

Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385



Dominion™

SEP 20 2002

Docket Nos. 50-245
50-336
50-423
B18748

RE: 10 CFR 50, Appendix E
10 CFR 50.47(b)(5)

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Power Station, Unit Nos. 1, 2 and 3
Revised Emergency Plan Procedures

The purpose of this letter is to inform the Nuclear Regulatory Commission that the following Emergency Plan procedures have been implemented:

- MP-26-EPI-FAP01-002, "Manager of Control Room Operations (MCRO)," Major Revision 1, Minor Revision 1, transmitted via Attachment 1;
- MP-26-EPI-FAP04, "Emergency Operations Facility Activation and Operation," Major Revision 1, Minor Revision 1, transmitted via Attachment 2;
- MP-26-EPI-FAP04-003, "Manager of Radiological Dose Assessment (MRDA)," Major Revision 1, Minor Revision 1, transmitted via Attachment 3;
- MP-26-EPI-FAP11, "Core Damage Assessment," Major Revision 1, Minor Revision 1, transmitted via Attachment 4;
- MP-26-EPI-FAP11-009, "Unit 2 Reactor Coolant and Liquid Waste Sample Worksheet," Major Revision 0, Minor Revision 1, transmitted via Attachment 5;
- MP-26-EPI-FAP11-010, "Unit 2 Vent and Containment Air Sample Worksheet," Major Revision 0, Minor Revision 2, transmitted via Attachment 6;
- MP-26-EPI-FAP11-011, "Unit 3 Reactor Coolant and Liquid Waste Sample Worksheet," Major Revision 0, Minor Revision 1, transmitted via Attachment 7;
- MP-26-EPI-FAP11-012, "Unit 3 Vent and Containment Air Sample Worksheet," Major Revision 0, Minor Revision 2, transmitted via Attachment 8; and
- MP-26-EPI-FAP14, "Recovery," Major Revision 1, transmitted via Attachment 9.

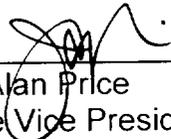
A045

There are no regulatory commitments contained within this letter.

If you have any questions concerning this submittal, please contact Mr. David A. Smith at (860) 437-5840.

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.



J. Alan Price
Site Vice President - Millstone

Attachments (9)

cc: H. J. Miller, Region I Administrator (2 copies)
R. J. Conte, Chief, Operational Safety Branch, Region I

cc: w/o attachment

J. B. Hickman, NRC Project Manager, Millstone Unit No. 1
J. R. Wray, NRC Inspector, Region I, Millstone Unit No. 1
R. B. Ennis, NRC Senior Project Manager, Millstone Unit No. 2
NRC Senior Resident Inspector, Millstone Unit No. 2
V. Nerses, NRC Senior Project Manager, Millstone Unit No. 3
NRC Senior Resident Inspector, Millstone Unit No. 3

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Attachment 1

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP01-002, "Manager of Control Room Operations (MCRO)"
Major Revision 1, Minor Revision 1

02/13/02
Approval Date



02/14/02
Effective Date

Document Action Request

SPG # 020808-082139

A

Initiated By: Patty Luckey Date: 06/17/2002 Department EP Ext 5474

Document No MP-26-EPI-FAP01-002 Rev. No: 001 Minor Rev No. 01

Title: **Manager of Control Room Operations**

B

For New Documents only → QA RI Title

Reason for Request (attach commitments, CR's, AR's, OEs etc)

AR 02000439-10/02000440-10

Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change

Continued

C

Intent Change (SQR Independent, RCD, ENV Screen Required) Edit Corr Non-Intent Change
(Other reviews may be required. See MP-05-DC-FAP 01.1 Att 3) (Only Tech IR, SQR IR and Env. signature Required)

D

Editorial Correction Approval

TPC Interim Approval

Plant Mngt Staff Member - Approval / Date

(1) Plant Mngt Staff Member Print/Sign/Date

(2) SM/SRO/CFH on Unit Print/Sign/Date

E

Procedure Request/Feedback Disposition

Priority: Perform Now Perform Later - See Comments

Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
See DC-GDL01 for guidance
 TPC OTC Place in Void

F

Reviews continued <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			If Comments
				Yes	No	Dept.	
<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
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50.5A(Q) <input checked="" type="checkbox"/>	<u>TOM REGNEY</u>	<u>Tom Regney</u>	<u>6/21/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
Env Screen <input checked="" type="checkbox"/>	<u>TOM REGNEY</u>	<u>Tom Regney</u>	<u>8/16/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
Licensing Basis <input type="checkbox"/>							<input type="checkbox"/>
Tech Independent <input checked="" type="checkbox"/>	<u>Tom Gilbert</u>	<u>Thompson</u>	<u>8/19/02</u>			<u>EPD</u>	<input type="checkbox"/>

G

An NRRL update was required? Yes

H

1. SQR Program Final Review and Approval

Approval Disapproval

Mark Birch 18-21-02
SQR Qualified Independent Reviewer / Date

Bates & Luckey
Department Head/Responsible Individual

8/22/02
Approval Date

SORC Final review and Approval

N/A RI/DH (Ref Mans. GDL's Handbook)

DH/RI Sign _____

Meeting No. _____

SORC Signature _____ DH / RI Signature _____

Approval Date _____

I

Effective Date 8/29/02

8/22/02
Approval Date

08/29/02
Effective Date

Manager of Control Room Operations (MCRO)

This form provides guidance to the MCRO once the DSEO in the EOF has assumed command and control of the event.

Section A: Ongoing Activities

NOTE

Any personnel dispatched outside the control room during an emergency are considered a 'team'.

- 1. Notify the ADTS of any teams dispatched from the control room.
- 2. Log events and periodically review entries for accuracy and completeness.
- 3. Assess plant conditions and initiate corrective actions, as necessary.
- 4. Evaluate plant conditions and recommend classification changes to ADTS using EPI-FAP06, "Classification and PARs."
- 5. Periodically, or whenever significant changes in plant conditions occur, brief control room personnel on:
 - Plant status
 - Event classification
 - Operational priorities
 - SERO status (i.e. SERO control transferred to the EOF, MOSC resource needs, etc.)
 - Changing radiological conditions
- 6. Update the ADTS on the following:
 - Event assessment
 - Requested actions
 - Associated priorities
 - Control room activities in progress
- 7. Direct RMT #1 to assess on-site radiological conditions and perform HP actions to support on-shift personnel.

Section A: Ongoing Activities

- 8. As appropriate, direct the following on-shift personnel to report to the MOSC to support in-plant corrective actions.
 - RMT #1
 - Chemistry Technicians
- 9. As appropriate, direct non-essential control room personnel (i.e., PEO) to the OSC Assembly Area.
- 10. Monitor plant conditions, strategies, and procedures for beyond design basis actions needed to protect the health and safety of the public.
- 11. IF necessary, Refer To and implement Section B, "Accident Management Decision Making - 50.54(X)."
- 12. IF requested by the ADTS, Refer To EPI-FAP08, "Evacuation and Assembly," and perform actions for site assembly and evacuation.

Section B: Accident Management Decision Making - 50.54(x)

- 1. Identify scope and departure of the action.
- 2. IF time permits, obtain verbal or written approval on the strategy and procedure from the available senior SERO representative (i.e., DSEO, ADTS) using EPI-FAP02-012, "TSC Emergency Repair/Procedure Change/Assessment Recommendations," for guidance.
- 3. IF time does not permit discussion with the ADTS or DSEO, perform the following:
 - Take the departure actions necessary to protect the public or station personnel.
 - Inform the ADTS as soon as possible of the action.
- 4. Log the 10 CFR 50.54(x) actions taken.

Prepared by: _____

Signature

Print

Date

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Attachment 2

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP04, "Emergency Operations Facility Activation and Operation"
Major Revision 1, Minor Revision 1

02/13/02
Approval Date



02/14/02
Effective Date

Document Action Request SPG # 020620-070119

A Initiated By: Patty Luckey Date: 06/17/2002 Department EP Ext 5474
 Document No MP-26-EPI-FAP04 Rev. No: 001 Minor Rev No. 01
 Title: **Emergency Operations Facility Activation and Operation**

B For New Documents only → QA RI Title _____
Reason for Request (attach commitments, CR's, AR's, OE's etc)
AR 02000439-10/02000440-10
 Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change Continued

C Intent Change (SQR Independent, RCD, ENV Screen Required) Edit Corr Non-Intent Change
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 Plant Mngt Staff Member - Approval / Date (1) Plant Mngt Staff Member Print/Sign/Date
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Reviews continued <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			If Comments
				Yes	No	Dept.	
<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
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50.54(Q) <input checked="" type="checkbox"/>	<u>Tom RIGNEY</u>	<u>[Signature]</u>	<u>6/21/02</u>	<input type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
Env Screen <input checked="" type="checkbox"/>	<u>Tom RIGNEY</u>	<u>[Signature]</u>	<u>5/16/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
Licensing Basis <input type="checkbox"/>							<input type="checkbox"/>
Tech Independent <input checked="" type="checkbox"/>	<u>Tom Gilbert</u>	<u>[Signature]</u>	<u>8/19/02</u>			<u>EPD</u>	<input type="checkbox"/>

