Connecticut.

Event Based EAL

A listing of symptoms and conditions under generic event categories.

Event Category

A generic group of plant conditions; e.g., loss of power, equipment failure, radiation hazard, security threat, etc.

Exposure Pathway

Plume Exposure Pathway

The pathway by which exposure to a radioactive plume and subsequent deposition of radioactive material could result in external exposure and by which inhalation of the radioactive plume could result in internal exposure.

Ingestion Exposure Pathway

The pathway by which deposited radioactive materials could be ingested from contaminated water or food, such as milk or fresh vegetables which would cause internal exposure.

Full Staffing

SERO positions which are beyond the required minimum staffing. Full staffing positions, as a goal, will be staffed within 4 hours of SERO activation. Personnel assigned to fill these positions are drawn from a pool of qualified individuals.

Appendix A

Incident

An unexpected occurrence that could lead to an emergency.

Independent Spent Fuel Storage Installation (ISFSI)

A complex designed and constructed for the interim storage of Millstone Power Station spent nuclear fuel.

Joint Media Center

The Joint Media Center is the principal contact point between the media and Millstone Station, state, and local community representatives. It is a facility where informational releases are made to the public and media and press conferences are held.

Minimum Staffing

Personnel assigned to fulfill a specific SERO position and who report to the station in accordance with Table 5-1.

On-Shift

Personnel assigned to duties as part of a normal shift complement.

Off-site

The area outside the owner controlled area of the Millstone Power Station.

On-site

The area inside the owner controlled area of the Millstone Power Station.

Operational Support Center (OSC)

A center co-located with the TSC where operational support of the emergency is provided.

OSC Assembly Area

An emergency repair team staging area supporting OSC activities.

Precautionary Dismissal

A dismissal of non-essential personnel at the Alert level which directs all non-essential Millstone employees, contractors, and visitors to leave the site.

Appendix A

Procedures

Emergency Operating Procedures (EOP)

Procedures which provide specific actions to mitigate the consequences of and terminate an emergency situation.

Emergency Plan Implementing Procedures (EPIs)

Procedures which implement the Station Emergency Plan. These procedures specify the emergency organization and actions that would be required of station and other on-site personnel during an emergency.

Supplemental Procedures

Station operating, health physics, radiological control, administrative, security and training procedures.

Projected Dose

The estimated potential dose that could be received by affected individuals if no protective actions are taken.

Protective Action Guides (PAGs)

Projected absorbed dose to individuals in the general population which warrants protective action.

Radiation (ionizing)

The emission and propagation of energy through a medium in the form of electromagnetic waves or particles which impart their energy to the medium through the creation of electrically charged ion pairs directly or indirectly in its passage through the medium.

Radioactivity

The property possessed by certain unstable radionuclides of spontaneously emitting charged particles, gamma photons or X-rays.

Radiopager System

The system used by Millstone Power Station for prompt notification of emergency response personnel.

Shift Manager's Work Station

The Unit 2 control room location from which indications and alarms for Unit 1 are monitored and control functions are performed.

Appendix A

Station Emergency Response Organization

The organization responsible for station operations under emergency conditions.

State

The State of Connecticut.

Site Evacuation

The orderly withdrawal of personnel from the owner controlled area except designated resource and SERO personnel.

State Plan

The State of Connecticut Emergency Operations Plan, Annex V, Fixed Nuclear Facilities Radiological Emergency Response Plan.

Station Evacuation

The orderly withdrawal of all personnel from the protected area, except designated resource and SERO personnel.

Symptom

A predetermined site and unit specific parameter observable in the Control Room (or reported to the Control Room) that is the threshold for a plant "condition" that places the plant in a given emergency classification. A symptom can be an instrument reading, equipment status indicator, a measurable parameter (on-site or off-site), a discrete observable event, or the results of analyses.

Technical Support Center (TSC)

A center located where technical support personnel monitor station conditions and provide data interpretation.

Appendix A

ABBREVIATIONS AND ACRONYMS

ALARA	-	As Low As Reasonably Achievable
ARMS	-	Area Radiation Monitoring System
BWR	-	Boiling Water Reactor
CC or CM ³	-	Cubic Centimeter
CEDE	-	Committed Effective Dose Equivalent
CFH	-	Certified Fuel Handler
CDE	-	Committed Dose Equivalent
CFR	-	Code of Federal Regulations
Ci	-	Curie (Unit of Radioactivity)
CMS	-	Central Monitoring Station
CONVEX	-	Connecticut Valley Exchange
CPM	-	Counts per minute
CR	-	Control Room
CT	-	Connecticut
CTS	-	Chief Technical Spokesperson
DEP	-	Department of Environmental Protection
DHS	-	Department of Health Services (formerly DHEW)
DSEO	-	Director of Station Emergency Operations
DOE	-	U.S. Department of Energy
DOT	-	Department of Transportation
dpm/100 cm ²	-	Disintegrations per minute per 100 square centimeter area
EAL	-	Emergency Action Level
EAS	-	Emergency Alert System
ECCS	-	Emergency Core Cooling System
EDAN	-	Environmental Data Acquisition Network
ENRS	-	Emergency Notification and Response System
ENS	-	NRC Emergency Notification System telephone
EOC	-	Emergency Operations Center (State, local, or Site)
EOP	-	Emergency Operating Procedure
EOF	-	Emergency Operations Facility
EPA	-	Environmental Protection Agency
EPA	-	Emergency Plan Administrative Procedure
EPC	-	Emergency Planning Coordinator
EPI	-	Emergency Plan Implementing Procedure
EPZ	-	Emergency Planning Zone
ETS	-	Environmental Technical Specification
FDA	-	Food and Drug Administration
FEMA	-	Federal Emergency Management Agency

Appendix A

GM	-	Geiger-Mueller detector
gpd	-	Gallons per day
gpm	-	Gallon per minute
HP	-	Health Physics
HPN	-	NRC Health Physics Network Telephone
I	-	Iodine
INPO	-	Institute of Nuclear Power Operations
IPZ	-	Ingestion Pathway Zone
ISFSI	-	Independent Spent Fuel Storage Installation
KI	-	Potassium Iodide
LCO	-	Limiting condition for operation
LOCA	-	Loss of coolant accident
MA	-	Massachusetts
MAX	-	Maximum
Met	-	Meteorological
MPC	-	Maximum permissible concentration
MPS	-	Millstone Power Station
mRem/hr	-	1/1000 Rem per hour
MSRC	-	Management Safety Review Committee
NAP	-	North Access Point
NFSA	-	Nuclear Fuel and Safety Analysis (formerly RES)
NRC	-	U.S. Nuclear Regulatory Commission
NNM	-	Nuclear News Manager
NY	-	New York
OEM	-	Office of Emergency Management
OFIS	-	Off-site Facilities Information System
ORO	-	Organization for Recovery Operations
OSC	-	Operational Support Center
PA	-	Public address system
PAG	-	Protective Action Guide
PEO	-	Plant Equipment Operator
PF	-	Protection factor
PIO	-	Public Information Officer
PITA	-	Public Information Technical Advisor
PWR	-	Pressurized water reactor
Q	-	Release rate
QA	-	Quality Assurance

Appendix A

R	-	Roentgen. A unit of radiation exposure
rad	-	Unit of radiation dose
RCA	-	Radiological Control Area
RCP	-	Reactor Coolant Pump
RCS	-	Reactor Coolant System
REM	-	Unit of radiation dose
RERP	-	Radiological Emergency Response Plan
RHR	-	Residual Heat Removal
RI	-	Rhode Island
RMS	-	Radiation Monitoring System
RMT	-	Radiological Monitoring Team
RO	-	Reactor Operator
RP	-	Radio Pager
RWP	-	Radiation Work Permit
SCBA	-	Self-contained breathing apparatus
SDO	-	Station Duty Officer
SEOC	-	State Emergency Operations Center
SIS	-	Safety injection system
SORC	-	Site Operations Review Committee
SRO	-	Senior Reactor Operator
SM	-	Shift Manager
STA	-	Shift Technical Advisor
State	-	State of Connecticut
TEDE	-	Total Effective Dose Equivalent
TLD	-	Thermoluminescent dosimeter
TSC	-	Technical Support Center
US	-	Unit Supervisor
USCG	-	US Coast Guard
u	-	Wind speed
μCi	-	Microcuries
X (chi)	-	Concentration
X/Q	-	Relative Concentration

Appendix B

APPENDIX B

LETTERS OF AGREEMENT

Appendix B

Page	Organization	Original Date of Agreement	Agreement Review Date
B-3	Amtrak	11/3/95	12/04
B-4	Electric Boat Division of General Dynamics	12/5/96	12/04
B-5	Institute of Nuclear Power Operations	1/23/98	12/04
B-6	Laidlaw Transit, Inc.	11/6/95	12/04
B-7	Lawrence & Memorial Hospital	10/27/95	12/04
B-8	Middlesex Hospital	11/18/97	12/04
B-9	Nichols Bus Service, Inc.	11/10/95	12/04
B-10	Shipman's Fire Equipment Company, Inc.	11/20/96	12/04
B-11	State of Connecticut, Department of Public Safety-Division of State Police	3/9/98	12/04
B-12	Teledyne Brown Engineering	11/21/97	12/04
B-13	Town of Waterford Ambulance Service	12/11/97	12/04
B-14	Town of Waterford Fire Service	12/10/97	12/04
B-15	Town of Waterford Police Department	3/2/96	12/04
B-16	Weather Service International	11/30/99	12/04
B-17	Framatome ANP (formerly Duke Engineering)	10/29/02	12/04
B-18	Norwich Fire Department	5/7/96	12/04
B-19	Salem Volunteer Fire Department	5/6/96	12/04
B-20	Department of Energy	12/97	12/04
B-21	Connecticut Yankee Atomic Power Company	11/22/04	12/04

Note: The letters of agreement are reviewed annually and verified to be current. Only letters with significant changes require reissue.

Appendix B

NATIONAL RAILROAD PASSENGER CORPORATION

Two South Station, Boston, MA 02110



November 7, 2001

Mr. William R. Matthews
Vice President & Sr. Nuclear Executive
Dominion Nuclear Connecticut
PO Box 128
Waterford, CT 06385

Dear Mr. Matthews:

This letter is to confirm that the National Railroad Passenger Corporation will, when requested, respond in the event of an emergency at the Millstone Power Station on Long Island Sound, in the following areas:

Implementation Criteria/Authorities, Responsibilities

It is our understanding that, in the event of an emergency, the nuclear facility Director of Site Emergency Operations may request our assistance. Assistance should be requested by calling the Chief Train Dispatcher of the Boston Division at (617) 345-7548 or 7569 or (800) 243-1255. Indicate the nature of the incident, the location, and the type of assistance required.

Measures to be Provided/Limits of Actions

Our commitment for assistance is to direct train traffic away from any areas that may be affected by the emergency.

Information Exchange/Point of Contact at Site

Verification communications to the nuclear facility will be by telephone to the Director of Site Emergency Operations. The telephone number is unlisted. Information exchange can be provided by using the same telephone number.

Training and Drills

Please notify us of your plant drills in the event we wish to observe your emergency response actions and meet your emergency operations personnel. Please coordinate by contacting my office at (617) 345-7400.

This letter of agreement shall remain in effect until cancellation by either party, provided on ninety (90) days prior written notice, and shall be reviewed and certified as needed.

Sincerely,

A handwritten signature in dark ink, appearing to read "Steven J. Alleman".

Steven J. Alleman
General Manager
New England Division

cc: Paul A. Blasioli, Emergency Planning Services Department - Millstone

cc'd
11/11/01

Appendix B

Enclosure (1)
to 438-37497
Page 1 of 2

**LETTER OF AGREEMENT
BETWEEN ELECTRIC BOAT CORPORATION
AND
DOMINION NUCLEAR CONNECTICUT
RADIOLOGICAL ASSISTANCE**

It is understood that the Electric Boat Corporation will, upon request, respond with personnel and equipment in the event of an emergency at the Millstone Power Station in accordance with the following:

1. In the event of a radiological emergency, the Director of the Site Emergency Organization may request personnel and equipment to assist in performing emergency radiological surveys. Assistance should be requested by calling:

Director of Radiological Services
Telephone: 433-3139 (during normal business hours)

2. If after normal business hours, or no answer, call in order:

RAD CON Office: 433-5019 or 433-5392
Shipyard Security: 433-5530 or 433-5531

NOTE: *If shipyard Security is contacted, request that RAD CON Management be notified.*

It is understood that the Electric Boat Corporation's commitment for assistance includes providing trained radiological control personnel and equipment for the purpose of performing emergency radiation, contamination, and airborne radioactivity measurements. Personnel responding to the facility's request for assistance will report to the Manager of Resources who will be located in the Emergency Operations Facility (EOF).

Appendix B

Enclosure (1)
to 438-37497
Page 2 of 2

It is understood that should the Electric Boat shipyard be affected by a radioactive release from another facility, Electric Boat resources will be used, as the first priority, to protect the shipyard and its personnel; support will be provided to Millstone Station as available.

It is understood that in each case where assistance is provided under this Agreement, all radiological waste from the emergency will remain the responsibility of the affected facility.

It is understood that verification of communications will be by telephone to:

Manager of Resources - 442-5139
Director Station Emergency Organization - 443-2276

Information exchange can be provided by using the same telephone number.

It is understood that Millstone Station will train representatives of Electric Boat Corporation's Radiological Training Section annually on the use of Station equipment and procedures. These Radiological Training Section individuals, in turn, will train selected Electric Boat Corporation personnel on this equipment and procedures. It is understood that this training will be performed annually and the Electric Boat Corporation will be given advance notification of plant drills or additional training that would be advantageous to both organizations.

This Letter of Agreement shall remain in effect until cancellation by either party, provided on ninety-(90) days prior written notice, and shall be reviewed and certified as needed.

By: <u><i>J. Alan Price</i></u>	<u><i>M. Toner</i></u>
Name: <u>J. Alan Price</u>	<u>M. Toner</u>
Title: <u>Site Vice-President</u>	<u>President</u>
Date: <u>11/04/02</u>	<u>10/29/02</u>

Appendix B



Institute of
Nuclear Power
Operations

Suite 100
700 Galleria Parkway, SE
Atlanta, GA 30339-5957
770-644-8000
FAX 770-644-8549

November 18, 2002

Dear Sirs and Mesdames:

This letter certifies that the plant emergency assistance agreement between INPO and its member utilities remains in effect. In the event of an emergency at your utility, INPO will assist you in acquiring the help of other organizations in the industry, as described in Section 1 of the *Emergency Resources Manual*, INPO 86-032. If requested, INPO will provide the following assistance:

- Facilitate technical information flow from the affected utility to the nuclear industry.
- Locate replacement equipment and personnel with technical expertise.
- Obtain technical information and industry experience regarding plant component and systems.
- Provide an INPO liaison to facilitate interface.

This agreement will remain in effect until terminated in writing. Should you have questions, please call me at (770) 644-8304.

Sincerely,

A handwritten signature in dark ink, appearing to read "David J. Moss".

David J. Moss
Manager
Radiological Protection Department

DJM/ms

Appendix B

LAIDLAW TRANSIT, INC.
We carry The Nation's Future

December 10, 2001

Mr. William Matthews
Vice President & Senior Nuclear Executive
Millstone Power Station
PO Box 158
Waterford, CT 06385

Dear Sir:


This letter will confirm that Laidlaw Transit, Inc., 80 Tower Ave., Groton, CT will, when requested, respond in the event of an emergency at the Millstone Nuclear Power Station. Per my discussions with Mr. Steve Mazzola of your staff, our response will be limited to providing available school buses for transporting personnel from the Millstone site, with volunteer workers from our branches in the area.

Please be advised, that our first priority for the vehicles will be to respond to the immediate needs of our school districts in the area, with whom we have contractual arrangements. We anticipate that in the event of an emergency involving the evacuation of the schools or communities, our fleet assets would be primarily involved in those duties, and would not be immediately available to assist the Millstone facility. However, when our duties there were concluded, we would gladly make our equipment available for your use, along with any of our employees who may volunteer to help.

It is important for your organization to note that most of our school bus drivers are part time employees, who are not available on a twenty-four-hour/seven day per week basis. This limits our ability to commit a definite quantity of vehicles or personnel to your needs. However, rest assured that we would respond with whatever assets and personnel we can make available, in the interest of public safety.

Coordination of the use of our vehicles should be requested by contacting our branch location in Groton, at 860-448-0677.

Sincerely,


Clifford Gibson
General Manager

*urgent
12/12/01*

Appendix B



William T. Christopher
President &
Chief Executive Officer

November 5, 2001

Mr. William R. Matthews
Vice President & Sr. Nuclear Executive
Dominion Nuclear Connecticut
P.O. Box 128
Waterford, CT 06385

Dear Mr. Matthews:

This letter is to confirm that Lawrence and Memorial Hospital will respond in the event of a radiological emergency at Millstone Power Station.

Implementation Criteria/Authorities, Responsibilities

It is our understanding that in the event of an emergency, the nuclear facility may request medical assistance. The Hospital Emergency Department is to be contacted by calling 442-0711 extension 2261 and requesting to speak to the Emergency Room Charge Nurse to activate our Radiation Accident Plan.

Measures to be Provided/Limits of Action

Our commitment for medical assistance includes patients who might be injured as a result of an industrial or radiation accident and who are in need of medical treatment at Lawrence and Memorial Hospital.

This letter of agreement shall remain in effect until cancellation by either party, provided on ninety (90) days prior written notice, and shall be reviewed and certified as needed.

Sincerely yours,

A handwritten signature of William T. Christopher, consisting of a stylized "W" and "C" followed by a horizontal line.

William T. Christopher
President/CEO

cc: Paul A. Blasioli, Emergency Planning Service, Millstone Station

365 Montauk Avenue • New London, Connecticut 06320
(860) 442-0711, Ext. 2221 • Fax: (860) 444-3741 • E-mail: wchristophe@lmhosp.chime.org

*updatd
12/10/01*

Appendix B



ADMINISTRATION

November 6, 2001

Mr. William R. Matthews
Vice President & Sr. Nuclear Executive
Dominion Nuclear Connecticut
P.O. Box 128
Waterford, CT 06385

Dear Mr. Matthews:

This letter represents a continuance of the Letter of Agreement between Millstone Power Station and Middlesex Hospital.

Middlesex is ready to receive and administer treatment to accident victims sent to us by Millstone Power Station. We will provide backup and support for Lawrence and Memorial Hospital, acting as the secondary medical treatment facility for the Millstone Station. Any expenses incurred as a result of providing these services will be the responsibility of Millstone Power Station.

In case of an emergency situation, we would follow the plan for "Decontamination and Treatment of the Radioactively Contaminated Patient at Middlesex Hospital," currently in effect between our institution and the facility mentioned above.

If you have any questions concerning our arrangements for contaminated patients, please contact me.

Sincerely,


Harry Evert
Vice President, Administration

HE/rdo

c: Paul A. Basioli, Emergency Planning Services, Millstone Station

28 Crescent Street
Middletown, Connecticut 06457-3650

tel 860 344-6000
fax 860 346-5485

A member of the Middlesex Health System

Handwritten:
2/11/01

Appendix B

November ⁵~~XX~~, 2001

Mr. William R. Matthews
Vice President & Sr. Nuclear Executive
Dominion Nuclear Connecticut
P.O. Box 128
Waterford, CT 06385

Dear Mr. Matthews:

This letter is to confirm that Nichols Bus Service, Inc. will, when requested, respond in the event of an emergency at the Millstone Power Station in the following areas:

Implementation Criteria/Authorities, Responsibilities

It is our understanding that in the event of an emergency, the Director of Site Emergency Operations may request services to assist in the emergency response effort. Assistance should be requested by calling 860-267-4574.


Measures to be Provided/Limits of Action

Our commitment for assistance is supplying mass transportation in the event of an emergency at the Millstone Power Station.

Information Exchange Point of Contact at Site

Verification communications to the Nuclear Facility will be by telephone to the Director of Site Emergency Operations. The telephone number is unlisted.

Very truly yours,


Charles B. Nichols
President

cc: Paul A. Blasfoll, Emergency Planning Service, Millstone Station

Appendix B



SHIPMAN'S FIRE EQUIPMENT CO., INC.
172 Cross Road — P. O. Box 257
Waterford, Connecticut 06385-0257
(860) 442-0678 Fax (860) 444-7395

November 7, 2001

Mr. William R. Matthews
Vice President & Sr. Nuclear Executive
Dominion Nuclear Connecticut
Millstone Station
P.O. Box 128
Waterford, CT 06385

Dear Mr. Matthews:

This letter is to confirm that Shipman's Fire Equipment Co., will, when requested, respond in the event of an emergency at the Millstone Power Station, in the following areas:

Implementation Criteria/Authorities, Responsibilities

It is our understanding that, in the event of an emergency, the nuclear facility Director of Site Emergency Operations may request services to assist in the emergency effort. Assistance should be requested by calling 860-267-4574.