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 Approval Disapproval
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 Department Head/Responsible Individual
8/22/02
 Approval Date

SORC Final review and Approval
 N/A RI/DH (Ref Mans.GDI's Handbook)
 DH/RI Sign _____
 Meeting No. _____
 SORC Signature _____ DH / RI Signature _____
 Approval Date _____

I Effective Date 8/21/02

**Functional
Administrative
Procedure**



**Emergency Operations Facility
Activation and Operation**

MP-26-EPI-FAP04

Rev. 001-01

Approval Date: 8/22/02

Effective Date: 8/29/02



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MP-26-EPI-FAP04-001, “Director of Station Emergency Operations (DSEO)”

MP-26-EPI-FAP04-002, “Assistant Director Emergency Operations Facility (ADEOF)”

MP-26-EPI-FAP04-003, “Manager Radiological Dose Assessment (MRDA)”

MP-26-EPI-FAP04-004, “Assistant Manager Radiological Dose Assessment (AMRDA)”

MP-26-EPI-FAP04-005, “Radiological Assessment Engineer (RAE)”

MP-26-EPI-FAP04-006, “Field Team Data Coordinator (FTDC)”

MP-26-EPI-FAP04-007, “Radiation Monitoring Team #3, #4, #5”

MP-26-EPI-FAP04-008, “Radiological Communicator - EOF”

MP-26-EPI-FAP04-009, “EOF HP Technician”

MP-26-EPI-FAP04-010, “Meteorological Assistant”

MP-26-EPI-FAP04-011, “Manager of Resources (MOR) or External Resources Coordinator (ERC)”

MP-26-EPI-FAP04-012, “Manager of Public Information (MPI)”

MP-26-EPI-FAP04-013, “Manager of Communications (MOC)”

MP-26-EPI-FAP04-014, “Technical Information Communicator (TIC)”

MP-26-EPI-FAP04-015, “EOF Shift Technician (EOF-ST)”

MP-26-EPI-FAP04-016, “Station Emergency Preparedness Representative (SEPR)”

MP-26-EPI-FAP04-017, “Regulatory Liaison”

1. PURPOSE

1.1 Objective

This procedure provides guidance to Station Emergency Response Organization (SERO) personnel who report to the Emergency Operations Facility (EOF) during an event.

1.2 Applicability

Activation of the EOF is initiated upon declaration of an ALERT, Posture Code Charlie-One, or higher event.

1.3 Supporting Documents

EPI-FAP01, "Control Room Emergency Operations"

EPI-FAP06, "Classification and PARs"

EPI-FAP07, "Notifications and Communications"

EPI-FAP08, "Evacuation and Assembly"

EPI-FAP09, "Radiation Exposure Controls"

EPI-FAP10, "Dose Assessment"

EPI-FAP11, "Core Damage Assessment"

EPI-FAP13, "News Releases"

EPI-FAP15, "Common Forms"

EPA-REF08B, "Millstone Emergency Plan Resource Book"

Meteorological Reference Manual for Support of Nuclear Plant Emergencies.

1.4 Discussion

1.4.1 Facility Activation

Facility activation should occur within 60 minutes of the time the SERO was notified. The EOF can be declared activated when the DSEO has relieved the CR-DSEO of command and control responsibilities AND minimum staffing requirements are met.

The DSEO has the discretion to relieve the CR-DSEO and authorize ERF activation with less than minimum staffing provided necessary functional areas are filled.

1.4.2 The major activities associated with the EOF are as follows:

- Event Classification and PARs- EPI-FAP06
- Event Notification and Communications - EPI-FAP07
- Radiological Dose Assessment/Sampling
- Exposure Control - EPI-FAP09
- Resources
- Rumor Control and News Releases - EPI-FAP13
- Coordination of Outside Agencies
- Recovery - EPI-FAP14

1.4.3 10 CFR 50.54(x) Invocation

- a. As discussed in the Statements of Consideration to 10 CFR Part 50, emergencies can arise during which compliance with a license condition or a Technical Specification could prevent necessary action by the licensee to protect the public health and safety. Absolute compliance with the license during these emergencies can be a barrier to effective protective action.
- b. Unanticipated circumstances can occur during the course of an emergency which may call for responses different from any previously considered during the course of licensing. Special circumstances requiring a deviation from license requirements are not necessarily limited to transients or accidents not analyzed in the licensing process. Special circumstances can arise during emergencies involving multiple equipment failures or coincident accidents where plant emergency procedures could be in conflict with, or not applicable to, the circumstances. In addition, an accident can take a course different from that which was addressed when the emergency procedure was written, thus requiring a protective response at variance with a procedure required to be followed by the licensee which may ultimately be contrary to current Technical Specifications or the license condition.
- c. 10 CFR 50.54(x) will permit the licensee to take reasonable action in an emergency even though the action departs from licensing conditions or plant Technical Specifications. This action may only be taken, however, if the following criteria are met:
 - The action is immediately needed to protect the public health and safety, including plant personnel.
 - No action consistent with the license conditions and Technical Specifications is immediately apparent that can provide adequate or equivalent protection.
 - As a minimum, a licensed senior operator approves the action.

d. Applicability Determination

The NRC can amend Technical Specifications or license conditions. The §50.54(x) regulation is not intended to apply in circumstances where time allows this normal process to be followed. The regulation applies only to those emergency situations in which immediate action is required by the licensee to protect public health and safety and this action is contrary to a Technical Specification or license condition.

Operating outside the boundaries of approved procedures or in the absence of procedures does not in and of itself meet the threshold for invocation of §50.54(x). Also, the existence of a safety analysis (§50.59) conducted for the purpose of determining whether an unreviewed safety question exists is not sufficient to determine whether application of §50.54(x) is appropriate. §50.54(x) is not intended for use as a general regulatory protective shield for all actions not addressed by current procedures. Even after §50.54(x) has been invoked, each subsequent action taken must be evaluated for §50.54(x) applicability with all necessary approvals and notifications being made for each invocation, as appropriate.

Additionally, the §50.54(x) and (y) amendments were not written for the purpose of establishing procedures and guidance (such as SAMG) that may be useful at some future date (e.g., preplanning and contingency actions). The determination to discontinue following plant operating procedures and/or EOPs, and to begin following SAMG, by itself, does not constitute a departure from a license condition or Technical Specification and, therefore, does not require invocation of §50.54(x). Note however, it is possible that the first action directed during SAMG implementation may actually require §50.54(x) invocation.

The threshold for invocation is met only if the action being taken is not consistent with current license conditions and Technical Specifications. Additionally, the action must meet the time and safety dependent criteria previously discussed. Then and only then should the invocation of §50.54(x) be considered for approval.

e. Approval

A licensed senior operator position is the minimum level within the organization, not the only position, authorized to approve invocation of §50.54(x). 10 CFR 50.54(y) states, "Licensee action permitted by paragraph (x) of this section shall be approved, as a minimum, by a licensed senior operator..." This wording makes it clear that such action must be approved by at least a licensed senior operator acting for the licensee. The regulation focuses on the responsibilities of facility licensees and only peripherally includes licensed senior operators. Under the provision, any licensed senior operator (licensed for the Unit involved) would be sufficient. However, during declared emergencies more senior licensee personnel would eventually become available. The decision to depart from the license would then pass to these more senior personnel already identified in the Emergency Plan.

Ultimate responsibility for the health and safety of the general public and station personnel in an emergency resides in the highest authority in the chain of command. The persons responsible for the health and safety of the general public and station personnel are already identified in the facility license and implementing procedures. These persons include the ADTS and the DSEO following emergency response facility activation. If however, an emergency should occur on a backshift, no licensee representative higher than a licensed senior operator in the chain of command is likely to be available. Therefore, the departure from a license condition or Technical Specification requires the approval of a licensed senior operator as a minimum.

To require any additional approvals or concurrence, such as from senior licensee representatives or the NRC, would defeat the purpose of §50.54(x). Concurrence or approval from the NRC is also not necessary, as this action would amount to a license amendment using procedures contrary to those existing for amendments. NRC concurrence would additionally shift the burden of responsibility for station safety from the licensee to the NRC.

f. Reportability

Deviations authorized pursuant to 10 CFR 50.54(x) are reportable as soon as practical and in all cases within one hour under 10 CFR 50.72(b)(1), or 10 CFR 50.73(a)(2)(i)(C), if not reported simultaneously with emergency notification under 10 CFR 50.72(a). When time permits, the notification is made before the protective action is taken; otherwise, it is made as soon as possible thereafter. Additionally, a Licensee Event Report will be generated and submitted to the NRC within 30 days.

g. Subsequent Actions

Following invocation of 50.54(x) and notification of the NRC, actions are taken as soon as practical to restore the plant to full compliance with Technical Specifications and all conditions of license.

1.4.4 Off-Site Radiological Communications

The radio control console located in the Radiological Dose Assessment Area will be used to support MRDA communications. The FTDC and the off-site RMTs will use this radio net to communicate radiation findings. The RMT vehicles maintained at the EOF are equipped with permanently mounted radios. The radio console at the EOF is monitored by the FTDC. Spare portable radios are stored at the EOF to issue to additional field teams or replace vehicle radios that malfunction.

Off-site teams may be assigned to monitor and report dose assessment findings which occur over water (Long Island Sound). RMT radios which operate on the off-site radiological communications frequency are installed in the Millstone Environmental boat.

1.4.5 Off-Site Radiological Monitoring

Off-site RMTs obtain samples for airborne radioactive contaminants and radiation dose rates for specific points and areas outside the Millstone Station protected area. Off-site RMTs are controlled by the MRDA, who transfers all or portions of this responsibility to the AMRDA or FTDC upon their arrival in the EOF. The goal of the FTDC or designee is to ensure the RMTs are deployed within 60 minutes of event notification.

The RMTs provide the off-site survey information necessary for the plume phase. Environmental Services and HP field teams perform environmental sampling during the intermediate and relocation/ingestion pathway phases. The thermoluminescent dosimeters (TLD) and air filters can also provide information to help determine the past integrated dose.

1.4.6 Definitions and abbreviation are contained in Attachment 1. Responsibilities are contained in Attachment 2.

INSTRUCTIONS

To and complete the following, as applicable:

NOTE

The steps in the checklists may be performed in any order, or more than once, as necessary.

- EPI-FAP04-001, "Director of Station Emergency Operations (DSEO)"
- EPI-FAP04-002, "Assistant Director Emergency Operations Facility (ADEOF)"
- EPI-FAP04-003, "Manager Radiological Dose Assessment (MRDA)"
- EPI-FAP04-004, "Assistant Manager Radiological Dose Assessment (AMRDA)"
- EPI-FAP04-005, "Radiological Assessment Engineer (RAE)"
- EPI-FAP04-006, "Field Team Data Coordinator (FTDC)"
- EPI-FAP04-007, "Radiation Monitoring Team #3, #4, #5"
- EPI-FAP04-008, "Radiological Communicator - EOF"
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- EPI-FAP04-011, "Manager of Resources (MOR) or External Resources Coordinator (ERC)"
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- EPI-FAP04-015, "EOF Shift Technician (EOF-ST)"
- EPI-FAP04-016, "Station Emergency Preparedness Representative (SEPR)"
- EPI-FAP04-017, "Regulatory Liaison"

If an action is not appropriate under existing conditions or was not necessary for the event, enter N/A when completing documentation for submittal.

3. SUMMARY OF CHANGES

3.1 **Revision 001-01**

3.1.1 Deleted PASS definition from Attachment 1.

3.2 **Revision 001**

3.2.1 Modified document number in Section 1.3 to reflect MP-26-MMM.

3.2.2 Clarified in step 1.4.1 that DSEO relieves the CR-DSEO.

3.2.3 Changed “non-SERO” to “non-essential” in Attachment 1.

3.2.4 Clarified the TIC responsibilities in Attachment 2.

Attachment 1

Definitions and Abbreviations

(Sheet 1 of 3)

Definitions

Alpha or Bravo Posture Code - A State response code that has expected or existing plant conditions relative to a radiological release as its basis. A technical basis for developing a PAR as a result of an EAL classification for all events short of the loss of all three fission product barriers, or high containment radiation.

Calculated Dose Rate (units of mRem/hr or Rem/hr) - A dose rate calculated for actual releases based on measured exposure rates from effluent monitor or survey readings (units of mR/hr or R/hr).

CDE - Committed Dose Equivalent for the thyroid (usually in units of Rem).

Measured Exposure Rate - Exposure rate based on field survey results (units of mR/hr or R/hr).

Operations Net - A communications network established for the TSC-SM, CRDC, TA, and TIC to apprise all Emergency Response Facilities of plant status and fast-breaking events; provide operational and technical input; and assist with classification.

Plant Conditions - A technical basis for developing a PAR as a result of actual or imminent loss of all three fission product barriers, or based on high containment radiation levels.

Precautionary Dismissal - A precautionary release of non-essential individuals from the site conducted at the ALERT classification.

Protective Action Recommendation (PAR) - A recommended course of action to take that affects the general population. Issued to state and local decision makers for their consideration in making a protective action decision.

Projected Dose - A calculated exposure received over the duration of the accident. A technical basis for developing a PAR as a result of an ongoing radiological release that is projected on either a measured exposure rate, or a calculated exposure rate for an expected release (units of Rem).

TEDE - Total Effective Dose Equivalent (usually in units of Rem).

“What IF” Dose - A theoretical dose projection based on the premise that the accident sequence in progress will result in the partial or total release of an assumed quantity of core inventory (usually in units of Rem).

Wind Direction - The three digit number indicating the degree bearing (000 and 360 being north, 180 being south) from which the wind is coming at the release elevation (Changes in wind direction may constitute the technical basis for updating a PAR).

Attachment 1

Definitions and Abbreviations

(Sheet 2 of 3)

Abbreviations

ADEOF - Assistant Director Emergency Operations Facility

ADTS - Assistant Director Technical Support

AMRDA - Assistant Manager Radiological Dose Assessment

AMT - Accident Management Team

AMTL - Accident Management Team Leader

CAS - Central Alarm Station

CBETS - Computer Based Exposure Tracking System

CTMT - Containment

DEP - Department of Environmental Protection

DSEO - Director of Station Emergency Operations

EAL - Emergency Action Level

EAS - Emergency Alerting System

EDAN - Environmental Data Acquisition Network

EPZ - Emergency Planning Zone

ERC - External Resource Coordinator

ERDS - Emergency Response Data System

FTDC - Field Team Data Coordinator

JMC - Joint Media Center

KI - Potassium Iodide

MCRO - Manager of Control Room Operations

MOC - Manager of Communications

MOR - Manager of Resources

Attachment 1

Definitions and Abbreviations

(Sheet 3 of 3)

MPI - Manager of Public Information

MRDA - Manager of Radiological Dose Assessment

MTSC - Manager of Technical Support Center

NNM - Nuclear News Manager

OFIS - Off-Site Facility Information System

PAG - Protective Action Guideline

PAR - Protective Action Recommendation

RAE - Radiological Assessment Engineer

RCS - Reactor Coolant System

RICC - Rumor and Inquiry Control Center

RMT - Radiological Monitoring Team

RDAT - Radiological Dose Assessment Team

SDO - Station Duty Officer

ST - Shift Technician

TEDE - Total Effective Dose Equivalent

TIC - Technical Information Coordinator

Attachment 2 Responsibilities

(Sheet 1 of 4)

1. Director of Station Emergency Operations (DSEO)

After formally relieving the CR DSEO, the DSEO is responsible for the following non-delegable emergency response functions:

- Overall command and control of the station's emergency response.
- Event classification.
- General public Protective Action Recommendations to offsite officials.
- Formal off-site notification approval.
- Emergency exposure extension authorization.
- News release approval.
- Federal assistance to support station response.

2. Assistant Director Emergency Operations Facility (ADEOF)

The ADEOF reports to the DSEO. The ADEOF is responsible for the following:

- Providing input for classification changes based on radiological conditions.
- Developing, recommending, and updating off-site PARs to the DSEO.
- Providing input for notification upgrades, updates, and termination, as necessary.
- Approving emergency exposure upgrades in excess of 10 CFR 20 limits.
- Authorizing potassium iodide (KI) for off-site personnel SERO personnel (e.g., Radiation Monitoring Teams).
- Overseeing off-site radiological assessment of the event.
- Coordinating communications of plant status to the NRC, State, and public.
- Authorizing contaminated personnel to leave the station.
- Reviewing news releases.
- Assuming DSEO responsibilities if DSEO becomes incapacitated.

Attachment 2 Responsibilities

(Sheet 2 of 4)

3. Manager of Radiological Dose Assessment (MRDA)

The MRDA reports to the ADEOF. The MRDA is responsible for the off-site dose assessment activities. This includes the following activities:

- Monitoring radiological conditions beyond the protected area and ensuring recommended protective actions provided to State officials are adequate to protect public health and safety in accordance with US EPA guidance.
- Providing key information to the ADEOF and DSEO that may influence classification as well as protective action decision making.
- Assessing radiological plant conditions and alerting the ADEOF and DSEO when information indicates there has been a significant change.
- Assessing the source term, determining the radiological release pathway, and obtaining meteorological data applicable to an actual or potential radiological release.
- Directing radiological and environmental field measurements be obtained.
- Directing dose assessment be performed.
- Directing core damage estimates be performed.
- Communicating with State dose assessment staff.
- Communicating with NRC dose assessment staff using the HPN circuit.
- Coordinating field team activities with the State DEP.

4. Assistant Manager, Radiological Dose Assessment (AMRDA)

Two AMRDAs report to the MRDA. They assist the MRDA as directed with dose assessment, RDATE strategies, HPN communications, etc.

5. Radiological Assessment Engineer (RAE)

The RAE reports to the MRDA in the EOF. Duties include evaluating actual and potential releases of radioactive material, and performing dose assessment calculations.