Measures to be Provided/Limits of Actions

Our commitment for assistance is supplying breathing air in the event of an emergency at Millstone Power Station.

Information Exchange/Point of Contact at Site

Verification communications to the nuclear facility will be by telephone to the Director of Site Emergency Operations. The telephone number is unlisted. Information exchange can be provided by using the same telephone number.

Training and Drills

Since our assistance is limited to providing equipment and service, we feel that we do not need to participate in your training and drills. However, we would appreciate being invited to your plant drills to observe your emergency response actions, and to meet your emergency personnel.

This letter of agreement shall remain in effect until cancellation by either party, provided on ninety (90) days prior written notice, and shall be reviewed and certified as needed.

Sincerely,

David E. Carson,
President

cc: Paul A. Blasioli, Emergency Planning Services Department, Millstone

FIRE & SAFETY EQUIPMENT ••• WWW.SHIPMANS.COM

wpf
11/15/01

Appendix B

STATE OF CONNECTICUT



DEPARTMENT OF PUBLIC SAFETY
OFFICE OF THE COMMISSIONER

November 7, 2001

Arthur L. Spada
Commissioner

Mr. William R. Matthews
Vice President and Senior Nuclear Executive
Dominion Nuclear Connecticut
Millstone Station
Post Office Box 128
Waterford, Connecticut 06385

Dear Mr. Matthews:

This letter is to confirm that personnel and equipment from the Department of Public Safety will, when requested, respond in the event of an emergency at the Millstone Power Station.

This response is in accordance with the State of Connecticut Radiological Emergency Response Plan.

Sincerely,

A handwritten signature in cursive script that reads "Arthur L. Spada".

Arthur L. Spada
COMMISSIONER

ALS:eah

Cc: Paul A. Blasioli, Emergency Services Department, Millstone

1111 Country Club Road
P.O. Box 2794
Middletown, CT 06457-9294
An Equal Opportunity Employer

Wesley
11/15/01

Appendix B

December 5, 2002



Mr. J. Alan Price
Site Vice President
Millstone Power Station
Dominion Nuclear CT
PO Box 128 Rope Ferry Road
Waterford, CT 06385

REFERENCE: Your request for emergency services plan.

Dear Mr. Price,

I am replying to the request to update our "Letter of Agreement" to provide assistance in the event of an emergency.

We have 23 Gamma detectors and 34 Gross alpha/beta proportional counters which are used for gross alpha/beta, I-131 and Sr 89/90 counting. During an accident we could dedicate a large portion of these detectors to provide fast turnaround analysis. The accompanying Table 1 lists the types of analyses; number of each analysis which can be performed on a one-day, two-day or three day basis; sample medium; and detection sensitivity.

We could be contacted at any time in the event of an emergency. The listed persons and telephone numbers can be called in the order listed:

Teledyne Brown Engineering	(865) 690-6819
Keith Jeter	(865) 220-0820
Marty Webb	(865) 376-3710
Rebecca Charles	(865) 482-3061

This agreement letter shall remain in effect until cancellation by either party, provided on ninety (90) days prior written notice, and shall be reviewed and certified as needed.

If you need additional information please contact me at the above number.

Sincerely yours,

A handwritten signature in black ink that reads "Keith Jeter".

Keith Jeter
Operations Manager

Enclosure

cc: Paul Blasioli

Appendix B



WATERFORD AMBULANCE SERVICE

October 22, 2002

Mr. J Alan Price
Site Vice President
Millstone Power Station
Dominion Nuclear CT
P.O. Box 123
Waterford, CT 06385

Dear Mr. Price,

This letter is to confirm that the Waterford Ambulance Service will, when called upon respond in the event of emergencies at the Millstone Power Station Complex in the following areas.

IMPLEMENTATION CRITERIA / AUTHORITIES, RESPONSIBILITIES.

It is our understanding that in the event of an emergency, the millstone shift Manager/ Director of Station Emergency Operations will request ambulance service to assist in the emergency operations. Assistance should be requested by calling the Waterford Emergency Communications Center (911), or by other means provided.

MEASURES TO BE PROVIDED / LIMIT OF ACTIONS

Our commitment is to provide Emergency Medical Service to personnel who might be injured at the Millstone Power Station Complex.

INFORMATION EXCHANGE / POINT OF CONTACT AT SCENE

Verification of communication to the site may be by telephone to the Millstone Control Room or Emergency Operations Facility.

TRAINING and DRILLS

We would appreciate notification of the plant drills or additional training, which you might feel would be advantages to us.

Sincerely,

Timothy D. Sullivan
President

Cc Paul Blasfoll, Emergency Planning Service Department

P.O. Box 137 • 89 Rope Ferry Road • Waterford • Connecticut • 06385
Tel • 860-443-6302 • fax • 860-442-2661

Appendix B

FIFTEEN ROPE FERRY ROAD



WATERFORD, CT 06385-2886

November 29, 2004

Mr. J. Alan Price
Site Vice President - Millstone Station
Dominion Nuclear Connecticut
Rope Ferry Road
Waterford, Connecticut 06385

Dear Mr. Price:

This letter is to confirm that personnel and equipment from the Waterford Fire Service will, when requested, respond in the event of an emergency at the Millstone Power Station in the following areas:

Implementation Criteria/Authorities. Responsibilities

It is our understanding that, in the event of an emergency, the Millstone Shift Manager/Director of Emergency Operations may request personnel and equipment to handle the emergency. Assistance should be requested by calling the Waterford Emergency Communications Center (911), or by other means that may be provided.

Measures to be Provided/Limits of Actions

Our commitment for assistance is to respond to the best of our ability with personnel and equipment in the event of a fire emergency or rescue at the Millstone Power Station Complex and attempt to control the situation with the resources that may be available.

Information Exchange/Point of Contact

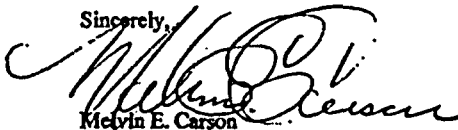
Verification of communications to the nuclear facility will be by telephone to the Control Room or Director of Site Emergency Operations/Designee.

Training and Drills

We would appreciate advanced notification of the plant drills or additional training, which you feel would be advantageous to us. This notification should also include any additional security requirements that are being implemented at the Millstone nuclear facility.

This letter of agreement shall remain in effect until cancellation by either party, provided on ninety (90) days prior written notice, and shall be reviewed and certified as needed.

Sincerely,



Melvin E. Carson
Chairman, Board of Fire Commissioners

Cc: Patti Luckey, Manager, Emergency Preparedness Department, Millstone

Appendix B



Murray J. Pendleton
Chief of Police

WATERFORD POLICE DEPARTMENT
41 AVERY LANE
WATERFORD, CT 06385-2819



(860) 442-9451 TEL
(860) 442-2557 FAX

October 31, 2002

Mr. Alan J. Price, Site Vice-President
Millstone Power Station
Dominion Nuclear Connecticut
P.O. Box 128
Waterford, Connecticut 06385

Dear Mr. Price:

This letter is to confirm that personnel from the Waterford Police Department shall serve as the primary Law Enforcement Agency which when requested, will respond to the Millstone Power Station.

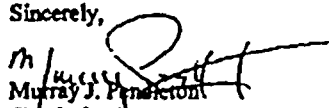
In the event of an emergency, the Millstone Power Station Director of Emergency Operations may request personnel and equipment from the Waterford Police Department by requesting such assistance utilizing the established Hot Lines within the Waterford Communications Dispatch Center.

The Waterford Police Department's commitment for assistance to provide personnel and equipment may include, but not limited to, traffic control, security or tactical assistance. Information requesting assistance will be verified by the Waterford Police Department utilizing a call back verification method, which shall be conducted by the ranking Executive Officer on duty. In addition, the Waterford Police Department shall be the initial staging area for all incidents involving outside law enforcement agencies.

The Waterford Police Department shall be notified of all noteworthy-related plant drills or additional training that would be advantageous to Law Enforcement.

This response is in accordance with the criteria as set forth in the Federal Regulations, 10 CFR, Part 73.55, "Requirements for Physical Protection of License Activities in Nuclear Power Reactors Against Radiological Sabotage".

Sincerely,


Murray J. Pendleton
Chief of Police

Appendix B



WEATHER SERVICES INTERNATIONAL

October 21, 2002

Mr. J. Alan Price
Site Vice President
Millstone Power Station
Dominion Nuclear CT
PO Box 128
Waterford, CT 06385

Dear Mr. Price:

This letter is to confirm that WSI Corporation will, when requested, respond with meteorological support in the event of an emergency at Millstone Power Station. Telephone consultations will be available 24 hours a day, 7 days a week, with WSI meteorologists as needed. In accordance with WSI Agreement #2365, the service includes the following:

- WSI will provide Millstone site-specific forecasts as needed during Incidents, Alerts, and Emergencies at Millstone Power Station. The forecasts will be delivered via phone to Millstone Power Station as requested.
- WSI will provide meteorological support for drills and exercises at Millstone Power Station.
- WSI will also provide meteorological support for hurricanes, severe weather, and other significant weather events potentially affecting Millstone Power Station.
- WSI will participate in periodic weather forecast simulations with the Millstone Environmental Staff.

The direct WSI Forecast Operations number is (978) 670-5053. Simply ask for the Senior Duty Meteorologist.

We look forward to continuing our work with the Dominion Nuclear Connecticut's Operations staff. If you have any questions, or need any additional information, feel free to contact me at (978) 670-5105.

Sincerely,

A handwritten signature in black ink, appearing to read "John G. Bosse".

John G. Bosse
Sales Director, Energy Services
WSI Corporation

Cc: Paul Blasioli, Manager Emergency Preparedness, Millstone Power Station
John Leavitt, Environmental Services, Millstone Power Station

4 Federal Street | Billerica, Massachusetts | 01821-3569 | Tel. 978 670-5000 | Fax 978 670-5100

** TOTAL PAGE.02 **

Appendix B

A

FRAMATOME ANP
FRAMATOME ANP DE&S

An AREVA and Siemens Company

October 29, 2002
EL 185/02

Mr. J. Alan Price, Site Vice President
Millstone Power Station
Dominion Nuclear CT
P.O. Box 128
Waterford, CT 06385

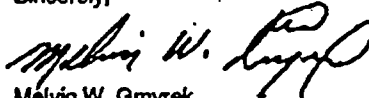
Dear Mr. Price:

This letter constitutes a renewal of the Framatome ANP DE&S Environmental Laboratory commitment to provide emergency radioanalyses of environmental samples to assist your organization in the event of an emergency situation or an emergency response drill. Please note that Dominion Nuclear Connecticut would be responsible, on a time and material basis, for the radwaste disposal costs of accident sample materials.

I am the contact point and can be reached at (508) 898-9970, Extension 2522.

This Letter of Agreement shall remain in effect until cancellation by either party, provided on ninety (90) days prior written notice, and shall be reviewed and certified as needed.

Sincerely,



Melvin W. Gmyrek
Laboratory Director

MWG/mrt

cc: Paul A. Blasioli
Emergency Planning Services
Millstone Station

FRAMATOME ANP DE&S
ENVIRONMENTAL LABORATORY: 29 Research Drive, Westborough, MA 01581-3913
Phone: 508 898-9970 Fax: 508 836-8816 www.us.framatome-anp.com

Appendix B

218

City of Norwich Fire Dept.

10 North Thames Street
Norwich, Connecticut 06360



James F. Walsh

Fire Chief

(860) 892-6080

November 9, 2001

Mr. William R. Matthews
Vice President & Sr. Nuclear Executive
Dominion Nuclear Connecticut
P.O. Box 128
Waterford, CT 06385

Dear Mr. Matthews:

This letter is to confirm that the Norwich Fire Department will, to the best of its ability, during a station emergency, fill breathing bottles brought to the Norwich Fire Department by Dominion Nuclear Connecticut upon telephone request by its Emergency Response Operations.

The Emergency Planning Services Department at Millstone Station is responsible for any questions pertaining to this agreement. (Contact Tom Dembek at 440-4223)

This agreement shall remain in effect until revised, as agreed upon by both parties, or cancelled by either party with 90 days written notice.

Sincerely,

James Walsh
Fire Chief
Norwich Fire Department

cc: Paul A. Blasioli, Emergency Planning Services Department, Millstone

W. Blasioli
12/6/01

Appendix B

SALEM VOLUNTEER FIRE CO. INC.
424 HARTFORD ROAD
SALEM, CT. 06420



November 15, 2001

Mr. William R. Matthews
Vice President & Sr. Nuclear Executive
Dominion Nuclear Connecticut
P.O. Box 128
Waterford, CT 06385

Dear Mr. Matthews:

This letter is to confirm that the Town of Salem and the Salem Volunteer Fire Department will, to the best of its ability, during a station emergency, fill breathing bottles brought to the Salem Volunteer Fire Station by Dominion Nuclear Connecticut upon telephone request by its Emergency Response Operations.

The Emergency Planning Services Department at Millstone Station is responsible for any questions pertaining to this agreement. (Contact Tom Dembek at 440-4223)

This agreement shall remain in effect until revised, as agreed upon by both parties, or cancelled by either party with 90 days written notice.

Sincerely,

Eugene Maiorano,
Fire Chief
Salem Volunteer Fire Department

cc: Paul A. Blasioli, Emergency Planning Services Department, Millstone



Station Phone 880-859-0842
Station Fax 880-858-2881

*Updated
12/6/01*

Appendix B



Department of Energy
Brookhaven Area Office
P.O. Box 5000
Upton, New York 11973

JUN 08 2002

TO: DISTRIBUTION LIST

SUBJECT: DEPARTMENT OF ENERGY'S (DOE) RADIOLOGICAL ASSISTANCE
PROGRAM (RAP) MEMORANDUM OF UNDERSTANDING

The DOE Brookhaven Area Office (BAO) as the Regional Coordinating Office (RCO) for DOE's Region 1, after discussion with representatives from the U.S. Nuclear Regulatory Commission (USNRC) and the Federal Emergency Management Agency (FEMA), has concluded that individual memorandums of understanding (MOUs) are no longer required.

Numerous federal laws, regulations, and DOE Orders, that are currently in existence, require DOE to maintain an ever-ready response capability for coping with any nuclear/radiological incident in support of FEMA and the NRC. The elimination of the annual letters would in no way impact the assistance or support that BAO is required to provide and has maintained over the years. BAO, as the RCO for DOE Region 1, will carry out that assistance required by law, regulation, and DOE Orders.

If you have any questions or would like further details, please contact me at (631) 344-7309.

Sincerely,


Steven M. Centore
Regional Response Coordinator

PC Doc #42351/4530.1

158-1

A component of the DOE Chicago Operations Office

Appendix B

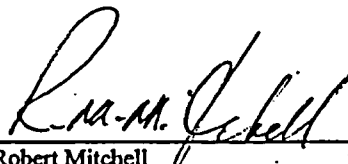
**Letter of Agreement
Between Connecticut Yankee Atomic Power Company
and Dominion Nuclear Connecticut, Inc.**

Emergency Preparedness

1. This agreement by and between Connecticut Yankee Atomic Power Company (CYAPCO) and Dominion Nuclear Connecticut, Inc. (DNC) confirms that CYAPCO will continue to provide the emergency services stipulated in the Millstone Station Emergency Plan, section 6.4.1.i.
2. DNC may use CYAPCO's Haddam Neck Plant in Haddam Neck, Connecticut to monitor and decontaminate DNC personnel during or following an emergency at the Millstone Power Station in Waterford, Connecticut if conditions at Millstone prohibit DNC from monitoring its personnel at Millstone.
3. Transportation of DNC personnel to CYAPCO's Haddam Neck Plant under these circumstances will be provided for by DNC.
4. This agreement shall remain in effect until terminated by either party and upon the designation of an alternate facility to perform the above-mentioned services.



Patricia Luckey
Manager
Emergency Preparedness Department
Dominion Nuclear Connecticut, Inc.



Robert Mitchell
Unit Manager,
Connecticut Yankee Atomic Power Co.

2:VEP_DEPTDATA\OFFSITE\ENLOA\cy LOA 01-0000.doc

Received 11-22-04.

Appendix C

APPENDIX C

**MAPS OF PLUME EXPOSURE AND INGESTION EXPOSURE EPZ, LOCATIONS OF
ON-SITE AND OFF-SITE RADIOLOGICAL MONITORING STATIONS, STATION
EVACUATION ROUTES**

Figure C-1

Map of Millstone Emergency Planning Zone, Host Communities and Evacuation Routes

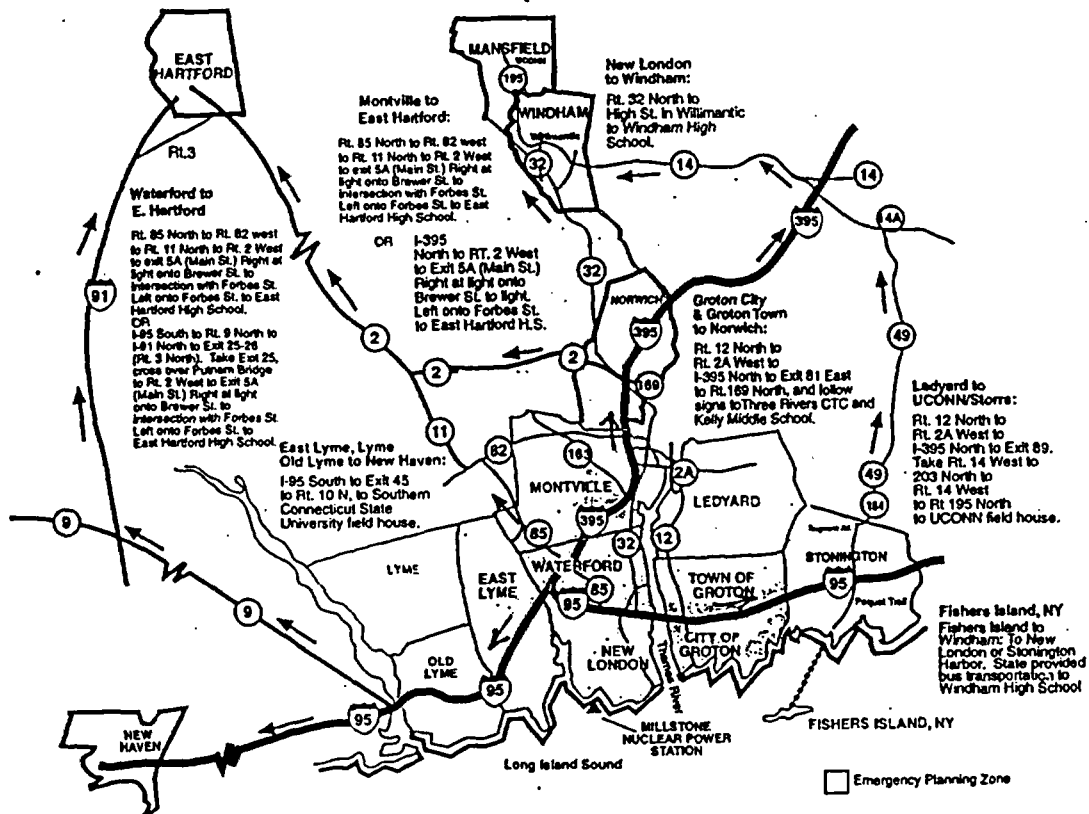


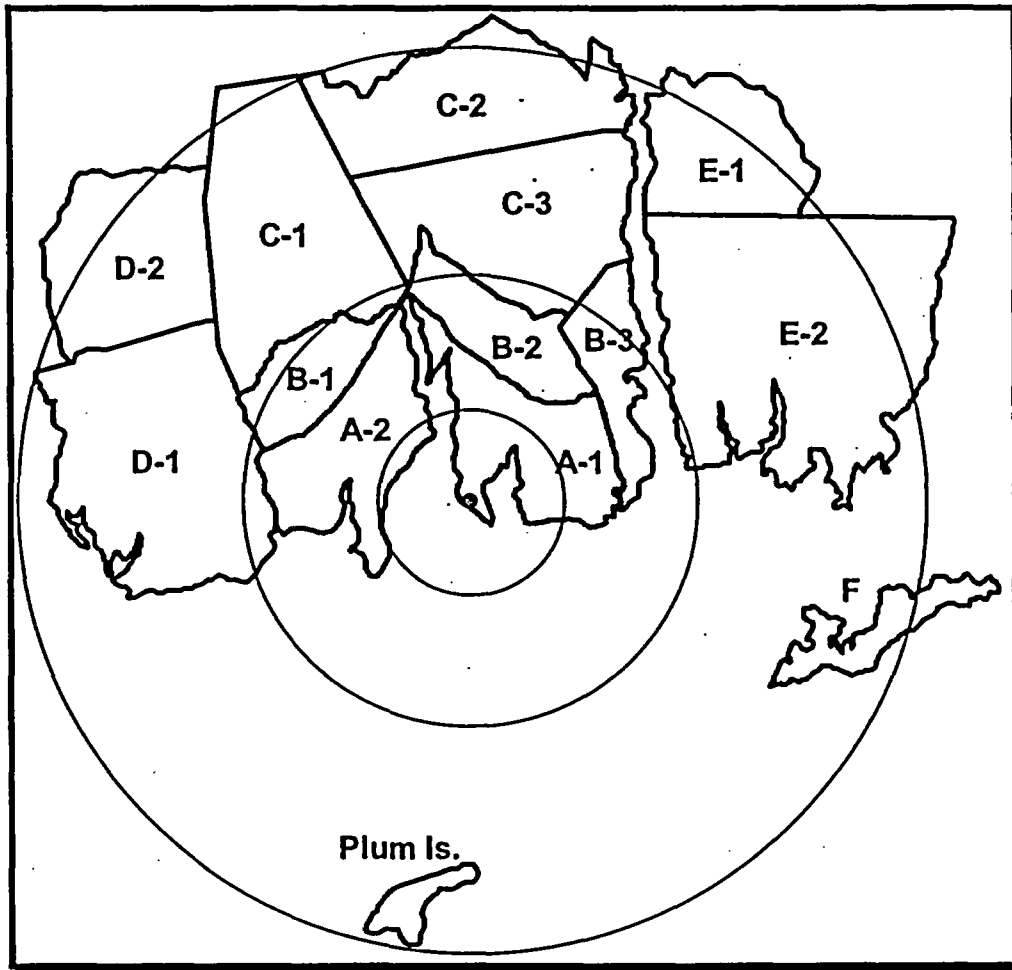
Figure C-2

Locations of On-Site and Off-Site Radiological Monitoring Stations

(As specified by the Radiological Effluent Monitoring and Off-Site Dose Calculation Manual)