6. Field Team Data Coordinator (FTDC)

The FTDC reports to the MRDA in the EOF. Duties include coordinating the activities of the off-site RMTs, and distributing off-site RMT data.

7. Radiological Monitoring Teams #3, #4, #5 (RMT)

The RMTs report to the FTDC in the EOF. Duties include performing surveys and samples.

Attachment 2 Responsibilities

(Sheet 3 of 4)

8. Radiological Communicator

The Radiological Communicator reports to the MRDA. Duties include obtaining information on radiological conditions inside the protected area which may impact offsite monitoring and tracking activities.

9. Meteorological Assistant

The Meteorological Assistant reports to the MRDA. Duties include obtaining and preparing current meteorological data and providing forecast information and technical input in matters involving meteorology.

10. Manager of Resources (MOR)

The MOR reports to the ADEOF. The MOR is responsible for the following:

- Providing station personnel, equipment, or supplies requested by SERO managers
- Acquiring corporate and off-site resources
- Coordinating support requests from federal regulatory agencies that have responded to Millstone Station

11. External Resources Coordinator (ERC)

The ERC reports to the MOR. The ERC assists the MOR in coordinating and obtaining corporate and off-site resources (e.g., personnel, equipment, housing, food, purchasing, and financial and legal services) needed to support the site.

12. Manager of Public Information (MPI)

The MPI reports to the ADEOF in the EOF. The MPI is responsible for the following:

- Collecting information regarding the event
- Providing input for news releases
- Monitoring media activities
- Supporting the Nuclear News Manager, located at the Hartford Armory

13. Manager of Communications (MOC)

The MOC reports to the ADEOF in the EOF. The MOC is responsible for coordinating all EOF communications which includes Emergency Notification System (ENS) communications between the station and the NRC.

Attachment 2 Responsibilities

(Sheet 4 of 4)

14. Technical Information Communicator (TIC)

The TIC reports to the DSEO. Duties include the following:

- Operating OFIS
- Providing requested plant parameter data
- Informing DSEO/ADEOF of critical parameters impacting classification and PARs
- Maintaining Chronology of Key Events status board
- Obtaining data from the CRDC, as necessary
- Providing information to the State EOC Technical Assistant and the TSC Staff, as requested.

15. EOF Health Physics (HP) Technician

The EOF HP Technician reports to the MRDA. The EOF HP Technician is responsible for providing HP support to the EOF.

16. EOF Shift Technician

The EOF Shift Technician reports to the ADEOF in the EOF. The EOF Shift Technician is responsible for notifying state and local officials, as directed.

17. Regulatory Liaison

The Regulatory Liaison reports to the ADEOF. The Regulatory Liaison 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.

Docket Nos. 50-245
50-336
50-423
B18748

Attachment 3

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP04-003, "Manager of Radiological Dose Assessment (MRDA)"
Major Revision 1, Minor Revision 1

02/13/02
Approval Date



02/14/02
Effective Date

Document Action Request

SPG # 020620-070445

Initiated By: Patty Luckey Date: 06/17/2002 Department EP Ext 5474
Document No MP-26-EPI-FAP04-003 Rev. No: 001 Minor Rev No. 01
Title: **Manager of Radiological Dose Assessment**

For New Documents only → QA RI Title

Reason for Request (attach commitments, CR's, AR's, OE's etc)

AR 02000439-10/02000440-10

Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change

Continued

Intent Change (SQR Independent, RCD, ENV Screen Required) Edit Corr Non-Intent Change
(Other reviews may be required. See MP-05-DC-FAP 01.1 Att 3) (Only Tech IR, SQR IR and Env signature Required)

Editorial Correction Approval

TPC Interim Approval

Plant Mngt Staff Member - Approval / Date

(1) Plant Mngt Staff Member Print/Sign/Date

(2) SM/SRO/CFH on Unit Print/Sign/Date

Procedure Request/Feedback Disposition

Priority: Perform Now Perform Later - See Comments

Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
See DC-GDI01 for guidance
 TPC OTC Place in Void

Reviews continued <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			If Comments
				Yes	No	Dept.	
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50.54(a) <input checked="" type="checkbox"/>	<u>Tom RIGNEY</u>	<u>Tom Rigney</u>	<u>6/21/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
Env Screen <input checked="" type="checkbox"/>	<u>TOM RIGNEY</u>	<u>Tom Rigney</u>	<u>8/16/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
Licensing Basis <input type="checkbox"/>							<input type="checkbox"/>
Tech Independent <input checked="" type="checkbox"/>	<u>Tom Gilbert</u>	<u>Tom Gilbert</u>	<u>8/19/02</u>			<u>EPD</u>	<input type="checkbox"/>

An NRRL update was required? Yes

1. SQR Program Final Review and Approval
Approval Disapproval
Mark Birch 18/21/02
SQR Qualified Independent Reviewer / Date
Patty Luckey
Department Head/Responsible Individual
8/22/02
Approval Date

SORC Final review and Approval
N/A RI/DH (Ref Man's GDI's Handbook)
DH/RI Sign _____
Meeting No. _____
SORC Signature _____ DH / RI Signature _____
Approval Date _____

Effective Date 8/29/02

8/22/02
Approval Date

8/29/02
Effective Date

Manager of Radiological Dose Assessment (MRDA)

This form provides guidance to the MRDA for emergency response actions during events that activate the SERO.

Section A: Initial Activation

1. Sign in on the EOF Staffing Board and log date and arrival time on the SERO Log Sheet.
2. Notify the ADEOF of arrival and obtain event conditions and status update.
3. Maintain a log of significant events and communications on the SERO Log Sheet.
4. Assume coordination and supervision of the Radiological Dose Assessment Team (RDAT).
5. Review RDAT assignments and reassign actions, as necessary.
6. Upon DSEO turnover, perform the following:
 - Ensure the AMRDA has relieved the on-shift Chem Tech of dose assessment responsibilities.
 - Notify the ADEOF of dose assessment turnover from the on-shift Chem Tech.
7. Ensure the off-site RMTs are assembled, briefed and prepared for dispatch.
 - Coordinate RMT access to locked site areas with the MOS in the TSC, as necessary.
 - IF over water surveys are required, request the MOR provide transportation to the Environmental Laboratory and the boat location.
8. IF not constrained, direct the FTDC to dispatch off-site RMTs (specifically to the vicinity of site boundary in the downwind direction) and establish field communications as soon as possible.
9. IF a release impacts the EOF, ensure the EOF high radiation ventilation filtration system is activated by the EOF HP Technician.
10. Assign an RDAT member to test phones, hotlines, and fax machines.

Section B: Radiological Controls



EPA-400 allows for an unrestricted emergency worker exposure of 5 Rem during a declared event, regardless of 10 CFR 20 occupational exposure previously received.

For ALARA purposes at Millstone, an ALERT or higher declaration automatically increases exposures to 4.5 Rem TEDE less annual exposure to date. If dosimetry records are unavailable for prompt deployment, a 1.5 Rem TEDE limit may be assumed. (4.5 Rem emergency worker limit minus 3 Rem station administration limit on dose from all licensees combined).

- 1. Consult with the MRCA on radiological conditions and on-site personnel protective action decisions.
- 2. Refer To and implement EPI-FAP09, "Radiation Exposure Controls," to:
 - Establish/upgrade off-site RMT exposure limits.
 - Evaluate/issue KI to offsite RMTs.
 - Determine DDE limit reductions.
- 3. Inform the State DEP of assumed DDE limit reductions.

Section C: Meteorological Data



Plant and dose based PARs utilize 15 minute average meteorological data. The EDAN and MP3 OFIS provide 15 minute average data.

The MP2 OFIS provides instantaneous readings which may *not* accurately identify the average of the plume direction. The MP2 OFIS data should only be used if it is trended.

NOTE

Wind direction data are critical to making PARs and accurate dose projections. Data is provided as a 3 digit number between 000°-360° representing the bearing from which the wind is blowing at the applicable release height (000° and 360° are from north; 180° is from south).

If no release is ongoing, the default height is the 142' elevation at MP.

- 1. IF necessary, Refer To EPI-FAP04-010, "Meteorological Assistant," and perform essential steps.
- 2. Maintain meteorological data applicable to the release elevations.

Section D: Dose Projections

NOTE

Time permitting, "What If" and "Worse Case" calculations are encouraged. Results shall be described as "hypothetical" or "bounding" in discussions with the ADEOF and DEP.