Figure C-3

Map of Millstone 10 Mile Emergency Planning Zone



Distance	Zone	Community
(0-2 mi)	A	Waterford (A-1) East Lyme (A-2)
(2-5 mi)	B	East Lyme (B-1) Waterford (B-2) New London (B-3)
(5-10 mi)	C	East Lyme (C-1) Montville (C-2) Waterford (C-3)
	D	Old Lyme (D-1) Lyme (D-2)
	E	Ledyard (E-1) Groton City & Town (E-2)
	F	Fishers Island
	N/A	Plum Island

Figure C-4

Map Of Millstone 50-Mile Emergency Planning Zones

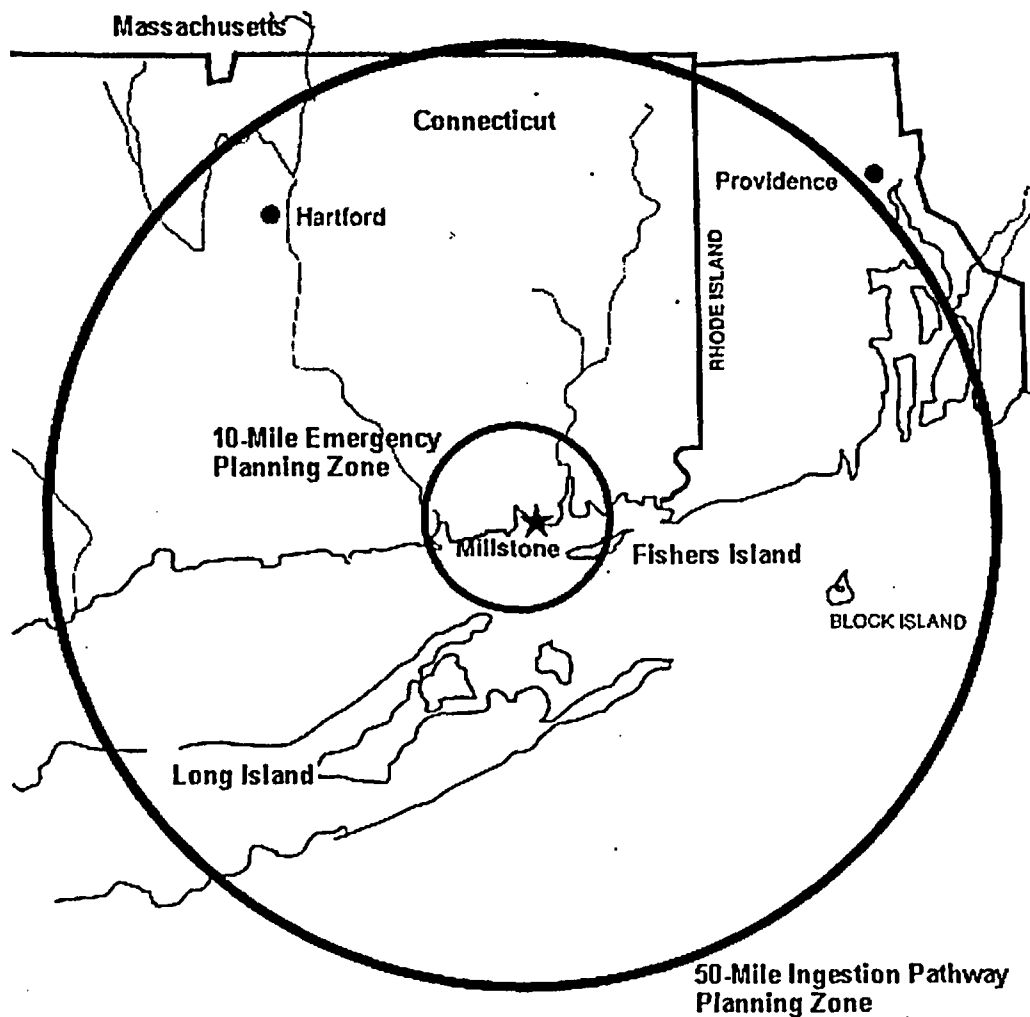
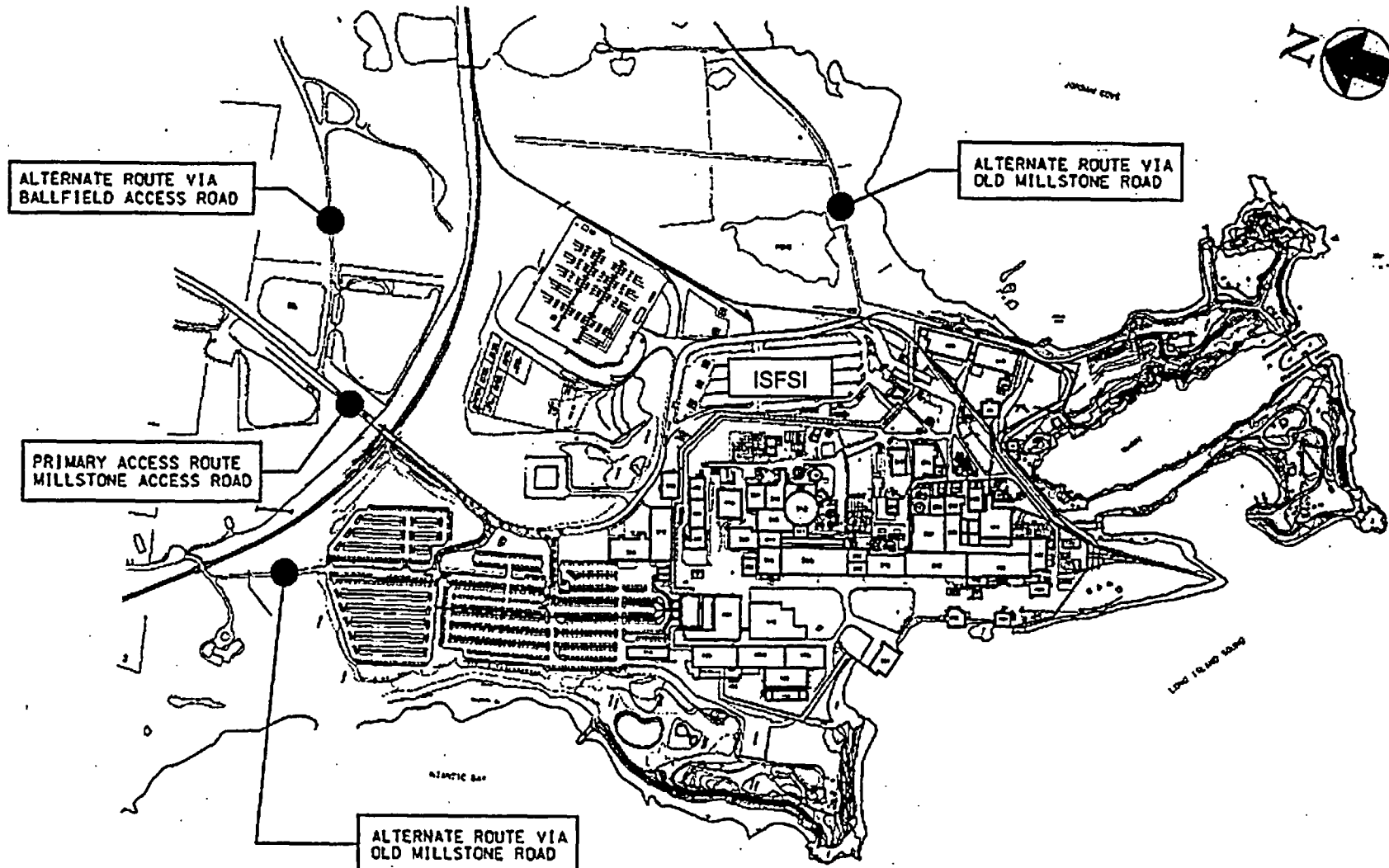


Figure C-5

Map of Millstone Station Evacuation Routes



Appendix D

APPENDIX D

SUPPORTING PROCEDURES LIST

Appendix D

<u>Procedure Number</u>	<u>Title</u>	<u>Emergency Plan Section(s)</u>
Program Description		
MP-26-MMM	Radiological Emergency Preparedness	8.0
Emergency Plan Implementing Procedures (EPIs)		
MP-26-EPI-FAP01	CR Emergency Operations	5.1
MP-26-EPI-FAP02	TSC Activation and Operation	5.2, 5.3, 7.3
MP-26-EPI-FAP03	OSC Activation and Operation	5.2, 5.3, 7.4
MP-26-EPI-FAP04	EOF Activation and Operation	5.2, 5.3, 7.2
MP-26-EPI-FAP05	State EOC Activation and Operation	5.2, 5.3
MP-26-EPI-FAP06	Classification and PARs	4, 5.2.1, 6.2, 5.2.5
MP-26-EPI-FAP07	Notification and Communications	5.1, 6.1
MP-26-EPI-FAP08	Evacuation and Assembly	6.4.1
MP-26-EPI-FAP09	Radiation Exposure Control	6.4, 6.5
MP-26-EPI-FAP10	Dose Assessment	6.2.1, 6.2.3
MP-26-EPI-FAP11	Core Damage Assessment	6.2.4
MP-26-EPI-FAP12	Thermal Hydraulic Evaluation	5.2.18, 5.3.13
MP-26-EPI-FAP13	News Releases	5.2.14, 5.2.16
MP-26-EPI-FAP14	Recovery	9.0
MP-26-EPI-FAP15	Common Forms	N/A
Emergency Plan Administrative Procedures		
MP-26-EPA-FAP01	Management Program for Maintaining Emergency Preparedness	7.0, 8.0
MP-26-EPA-FAP02	Decrease In Effectiveness 10 CFR 50.54(q) Determination	8.3
MP-26-EPA-FAP03	Drill and Exercise Implementation	8.2
MP-26-EPA-FAP04	EAL Table Revision	N/A
MP-26-EPA-FAP05	Emergency Planning Facility Maintenance	7.0, 7.5
MP-26-EPA-FAP06	Emergency Plan Change Process	N/A
MP-26-EPA-FAP07	Emergency Preparedness Services Departmental Staff Qualifications	N/A
MP-26-EPA-FAP08	Public Alerting System Administration	8.2
MP-26-EPA-FAP09	Public Alerting System Test and Inspection Program	8.2
MP-26-EPA-FAP10	Public Alerting System Siren Test and Repair	8.2
MP-26-EPA-FAP11	Public Alerting System Siren Acoustical Performance Testing	8.2

Appendix D

<u>Procedure Number</u>	<u>Title</u>	<u>Emergency Plan Section(s)</u>
MP-26-EPA-FAP12	Public Alerting System Field Acoustical Measurement (Community Test)	8.2
MP-26-EPA-GDL01	Emergency Planning Performance Indicators	N/A
MP-26-EPA-GDL02	Document Maintenance and Storage	N/A
MP-26-EPA-GDL03	Station Emergency Response Organization Qualification Maintenance	N/A
MP-26-EPA-GDL04	Emergency Planning Cyclical Tasks	Appendix B
MP-26-EPA-GDL05	Emergency Response Data System (ERDS) Change Process	N/A
MP-26-EPA-GDL06	OFIS	7.1, 7.2, 7.3
MP-26-EPA-GDL07	SERO Database and ENRS System Modifications	N/A
MP-26-EPA-REF01	Millstone Unit 1 Defueled Emergency Action Level (EAL) Basis Document	N/A
MP-26-EPA-REF02	Millstone Unit 2 Emergency Action Level (EAL) Basis Document	N/A
MP-26-EPA-REF03	Millstone Unit 3 Emergency Action Level (EAL) Basis Document	N/A
MP-26-EPA-REF04	Off-Site Programs	8.0
MP-26-EPA-REF08B	Millstone Emergency Planning Resource Book	8.2.1
Administrative Control Procedures		
NTP 7.205	Millstone Fire Protection and Prevention Training Program Implementing Procedure	8.1.3
Nuclear Training Procedures		
NTP 7.212	Emergency Plan Training Program Description	8.1.1
Radiation Protection/Radiation Monitoring		
RPM Section 2.3.4	Quality Assurance Program for Respiratory Protection Equipment	Various
RPM Section 2.3.5	Inspection and Inventory of Respiratory Protection Equipment	Various
RPM Section 2.9.1	Sample Identification and Transmittal to Contractor for Analysis	6.2.4
RPM Section 2.9.6	Biota Sampling	6.2.4
RPM Section 2.9.8	Soil Sampling	6.2.4
RPM Section 2.9.9	Terrestrial Sampling	6.2.4
RPM Section 4.8.5	Emergency Radiological Equipment Maintenance and Inspection	Various
REMODCM	Radiological Effluent Monitoring and Off-Site Dose Calculation Manual	Figure C-2, Appendix H Table H-2

Appendix D

<u>Procedure Number</u>	<u>Title</u>	<u>Emergency Plan Section(s)</u>
Millstone Unit-2 Severe Accident Management Guidelines (SAMG)		
SAMG 4211	Phase 1 Initial Diagnosis	5.2.2, 5.1.3, 5.3.13
SAMG 4212	Phase 2 Verification of Diagnosis	5.2.2, 5.1.3, 5.3.13
SAMG 4213	Phase 3 CHLA Implementation	5.2.2, 5.1.3, 5.3.13
SAMG 4214	Phase 4 Restorative Actions	5.2.2, 5.1.3, 5.3.13
SAMG 4215	Calculational Aids	5.2.2, 5.1.3, 5.3.13
Millstone Unit-3 Severe Accident Management Guidelines (SAMG)		
SACRG-1	Severe Accident CR Guideline Initial Response	5.2.2, 5.1.3, 5.3.13
SACRG-2	Severe Accident CR Guideline for Transients after TSC is Activated	5.2.2, 5.1.3, 5.3.13
SAG-1	Injection into the Steam Generators	5.2.3, 5.3.13
SAG-2	Depressurize the RCS	5.2.3, 5.3.13
SAG-3	Inject into RCS	5.2.3, 5.3.13
SAG-4	Inject into Containment	5.2.3, 5.3.13
SAG-5	Reduce Fission Product Releases	5.2.3, 5.3.13
SAG-6	Control Containment Conditions	5.2.3, 5.3.13
SAG-7	Reduce Containment Hydrogen	5.2.3, 5.3.13
SAG-8	Flood Containment	5.2.3, 5.3.13
SCG-1	Mitigate Fission Product Release	5.2.3, 5.3.13
SCG-2	Depressurize Containment	5.2.3, 5.3.13
SCG-3	Control Hydrogen Flammability	5.2.3, 5.3.13
SCG-4	Control Containment Vacuum	5.2.3, 5.3.13
SAEG-1	TSC Long Term Monitoring	5.2.3, 5.3.13
SAEG-2	SAMG Termination	5.2.3, 5.3.13
CA-1	RCS Injection to Recover Core	5.2.3, 5.3.13
CA-2	Injection Rate for Long-Term Decay Heat Removal	5.2.3, 5.3.13
CA-3	Hydrogen Flammability in Containment	5.2.3, 5.3.13
CA-4	Volumetric Release Rate from Vent	5.2.3, 5.3.13
CA-5	Containment Water Level and Volume	5.2.3, 5.3.13
CA-6	RWST Gravity Drain	5.2.3, 5.3.13

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<u>Procedure Number</u>	<u>Title</u>	<u>Emergency Plan Section(s)</u>
CA-7	Hydrogen Impact when Depressurizing Containment	5.2.3, 5.3.13
DFC	TSC Diagnostic Flow Chart	5.2.3, 5.3.13
SCST	Severe Challenge Status Tree	5.2.3, 5.3.13
Common Operating Procedures		
C-OP 200.2	Response to Security Events	6.4.1
C-OP 200.3	Response to Medical Emergencies	6.5.4, 6.5.5
C-SP 600.1	Page/ Siren System Evacuation Alarm Operability Test	8.2.1
C-OP 606	Communications-Radiopaging and Callback Monthly Operability Test	8.2.1
C-SP 600.3	State Police, Waterford Police and Tri-Town Radio Test	8.2.1
C-SP 600.4	Communications-Radiopaging and ENRS Daily and Weekly Operability Test	8.2.1
Chemistry Department Procedures		
CP 3804K	PASS RCS/RSS Sample (Unit 3)	N/A
CP 3804AC	Liquid Waste Sample Sink (Unit 3)	N/A
CP 3804L	PASS Containment Air Sample (Unit 3)	N/A
CP 3804M	PASS Ventilation Samples (Unit 3)	N/A
CP 2804L	Unit 2 Reactor Coolant and Liquid Waste PASS	N/A
CP 2804M	Unit 2 High Range Vent Stack and Containment Air PASS Sampling and Analysis	N/A

Appendix E

APPENDIX E

MILLSTONE EMERGENCY EQUIPMENT

Appendix E

Figure E-1

Millstone Emergency Equipment Summary⁽⁶⁾

Emergency Item	Control Room	TSC/OSC	NAP/SAP	Ambulance	EOF	Env. Lab	RMT Kit ¹	RMT Kit ²
Radiological Monitoring Equipment:								
RM-14 Frisker (or equivalent)	U3	X	X		X			
RO-2A Survey Meter (or equivalent)		X			X		X	X
DIG-5 Portable Scaler					X		X	X
ASP-1 / HP-270 (or equivalent)					X			X
E-140 / HP-210 (or equivalent)	U2				X		X	X
PS-2-2 / HP-210 (or equivalent)					X			
Teletector (or equivalent)	X	X			X			
Air Sampler- 110 vac			X		X		X ⁽⁷⁾	
Air Sampler- 12 vdc					X		X ⁽⁷⁾	X
Area Radiation Monitor		X			X			
Portable Count Rate Meter	U2				X		X	X
Cont. Air Monitor (AMS-3 or equiv.)					X			
Portal Monitor			(4)		X			
Iodine Sampling Materials	(5)	X	X		X	(5)	X	X
On-Site RMT Kit (locations)	X	X	X		X		(5)	(5)
Off-Site RMT Kit (locations)					X	X	(5)	(5)
Emergency Dosimetry	X	X	(5)	X	X	(5)	X	X
Protective Equipment / Materials³ :								
Respirators	X	X	X		X	(5)	(5)	(5)
SCBA	X	X			Fire Fac			
Protective Clothing	X	X	X	X	X	X		
Personnel Decontamination Material	X			X	X			
Facility Rad Control / Decon Material		X			X			
Potassium Iodide Tablets	U2,U3	X	X		X		X	X
Communications Equipment³ :								
Dedicated Telephone Lines	U2, U3	X			X			
Emergency Radios	X	X			X			
Emergency Supplies / Materials³ :								
Emergency Preparedness Procedures	X	X	X		X		X	X
RMT Vehicles					X			
Tools, Lights, Office Supplies	(3)	X			X			

(1) On-Site RMT Kit

(2) Off-Site RMT Kit; Backups located at Goshen Vol. Fire Dept.

(3) Additional tools and equipment can be obtained from tool cribs located in U2/U3. ERF Items maintained in accordance with EP procedures.

(4) Permanently installed at this location.

(5) RMT kit resupply equipment is stored at this location.

(6) HP materials and equipment are maintained and surveilled in accordance with the site Radiation Protection Manual. Detailed inventory of other equipment is provided in MP-26-EPA-FAP05, EP Facility Maintenance.)

(7) 110v - RMT1 (U2,3 CR) TSC/OSC 12v - NAP/SAP over water

Appendix F

APPENDIX F

DIAGRAMS AND ARRANGEMENT OF EMERGENCY FACILITIES

Figure F-1
Diagram of TSC / OSC Layout

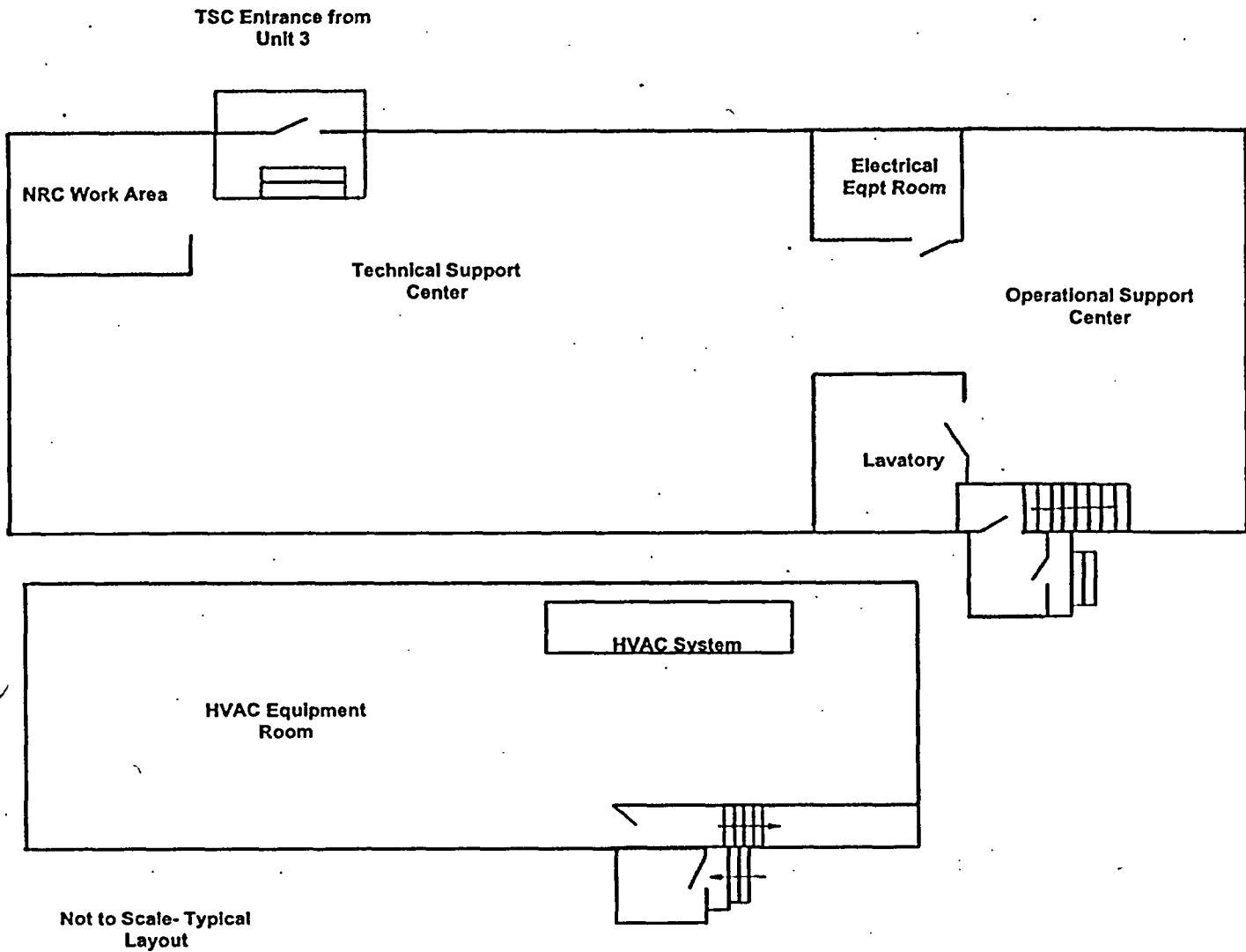
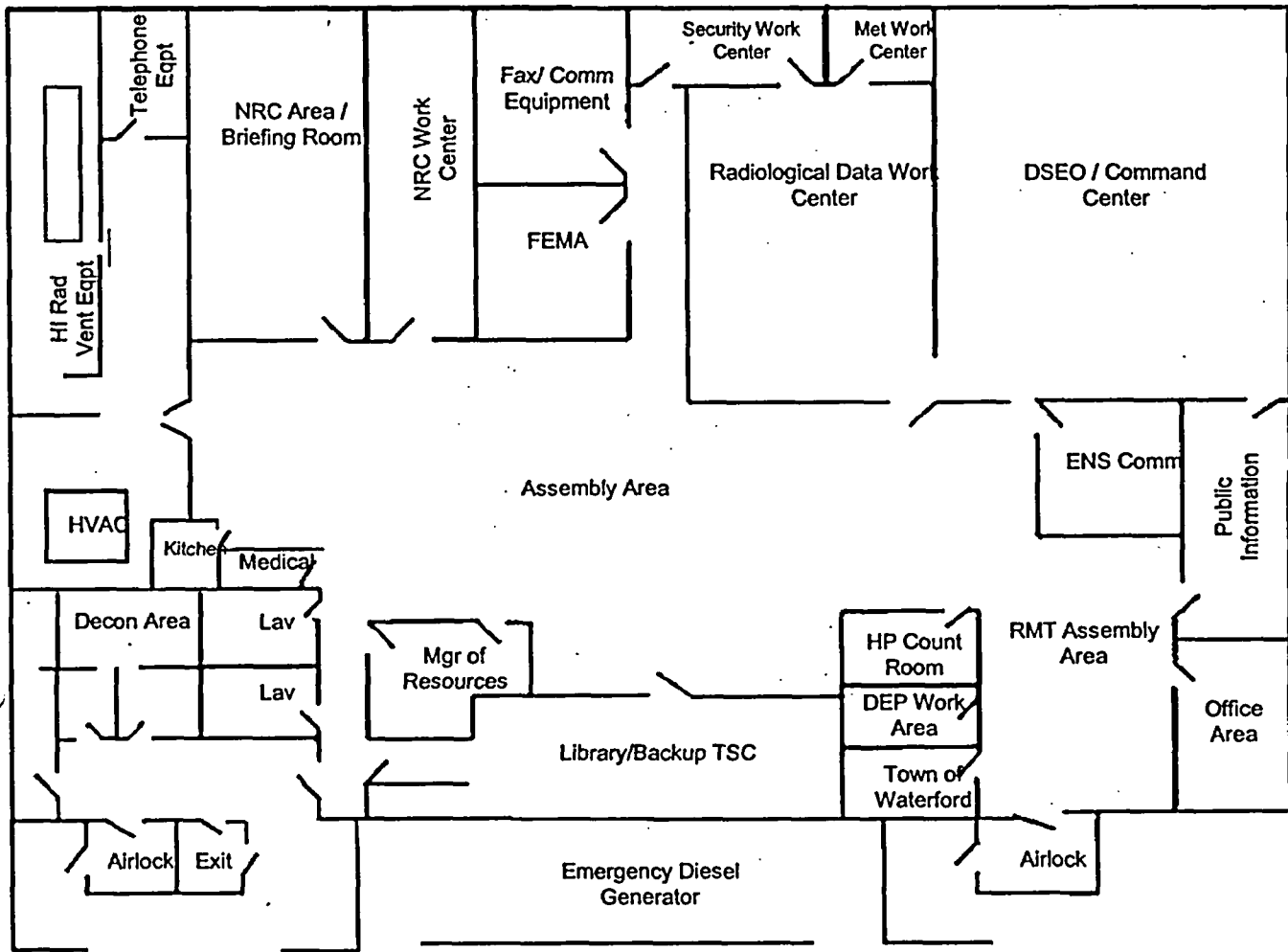


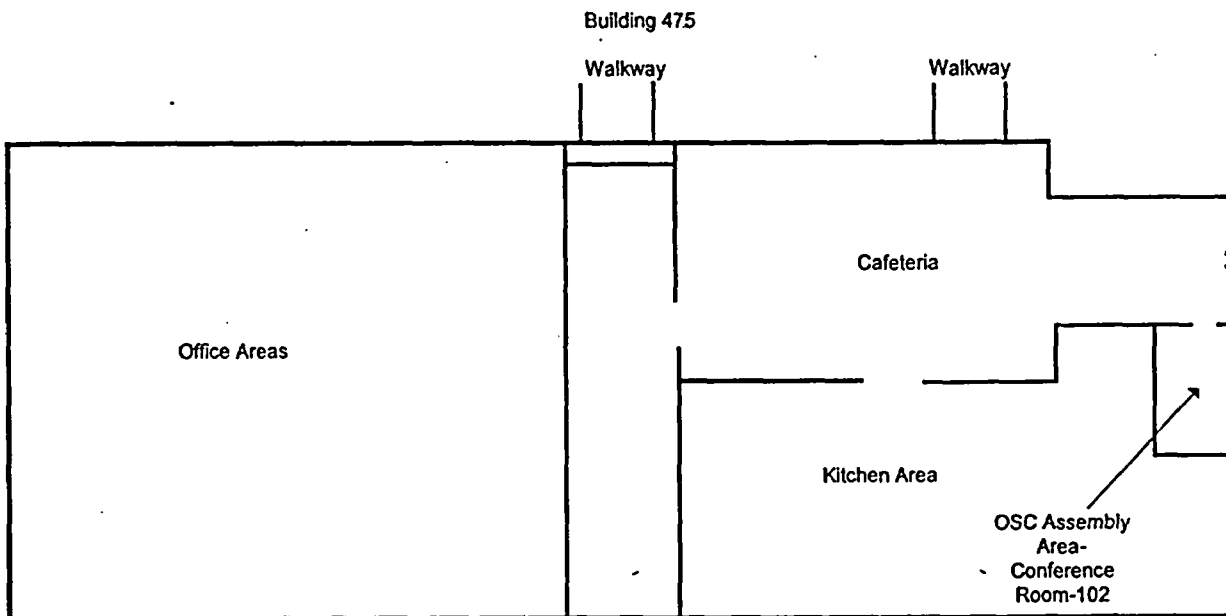
Figure F-2

Diagram of Emergency Operations Facility



Typical Layout- Drawing
not to scale

Figure F-3
Diagram of OSC Assembly Area Layout



Drawing not to scale-

Appendix G

APPENDIX G

CROSS-REFERENCE TO NUREG-0654 CRITERIA

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
A. ASSIGNMENT OF RESPONSIBILITY (ORGANIZATION CONTROL)		
A.1.a	Identify State, Local, Federal and private organizations who are part of emergency plans.	1.1, 1.2, Table 1-1, Figure 1-1, Appendix B, Table 2-1
.1.b	Each organization shall specify its concept of operations and relationship to total effort.	Sections 1, 5, 6, 9
A.1.c	Illustrate relationships by block diagram.	Figures 1-2, 5-1, 7-1a, b, c
A.1.d	Title of individual in charge of emergency operations.	5.2.1, Figure 5-1
A.1.e	Provide for 24 hr./day emergency response and manning of communications.	Section 5.0
A.2.a	Specify functions and responsibilities for major elements and key individuals by title.	N/A- State and Local requirement only.
A.2.b	Each plan shall contain the legal basis for such authorities.	N/A- State and Local requirement only.
A.3	Include written letters of agreement. Include concept of operations, emergency measures to be provided, criteria for implementation and exchange of information.	5.4.1, 5.4.2, Appendix B
A.4	Title of individual responsible for assuring continuity of resources.	5.2.17, 5.4.3
B. ON-SITE EMERGENCY ORGANIZATION		
B.1	Relationship between on-site emergency organization and normal staff.	Table 5-1
B.2	Specify title of emergency coordinator who is on-site 24-hr./day.	5.1.1, Table 5-1
B.3	Line of succession for emergency coordinator. Specify conditions for high level officials assuming this function.	5.1.1, 5.2.1, 5.2.5
B.4	Specify functional responsibilities of emergency coordinator. Specify responsibilities which cannot be delegated (e.g., may not delegate the decision to notify and to recommend protective actions to authorities).	5.1.1, 5.2.1
B.5	Specify title and corresponding qualifications of emergency personnel. Include Table B-1, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." Specify minimum on shift and available within 30 minutes and 60 minutes following declaration of emergency.	Table 5-1
B.6	Specify interfaces between on-site and off-site organizations. Illustrate in block diagram.	1.2, Figures 1-1, 1-2, 1-3, 5-1
B.7	Specify corporate organization. Provide a table similar to B-1.	5.0, Table 5-1, Figure 5-1
B.7a	Logistics support for emergency personnel	5.2.17
B.7b	Technical support for planning, reentry, recovery	Section 9
B.7c	Management interface with government authorities	6.1, Figures 7-1a, c
B.7d	Release of information to news media	5.2.14, 5.2.16

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
B.8	Specify private organizations and contractors who would provide assistance.	5.4
B.9	Specify services to be provided by local agencies. Include transportation and treatment of injured personnel who may be contaminated.	6.3.1, 6.4.1.b, 6.5.5, 6.5.6
B.9	Append letters of agreement with contractor, local, and private agencies which include authorities, responsibilities, and limits of actions.	7.10, Appendix B
C. EMERGENCY RESPONSE SUPPORT AND RESOURCES		
C.1	Make arrangements with DOE for FRMAP/RAP assistance.	1.2, 1.4
C.1.a	Specify persons by title authorized to request federal assistance.	1.4, 5.4.3
C.1.b	Specify federal resources expected, including expected times of arrival at specific nuclear facility sites.	1.4, 5.4.3
C.1.c	Specify resources available to support the federal response.	1.4, 5.4.3
C.2.b	Licensee may dispatch a representative to principal off-site governmental EOCs.	5.2.15, 5.2.16
C.3	Identify radiological laboratories, capabilities, and expected availability.	7.10, Table H-2, Appendix B, Table H-1
C.4	Identify facilities, organizations, and individuals which can be relied upon in an emergency	Table H-2, Appendix B
D. EMERGENCY CLASSIFICATION SYSTEM		
D.1	Establish EAL scheme per Appendix 1.	Section 4, Table 4-1, 4-2, 4-3 4-4, Appendix I
D.2	Initiating conditions shall include the example conditions in Appendix 1 and accidents in the FSAR.	Section 4, Table 4-1, 4-2, 4-3 4-4, Appendix I
E. NOTIFICATION METHODS AND PROCEDURES		
E.1	Establish procedures for notification of response organizations consistent with Appendix 1. Provide verification of messages.	1.3, 6.1
E.2	Establish procedures for notifying, alerting, and mobilizing emergency response personnel.	6.1
E.3	Initial emergency message shall include: class of emergency, whether a release is taking place, potentially affected areas, whether protective measures may be necessary.	6.1
E.4	Provide for follow-up messages. Includes the 14 listed items.	1.3, 6.1, 6.2.1, 6.2.2
E.6	Establish administrative and physical means and the time required to notify public in plume EPZ per Appendix 3. Licensee will ensure means exist. Responsibility of State and Local governments to activate the system.	1.5, 6.1
E.7	Provide written messages intended for the public, consistent with the operator's classification. Role of the licensee is to provide supporting information for the messages.	1.3, 1.5, 6.2.2, 7.7, 8.4

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
F. EMERGENCY COMMUNICATIONS		
F.1	Identify organizational titles and alternates for communications links. Establish primary and backup communications.	1.3, 6.1, Figures 7-1a, b, c, 7.9, Appendix B
F.1.a	Provide 24-hr./day notification and activation and 24-hr./day manning of communications links.	5.1.4, 6.1
F.1.b	Provide communications with contiguous State/Locals within the Emergency Planning Zones.	6.1, Figure 7-1a
F.1.c	Provide communications with Federal Emergency Response Organizations.	Figure 7-1b, 7-1c
F.1.d	Provide communications between State and Local centers, and field assessment teams.	1.3, 6.1, 7.2.5, Figure 7-1a, 7-1c
F.1.e	Provide for alerting and activating emergency personnel.	6.1
F.1.f	Provide communications to NRC Headquarters, NRC Regional Office EOC, EOF, and RMT assembly area.	Figure 7-1b, 7-1c
F.2	Ensure that coordinated communication links for fixed and mobile medical support facilities exists.	7.9
F.3	Periodic testing of communications systems.	8.2.1, 8.2.1.b, 8.2.2
G. PUBLIC INFORMATION		
G.1	Provide periodic information at least annually to public concerning public notification and protective actions in an emergency including the special needs of the handicapped.	1.6, 8.4, 8.5
G.2	Information must reach population within plume EPZ and should include written material that would likely be available in an emergency. Updated information should be disseminated annually. Notices to refer the transient populations to the sources of local information.	1.6, 8.4
G.3.a	Provide point of contact and physical location for use by news media.	7.7
G.3.b	Provide space for a limited number of news media at EOF.	7.7
G.4.a	Designate a spokesperson.	5.2.15
G.4.b	Arrange for timely exchange of information among spokesperson.	Figure 1-1, 5.2.14, 5.2.15, 5.2.16, 6.1, 6.6
G.4.c	Coordinate arrangements for dealing with rumors.	5.2.14
G.5	Conduct informational programs for news media at least annually.	8.5
H. EMERGENCY FACILITIES AND EQUIPMENT		
H.1	Establish TSC and OSC per NUREG-0696	7.3, 7.4, Appendix E, F
H.2	Establish EOF per NUREG-0696	7.2, Appendix E, F
H.4	Provide for activating and staffing facilities in a timely manner.	Section 5, Table 5-1, 6.1
H.5	Provide on-site monitoring systems to be used to initiate emergency measures per Appendix 1, including:	Table H-1
H.5.a	Geophysical	Table H-1

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
H.5.b	Radiological	6.2.3, Table H-1, Figure C-2
H.5.c	Process	Table H-1
H.5.d	Fire	Table H-1
H.6	Provide off-site monitoring equipment including:	
H.6.a	Geophysical	Table H-2
H.6.b	Radiological	Figures C-2, Table H-2
H.6.c	Laboratory facilities	7.10, Table H-1, H-2
H.7	Provide off-site radiological monitoring equipment.	Appendix E, Table H-2
H.8	Provide meteorological instrumentation and procedures per Appendix 2. Obtain meteorological information from other sources.	7.13, Table H-1, H-2
H.9	Provide on-site Operational Support Center (assembly area) with adequate capacity and supplies.	7.4, Figures F-2, F-3
H.10	Provide for inspection, inventory and operational checking of equipment at least once each calendar quarter and after each use. Have sufficient reserves of equipment to replace that which was removed from emergency kits for calibration or repair. Calibrate equipment per suppliers recommended intervals.	7.5, Appendix E, Appendix D
H.11	In appendix, provide inventory of emergency kits.	Appendix E
H.12	Establish central point for receipt and analysis of field monitoring data (preferably associated with EOF) and coordination of sample media.	6.2.3, 7.10, Table H-1, H-2
I. ACCIDENT ASSESSMENT		
I.1	Provide EALs and corresponding emergency class.	Section 4, Tables 4-1, 4-2, 4-3, 4-4 and Appendix I
I.2	On-site capabilities to provide initial values and continuing assessment (per NUREG-0578 and NRC letter of 10/30/79) including:	N / A
Cont'd	Post-accident sampling capability	Appendix D
Cont'd	Radiation and effluent monitors	Table H-1
Cont'd	In-plant iodine instrumentation	Table H-1
Cont'd	Containment radiation monitors	Table H-1
I.3	Establish methods and techniques for determining:	N / A
I.3.a	Source term (e.g., relation of containment radiation monitors and material available for release.)	6.2.3, Appendix D
I.3.b	Magnitude of release based on plant parameters and effluent monitors.	6.2.3, Appendix D
I.4	Establish relationship between effluent monitor readings and exposures and contamination for meteorological conditions.	6.2.3, Appendix D, 6.2.4.c