- 1. Immediately notify the ADEOF, DSEO, and MRCA any time off-site radiological or meteorological conditions change significantly or are expected to change.
- 2. Verify the release pathway and characteristics with the MTSC or the AMTL.
- 3. Brief the RAE on critical dose assessment inputs (e.g., release direction, core damage status, release filtering, containment spray, etc.)
- 4. Ensure the following are performed by the assigned staff:
 - a) IF a release is in progress, obtain effluent radiation monitor readings, radiation survey results, and TEDE and CDE thyroid dose calculations at site boundary, 5 mile, and 10 mile using EPI-FAP10, "Dose Assessment."
 - b) "What If" dose projections are developed for known source terms released to the RCS or containment.
 - c) "Worst Case" dose projections are developed for severe accident sequences in cooperation with AMTL or MTSC, as appropriate.
- 5. Identify maximum off-site airborne doses (both TEDE and CDE thyroid) at the site boundary, 5 miles, and 10 miles downwind.
- 6. Communicate dose assessment results and basis to the ADEOF, State DEP, and the NRC.
- 7. Immediately notify the ADEOF when EPA PAG limits exceed or are projected to exceed off-site TEDE ≥ 1 Rem or CDE-thyroid ≥ 5 Rem.
- 8. IF dose projections indicate EPA PAGs may be exceeded beyond the 10 mile EPZ, perform the following:
 - a) Dispatch RMTs to define boundary beyond 10 mile EPZ.
 - b) Verify projected doses with RMT readings.
 - c) Inform the ADEOF of boundaries and doses to areas beyond 10 mile EPZ that may exceed EPA PAGs.
- 9. IF a radioactive liquid release via the quarry has occurred, calculate dose to the maximum individual using the REMODCM methods.

Section D: Dose Projections

- 10. IF a radioactive liquid release via the storm drain system has occurred, calculate dose to the maximum individual using the REMODCM methods with the following input values:
 - Flow - 0.22 CFS
 - Dilution factor for fish, invertebrate, and boat pathways - 100
 - Dilution factor for shore and swim pathways - 240
- 11. Update the radiological status boards.

Section E: Routine Activities

- 1. Provide input on radiological emergency classification or PAR changes to the ADEOF.
- 2. Discuss status of actual or potential release scenarios with the ADEOF.
- 3. Direct the EOF HP Technician to monitor habitability and provide radiological coverage for building access, as necessary.
- 4. After an initial PAR has been issued, notify the ADEOF of actual meteorological or radiological conditions that require an updated PAR to be issued.
- 5. Determine personnel resources and establish individual work priorities. (e.g., off-site dose assessment strategy).
- 6. IF an effluent sample is required, Refer To EPI-FAP11, "Core Damage Assessment."
- 7. IF an environmental sample is required, Refer To the appropriate RPM procedure as follows:
 - RPM 2.9.5, "Milk Sampling"
 - RPM 2.9.6, "BIOTA Sampling"
 - RPM 2.9.8, "Soil Sampling"
 - RPM 2.9.9, "Terrestrial Water Sampling"
- 8. Assign, brief, and dispatch RMTs to obtain environmental sample.
- 9. Monitor changes in the radiological release pathways via OFIS, TIC, or AMT.
- 10. Provide input to NRC questions on radiological information via the HPN, as necessary.

Section E: Routine Activities

- 11. Consult with the State DEP representative on the following:
 - Dose assessments and field team coordination
 - RMT data
 - Meteorological data

- 12. Immediately notify the ADEOF, and MRCA when off-site radiological conditions have changed significantly or are expected to change.

- 13. Consult with the MTSC or AMTL regarding radiological data that may affect the following:
 - Plant recovery plans that may effect radiological conditions
 - Accident sequence
 - Radiation release paths
 - Core uncover time
 - Performance information regarding radioactivity mitigating systems
 - Compared results of radiologically based core damage estimates with results obtained using thermal hydraulic methods.

- 14. Provide a routine briefing to the RDAT on radiological status.

- 15. Maintain radiological status boards in EOC, as necessary.

- 16. Request additional personnel from the MOR, as necessary.

- 17. Process requests for samples (refer to EPI-FAP11, "Core Damage Assessment" for Sample Points/Analysis Options) when warranted or requested by the ADTS. | ①

- 18. Direct the RAE to calculate core damage estimates when data becomes available, as needed. |

Section F: Environmental Sampling

Sample Location and Schedule

- 1. Refer To Table 1 "Sample Location References" and the following to determine which areas to begin searching for contamination:
 - For Stack ReleasesObtain data from the 374' met data
 - For Rooftop ReleasesObtain data from the 142' met data
 - For Ground ReleasesObtain data from the 33' met data
 - **DAYTIME - Wind Speed Less than 4 mph (2m/sec)**
Survey in downwind sector and 3 sectors to each side
 - **DAYTIME - Wind Speed Greater than 4 mph (2m/sec)**
Survey in downwind sector and 1 sector on each side
 - **NIGHTTIME - Wind Speed Less than 2 mph (1m/sec)**
Survey in downwind sector and 2 sectors on each side
 - **NIGHTTIME - Wind Speed Greater than 2 mph (1m/sec)**
Survey in downwind sector and 1 sector on each side
- 2. Coordinate sampling locations, schedule and strategies through State DEP.
- 3. Periodically, provide environmental sampling teams with the following:
 - Wind Direction
 - Plant Status
 - Sample Collection directions (including TLD)

Analytic Requirements

- 1. Determine the needed analytic requirements for the requested samples types:
 - HPGe or NaI
 - Iodine chemistry
 - Strontium chemistry
 - Tritium
- 2. Determine the required Minimum Detectable Levels (MDLs).

Laboratory Selection

- 1. Send samples to primary contractor for analysis.
- 2. Obtain assistance from additional contractor, as necessary.

Table 1: Sample Location References

SAMPLE TYPE	LOCATIONS	MAPS
TLDs	Emergency TLD locations and their backgrounds as identified in the Environmental Operating Report	Millstone REMODCM
Air Particulates & Iodine	Environmental Operating Report	Millstone REMODCM
Aquatic, Ground Cover (Broad Leaf Vegetation, Grass, Snow, etc.)	As taken by the Environmental Sampling Team in the Environmental Operating Report	Millstone Power Station Field Monitoring Map Books
Milk (or Pasture Grass)	Dairy cow and goat census in Annual Environmental Operating Report.	Millstone REMODCM
Vegetables, Fruits and Water	Environmental Operating Report	Millstone REMODCM

Docket Nos. 50-245
50-336
50-423
B18748

Attachment 4

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP11, "Core Damage Assessment"
Major Revision 1, Minor Revision 1

02/13/02
Approval Date



02/14/02
Effective Date

Document Action Request

SPG # 020620-071058

Initiated By: Patty Luckey **Date:** 06/17/2002 **Department:** EP **Ext:** 5474
Document No: MP-26-EPI-FAP11 **Rev. No.:** 001 **Minor Rev No.:** 01
Title: Core Damage Assessment

For New Documents only → QA RI Title

Reason for Request (attach commitments, CR's, AR's, OE's etc)

AR 02000439-10/02000440-10

Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change

Continued

Intent Change (SQR Independent, RCD, ENV Screen Required) Edit Corr Non-Intent Change
(Other reviews may be required. See MP-05-DC-FAP 01.1 Att 3) (Only Tech IR, SQR IR and Env. signature Required)

Editorial Correction Approval

Plant Mngt Staff Member - Approval / Date

TPC Interim Approval

(1) Plant Mngt Staff Member Print/Sign/Date

/

(2) SM/SRO/CFH on Unit Print/Sign/Date

/

Procedure Request/Feedback Disposition

Priority: Perform Now Perform Later - See Comments

Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
See DC-GDI01 for guidance
 TPC OTC Place in Void

Reviews <small>continued</small> <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			If Comments
				Yes	No	Dept.	
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50.5A(Q) <input checked="" type="checkbox"/>	Tom RIGNEY	Tom Rigney	6/21/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	<input type="checkbox"/>
Env Screen <input checked="" type="checkbox"/>	Tom RIGNEY	Tom Rigney	8/16/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	<input type="checkbox"/>
Licensing Basis <input type="checkbox"/>							<input type="checkbox"/>
Tech Independent <input checked="" type="checkbox"/>	Tom Gilbert	oe/p/a	8/19/02			EPD	<input type="checkbox"/>

An NRRL update was required? Yes

1. SQR Program Final Review and Approval

Approval Disapproval

Marks Birch 12/2/02
SQR Qualified Independent Reviewer / Date

Patty Luckey
Department Head/Responsible Individual

8/22/02
Approval Date

SORC

Final review and Approval

N/A

RI/DH (Ref Mans.GDI's Handbook)

DH/RI Sign

Meeting No. _____

SORC Signature _____

DH / RI Signature _____

Approval Date _____

Effective Date 8/29/02

**Functional
Administrative
Procedure**



Millstone Station

Core Damage Assessment

MP-26-EPI-FAP11

Rev. 001-01

Approval Date: 8/22/02

Effective Date: 8/29/02



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MP-26-EPI-FAP11-002, "Core Damage Estimate: Core Uncovery Time"

MP-26-EPI-FAP11-003, "Core Damage Estimate: Containment Radiation Monitors"

MP-26-EPI-FAP11-004, "Core Damage Estimate: Main Steam Line Radiation Monitors"

MP-26-EPI-FAP11-005, "Core Damage Estimate: Containment Hydrogen"

MP-26-EPI-FAP11-006, "Core Damage Estimate: Ratio Comparison/Abnormal Isotopes"

MP-26-EPI-FAP11-007, "Core Damage Estimate: Isotopic Concentrations"

MP-26-EPI-FAP11-008, "Core Damage Estimate: Summary Analysis"

MP-26-EPI-FAP11-009, "Unit 2 Reactor Coolant and Liquid Waste Sample Worksheet"

MP-26-EPI-FAP11-010, "Unit 2 Vent and Containment Air Sample Worksheet"

MP-26-EPI-FAP11-011, "Unit 3 Reactor Coolant and Liquid Waste Sample Worksheet"

MP-26-EPI-FAP11-012, "Unit 3 Vent and Containment Air Sample Worksheet"

1. PURPOSE

1.1 Objective

This procedure provides sampling and analysis guidance and instructions for estimating core damage under accident conditions.