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
I.5	Acquire meteorological information per Appendix 2. Provide meteorological data to EOF, TSC, CR, and off-site NRC center. Make available to the State suitable meteorological data processing interconnections.	6.2.3, 6.2.4.d, 7.13
I.6	Determine release rate/projected doses if instruments are off-scale or inoperable.	6.2.3, 6.2.4
I.7	Field monitoring within plume EPZ.	6.2.3, 6.2.4.h
I.8	Provide for rapid assessment of radiological hazards. For field teams include: activation, notification, composition, transportation communication, monitoring equipment and deployment times.	6.2.3, 6.2.4.h, Appendix D
I.9	Have capability to detect radio-iodine in air as low as 10^{-7} $\mu\text{Ci/cc}$.	6.2.3, 6.2.4.h.4
I.10	Relate measured parameters to dose rates. Estimate integrated dose from dose rates and compare to PAGs.	6.2.3, 6.2.4.c, 6.2.4.e
J. PROTECTIVE RESPONSE		
J.1	Establish means and time to warn individuals in owner-controlled areas.	6.4.1
J.2	Provide evacuation routes and transportation for on-site individuals to off-site locations, including alternatives.	6.4.1
J.3	Provide radiological monitoring for people evacuated from the site.	6.4.1.i
J.4	Provide evacuation of on-site non-essential personnel in Site Area or General Emergency. Provide decontamination capability near off-site location.	6.4.1.d, 6.4.1.i
J.5	Account for all individuals on-site and ascertain names of missing individuals within 30 minutes. Account for all individuals continuously thereafter.	6.4.1.d, 6.4.1.h
J.6	Provide for individuals remaining or arriving on-site, respiratory protection, protective clothing, radioprotective drugs.	6.4.3, 6.4.4, 5.2.2, 5.2.5
J.7	Establish a mechanism for recommending protective actions to state/local authorities per EALs of Appendix 1 and Tables 2.1 and 2.2 of the EPA PAGs.	1.3, 6.2.1, 6.2.2, 6.2.3, Figure 1-1, Table 4-4
Cont'd	Provide prompt notification to off-site authorities in plume EPZ as specified in NUREG-0654, Appendix 1.	Section 4, Tables 4-1, 4-2, 4-3, 4-4, 6.1, Figures 7-1a, b, c
J.8	Time estimates for evacuation in plume EPZ in accordance with Appendix 4.	Appendix J
J.10	Plans for protective measures to include:	
J.10.a	Maps	Appendix C
J.10.b	Population distribution	Appendix J
J.10.c	Means for notifying population	1.5, 6.1
J.10.m	Public protective strategies from plume exposure.	6.2.1

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
K. RADIOLOGICAL EXPOSURE CONTROL		
K.1	Establish on-site exposure guidelines for:	
K.1.a	Removal of injured persons	6.5
K.1.b	Corrective actions	6.5
K.1.c	Assessment actions	6.5
K.1.d	First aid	6.5
K.1.e	Personnel decontamination	6.5
K.1.f	Ambulance service	6.5
K.1.g	Medical treatment	6.5
K.2	Provide on-site emergency radiation protection programs. Specify individual (s) who can authorize exposure in excess of 10CFR20 limits.	5.1, 5.2.1, 5.2.2, 5.2.5, 6.4, Table 6-1
Cont'd	Provide procedures for volunteers to receive radiation exposures in lifesaving activities.	5.1, 5.2.1, 6.4
K.3.a	Provide 24-hr./day dose determination	6.4
K.3.b	Maintain dose records and read dosimeters at appropriate frequencies.	6.4
K.5.a	Levels for decontamination	6.4
K.5.b	Establish means for radiological decontamination of personnel, supplies, equipment, and waste disposal.	6.4.3
K.6	Provide on-site contamination control, including:	
K.6.a	Area access control	5.2.2, 5.2.4, 5.2.5, 6.4.1, 6.4.3
K.6.b	Drinking water and food supplies	6.4.3.c
K.6.c	Criteria for permitting return of areas and items to normal use in accordance with ANSI 13.12	6.4.3
K.7	Capability to decontaminate relocated on-site personnel, including extra clothing and decontaminates (particularly for radio-iodine contamination).	6.5.3
L. MEDICAL AND PUBLIC HEALTH SUPPORT		
L.1	Describe hospital and medical services, including preparations to handle contaminated individuals.	6.5.4, 6.5.5, 6.5.6, Appendix B
L.2	Provide on-site first-aid capability.	6.5.4, 7.11
L.4	Arrange for transporting patients of radiological accidents to medical facilities.	6.5.5

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
M. RECOVERY AND REENTRY PLANNING AND POST-ACCIDENT OPERATIONS		
M.1	Develop general plans and procedures for recovery and means by which decisions are made to relax protective actions.	Section 9
M.2	Specify position/title, authority, and responsibility for key positions in the recovery organization.	Section 9, Figure 9-1
M.3	Means to inform personnel that recovery is to be initiated and changes in organization.	Section 9
M.4	Method of periodically estimating total population exposure.	6.2.3, 9.2.5
N. EXERCISES AND DRILLS		
N.1.a	Conduct an exercise as set forth in NRC and FEMA rules.	8.2.2.f
N.1.b	Include mobilization of state and local resources. Provide for critique by Federal and State evaluators	8.2.2
N.2	Conduct drills, in addition to the annual exercise, at the frequencies indicated.	8.2
N.2.a	Communication drills (Quarterly), FEMA - IP State	8.2
N.2.b	Fire drills - per technical specifications	8.2
N.2.c	Medical drills - annually to include contaminated individual, ambulance, and off-site medical help. (Off-site portions may be part of annual exercise).	8.2
N.2.d	Radiological monitoring - annually (include collection and analysis of sample media).	8.2
N.2.e	Health Physics - semi-annually to include simulated elevated environmental samples; analyze actual in-plant liquid samples with elevated radiation levels.	8.2
N.3	Describe the conduct of drills and exercises.	8.2
N.4	Official observers from Federal/State/Local governments critique exercises. Hold critiques. Formal evaluation based on critiques.	8.2.2.g
N.5	Establish means and management control for incorporating observer's comments into plan and implementing corrective actions.	8.2.2
O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING		
O.1	Make provisions for training appropriate individuals.	8.1
O.1.a	Provide training to off-site organizations	8.1.2
O.2	Training for on-site organization to include drills in which individuals demonstrate abilities. On-the-spot corrections to be made and instructor to show proper performance.	8.2
O.3	First-aid teams trained in courses equivalent to Red Cross Multi-Media.	6.5.4
O.4	Establish training programs, including initial training and retraining. Specify scope, nature, and frequency for:	
O.4.a	Directors and coordinators	8.1.1
O.4.b	Personnel responsible for accident assessment	8.1.1
O.4.c	Radiological monitoring teams	8.1.1, 8.1.2

Appendix G

Planning Standard	Summary of Planning Standard	Plan Cross Reference (Section or Item)
O.4.d	Police, security, and fire-fighting personnel	8.1.2
O.4.e	On-site repair and damage control/corrective action teams	8.1.1
O.4.f	First aid and rescue personnel	8.1.1, 8.1.2
O.4.g	Local support services	8.1.2
O.4.h	Medical support personnel	8.1.2, 8.1.3
O.4.i	Licensee's headquarters support personnel	8.1.1
O.4.j	Personnel responsible for transmission of emergency information instructions.	8.1
O.5	Provide initial and annual retraining of personnel.	8.1.1
P. RESPONSIBILITY FOR THE PLANNING EFFORT		
P.1	Train individuals responsible for planning effort.	Section 8
P.2	Identify by title, individual with overall authority and responsibility for radiological emergency response planning.	Section 8
P.3	Designate Emergency Planning Coordinator.	Section 8
P.4	Review and certify plan annually. Update plans as needed. Incorporate changes identified by drills and exercises.	8.3
P.5	Forward plans and approved changes to responsible individuals and organizations. Revised pages shall be dated and marked to show where changes have been made.	8.3
P.6	Each plan shall contain a detailed list of supporting plans and their source.	Section 2, Table 2-1
P.7	In appendix, list, by title, procedures required to implement the plan, including sections of the plan to be implemented by procedures.	Appendix D
P.8	Include specific table of contents and index.	Table of Contents
Cont'd	Cross reference to NUREG-0654 criteria	Appendix G
P.9	Conduct independent reviews at least every 12 months and include:	8.3
Cont'd	Plan, procedures, practices, training, readiness, testing, equipment and interfaces with State and Local governments.	8.3
Cont'd	Include management controls for implementation and correction of audit findings.	8.3
Cont'd	Document reports to management and involved Federal, State and Local organizations. Retain for 5 years.	8.3
P.10	Provide for updating telephone numbers in emergency procedures at least quarterly.	8.2.1.a

Appendix H

APPENDIX H

RADIOLOGICAL ASSESSMENT EQUIPMENT AND FACILITIES

Table H-1**On-Site Assessment Equipment and Facilities**

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
1. <u>Geophysical Monitors</u>		
Meteorological Tower	4 Wind speed indicators	Monitor wind speed at 33', 142', 374', and 447' elevations
	4 Wind direction indicators	Monitor wind direction at 33', 142', 374', and 447' elevations
	3 Delta temp. sensors	Monitor temp. difference between 33' and 142', 33' and 374', 33' and 447'
Meteorological Mast	1 Wind speed indication	Monitor wind speed at 33'.
	1 Wind direction indicator	Monitor wind direction at 33'.
Time History Accelerographs	Containment base slab (Unit 2)	Record ground accelerations with respect to time
	Auxiliary building	" "
	Intake structure	" "
	Free field	" "
Peak Accelerographs	Containment base slab	Record peak ground accelerations
	Steam generator support	" "
	Pressurizer support	" "
	Safety injection tank support	" "
Seismic Trigger	Containment base slab	Activate an annunciator
Response Spectrum Recorder	Containment base slab	Records ground accelerations
1. <u>Radiological Monitors</u>		
Unit 1 Process Monitors	RM-SFPI-02	Measure gaseous activity
Unit 2 Process Monitors	RM8123A Containment recirculation air particulate	Monitor particulate activity
	RM8123B Containment recirculation air gaseous	Monitor gaseous activity
	RM8262A Containment recirculation air particulate	Monitor particulate activity
	RM8262B Containment recirculation air gaseous	Monitor gaseous activity
	RM8434A Radwaste ventilation particulate	Monitor particulate activity
	RM8434B Radwaste ventilation gaseous	Monitor gaseous activity

Table H-1**On-Site Assessment Equipment and Facilities**

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
Unit 2 Process Monitors (Cont'd)	RM8011 Control room ventilation gaseous	Monitor gaseous activity
	RM8145A Spent fuel pool ventilation particulate	Monitor particulate activity
	RM8145B Spent fuel pool ventilation gaseous	Monitor gaseous activity
	RM8997 Radwaste ventilation particulate	Monitor particulate activity
	RM8998 Radwaste ventilation particulate	Monitor particulate activity
	RM4299 A, B & C Main steam line monitors	Measure gaseous activity
	RM8999 Radwaste ventilation particulate	Monitor particulate activity
	RM8132A Unit 2 stack discharge particulate	Monitor particulate activity
	RM8132B Unit 2 stack discharge gaseous	Monitor gaseous activity
	RM8168A Unit 2 stack high range	Monitor high level gaseous activity
	RM8168B Unit 2 stack mid range	Monitor gaseous activity
	RM5099 Steam jet air ejector	Monitor gaseous activity
	RM9095 Waste gas storage tanks discharge gaseous	Monitor gaseous activity
	RM4262 Steam generator blowdown	Monitor liquid activity
	RM6038 Reactor building closed cooling water	Monitor liquid activity
	RM9049 Clean radwaste discharge	Monitor liquid activity
	RM9116 Aerated radwaste discharge	Monitor liquid activity
	RM202 & 202A Reactor letdown gross gamma	Monitor liquid activity
	RM9327 Condensate recovery tank	Monitor liquid activity
	2CND-RE245 Condensate polishing neutralizing sump	Monitor liquid activity
	RM-8169 Wide Range Gas Monitor	Monitors particulate and gaseous radioactivity

Table H-1**On-Site Assessment Equipment and Facilities**

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
Unit 3 Process Monitors	3HVR-RE10 A & B Ventilation Vent	Monitors particulate and gaseous radioactivity
	3HVR-RE11 &12 (A&B) Auxiliary Building (lower levels)	Monitors particulate and gaseous radioactivity
	3HVR-RE13, 14 & 15(A&B) Auxiliary Building (upper levels)	Monitors particulate and gaseous radioactivity
	3HVR-RE16 (A&B) Charging Pump Cubicle	Monitors particulate and gaseous radioactivity
	3HVR-RE17 (A&B) Fuel Building	Monitors particulate and gaseous activity
	3HVR-RE18 (A&B) Waste Building	Monitors particulate and gaseous radioactivity
	3HVR-RE19 (A&B) SLCRS	Monitors particulate and gaseous radioactivity
	3HVR-RE91 (A&B) Control Room	Monitors particulate and gaseous activity
	3HVQ-RE49 ESF Building	Monitors particulate and gaseous radioactivity
	3CMS-RE22 A&B Containment Atmosphere	Monitors particulate and gaseous radioactivity
	3HVZ-RE09 A&B Hydrogen Recombiner Cubicles Ventilation	Monitors particulate and gaseous radioactivity
	3HVC-RE16 A&B Control Building Inlet ventilation	Monitors gaseous radioactivity
	3MSS-RE75, 76, 77, 78 4 Main Steam Relief lines	Monitors gaseous radioactivity
	3ARC-RE21 Condenser Air Ejector	Monitors gaseous radioactivity
	3CHS-R69 A Failed Fuel (Primary Coolant)	Monitors gross activity & specific fission product activity in primary coolant liquid
	3GWS-RE48 Hydrogenated Vent	Monitors gaseous radioactivity
	3MSS-RE79 Turbine Driven Auxiliary Feedwater Pump Discharge	Monitors gaseous radioactivity
	3SSR-RE08 Steam Generator Blowdown	Monitors liquid radioactivity
	3CCP-RE31 Reactor Plant Component Cooling	Monitors liquid radioactivity
	3CNA-RE47 Auxiliary Condensate	Monitors liquid radioactivity
	3LWS-RE70 Liquid Waste	Monitors liquid radioactivity

Table H-1**On-Site Assessment Equipment and Facilities**

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
Unit 3 Process Monitors (Cont'd)	3DAS-RE50 Turbine Building Drains	Monitors liquid radioactivity
	3LWC-RE65 Regenerant Evaporator	Monitors liquid radioactivity
Unit 1 Area Radiation Monitors	RM-SFPI-01	Monitor Radiation Levels
Unit 2 Area Radiation Monitors	RM-7892 Drumming and decontamination area	Measure radiation levels
	RM-7894 Engineered safeguards systems area	Measure radiation levels
	RM-7895 Sampling area	Measure radiation levels
	RM-7896 Radioactive waste gas processing area	Measure radiation levels
	RM-7899 Control room	Measure radiation levels
	RM-8139 Spent fuel pool (south wall)	Measure radiation levels
	RM-8142 Spent fuel pool (north wall)	Measure radiation levels
	RM-8156 Spent fuel pool (north wall)	Measure radiation levels
	RM-8157 Spent fuel pool (south wall)	Measure radiation levels
	RM-8240 Containment High Radiation	Measure radiation levels
	RM-8241 Containment High Radiation	Measure radiation levels
	2-RMS-9813 Drumming area	Measure radiation levels
	2-RMS-9799A Control Room ventilation air supply	Measure radiation levels
	2-RMS-9799B Control Room Ventilation air supply	Measure radiation levels
	2-RMS-04 (not in use) CPF-solid waste	Measure radiation levels
	2-RMS-05 (not in use) CPF-Condensate demineralizers	Measure radiation levels
	2-RMS-06 (not in use) CPF-Access area	Measure radiation levels
	2-RMS-08 (not in use) CPF-Evaporator	Measure radiation levels

Table H-1**On-Site Assessment Equipment and Facilities**

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
Unit 3 Area Radiation Monitors	3RMS-RE01 Manipulator Crane 51'4" Containment	Measure radiation levels
	3RMS-RE02 Fuel Transfer Tube 51'4" Containment	Measure radiation levels
	3RMS-RE03 In-Core Inst. Trans. 24'6" Containment	Measure radiation levels
	3RMS-RE04A Containment HR Internal 51'4" Containment	Measure radiation levels
	3RMS-RE05A Containment HR Internal 51'4" Containment	Measure radiation levels
	3RMS-RE06 Decontamination Area 24'6" Fuel Bldg.	Measure radiation levels
	3RMS-RE07 Calibration Room 66'6" Auxiliary Bldg.	Measure radiation levels
	3RMS-RE08 Spent Fuel Pit/Hoist 52'4" Fuel Bldg.	Measure radiation levels
	3RMS-RE09 Aux. Bldg. General (A) 18'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE10 Aux. Bldg. General (B) 4'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE11 Aux. Bldg. General (C) 4'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE12 Aux. Bldg. General (D) 24'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE13 Aux. Bldg. General (E) 24'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE14 Aux. Bldg. General (F) 24'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE15 Aux. Bldg. General (G) 43'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE16 Aux. Bldg. General (H) 43'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE17 Waste Disp. Bldg.	Measure radiation levels
	3RMS-RE18 Waste Disp. Bldg. 4'6" Waste Bldg.	Measure radiation levels
	4RMS-RE19 Solid Waste Storage 24'6" Waste Bldg.	Measure radiation levels
	3RMS-RE20 Sample Room 43'6" Aux. Bldg.	Measure radiation levels
	3RMS-RE21 Service Bldg. Laboratory 24'6" Service Bldg.	Measure radiation levels

Table H-1**On-Site Assessment Equipment and Facilities**

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
Unit 3 Area Radiation Monitors (Cont'd)	3RMS-RE22 Control Room Monitor 47'6" Control Bldg.	Measure radiation levels
	3RMS-RE24 Waste Disposal Bldg. (C) 24'6" Waste Disp. Bldg.	Measure radiation levels
	3RMS-RE25 Waste Disposal Bldg. (D) 24'6". Waste Disp Bldg.	Measure radiation levels
	3RMS-RE28 Fuel Bldg. Pipe Rack 11'0 Fuel Bldg.	Measure radiation levels
	3RMS-RE29 Spent Fuel Cask Area 52'4" Fuel Bldg.	Measures radiation levels
	3RMS-RE31 Fuel Transfer Tube 24'6" Containment	Measures radiation levels
	3RMS-RE32 Containment Air Compressor 24'6" Containment	Measure radiation levels
	3RMS-RE33 RHR Cubicle "A" (Normal Range) 4'6" ESF Bldg.	Measure radiation levels
	3RMS-RE34 RHR Cubicle "B" (Normal Range) 4'6" ESF Bldg.	Measure radiation levels
	3RMS-RE35 In-Core Inst. Thimble Area 3'8" Containment	Measure radiation levels
	3RMS-RE36 Fuel Pool Monitor 52'4" Fuel Bldg.	Measure radiation levels
	3RMS-RE37 Condensate Demin. Area 14'6" Cond. Polishing Bldg.	Measure radiation levels
	3RMS-RE38 Regeneration Area 38'6" Cond. Polishing Bldg.	Measure radiation levels
	3RMS-RE41 Fuel Drop Monitor 51'4" Containment	Measure radiation levels
	3RMS-RE42 Fuel Drop Monitor 51'4" Containment	Measure radiation levels
	3RMS-RE52 Recombiner Control Room 24'6" Recombine Bldg.	Measure radiation levels
2. Radiation Monitors and Sampling Equipment	Gamma spectrometers	Isotopic identification and analysis
	Geiger-Mueller survey instruments (0-1,000 R/hr range)	Measure gamma and beta radiation dose rate
	Ionization chamber (0-1,000 R/hr range)	Measure gamma and beta radiation dose rate
	Contamination survey	Count samples for gross alpha and beta

Table H-1

On-Site Assessment Equipment and Facilities

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
Radiation Monitors and Sampling Equipment (Cont'd)	Air sampling equipment	Sample for airborne radionuclides (particulate, iodine, gaseous, and tritium)
	Neutron survey instrument	Measure neutron radiation dose rate
	TLD	Measure personnel radiation dose
	Direct reading pocket ion chamber	Measure personnel gamma radiation dose
3. <u>Fire Detection</u>	Smoke detectors	Detects products of combustion
	Rate of rise heat detector	Detects quick rise of temperature
	Fixed heat detector	Detects a set temperature
4. <u>Facilities</u>	Chemistry laboratory	Equipped for chemical and radiological analysis
	9 radiation monitoring stations	Measure gamma radiation dose
	4 Fixed air sampling stations	Sample particulates and iodines
	Health Physics Laboratory	Equipped for radiological analyses
	Emergency Operations Facility	Equipped for limited radiological analyses.

Appendix H

Table H-2

Off-Site Assessment Equipment and Facilities

<u>Functional System</u>	<u>Instrument Detector</u>	<u>Individual Applicability</u>
1. <u>Geophysical Monitors</u>		
Meteorological	Meteorological forecasting contractor for full weather forecast service	Provide current and forecast weather for Millstone area
Seismic	Weston Massachusetts Observatory for Strong motion recorder	Record ground accelerations
2. <u>Radiological Monitors</u>		
Environmental Monitoring	As specified by REMODCM	Gamma radiation dose and sample particulates and iodines
3. <u>Laboratory Facilities</u>		
Radiochemistry laboratory	Teledyne Brown Engineering Environmental Services	Equipped for chemical and radiological analysis
	Duke Engineering and Services Environmental Laboratory (DESEL)	Equipped for chemical and radiological analysis

Appendix I

APPENDIX I

EMERGENCY ACTION LEVEL SCHEME

NOTE: The EAL scheme provides an example of how the Emergency Plan meets the standards of 50.47(b) and requirements of Appendix E. The EAL Tables in the Station Emergency Assessment procedure MP-26-EPI-FAP06 are used to classify events.