1.2 Applicability

This procedure is applicable when the following occurs:

- An emergency has been declared and the SERO has been activated
- There are indications of core damage
- Events require the estimation of the type and amount of core damage

1.3 Supporting Documents

1.3.1 CP 2804L, "Unit 2 Reactor Coolant and Liquid Radwaste PASS"

1.3.2 CP 2804M, "Unit 2 Vent and Containment Air PASS"

1.3.3 CP 3804K, "PASS RCS/RSS Sample"

1.3.4 CP 3804L, "PASS Containment Air Sample"

1.3.5 CP 3804M, "PASS Ventilation Samples"

1.4 Discussion

Core Damage estimates are used to provide the following:

- Confirm whether fuel barriers are breached
- Determine the potential quality (type) or quantity (%) of source term available for release in support of projected offsite doses
- Support the determination of radiological protection actions that should be considered for long term recovery activities
- Satisfy inquiries from local and federal government agencies and provide evidence that the utility understands the plant conditions

An overall estimation of the extent of core damage can be made when information accumulated from all available sources and methods is evaluated. The NRC defines the overall condition of the core using a matrix of 10 categories as shown below:

NRC Criteria for Determining Condition of Core			
Degree of Degradation	Minor (<10%)	Intermediate (10%-50%)	Major (>50%)
No Fuel Damage	1	1	1
Cladding Failure	2	3	4
Fuel Overheat	5	6	7
Fuel Melt	8	9	10

The NRC recognizes four general classifications with three degrees of core damage within each (excepting the “No Fuel Damage” classification). It is important to recognize that different methodologies may provide indications that point to several degrees if not several classifications, simultaneously.

INSTRUCTIONS

Damage Assessment

NOTE

The magnitude and type of event, transport mechanism, and time after shutdown will be influencing factors on the method(s) used to determine the extent of core damage.

Plant operating parameters are usually the first type of information available for core damage evaluation. Generally, they can only provide a low confidence numerical value, but do help to determine the type of core damage resulting from the accident. Methods include:

- Core Exit Temperatures
- Core Uncovery Time
- Containment Radiation
- Main Steam Line Radiation
- Containment Hydrogen

IF current core conditions are appropriate for the plant parameter methods, Go To Section 2.2.

NOTE

System activity results are not usually available in the early stages of an emergency. Assessment involving isotopic ratio comparisons and the presence of abnormal isotopes are valid as soon as a sample can be taken following an accident, but provide only an indication of the *type* of core damage.

Isotopic concentration evaluations will normally provide the most accurate assessment, but require a stable steady state condition to be valid. Methods include:

- Isotopic Ratio Comparison
- Presence of Abnormal Isotopes
- Isotopic Concentration

IF current plant conditions produce a representative reactor coolant or containment sample, Go To Section 2.3.

- IF samples are needed for operational or source term adjustment, Go To Section 2.4.

2.2 Plant Parameter Evaluation Method

2.2.1 IF necessary, contact the Accident Management Team in the TSC for assistance with core temperatures or uncover times.

2.2.2 Obtain plant parameters from the following, as applicable:

- Off-Site Facilities Information System (OFIS)
- Technical Information Coordinator
- Control Room Data Coordinator

2.2.3 WHEN plant data becomes available, perform the following, as applicable:

NOTE

Containment radiation, main steam line radiation, and containment hydrogen methods assume a significant reactor coolant leak (LOCA) has occurred into containment.

- Evaluate all methods using the DAMAGE computer application.
- Refer To and complete the following forms, as applicable:
 - EPI-FAP11-001, "Core Damage Estimate: Core Exit Temperatures"
 - EPI- FAP11-002, "Core Damage Estimate: Core Uncovery Time"
 - EPI- FAP11-003, "Core Damage Estimate: Containment Radiation Monitors"
 - EPI- FAP11-004, "Core Damage Estimate: Main Steam Line Radiation Monitors"
 - EPI- FAP11-005, "Core Damage Estimate: Containment Hydrogen"

NOTE

The following attachments are provided as additional information for use in estimating core damage:

- Attachment 3, “Common Conditions of Core Damage’
- Attachment 4, “Isotopes in Core Fission Products’
- Attachment 5, “ Indicators of core Damage”

2.2.4 Record the overall damage estimation by performing one of the following:

- Print the DAMAGE application summary report.
- Refer To and complete EPI-FAP11-008, “Core Damage Estimate: Summary Analysis.”

2.2.5 IF additional information becomes available OR is revised throughout the course of the accident, provide an overall estimation of the extent of core damage to the ADEOF.

2.3 System Activity Evaluation Method

2.3.1 Determine the most representative sample points (location of the activity released from the core) based on current system conditions as shown in Table 1.

Table 1 Sampling Point Determination Criteria		
Sampling Points		Limitations
Unit 2	Unit 3	
Loop 1 Hot Leg	Loop 1 or 3 Hot Leg	Break should not be upstream of the sample point
Liquid Waste	Liquid Waste	Not used for core damage estimates
Containment Sump via: • HPSI Pumps • LPSI Pumps • Containment Spray Pumps	Containment Sump via Containment Spray System	System in operation and sump recirculation actuation signal in effect prior to sampling
Containment Air	Containment Air	Accident must involve a release into containment
Vent Air	Vent Air	Not used for core damage estimates
WRGM Air	SLCRS Air	Not used for core damage estimates

2.3.2 Contact the MRCA to discuss the following:

- In-plant radiological conditions
- Priority for obtaining samples
- Sampling sequence if multiple locations are available

2.3.3 Inform the ADTS of the selected sample points.

2.3.4 Request the ADTS assemble a sample team for core damage assessment purposes.

2.3.5 WHEN sample results become available, perform the following, as applicable:

- Evaluate all methods using the DAMAGE computer application.
- Refer To and complete the following forms, as applicable:
 - EPI-FAP11-006, “Core Damage Estimate: Ratio Comparison/Abnormal Isotopes”
 - EPI-FAP11-007, “Core Damage Estimate: Isotopic Concentrations”

NOTE

The following attachments are provided as additional information for use in estimating core damage:

- Attachment 3, “Common Conditions of Core Damage”
- Attachment 4, “Isotopes in Core Fission Products”
- Attachment 5, “Indicators of core Damage”

2.3.6 Record the overall damage estimation by performing one of the following:

- Print the DAMAGE application summary report.
- Refer To and complete EPI-FAP11-008, “Core Damage Estimate: Summary Analysis.”

2.3.7 IF additional information becomes available OR is revised throughout the course of the accident, provide an overall estimation of the extent of core damage to the ADEOF.

2.4 Sample Location Determination

- 2.4.1 Discuss sample preparations with the MRCA.
- 2.4.2 Determine sampling and analysis requirements using one of the following forms, as applicable:
- EPI-FAP11-009, "Unit 2 RX Coolant and Liquid Waste Sample Worksheet"
 - EPI-FAP11-010, "Unit 2 Vent and Containment Air Sample Worksheet"
 - EPI-FAP11-011, "Unit 3 RX Coolant and Liquid Waste Sample Worksheet"
 - EPI-FAP11-012, "Unit 3 Vent and Containment Air Sample Worksheet"
- 2.4.3 Fax completed forms to the ADTS for review.
- 2.4.4 IF required, request additional Chemistry Technician support from the MOR.

MARY OF CHANGES

Revision 001-01

Deleted reference to 3-hour time requirement for a PASS sample from Section 1.4.

Deleted Note box in Section 3 discussing 3-hour time requirement and ADTS responsibility for initiating sampling.

Deleted words “normal” and “PASS” from step 2.4.1.

Deleted PASS definition and acronym from Attachment 1.

Deleted responsibilities for PASS from Attachment 2.

Revision 001

Added Wide Range Gas Monitor Air and Supplemental Leak Collection and Release System Air to the sampling points in Table 1.

Added the definition of Wide Range Gas Monitor to Attachment 1.

Changed Primary Vent Stack to Wide Range Gas Monitor in MP-26-EPI-FAP11-010, “Unit 2 Vent and Containment Air Sample Worksheet.”

Deleted reference to Primary Vent Stack in MP-26-EPI-FAP11-012.

Performed Writer’s Guide modifications for compliance with the administrative format contained in MM-05.