Approval Date

Millstone Unit 1 Emergency Action Levels

Effective Date

IN-PLANT RADIATION	SECURITY THREAT/ DESTRUCTIVE PHENOMENA	FIRE / GASES	FUEL POOL EQUIPMENT FAILURE	UNPLANNED OFFSITE RELEASES	JUDGEMENT	CLASSIFICATION
RA1 REACTOR BUILDING RADIATION (D-AA2) 1. Area radiation monitor reading in Reactor Building or survey results indicate an UNCONTROLLED increase in radiation levels by * mR/hr that is not the result of a planned evolution AND impedes operation of systems needed to maintain spent fuel integrity. 2. Valid radiation monitor reading or survey results indicate greater than * mR/hr in areas required to be occupied 24 hours a day.	TA1 SECURITY EVENT (D-HA1) 1. Any on-going or imminent security compromise to the safety of the plant. TA2 DESTRUCTIVE PHENOMENA (N/A) An event that damages systems, structures, or components needed to maintain spent fuel integrity that may result in overexposure of site personnel or results in an uncontrolled decrease in the spent fuel pool water level or damage to spent fuel.			OA1 OFFSITE DOSE (D-AA1) 1. Unplanned release of radioactivity $\geq 3.42\text{E-1 } \mu\text{Ci/cc}$ to the environment (≥ 200 times REMODCM release limit) for ≥ 15 minutes. 2. Grab sample analyses indicates unplanned gaseous release rate $\geq 3.42\text{E-1 } \mu\text{Ci/cc}$ (≥ 200 times the REMODCM limit) for ≥ 15 minutes.	JA1 JUDGEMENT (D-HA2) Any condition for which judgement indicates that the level of safety for the Reactor Building or other areas important for maintaining the integrity of the spent fuel is substantially degraded and which requires Station Emergency Response Organization (SERO) staffing.	ALERT CHARLIE ONE Events are in progress or have occurred which indicate an actual or potential substantial degradation of the level of safety of the plant, to plant personnel, or to the safe storage of fuel in the spent fuel pool.
RU1 REACTOR BUILDING RADIATION (D-AU2) Area radiation monitor reading in Reactor Building or survey results indicate an UNCONTROLLED increase in radiation levels by * mR/hr that is not the result of a planned evolution.	TU1 SECURITY EVENT (D-HU1) 1. Security events as determined for Station Safeguards Contingency Plan and reported by Security Shift Supervision. 2. A credible site-specific security threat notification. TU2 DESTRUCTIVE PHENOMENA (D-HU3) 1. Earthquake detected per ONP 514C, Earthquake. 2. Report of tornado striking within the Protected Area (PA) that has the potential to affect equipment needed to maintain spent fuel integrity. 3. On-Site sustained wind speed $> * \text{ mph}$. 4. Explosion or visible damage to structures, systems, or components within the Protected Area with the potential to affect equipment required to maintain the integrity of the spent fuel. 5. Flood Level $> * \text{ Feet Mean Sea Level}$. 6. Vehicle crash within the PA that could potentially affect equipment needed to maintain spent fuel integrity.	GU1 FIRE (D-HU3) Fire in the Reactor Building or other areas important to maintaining the integrity of the spent fuel NOT extinguished within 15 minutes of Control Room notification OR within 15 minutes of the fire alarm actuation in the Control Room. GU2 TOXIC/FLAMMABLE GASES (D-HU3) 1. Life threatening toxic gases OR flammable gas concentrations as identified in C-OP 200.5, "Oil, Hazardous Material, Hazardous Waste and Mixed Waste Contingency Plan," affecting activities in areas needed to maintain spent fuel integrity. 2. Notification of a near-site release that may require evacuation of MP1.	EU1 FUEL POOL LEVEL (D-SU1) Uncontrolled decrease in fuel pool level indicated by a low level alarm actuation with all spent fuel assemblies remaining covered by water. EU2 FUEL POOL TEMPERATURE (D-SU1) Uncontrolled heatup of the spent fuel pool such that the bulk pool temperature exceeds * F.	OU1 UNPLANNED RELEASES (D-AU1) <div>1. Gaseous effluent monitor $\geq 3.42\text{E-1 } \mu\text{Ci/cc}$ (≥ 200 times REMODCM limit) for ≥ 60 minutes.</div> 2. Grab sample analyses indicate unplanned gaseous release rate $\geq 3.42\text{E-3 } \mu\text{Ci/cc}$ (≥ 2 times the REMODCM limit) for ≥ 60 minutes.	JU1 JUDGEMENT (D-HU2) Any condition for which judgement indicates the potential or actual degradation in the level of safety of the Reactor Building or other areas important to maintaining the integrity of the spent fuel.	UNUSUAL EVENT DELTA TWO OR DELTA ONE Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant.

AREAS NEEDED TO MAINTAIN SPENT FUEL INTEGRITY

- Reactor Building - 4th and 5th floors
- Reactor Building, Fuel Pool Pump Mezzanine - 2nd Floor
- H&V Room - Lower Level (DHR)
- H&V Room - Roof - Coolers

1
Millstone

*Specific setpoints are contained in EPI-FAP06, "Classification and PARs."

MILLSTONE UNIT 2 EMERGENCY ACTION LEVELS

NOTE: When two or more EALs apply, always choose the EAL of the highest incident classification; also always read from top to bottom in each category.

<input checked="" type="checkbox"/> GENERAL EMERGENCY ALPHA		<input type="checkbox"/> GENERAL EMERGENCY BRAVO	<input type="checkbox"/> SITE AREA EMERGENCY CHARLIE-TWO	<input type="checkbox"/> ALERT CHARLIE-ONE	<input checked="" type="checkbox"/> UNUSUAL EVENT DELTA-TWO	<input type="checkbox"/> UNUSUAL EVENT DELTA-ONE						
BARRIER FAILURE		LOSS OF POWER		EQUIPMENT FAILURE		OFFSITE RELEASES	CLASSIFICATION					
BG1	ALL THREE BARRIERS	Mode 1, 2, 3, 4	PG1	STATION BLACKOUT	Mode 1, 2, 3, 4	EG1	ATWS/INADEQUATE COOLING	Mode 1	OG1	OFFSITE DOSE	Mode ALL	GENERAL EMERGENCY
See Barrier Failure Reference Table			Loss of Voltage on Buses 24C AND 24D AND ANY of the Following: <ul style="list-style-type: none">Restoration of Power to AT LEAST One Vital Bus Is NOT Likely Within Four HoursCore Exit Thermocouple Readings Indicate SuperheatInadequate SG Heat Removal Capability as Indicated by SG Water Level \leq * % in BOTH SGs AND Inadequate Terry Turbine Feedwater Flow			Functional Recovery of Reactivity Control Ineffective AND EITHER of the Following: <ul style="list-style-type: none">RCS Heat Removal by Steam Generator Heat Removal SFSC Criteria Can NOT Be SatisfiedCore Exit TC Temperature Readings $>$ * °F			1. MP2 Kaman Vent Monitor (RM-8168) Reading \geq * μ Cl/cc for $>$ 15 Minutes 2. MP2 WRGM Site Stack Effluent Activity (RM-8169) Reading \geq * μ Cl/cc for $>$ 15 Minutes 3. MSL Monitor (RM-4299A/B/C) Reading \geq * R/hr for $>$ 15 Minutes 4. Measured Plume Dose Rate Onsite \geq * mR/hr for $>$ 15 Minutes 5. Rad Assessment Determines Integrated Dose Offsite \geq * Rem TEDE OR \geq * Rem CDE Thyroid			ALPHA
												OR BRAVO
												Events in Progress or Have Occurred Which Involve Actual or Imminent Substantial Core Degradation or Melting With Potential for Loss of Containment Integrity
BS1	ANY TWO BARRIERS	Mode 1, 2, 3, 4	PS1	STATION BLACKOUT	Mode 1, 2, 3, 4	ES1	ATWS	Mode 1	OS1	OFFSITE DOSE	Mode ALL	SITE AREA EMERGENCY
See Barrier Failure Reference Table			Loss of Voltage on Buses 24C AND 24D $>$ 15 Minutes			Manual Reactor Trip Attempted At Panel C04 AND Reactor Is NOT Shutdown			1. MP2 Kaman Vent Monitor (RM-8168) Reading \geq * μ Cl/cc for $>$ 15 Minutes 2. MP2 WRGM Site Stack Effluent Activity (RM-8169) Reading \geq * μ Cl/cc for $>$ 15 Minutes 3. MSL Monitor (RM-4299A/B/C) Reading \geq * R/hr for $>$ 15 Minutes 4. Measured Plume Dose Rate Onsite \geq * mR/hr for $>$ 15 Minutes 5. Rad Assessment Determines Integrated Dose Offsite \geq * Rem TEDE OR \geq * Rem CDE Thyroid			CHARLIE-TWO
						ES2 INABILITY TO MAINTAIN HOT S/D Mode 1, 2, 3, 4						Events in Progress or Have Occurred Which Involve Actual or Likely Major Failures of Plant Functions Needed for Protection of the Public
						ES3 IN-VESSEL FUEL UNCOVERY Mode 5, 6						
						Shutdown Cooling Has Been Lost AND ANY of the Following Conditions Exist: <ul style="list-style-type: none">Alternate Methods for Restoring RCS Inventory are NOT EffectiveRVLMS Reading = * %Core Exit TC Temperature Readings Indicate Superheat						
						ES4 LOSS OF ANNUNCIATORS/TRANSIENT Mode 1, 2, 3, 4						
						Loss of Most (75%) MCB Annunciators AND BOTH of the Following <ul style="list-style-type: none">Significant Transient In ProgressLoss of SPDS And ICC Instrumentation						
BA1	FUEL CLAD OR RCS BARRIER	Mode 1, 2, 3, 4	PA1	STATION BLACKOUT	Mode 5, 6	EA1	AUTOMATIC Rx TRIP FAILURE	Mode 1, 2	OA1	OFFSITE DOSE	Mode ALL	ALERT
See Barrier Failure Reference Table			Loss of Voltage on Buses 24C AND 24D $>$ 15 Minutes			Failure of Automatic Reactor Trip AND Manual Trip Was Successful			1. MP2 Kaman Vent Monitor (RM-8168) Reading \geq * μ Cl/cc for $>$ 15 Minutes 2. MP2 WRGM Site Stack Effluent Activity (RM-8169) Reading \geq * μ Cl/cc for $>$ 15 Minutes 3. MSL Monitor (RM-4299A/B/C) Reading \geq * R/hr for $>$ 15 Minutes 4. Measured Plume Dose Rate Onsite \geq * mR/hr for $>$ 15 Minutes 5. Rad Assessment Determines Integrated Dose Offsite \geq * Rem TEDE OR \geq * Rem CDE Thyroid			CHARLIE-ONE
						EA2 INABILITY TO MAINTAIN COLD S/D Mode 5, 6						Events in Progress or Have Occurred Which Involve an Actual or Potential Substantial Degradation of the Level of Safety of the Plant
						1. Uncontrolled RCS Temperature Increase $>$ * °F That Results in RCS Temperature $>$ * °F 2. Inadvertent Criticality						
BA2	STEAM LINE BREAK	Mode 1, 2, 3, 4	PA2	SINGLE AC POWER SOURCE	Mode 1, 2, 3, 4	EA3	LOSS OF ANNUNCIATORS/TRANSIENT	Mode 1, 2, 3, 4				
Unisolable Steam Line Break Outside CTMT			Only One AC Power Source Available to Supply Buses 24C AND/OR 24D $>$ 15 Minutes such that loss of that power source would result in a station blackout (Unit 3 buses 34A/B CANNOT be credited).			Loss of Most (75%) MCB Annunciators $>$ 15 Minutes AND EITHER of the Following: <ul style="list-style-type: none">Significant Transient In ProgressLoss of SPDS And ICC Instrumentation						
BU1	CTMT BARRIER	Mode 1, 2, 3, 4	PU1	LOSS OF OFFSITE POWER	Mode ALL	EU1	LOSS OF COLD S/D FUNCTION	Mode 5, 6	OU1	UNPLANNED RELEASE	Mode ALL	UNUSUAL EVENT
See Barrier Failure Reference Table			Buses 24C AND 24D Are Powered from Emergency Generators AND Offsite Power NOT Restored Within 15 Minutes			1. Loss of Shutdown Cooling $>$ 15 Minutes AND Refuel Pool Water Level $<$ * Ft. 2. Uncontrolled RCS Temperature Increase $>$ * °F 3. RCS Boron Concentration $<$ Minimum Required			Effluent Monitors In Alarm OR Unplanned, Unmonitored or Uncontrolled Offsite Release And DELTA-TWO Posture Code Limits as Determined from EPI-FAP06, "Classification and PARs," Exceeded			DELTA-TWO
BU2	RCS LEAKAGE	Mode 1, 2, 3, 4	PU2	LOSS OF DC	Mode 5, 6	EU2	REFUEL/SPENT FUEL POOL LEVEL	Mode 6	Note: Effluent Monitors Indicate Release Above Alarm Setpoint Continuing $>$ 60 minutes and Reportability Evaluations NOT Complete			OR DELTA-ONE
1. Pressure Boundary Leakage $>$ * GPM 2. Unidentified Leakage $>$ * GPM 3. Identified Leakage $>$ * GPM 4. Primary to Secondary Leakage $>$ * GPM			Loss of Voltage on DC Buses 201A AND 201B $>$ 15 Minutes			1. Uncontrolled Spent Fuel Pool Water Level Decrease Causing Loss of Cooling Suction Flow 2. Uncontrolled Refuel Pool Water Level Decrease Requiring Containment Evacuation AND All Spent Fuel Assemblies in Safe Storage Locations						Events in Progress or Have Occurred Which Indicate a Potential Degradation of the Level of Safety of the Plant
BU3	FUEL CLAD DEGRADATION	Mode ALL				EU3 LOSS OF ANNUNCIATORS Mode 1, 2, 3, 4						
1. RCS Activity $>$ * μ Cl/gm I-131 DEQ 2. Dose Rate at One Foot from Unpressurized RCS Sample \geq * mR/hr/ml						Loss of Most (75%) MCB Annunciators $>$ 15 Minutes AND SPDS Or ICC Instrument Available						
						EU4 LOSS OF COMMUNICATIONS Mode ALL						
						1. Loss of ALL Onsite Electronic Communications Methods 2. Loss of ALL Electronic Communications Methods With Government Agencies						
						EU5 SHUTDOWN LCO EXCEEDED Mode 1, 2, 3, 4						
						Unit NOT Brought To Required Mode Within Applicable LCO Action Statement Time Limits						
* Specific setpoints are contained in EPI-FAP06, "Classification and PARs."												

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MILLSTONE UNIT 2 EMERGENCY ACTION LEVELS

NOTE: When two or more EALs apply, always choose the EAL of the highest incident classification; also always read from top to bottom in each category.

GENERAL EMERGENCY ALPHA GENERAL EMERGENCY BRAVO SITE AREA EMERGENCY CHARLIE-TWO ALERT CHARLIE-ONE UNUSUAL EVENT DELTA-TWO UNUSUAL EVENT DELTA-ONE

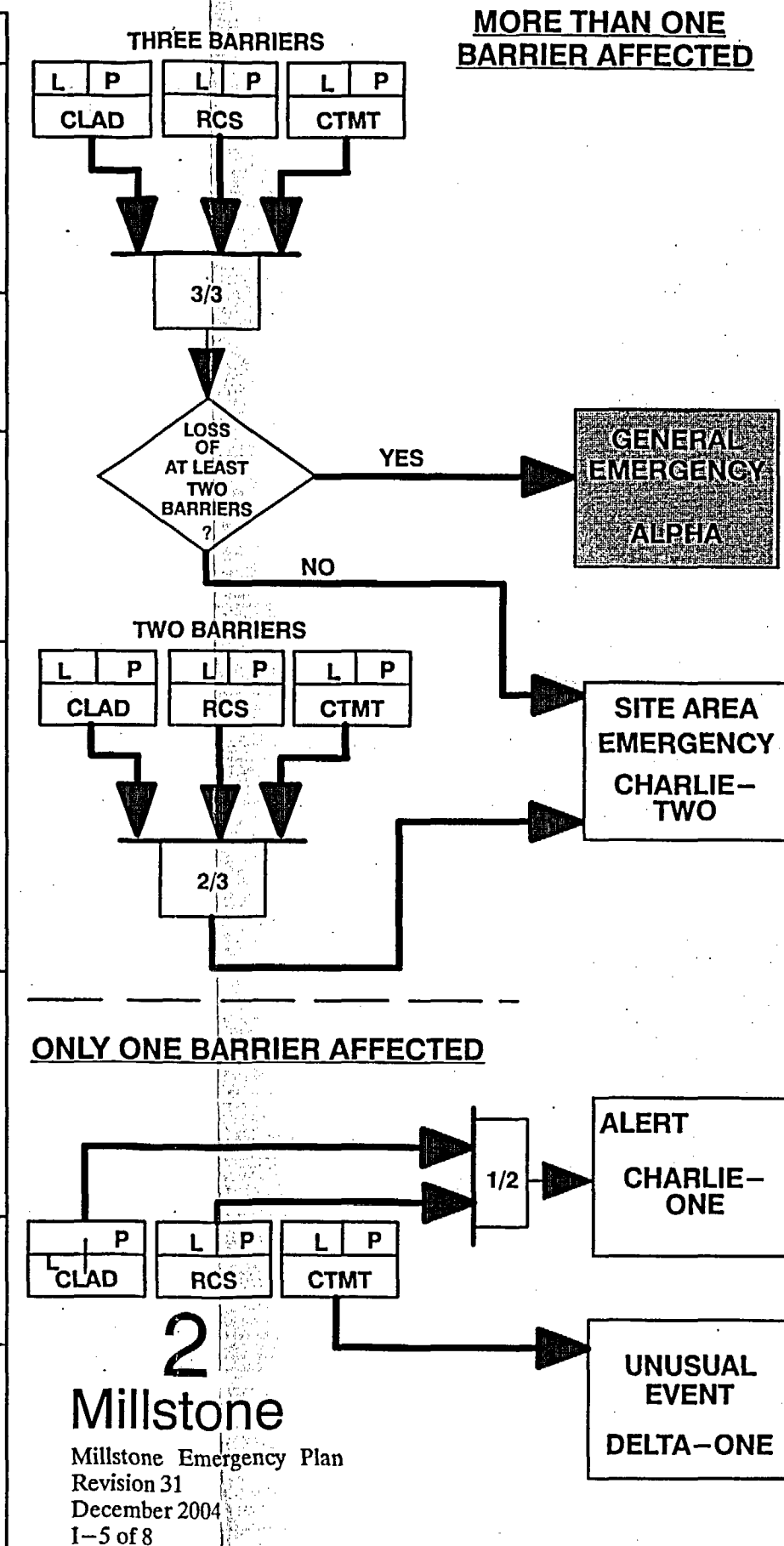
IN-PLANT RADIATION			SECURITY THREAT/DESTRUCTIVE PHENOMENA			FIRE/GASES			JUDGEMENT			CLASSIFICATION		
RG1	MAJOR FUEL DAMAGE	Mode ALL	TG1	SECURITY EVENT	Mode ALL				JG1	JUDGEMENT	Mode ALL	GENERAL EMERGENCY		
1. RM-8240/8241 Reading > * R/hr 2. At Least 1/2 Fuel CLAD Damage As Determined By Core Damage Estimator 3. Spent Fuel Is Exposed from Water Loss from Open Vessel Cavity Or SF Pool and BOTH of the Following: Spent Fuel Has Decayed < 30 Days CTMT Integrity is NOT established OR Exposed Spent Fuel Is outside CTMT			1. Loss of Physical Control of the Control Room 2. Loss of Physical Control of Remote Shutdown Capability						Other conditions exist for which judgement indicates: (1) Actual or imminent substantial core degradation with potential for loss of containment, OR (2) Potential for uncontrolled radiological releases. These releases can be reasonably expected to exceed EPA PAG plume exposure levels outside the site boundary			ALPHA OR BRAVO Events in Progress or Have Occurred Which Involve Actual or Imminent Substantial Core Degradation or Melting With Potential for Loss of Containment Integrity		
RS1	SPENT FUEL DAMAGE	Mode ALL	TS1	SECURITY EVENT	Mode ALL	GS1	CONTROL ROOM EVACUATION	Mode ALL	JS1	JUDGEMENT	Mode ALL	SITE AREA EMERGENCY		
Spent Fuel Is Exposed from Open Vessel, or Cavity And BOTH of the Following: Spent Fuel Has Decayed < 30 Days CTMT Integrity Established			Intrusion into Vital Area by a Hostile Force			Unit Control from Hot Shutdown Panel C-10 Or C-21 NOT Established Within 15 Minutes After Control Room Evacuation			Other Conditions Exist For Which Judgement Indicates Actual Or Likely Major Failures of Plant Functions Needed For Protection Of The Public			CHARLIE-TWO Events in Progress or Have Occurred Which Involve Actual or Likely Major Failures of Plant Functions Needed for Protection of the Public		
RA1	SPENT FUEL ASSEMBLY DAMAGE	Mode ALL	TA1	SECURITY EVENT	Mode ALL	GA1	CONTROL ROOM EVACUATION	Mode ALL	JA1	JUDGEMENT	Mode ALL	ALERT CHARLIE-ONE Events in Progress or Have Occurred Which Involve an Actual or Potential Substantial Degradation of the Level of Safety of the Plant		
1. Spent Fuel is Exposed from Open Vessel, Cavity, or SF Pool AND Spent Fuel Has Decayed ≥ 30 Days 2. Fuel Handling Accident Causing Damage to Spent Fuel, Indicated by Fuel Building OR Containment Radiation Monitors Increasing			Any on-going or imminent security compromise to the safety of the plant.			Control Room Evacuation Initiated			Any Condition For Which Judgement Indicates That Safety Systems May Be Degraded AND Which Requires Emergency Response Organization Staffing					
RA2	PLANT RADIATION	Mode ALL	TA2	DESTRUCTIVE PHENOMENA	Mode ALL	GA2	FIRE/EXPLOSION	Mode ALL						
1. Radiation Readings > * mR/hr in Control Room OR Central Alarm Station OR Secondary Alarm Station 2. Radiation Reading > * R/hr in Areas Requiring Access for Safe Shutdown			1. Seismic Event > * g ZPA 2. Onsite Sustained Windspeed > * MPH 3. Visible Damage to Structures or Equipment AND Affecting Safe Shutdown 4. Vessel or Vehicle Collision AND Affecting Safe Shutdown 5. Missiles Affecting Safe Shutdown 6. Flooding Affecting Safe Shutdown			Fire or Explosion Affecting Safe Shutdown Area AND Damage to Structures OR Equipment Indicated			Toxic/Flammable Gases					
						Life Threatening Toxic Gases OR Flammable Gas Concentrations as Identified in C-OP 200.5, Oil, Hazardous Material, Hazardous Waste and Mixed Waste Contingency Plan, Affecting Areas for Safe Shutdown								
RU1	RAD MONITORS	Mode ALL	TU1	SECURITY EVENT	Mode ALL	GU1	FIRE	Mode ALL	JU1	JUDGEMENT	Mode ALL	UNUSUAL EVENT DELTA-TWO OR DELTA-ONE Events in Progress or Have Occurred Which Indicate a Potential Degradation of the Level of Safety of the Plant		
1. Uncontrolled Refuel Pool Water Level Decrease AND Rad Levels Require Evacuation of CTMT Or Spent Fuel Pool Area 2. Unexpected Area Rad Monitor Reading Offscale High OR > * Times Normal Reading			1. Security Events as determined for Station Safeguards Contingency Plan and reported by Security Shift Supervision. 2. A credible site specific security threat notification.			1. Fire in Building OR Areas Adjacent to Areas Needed for Safe Shutdown NOT Extinguished Within 15 Minutes of Notification OR Verification of Control Room Alarms 2. Fire Affecting a Loaded ISFSI Confinement Boundary NOT Extinguished Within 15 Minutes of Notification OR Verification of Control Room Alarms			Any Condition For Which Judgement Indicates Potential Degradation in the Level of Safety of the Plant					
			TU2			DESTRUCTIVE PHENOMENA			Mode ALL					
			1. Seismic Activity Detected Per AOP-2562, Earthquake 2. Report by Plant Personnel of Tornado Striking Within Protected Area 3. Visible Damage to Structures or Equipment Within the Protected Area 4. Onsite Sustained Windspeed > * MPH 5. Explosion Within the Protected Area 6. Turbine Failure Causing Observable Casing Damage 7. Vessel or Vehicle Collision With Structures OR Equipment Required for Safe Shutdown or a loaded ISFSI Confinement Boundary 8. Flood Level > * Feet Mean Sea Level 9. Flooding in Areas Containing Safe Shutdown Equipment			GU2			TOXIC/FLAMMABLE GASES					
						1. Life Threatening Toxic Gases OR Flammable Gas Concentrations as Identified in C-OP 200.5, Oil, Hazardous Material, Hazardous Waste and Mixed Waste Contingency Plan, Affecting Normal Operation 2. Notification of a Near-Site Release That May Require Evacuation								
* Specific setpoints are contained in EPI-FAP06. "Classification and PARs."														
<div>AREAS OF CONCERN FOR SAFE SHUTDOWN</div> <div><div>Control Room Cable Vaults Turbine Building Penetration Areas RBCCW Rooms Diesel Generator Room Charging Pump Cubicles Switchyard</div><div>Switchgear Rooms Intake Structure Switchgear Area Coolant Tanks Area Containment DC Equipment and Battery Rooms Safety Injection Pump Rooms</div></div>														
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MILLSTONE 2 EMERGENCY ACTION LEVELS BARRIER FAILURE REFERENCE TABLE

IMMINENT - No Turnaround in Safety System Performance is Expected AND Escalation to General Emergency Conditions Will Occur Within 2 Hours

INDICATORS	FUEL CLAD BARRIER	RCS BARRIER	CTMT BARRIER
SAFETY FUNCTION STATUS/ FUNCTIONAL RECOVERY	<div>FCB1</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>NO RCS Heat Removal Method Meets SFSC Criteria > 15 minutes AND Shutdown Cooling System Is NOT In Service</div>	<div>RCB1</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Uncontrolled RCS Cooldown AND RCS Pressure-Temperature To the Left Of the PTS Limit 200 °F Subcooling Maximum Curve</div> <div>P</div> <div>NO RCS Heat Removal Method Meets SFSC Criteria > 15 minutes AND Shutdown Cooling System Is NOT In Service</div>	
CORE EXIT TC TEMPERATURES	<div>FCB2</div> <div>LOSS</div> <div>L</div> <div>Core Exit Thermocouple Readings > * °F</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Core Exit Thermocouple Readings > * °F</div>	<div>RCB2</div> <div>LOSS</div> <div>L</div> <div>RCS Subcooling < * °F</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>	<div>CNB1</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Core Exit TC Temperature Readings > * °F AND Do NOT Decrease Within 15 Minutes</div>
PRESSURE		<div>RCB3</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Uncontrolled RCS Pressure Decrease and Increasing Containment Radiation Monitors</div>	<div>CNB2</div> <div>LOSS</div> <div>L</div> <div>Rapid Unexplained CTMT Pressure Decrease Following Initial Increase</div> <div>L</div> <div>No CTMT Pressure Increase When Expectation Exists</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>CTMT Pressure > * PSIG AND Increasing AND No Containment Spray Pump</div> <div>P</div> <div>CTMT H₂ Concentration ≥ * %</div>
COOLANT LEAKAGE		<div>RCB4</div> <div>LOSS</div> <div>L</div> <div>Reactor Coolant Leak > CVCS Capacity AND Entry Into EOP-2534, Steam Generator Tube Rupture or EOP 2540 Functional Recovery to Address Steam Generator Tube Rupture</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Reactor Coolant Leak > CVCS Capacity AND Entry Into EOP-2525, Standard Post Trip Actions</div> <div>P</div> <div>Reactor Coolant Leak Rate > Capacity of one (1) charging pump AND ≤ CVCS Capacity AND ANY of the following: <ul style="list-style-type: none"> Entry into EOP 2534, Steam Generator Tube Rupture Entry into AOP 2569, Steam Generator Tube Leak Entry Into EOP 2540 to Address Steam Generator Tube Rupture </div>	<div>CNB3</div> <div>LOSS</div> <div>L</div> <div>Primary to Secondary > Tech Spec Limits and EITHER exists: <ul style="list-style-type: none"> Nonisolable Steam Release from Affected S/G to Environment When Used for Cooldown Prolonged Release From Affected S/G to Environment When Used for Cooldown (see basis for description of prolonged release). </div> <div>L</div> <div>Failure of BOTH Isolation Valves AND a Pathway to the Environment Exists</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Entry Into EOP-2532, Loss of Primary Coolant, AND Leakage Exists Outside CTMT Requiring Local Isolation</div>
RADIATION	<div>FCB3</div> <div>LOSS</div> <div>L</div> <div>RM-8240/8241 Reading > * R/hr</div> <div>L</div> <div>RM-8240/8241 Reading > * R/hr without RCS release Inside CTMT</div> <div>L</div> <div>At Least * % Fuel Clad Damage As Determined By Core Damage Estimate</div> <div>L</div> <div>Dose Rate at One Foot from Unpressurized RCS Sample ≥ * mR/hr/ml</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>	<div>RCB5</div> <div>LOSS</div> <div>L</div> <div>RM-8240/8241 Reading > * R/hr Without Fuel Clad Barrier Loss</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>	<div>CNB4</div> <div>LOSS</div> <div>L</div> <div>Offsite Dose Plume Rate ≥ * Times RM-8240/8241 Reading if Release Is to CTMT</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Valid RM-8240/8241 Reading > * R/hr</div> <div>P</div> <div>At Least * % Fuel Clad Damage As Determined By Core Damage Estimate</div>
WATER LEVEL	<div>FCB4</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>RVLMS Reading = 0%</div>		<div>CNB5</div> <div>LOSS</div> <div>L</div> <div>No CTMT Sump Level Increase When Expectation Exists</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>
JUDGEMENT	<div>FCB5</div> <div>Any Condition For Which Judgement Indicates Loss or Potential Loss of Fuel Clad Barrier Due to: <ul style="list-style-type: none"> Imminent Barrier Degradation Based On Current Safety System Performance Degraded Fission Barrier Monitoring Capability Making Barrier Status Indeterminate </div>	<div>RCB6</div> <div>Any Condition For Which Judgement Indicates Loss or Potential Loss of RCS Barrier Due to: <ul style="list-style-type: none"> Imminent Barrier Degradation Based On Current Safety System Performance Degraded Fission Barrier Monitoring Capability Making Barrier Status Indeterminate </div>	<div>CNB6</div> <div>Any Condition For Which Judgement Indicates Loss or Potential Loss of CTMT Barrier Due to: <ul style="list-style-type: none"> Imminent Barrier Degradation Based On Current Safety System Performance Degraded Fission Barrier Monitoring Capability Making Barrier Status Indeterminate </div>

* Specific setpoints are contained in EPI-FAP06. "Classification and PARs."



MILLSTONE UNIT 3 EMERGENCY ACTION LEVELS

NOTE: When two or more EALs apply, always choose the EAL of the highest incident classification; also always read from top to bottom in each category.

☒ GENERAL EMERGENCY ALPHA ☐ GENERAL EMERGENCY BRAVO ☐ SITE AREA EMERGENCY CHARLIE-TWO ☐ ALERT CHARLIE-ONE ☒ UNUSUAL EVENT DELTA-TWO ☐ UNUSUAL EVENT DELTA-ONE

BARRIER FAILURE	LOSS OF POWER	EQUIPMENT FAILURE	OFFSITE RELEASES	CLASSIFICATION
<div>BG1</div> <div>ALL THREE BARRIERS</div> <div>Mode 1, 2, 3, 4</div> <div>See Barrier Failure Reference Table</div>	<div>PG1</div> <div>STATION BLACKOUT</div> <div>Mode 1, 2, 3, 4</div> <div>Loss of Voltage on Buses 34C AND 34D (Station Blackout Diesel cannot be credited) AND ANY of the Following:</div> <div><ul style="list-style-type: none">Restoration of Power to AT LEAST One Bus is NOT Likely Within Four HoursCore Cooling - REDHeat Sink - RED</div>	<div>EG1</div> <div>ATWS/INADEQUATE COOLING</div> <div>Mode 1</div> <div>Reactor Power > * % Following Entry Into FR-S.1 AND EITHER of the Following:</div> <div><ul style="list-style-type: none">Core Cooling - REDAll SG Wide Range Levels < * % (* % Adverse CTMT)</div>	<div>OG1</div> <div>OFFSITE DOSE</div> <div>Mode ALL</div> <div>1. MP3 Kaman Vent Monitor (RE-10A) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 2. MP3 SLCRS Gas Monitor (HVR*19A) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 3. MP3 Safeties or Steam Dump Monitor (RE-75/76/77/78) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 4. Terry Turbine Monitor (RE-79) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 5. Measured Plume Dose Rate Onsite \geq * mR/hr for > 15 Minutes 6. Rad Assessment Determines Integrated Dose Offsite \geq * Rem TEDE OR \geq * Rem CDE Thyroid</div>	<div>GENERAL EMERGENCY</div> <div>ALPHA</div> <div>OR</div> <div>BRAVO</div> <div>Events in Progress or Have Occurred Which Involve Actual or Imminent Substantial Core Degradation or Melting With Potential for Loss of Containment Integrity</div>
<div>BS1</div> <div>ANY TWO BARRIERS</div> <div>Mode 1, 2, 3, 4</div> <div>See Barrier Failure Reference Table</div>	<div>PS1</div> <div>STATION BLACKOUT</div> <div>Mode 1, 2, 3, 4</div> <div>Loss of Voltage on Buses 34C AND 34D > 15 Minutes (Station Blackout Diesel cannot be credited)</div> <div><div>PS2</div><div>LOSS OF DC</div><div>Mode 1, 2, 3, 4</div><div>Loss of Voltage on DC Buses 1, 2, 3 AND 4 > 15 Minutes</div></div>	<div>ES1</div> <div>ATWS</div> <div>Mode 1</div> <div>FR-S.1 Is Entered Directly From E-0</div> <div><div>ES2</div><div>INABILITY TO MAINTAIN HOT S/D</div><div>Mode 1, 2, 3, 4</div><div>1. Heat Sink - RED AND BOTH of the Following:<ul style="list-style-type: none">Required Feedwater Flow Can NOT Be Established Within 15 MinutesRCS Feed and Bleed Can NOT Be Established2. RCS Boration Capability Unable to Eliminate Inadvertent Criticality</div></div> <div><div>ES3</div><div>IN-VESSEL FUEL UNCOVERY</div><div>Mode 5, 6</div><div>RHR Has Been Lost AND ANY of the Following Conditions Exist:<ul style="list-style-type: none">Alternate Methods for Restoring RCS Inventory Are NOT EffectiveRVLMS Reading Decreasing Toward * % Level (Plenum)CET Readings Indicate Superheat Conditions</div></div> <div><div>ES4</div><div>LOSS OF ANNUNCIATORS/TRANSIENT</div><div>Mode 1, 2, 3, 4</div><div>Loss of Most (75%) MCB Annunciators AND BOTH of the Following:<ul style="list-style-type: none">Significant Transient In ProgressLoss of SPDS AND ICC Instrumentation</div></div>	<div>OS1</div> <div>OFFSITE DOSE</div> <div>Mode ALL</div> <div>1. MP3 Kaman Vent Monitor (RE-10A) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 2. MP3 SLCRS Gas Monitor (HVR*19A) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 3. MP3 Safeties or Steam Dump Monitor (RE-75/76/77/78) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 4. Terry Turbine Monitor (Re-79) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 5. Measured Plume Dose Rate Onsite \geq * mR/hr for > 15 Minutes 6. Rad Assessment Determines Integrated Dose Offsite \geq * Rem TEDE OR \geq * Rem CDE Thyroid</div>	<div>SITE AREA EMERGENCY</div> <div>CHARLIE-TWO</div> <div>Events in Progress or Have Occurred Which Involve Actual or Likely Major Failures of Plant Functions Needed for Protection of the Public</div>
<div>BA1</div> <div>FUEL CLAD OR RCS BARRIER</div> <div>Mode 1, 2, 3, 4</div> <div>See Barrier Failure Reference Table</div> <div><div>BA2</div><div>STEAM LINE BREAK</div><div>Mode 1, 2, 3, 4</div><div>Unisolable Steam Line Break Outside CTMT</div></div>	<div>PA1</div> <div>STATION BLACKOUT</div> <div>Mode 5, 6</div> <div>Loss of Voltage on Buses 34C AND 34D > 15 Minutes</div> <div><div>PA2</div><div>SINGLE AC POWER SOURCE</div><div>Mode 1, 2, 3, 4</div><div>Only One AC Power Source Available to Supply Buses 34C AND 34D > 15 Minutes Such That Loss of That Power Source Would Result in a Station Blackout (Station Blackout Diesel CANNOT be Credited)</div></div>	<div>EA1</div> <div>AUTOMATIC Rx TRIP FAILURE</div> <div>Mode 1, 2</div> <div>Failure of Automatic Reactor Trip AND Manual Trip Was Successful</div> <div><div>EA2</div><div>INABILITY TO MAINTAIN COLD S/D</div><div>Mode 5, 6</div><div>1. Uncontrolled RCS Temperature Increase > **F That Results in RCS Temperature > **F 2. Inadvertent Criticality</div></div> <div><div>EA3</div><div>LOSS OF ANNUNCIATORS/TRANSIENT</div><div>Mode 1, 2, 3, 4</div><div>Loss of Most (75%) MCB Annunciators > 15 Minutes AND EITHER of the Following:<ul style="list-style-type: none">Significant Transient In ProgressLoss of SPDS AND ICC Instrumentation</div></div>	<div>OA1</div> <div>OFFSITE DOSE</div> <div>Mode ALL</div> <div>1. MP3 Kaman Vent Monitor (RE-10A) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 2. MP3 SLCRS Gas Monitor (HVR*19A) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 3. MP3 Safeties or Steam Dump Monitor (RE-75/76/77/78) Reading \geq * $\mu\text{Ci/cc}$ for > 15 Minutes 4. Terry Turbine Monitor (RE-79) Reading of \geq * $\mu\text{Ci/cc}$ for 15 Minutes 5. Measured Plume Dose Rate Onsite \geq * mR/hr for > 15 Minutes 6. Rad Assessment Determines Integrated Dose Offsite \geq * Rem TEDE OR \geq * Rem CDE Thyroid</div>	<div>ALERT</div> <div>CHARLIE-ONE</div> <div>Events in Progress or Have Occurred Which Involve an Actual or Potential Substantial Degradation of the Level of Safety of the Plant</div>
<div>BU1</div> <div>CTMT BARRIER</div> <div>Mode 1, 2, 3, 4</div> <div>See Barrier Failure Reference Table</div> <div><div>BU2</div><div>RCS LEAKAGE</div><div>Mode 1, 2, 3, 4</div><div>1. Pressure Boundary Leakage > * GPM 2. Unidentified Leakage > * GPM 3. Identified Leakage > * GPM</div></div> <div><div>BU3</div><div>FUEL CLAD DEGRADATION</div><div>Mode ALL</div><div>1. RCS Activity > * $\mu\text{Ci/gm}$ I-131 DEQ 2. Dose Rate at One Foot from Unpressurized RCS Sample \geq * mR/hr/ml</div></div>	<div>PU1</div> <div>LOSS OF OFFSITE POWER</div> <div>Mode ALL</div> <div>Buses 34C AND 34D Are Powered from Emergency Generators AND Offsite Power NOT Restored Within 15 Minutes</div> <div><div>PU2</div><div>LOSS OF DC</div><div>Mode 5, 6</div><div>Loss of Voltage on DC Buses 1, 2, 3 AND 4 > 15 Minutes</div></div>	<div>EU1</div> <div>LOSS OF COLD S/D FUNCTION</div> <div>Mode 5, 6</div> <div>1. Loss of RHR Cooling > 15 Minutes AND Valid PZR Water Level (LT 462) Reading < * % 2. Uncontrolled RCS Temperature Increase > **F 3. RCS Boron Concentration < Minimum Required</div> <div><div>EU2</div><div>CAVITY SEAL FAILURE</div><div>Mode 6</div><div>Refueling Cavity Seal Failure AND EITHER of the Following:<ul style="list-style-type: none">Valid PZR Level (LT 462) Reading < * %Valid SFP Level (LI 26) Reading = * %</div></div> <div><div>EU3</div><div>LOSS OF ANNUNCIATORS</div><div>Mode 1, 2, 3, 4</div><div>Loss of Most (75%) MCB Annunciators > 15 Minutes AND SPDS OR ICC Instruments Available</div></div> <div><div>EU4</div><div>LOSS OF COMMUNICATIONS</div><div>Mode ALL</div><div>1. Loss of ALL Onsite Electronic Communications Methods 2. Loss of ALL Electronic Communications Methods With Government Agencies</div></div> <div><div>EU5</div><div>SHUTDOWN LCO EXCEEDED</div><div>Mode 1, 2, 3, 4</div><div>Unit NOT Brought To Required Mode Within Applicable LCO Action Statement Time Limits</div></div>	<div>OU1</div> <div>UNPLANNED RELEASE</div> <div>Mode ALL</div> <div>Effluent Monitors In Alarm OR Unplanned, Unmonitored or Uncontrolled Offsite Release AND DELTA-TWO Posture Code Limits as Determined from EPI-FAP06, "Classification and PARs," Exceeded Note: Effluent Monitors Indicate Release Above Alarm Setpoint Continuing > 60 minutes AND Reportability Evaluations NOT Complete</div>	<div>UNUSUAL EVENT</div> <div>DELTA-TWO</div> <div>OR</div> <div>DELTA-ONE</div> <div>Events in Progress or Have Occurred Which Indicate a Potential Degradation of the Level of Safety of the Plant</div>

* Specific setpoints are contained in EPI-FAP06, "Classification and PARs."