Attachment 1

Definitions and Abbreviations

(Sheet 1 of 1)

Definitions

None

Abbreviations

ADEOF - Assistant Director EOF

ADTS - Assistant Director Technical Support Center

AMRDA - Assistant Manager of Radiological Dose Assessment

DSEO - Director of Station Emergency Operations

ESF - Engineered Safety Features

MOSC - Manager of Operational Support Center

MRCA - Manager of Radiological Consequence Assessment

MRDA - Manager of Radiological Dose Assessment

RSS - Recirculation Spray System

SERO - Station Emergency Response Organization

SLCRS - Supplementary Leak Collection and Release System

TSC - Technical Support Center

WRGM - Wide Range Gas Monitor

Attachment 2 Responsibilities

(Sheet 1 of 1)

1. The Manager of Radiological Dose Assessment or the Assistant Manager of Radiological Dose Assessment specify sampling and analysis requirements.
2. The Assistant Manager of Radiological Dose Assessment is responsible for performing the calculations and evaluations required for determining core damage estimates.

Attachment 3 Common Conditions of Core Damage

(Sheet 1 of 1)

Types of damage sustained, as well as their severity, depend upon fission rate, power, and temperature of the reactor. During an accident, clad damage would occur first, followed by fuel overheating, and finally fuel melt as conditions become more severe.

Common conditions of core damage are shown below:

Indicators of Core Damage	
Damage Type	Conditions
Clad Damage	An increasing potential for inadequate core cooling exists Loose part indication is observed No significant overheating has been observed at this point
Overheat	The fuel is suspected to be at least partially uncovered for a period of time greater than a few minutes Loss of inventory in the pressurizer is observed Hot leg temperatures are increasing Voiding in the core is detected Ex-core count rate is increasing (occurs when uncovered core is no longer shielded by water) High in-core thermocouple readings are observed Fuel clad oxidation is detected by excess hydrogen in the containment (>10%)
Fuel Melt	The core has been uncovered for an appreciable period of time In-core thermocouples are off-scale In-core and ex-core instrumentation display erratic readings

The presence of specific isotopes within the core fission product inventory are indicative of the type(s) of core damage that exist. Although each type of core damage exhibits the presence of certain isotopes, the isotopes related to each damage type build up as accident severity increases. Thus, when determining the type of core damage, the presence and amounts of some isotopes and the absence of others is usually a good indicator.

None of the noble gases will be detected in containment air samples unless the accident does not involve a break inside the containment.

Attachment 4 Isotopes in Core Fission Products

(Sheet 1 of 2)

Fission products are grouped with respect to their relative volatility. The categories of isotopes as shown below, are grouped in order of decreasing volatility:

Isotopes in Core Fission Products			
Group	Fission Product Type	Group	Fission Product Type
I	Noble Gases (Xe, Kr)	V	Alkaline Earths (Sr, Br)
II	Halogens (I, Br)	VI	Noble Metals (Ru, Rh, Pd, Mo, Tc)
III	Alkali Metals (Cs, Rb)	VII	Rare Earths and Actinides (Y, La, Ce)
IV	Tellurium (Te, Se, Sb)	VIII	Refractory Oxides of Zr and Nb

Isotopes with longer half-lives will serve as a better basis for analysis in long-term sampling. Note that any sample taken soon after shutdown will be difficult to analyze due to the large amount of short-lived isotopes in the sample. There may be many isotopes with similar peaks which makes it difficult to distinguish one from another. Some isotopes may have peaks near the annihilation radiation level (511KeV). Also, Compton edges could lead to difficulties in the sample analysis. Therefore, it is recommended that confirming peaks are used in the isotopic analysis. Any other quantifying techniques, such as iodine cartridge analysis, if available for analysis in long-term sampling, are recommended.

Attachment 4 Isotopes in Core Fission Products

(Sheet 2 of 2)

Isotopes as shown below, reflect a best choice in terms of measurement and effect on-growth of daughter products. It is important to recognize that halogens, and to a degree other particulate radioisotopes, may not be a good measure of the extent of damage when identified as part of a gaseous sample.

Isotopes Indicative of Core Damage			
Core Damage State	Nuclide	Group	Half-Life (hrs)
Failure	Kr-85m	I	4.48E+00
	Kr-87	I	1.27E+00
	Kr-88	I	2.84E+00
	Xe-131m	I	2.86E+02
	Xe-133	I	1.26E+02
	Xe-133m	I	5.25E+01
	Xe-135	II	9.09E+00
	I-131	II	1.93E+02
	I-132	II	2.30E+00
	I-133	II	2.08E+01
	I-135	II	6.61E+00
	Rb-88	III	2.97E-01
	Overheat	Cs-134	III
Cs-137		III	2.63E+05
Te-129		IV	1.16E+00
Te-132		IV	7.82E+01
Meltdown	Sr-89	V	1.21E+03
	Sr-90	V	2.55E+05
	Ba-140	V	3.06E+02
	La-140	VII	4.03E+01
	La-142	VII	1.54E+00
	Pr-144	VII	2.88E-01
Combination (Related Parent Nuclides)	Xe-135m	I	4.32E+00
	Sb-129	IV	8.06E+02
	Te-129m	IV	2.55E-01
	Ba-142	V	1.77E-01
	Ce-144	VII	6.82E+03

Attachment 5 Indicators of Core Damage

(Sheet 1 of 3)

Following are indicators of core damage:

Clad Damage

The presence of noble gases and iodines in reactor coolant or containment air without the presence of other fission products is a fair indication of clad damage and perhaps some degree of fuel overheating.

Iodines may be detected in both reactor coolant and containment air, depending upon the accident scenario and upon the physical and chemical form of the radioactive release.

Fuel Overheat Damage

No significant quantity of cesiums (i.e., greater than 30 percent of the inventory) should be found if core temperatures remain below 2300° F or if the core has not been at least partially uncovered for an appreciable amount of time. Therefore, the presence of a significant amount of cesium is indicative of a fuel overheating condition. The amount of hydrogen in the containment air and reactor coolant samples can serve as confirmation. It should also be noted that just as in the case of iodines, the cesiums from both containment air and reactor coolant samples should be taken together.

Over 50 percent of the core inventory of noble gases, iodines, and cesiums may be released from extensively damaged fuel clad (i.e., fuel overheating) even if fuel temperatures remain below the melting point.

As the fuel temperature increases and fuel melting is suspected to have occurred, the possibility of finding significant quantities of other core solids (e.g., groups IV through VIII) above the baseline increases. However, these fission products will not be found in reactor coolant samples unless the core has been covered and a recirculation mode has been established. Many of the fission products and most of the actinides which occur as refractory oxides are released only in relatively small amounts even at elevated temperatures. However, if damaged fuel pellets are rewetted, some of the more refractory radioactive material will be leached out.

Fuel Melt Damage

Significant releases of tellurium, ruthenium, and more refractory materials will occur only if the temperature approaches the fuel melting point (5200° F). However, the presence of ruthenium and tellurium does not prove melting, but their absence in long-term sampling analysis is a good indication that fuel meltdown has not occurred.

Attachment 5

Indicators of Core Damage

(Sheet 2 of 3)

Assuming equilibrium conditions have been reached, a fixed inventory of radioisotopes exists within the fuel pellet. The relative ratios of the isotopes which have reached equilibrium can be considered a constant value. The distribution of isotopes in the fuel gap are not in the same proportion as in the fuel pellet. This is due to the differing diffusion rates of the isotopes from the fuel pellet to the fuel gap. During an accident, the ratios of isotopic activities obtained from samples can be compared to the expected ratios for a gap and melt type mix.

The following methods and indications can be used to estimate the amount or type of core damage under accident conditions:

- **Core Parameters:** An indirect method which is immediately available and is used to indicate the potential for core damage. Indications are provided by core exit thermocouples and the time of core uncover and are applicable for all types of accidents. This method does not provide numerical estimations, but rather can be used to determine the type of damage.
- **Containment Radiation:** An indirect method which is used to determine the amount of core damage. Indications are provided by containment high range or main steam line radiation monitors. This method is only applicable for a loss of coolant accident and is based upon an end-of-life source term and static nuclide ratio assumptions.
- **Containment Hydrogen:** An indirect method which is used to determine the amount of fuel melt. This method assumes all the hydrogen generated by the metal-water reaction is released into containment (LOCA).
- **System Activity - Isotopic Ratio Comparison:** A direct method which is used to help establish the type of core damage (clad failure or fuel melt). This method is applicable under all types of accidents and is valid any time following an accident although accuracy will decrease over time.
- **System Activity - Presence of Abnormal Isotopes:** A direct method which is used to indicate some degree of fuel melt by the presence of unusually high concentrations of any of the less volatile fission products.
- **System Activity - Isotopic Concentration Evaluation:** A direct method which can yield numeric estimations. This method is applicable for all types of accidents and requires the sampled system(s) to be in a steady state which usually prevents its use until the plant is in a stable shutdown condition.

Attachment 5 Indicators of Core Damage

(Sheet 3 of 3)

Precise damage estimates are based upon accounting for all of the radioactivity released from the core. Methods which provide a numerical estimation of the extent of core damage should be evaluated to ensure all activity has been accounted for. If reactor coolant and containment air samples are available, then the total activity should be determined from the sum of both types of samples.

Iodine should not be used as the sole means of determining an estimate of core damage since it is difficult to determine the extent to which iodine will plate-out on containment walls, other surfaces, and piping. Spiking due to power excursions can also lead to inaccurate results in the iodine analysis.