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MILLSTONE UNIT 3 EMERGENCY ACTION LEVELS

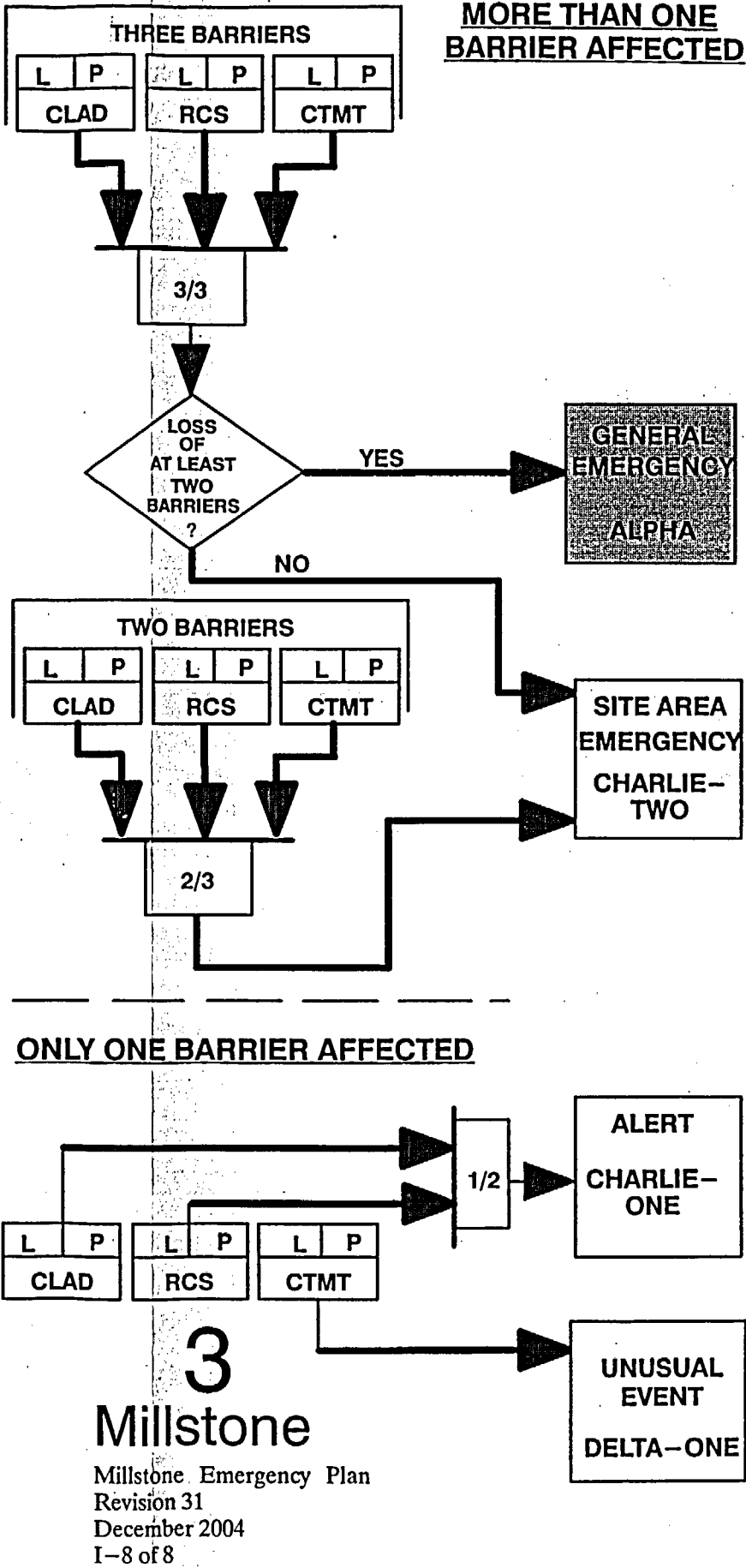
☒ GENERAL EMERGENCY ALPHA ☐ GENERAL EMERGENCY BRAVO ☐ SITE AREA EMERGENCY CHARLIE-TWO ☐ ALERT CHARLIE-ONE ☒ UNUSUAL EVENT DELTA-TWO ☐ UNUSUAL EVENT DELTA-ONE

IN-PLANT RADIATION			SECURITY THREAT/ DESTRUCTIVE PHENOMENA		FIRE/GASES		JUDGEMENT		CLASSIFICATION			
RG1	MAJOR FUEL DAMAGE	Mode ALL	TG1	SECURITY EVENT	Mode ALL		JG1	JUDGEMENT	Mode ALL	GENERAL EMERGENCY		
1. Valid RE04A/05A Reading > * R/hr 2. At Least 1/2 Fuel Clad Damage As Determined By Core Damage Estimate 3. Spent Fuel Is Exposed from Water Loss from Open Vessel Cavity OR SF Pool AND BOTH of the Following: • Spent Fuel Has Decayed < 30 Days • Release Can Bypass GTMT			1. Loss of Physical Control of the Control Room 2. Loss of Physical Control of Remote Shutdown Capability				Other Conditions Exist For Which Judgement Indicates: (1) Actual or Imminent substantial core degradation with potential for loss of containment, OR (2) Potential for uncontrolled radiological releases. These releases can be reasonably expected to exceed EPA PAG plume exposure levels outside the site boundary		ALPHA OR BRAVO Events In Progress or Have Occurred Which Involve Actual or Imminent Substantial Core Degradation or Melting With Potential for Loss of Containment Integrity			
RS1	SPENT FUEL DAMAGE	Mode ALL	TS1	SECURITY EVENT	Mode ALL	GS1	CONTROL ROOM EVACUATION	Mode ALL	JS1	JUDGEMENT	Mode ALL	SITE AREA EMERGENCY
1. Spent Fuel Is Exposed from Open Vessel, or Cavity AND BOTH of the Following: • Spent Fuel Has Decayed < 30 Days • CTMT Integrity Established			Intrusion Into Vital Area by a Hostile Force		Unit Control from Auxillary Shutdown Panel NOT Established Within 15 Minutes After Control Room Evacuation		Other Conditions Exist For Which Judgement Indicates Actual Or Likely Major Failures of Plant Functions Needed For Protection Of The Public		CHARLIE-TWO Events In Progress or Have Occurred Which Involve Actual or Likely Major Failures of Plant Functions Needed for Protection of the Public			
RA1	SPENT FUEL ASSEMBLY DAMAGE	Mode ALL	TA1	SECURITY EVENT	Mode ALL	GA1	CONTROL ROOM EVACUATION	Mode ALL	JA1	JUDGEMENT	Mode ALL	ALERT
1. Spent Fuel Is Exposed from Open Vessel, Cavity OR SF Pool AND Spent Fuel Has Decayed ≥ 30 Days 2. Fuel Handling Accident Causing Damage to Spent Fuel, Indicated by Fuel Building OR Containment Radiation Monitors Increasing			1. Any on-going or imminent security compromise to the safety of the plant.		Control Room Evacuation Initiated		Any Condition For Which Judgement Indicates That Safety Systems May Be Degraded And Which Requires Emergency Response Organization Staffing		CHARLIE-ONE Events In Progress or Have Occurred Which Involve an Actual or Potential Substantial Degradation of the Level of Safety of the Plant			
RA2	PLANT RADIATION	Mode ALL	TA2	DESTRUCTIVE PHENOMENA	Mode ALL	GA2	FIRE/EXPLOSION	Mode ALL				
1. Radiation Readings > * mR/hr In Control Room OR Central Alarm Station OR Secondary Alarm Station 2. Radiation Reading > * R/hr In Areas Requiring Access for Safe Shutdown			1. Seismic Event > * g ZPA 2. Onsite Sustained Windspeed > * MPH 3. Visible Damage to Structures or Equipment AND Affecting Safe Shutdown 4. Vessel or Vehicle Collision AND Affecting Safe Shutdown 5. Missiles Affecting Safe Shutdown 6. Flooding Affecting Safe Shutdown		Fire or Explosion Affecting Safe Shutdown Area AND Damage to Structure OR Equipment Indicated		Life Threatening Toxic Gases OR Flammable Gas Concentrations as Identified in C-OP 200.5, Oil, Hazardous Material, Hazardous Waste and Mixed Waste Contingency Plan Affecting Areas for Safe Shutdown					
RU1	RAD MONITORS	Mode ALL	TU1	SECURITY EVENT	Mode ALL	GU1	FIRE	Mode ALL	JU1	JUDGEMENT	Mode ALL	UNUSUAL EVENT
1. Containment OR Fuel Building Area Rad Monitor Alarms Indicate Cavity Seal Failure 2. Unexpected Rad Monitor Reading Offscale High OR > * Times Normal Reading			1. Security Events as determined for Station Safeguards Contingency Plan and reported by Security Shift Supervision 2. A credible site specific security threat notification		Fire in Buildings OR Areas Adjacent to Areas Needed for Safe Shutdown NOT Extinguished Within 15 Minutes of Control Room Notification OR Verification of Control Room Alarms		Any Condition For Which Judgement Indicates Potential Degradation in the Level of Safety of the Plant		DELTA-TWO OR DELTA-ONE Events In Progress or Have Occurred Which Indicate a Potential Degradation of the Level of Safety of the Plant			
			TU1	DESTRUCTIVE PHENOMENA	Mode ALL	GU2	TOXIC/FLAMMABLE GASES	Mode ALL				
			1. Seismic Activity Detected Per AOP-3570, Earthquake 2. Report by Plant Personnel of Tornado Striking Within Protected Area 3. Visible Damage to Structures or Equipment Within the Protected Area 4. Onsite Sustained Windspeed > 75 MPH 5. Explosion Within the Protected Area 6. Turbine Failure Causing Observable Casing Damage 7. Vessel or Vehicle Collision With Structures or Equipment Required for Safe Shutdown 8. Flood Level > 19.7 Feet Mean Sea Level 9. Flooding In Areas Containing Safe Shutdown Equipment		1. Life Threatening Toxic Gases OR Flammable Gas Concentrations as Identified in C-OP 200.5, Oil, Hazardous Material, Hazardous Waste and Mixed Waste Contingency Plan Affecting Normal Operation 2. Notification of a Near-Site Release That May Require Evacuation							

MILLSTONE 3 EMERGENCY ACTION LEVELS BARRIER FAILURE REFERENCE TABLE
IMMINENT - No Turnaround in Safety System Performance is Expected AND Escalation to General Emergency Conditions Will Occur Within 2 Hours

INDICATORS	FUEL CLAD BARRIER	RCS BARRIER	CTMT BARRIER
STATUS TREES	<div>FCB1</div> <div>LOSS</div> <div>L</div> <div>Core Cooling - RED</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Core Cooling - ORANGE</div> <div>P</div> <div>Heat Sink - RED AND BOTH of the Following:<ul style="list-style-type: none">Required Feedwater Flow Can NOT Be Established Within 15 MinutesRCS Feed and Bleed Can NOT Be Established</div>	<div>RCB1</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>RCS Integrity - RED</div> <div>P</div> <div>Heat Sink - RED AND Required Feedwater Flow Can NOT Be Established Within 15 Minutes</div>	<div>CNB1</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Containment - RED</div>
CORE EXIT TC TEMPERATURES	<div>FCB2</div> <div>LOSS</div> <div>L</div> <div>Core Exit TC Temperatures > * °F</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Core Exit TC Temperatures > * °F</div>	<div>RCB2</div> <div>LOSS</div> <div>L</div> <div>RCS Subcooling < * °F Due to RCS Leak (* °F Adverse CTMT)</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>	<div>CNB2</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Entry Into FR-C.1, Response to Inadequate Core Cooling, or FR-C.2, Response to Degraded Core Cooling with RVLMS ≤ * % (Plenum) AND Core Exit TC Temperatures Do NOT Decrease Within 15 Minutes</div>
PRESSURE		<div>RCB3</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Uncontrolled RCS Pressure Decrease and Increasing Containment Radiation Monitors</div>	<div>CNB3</div> <div>LOSS</div> <div>L</div> <div>Rapid Unexplained CTMT Pressure Decrease Following Initial Increase</div> <div>L</div> <div>No CTMT Pressure Increase When Expectation Exists</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>CTMT Pressure ≥ * PSIA AND Increasing</div> <div>P</div> <div>CTMT H₂ Concentration ≥ * %</div>
COOLANT LEAKAGE		<div>RCB4</div> <div>LOSS</div> <div>L</div> <div>Entry Into E-3, Steam Generator Tube Rupture AND Reactor Coolant Leak > Capacity of One Charging Pump</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Reactor Coolant Leak > Capacity of one charging pump AND ANY of the following:<ul style="list-style-type: none">Entry Into E-0, "Reactor Trip or Safety Injection"Entry Into AOP 3555, "Reactor Coolant Leak"Entry Into AOP 3576, "Steam Generator Tube Leak"</div> <div>P</div> <div>Entry into E-3, Steam Generator Tube Rupture AND Reactor Coolant Leak ≤ Capacity of One Charging Pump</div>	<div>CNB4</div> <div>LOSS</div> <div>L</div> <div>Primary to Secondary > Tech Spec Limits and EITHER exists:<ul style="list-style-type: none">Nonisolable Steam Release from Affected S/G to EnvironmentProlonged Release From Affected S/G to Environment When Used for Cooldown (see basis for description of prolonged release).</div> <div>L</div> <div>Failure of BOTH Isolation Valves AND a Pathway to the Environment Exists</div> <div>L</div> <div>Entry Into ECA-1.2, LOCA Outside Containment, Is Required AND Reactor Coolant Leakage is Verified</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>Entry Into ECA-1.2, LOCA Outside Containment</div>
RADIATION	<div>FCB3</div> <div>LOSS</div> <div>L</div> <div>RE-04A/05A Reading > * R/hr</div> <div>L</div> <div>RE-04A/05A Reading > * R/hr Without RCS Release Inside CTMT</div> <div>L</div> <div>At Least 5% Fuel Clad Damage As Determined By Core Damage Estimate</div> <div>L</div> <div>Dose Rate at One Foot from Unpressurized RCS Sample ≥ * mR/hr/ml</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>	<div>RCB5</div> <div>LOSS</div> <div>L</div> <div>RE-04/05A Reading > * R/hr Without Fuel Clad Barrier Loss</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>	<div>CNB5</div> <div>LOSS</div> <div>L</div> <div>Offsite Dose Plume Rate > 10⁻⁶ Times RE-04A/RE-05A Reading if Coolant Loss is to CTMT</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>RE-04A/05A Reading > * R/hr</div> <div>P</div> <div>At Least 20% Fuel Clad Damage As Determined By Core Damage Estimate</div>
WATER LEVEL	<div>FCB4</div> <div>LOSS</div> <div>Not Applicable</div> <div>POTENTIAL LOSS</div> <div>P</div> <div>RVLMS ≤ * % (Plenum)</div>		<div>CNB6</div> <div>LOSS</div> <div>L</div> <div>No CTMT Sump Level Increase When Expectation Exists</div> <div>POTENTIAL LOSS</div> <div>Not Applicable</div>
JUDGEMENT	<div>FCB4</div> <div>Any Condition For Which Judgement Indicates Loss or Potential Loss of Fuel Clad Barrier Due to:<ul style="list-style-type: none">Imminent Barrier Degradation Based On Current Safety System PerformanceDegraded Fission Barrier Monitoring Capability Making Barrier Status Indeterminate</div>	<div>RCB6</div> <div>Any Condition For Which Judgement Indicates Loss or Potential Loss of RCS Barrier Due to:<ul style="list-style-type: none">Imminent Barrier Degradation Based On Current Safety System PerformanceDegraded Fission Barrier Monitoring Capability Making Barrier Status Indeterminate</div>	<div>CNB7</div> <div>Any Condition For Which Judgement Indicates Loss or Potential Loss of CTMT Barrier Due to:<ul style="list-style-type: none">Imminent Barrier Degradation Based On Current Safety System PerformanceDegraded Fission Barrier Monitoring Capability Making Barrier Status Indeterminate</div>

* Specific setpoints are contained in EPI-FAP06, "Classification and PARs."



Appendix J

APPENDIX J

EVACUATION TIME ESTIMATE PLUME EXPOSURE PATHWAY

Appendix J

Estimates for Evacuation of the Plume Exposure EPZ

The following table summarizes the results of the Evacuation Time Estimate (ETE) prepared for the Millstone Power Station in 2002, to reflect the 2000 U.S. Census and the current EPZ evacuation zones. The population estimates are based on the 2000 U.S. Census block level population and housing data.

The various population components are presented for three basic scenarios: winter day, winter night and summer weekend. The road network for evacuation planning consists of designated routes plus additional roadways needed to accurately simulate conditions during an evacuation.

A dynamic evacuation model, NetVac2, was used to generate the ETES. The model accounts for road and intersection capacity, variable vehicle loading rates, and the geographic distribution of vehicles entering the network.

Appendix J

Table J-1
Millstone Evacuation Time Estimate Summary

Winter Weekday

<u>Analysis Area</u>	<u>Resident</u>	<u>Transient</u>	<u>Special Facilities</u>	<u>Total Population</u>
Zone A	21,520	3,473	6,387	31,380
Zones A and B	53,478	22,616	23,023	99,117
Zones A-E	120,048	47,753	38,273	206,074

Weather Based Evacuation Time (Minutes)

<u>Analysis Area</u>	<u>Fair - 100%</u>	<u>Adverse - 100%</u>
Zone A	300	420
Zones A and B	390	510
Zones A-E	391	527

Winter Weeknight

<u>Analysis Area</u>	<u>Resident</u>	<u>Transient</u>	<u>Special Facilities</u>	<u>Total Population</u>
Zone A	21,520	3,473	6,387	31,380
Zones A and B	53,478	4,872	13,792	72,142
Zones A-E	120,048	22,291	12,506	154,845

Weather Based Evacuation Time (Minutes)

<u>Analysis Area</u>	<u>Fair - 100%</u>	<u>Adverse - 100%</u>
Zone A	220	280
Zones A and B	240	320
Zones A-E	257	358

Summer Weekend

<u>Analysis Area</u>	<u>Resident</u>	<u>Transient</u>	<u>Special Facilities</u>	<u>Total Population</u>
Zone A	21,520	3,473	6,387	31,380
Zones A and B	53,871	6,183	10,468	70,521
Zones A-E	128,658	37,122	8,833	174,613

Weather Based Evacuation Time (Minutes)

<u>Analysis Area</u>	<u>Fair - 100%</u>	<u>Adverse - 100%</u>
Zone A	260	320
Zones A and B	265	327
Zones A-E	265	327

Notes:

Zones A-E refer to State of Connecticut Emergency Planning Zones for Millstone Station.

Evacuation times for zones based on Evacuation Time Estimates for Millstone Station, revised 2002.

Appendix K

APPENDIX K

SERO PERSONNEL TRAINING SUMMARY

Appendix K

The following table provides a summary of training, for the qualification of SERO personnel. Detailed lesson plans and administrative controls are maintained in NTP 7.212. In addition, EPA-FAP01 defines specific training requirements. See Reference #4 below

Training Summary	Table 5-1 Ref. #
Provide an overview of responsibilities and actions that occur during an emergency. This includes classification system, notifications, communications, Station Emergency Response Organization, Emergency Response Facilities and equipment. This lesson may be computer based training and is used for initial and continuing training.	1
Provide hands-on instruction for the operation of the OFIS computer program.	2
Provide instruction on the function and operation of the Emergency Notification and Response System, in addition to providing instruction on the various reports available.	3
Provide practical application of specific emergency duties and responsibilities as well as hands-on experience with emergency equipment during the conduct of a training drill, facility walk-through or on-the-job training.	4 MP-26- EPA-FAP01
Provide overview of meteorological conditions and their impact during an emergency, including equipment and resources available to access this data.	5
Provide training on the event based EAL tables, including structure and practical applications using scenarios.	6
Provide familiarization training on the event based EAL tables.	7
Identify NRC initiatives in the area of accident management and familiarize students with types of severe accident phenomena.	8
Provide SERO position specific duties and responsibilities as delineated in the Emergency Plan and procedures.	9
Explain basic principles of meteorological analysis and forecasting, including interpretation and communication of data.	10
Provide methods for performing containment curie level estimation and for assessing core uncover projections.	11
Provide methods for performing radiological dose calculations.	12
Demonstrate operation of the applicable computer programs for radiological dose assessments.	13
Provide training on process for preparing protective action recommendations to the State of Connecticut.	14
Provide training for performance of on-shift radiological dose calculations using computer programs.	15