No single method should be relied upon for a definitive damage estimation. All available data and sound engineering principles should be used to compile the best overall estimation.

Docket Nos. 50-245
50-336
50-423
B18748

Attachment 5

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP11-009, "Unit 2 Reactor Coolant and Liquid Waste Sample Worksheet"
Major Revision 0, Minor Revision 1

02/13/02
Approval Date



02/14/02
Effective Date

Document Action Request

SPG # 020624-082728

Initiated By: Patty Luckey Date: 06/24/2002 Department EP Ext 5474
Document No MP-26-EPI-FAP11-009 Rev. No: 000 Minor Rev No. 01
Title: **Unit 2 RX Coolant and Liquid Waste Sample Worksheet**

For New Documents only → QA RI Title

Reason for Request (attach commitments, CR's, AR's, OE's etc)

AR 0000439-10/02000440-10

Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change

Continued

Intent Change (SQR Independent, RCD, ENV Screen Required) Edit Corr Non-Intent Change
(Other reviews may be required. See MP-05-DC-FAP 01.1 Att 3) (Only Tech IR, SQR IR and Env. signature Required)

Editorial Correction Approval

Plant Mngt Staff Member - Approval / Date

TPC Interim Approval

(1) Plant Mngt Staff Member Print/Sign/Date

(2) SM/SRO/CFH on Unit Print/Sign/Date

Procedure Request/Feedback Disposition

Priority: Perform Now Perform Later - See Comments

Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
See DC-GDL01 for guidance
 TPC OTC Place in Void

Reviews <small>continued</small> <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			If Comments
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SO, SA (g) <input checked="" type="checkbox"/>	<u>TOM RIGNEY</u>	<u>Tom Keaney</u>	<u>6/21/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
RCD <input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Env Screen <input checked="" type="checkbox"/>	<u>TOM RIGNEY</u>	<u>Tom Keaney</u>	<u>8/16/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
Licensing Basis <input type="checkbox"/>							<input type="checkbox"/>
Tech Independent <input checked="" type="checkbox"/>	<u>Tom Gilbert</u>	<u>Jeff Smith</u>	<u>8/15/02</u>			<u>EPD</u>	<input type="checkbox"/>

An NRRL update was required? Yes

1. SQR Program Final Review and Approval
Approval Disapproval
Mark Birch 18/21/02
SQR Qualified Independent Reviewer / Date
Patty Luckey
Department Head/Responsible Individual
8/22/02
Approval Date

SORC Final review and Approval
N/A RI/DH (Ref Mans. GDL's Handbook)
DH/RI Sign _____
Meeting No. _____
SORC Signature _____ DH / RI Signature _____
Approval Date _____

Effective Date 8/29/02

8/22/02
Approval Date

8/29/02
Effective Date

Unit 2 Reactor Coolant and Liquid Waste Sample Worksheet

TABLE 1

RM-8240/8241 Reading \geq 300 R/hr ($>$ 5% Clad Damage)
RM-8240/8241 Reading \geq 5 R/hr without RCS Release into CTMT ($>$ 5% Clad Damage)

_____ Appropriate indicator circled.

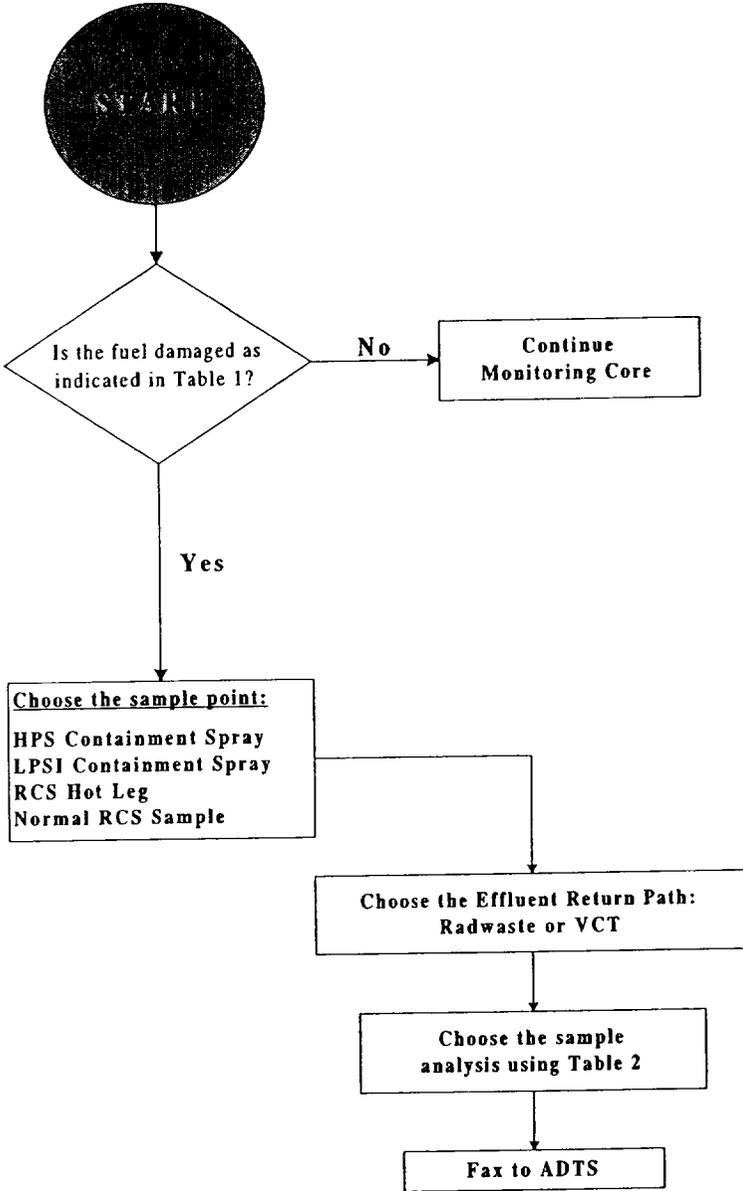


TABLE 2

<input type="checkbox"/> Boron
<input type="checkbox"/> Liquid isotopic

_____ Appropriate sample analysis checked.

Completed by: _____
(MRDA/AMRDA)

Date: _____

Time: _____

Docket Nos. 50-245
50-336
50-423
B18748

Attachment 6

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP11-010, "Unit 2 Vent and Containment Air Sample Worksheet"
Major Revision 0, Minor Revision 2

02/13/02
Approval Date



02/14/02
Effective Date

Document Action Request

SPG # 020624-083232

Initiated By: Patty Luckey Date: 06/24/2002 Department EP Ext 5474
Document No MP-26-EPI-FAP11-010 Rev. No: 000 Minor Rev No. 02
Title: **Unit 2 Vent and Containment Air Sample Worksheet**

For New Documents only → QA RI Title

Reason for Request (attach commitments, CR's, AR's, OE's etc)

AR 02000439-10/02000440-10

Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change

Continued

Intent Change (SQR Independent, RCD, ENV Screen Required) Edit Corr Non-Intent Change
(Other reviews may be required. See MP-05-DC-FAP 01.1 Att 3) (Only Tech IR, SQR IR and Env. signature Required)

Editorial Correction Approval

TPC Interim Approval

Plant Mngt Staff Member - Approval / Date

(1) Plant Mngt Staff Member Print/Sign/Date

(2) SM/SRO/CFH on Unit Print/Sign/Date

Procedure Request/Feedback Disposition

Priority: Perform Now Perform Later - See Comments

Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
See DC-GD101 for guidance
 TPC OTC Place in Void

Reviews continued <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			if Com- ments
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<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
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50.54(a) <input checked="" type="checkbox"/>	Tom Rigney	Tom Rigney	6/24/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	<input type="checkbox"/>
RCD <input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Env Screen <input checked="" type="checkbox"/>	Tom Rigney	Tom Rigney	8/16/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	<input type="checkbox"/>
Licensing Basis <input type="checkbox"/>							<input type="checkbox"/>
Tech Independent <input checked="" type="checkbox"/>	Tom Gilbert	Supp	8/19/02			EPD	<input type="checkbox"/>

An NRRL update was required? Yes

1. SQR Program Final Review and Approval

Approval Disapproval

Mark Birch 1/8/21/02

SQR Qualified Independent Reviewer / Date

Patty Luckey

Department Head/Responsible Individual

8/22/02

Approval Date

SORC

Final review and Approval

N/A

RI/DH (Ref Mans. GDL's Handbook)

DH/RI Sign

Meeting No. _____

SORC Signature _____

DH / RI Signature _____

Approval Date

Effective Date

8/29/02

8/22/02

Approval Date

8/29/02

Effective Date

Unit 2 Vent and Containment Air Sample Worksheet

INSTRUCTIONS:

1. Provide Sample, Sample Location, Sample Type, and Analysis.

SAMPLE	LOCATION	TYPE	ANALYSIS
Air	Hydrogen Analyzer Train "A"	Gas	Gas Isotopic Gas Composition
Air	Hydrogen Analyzer Train "B"	Gas	Gas Isotopic Gas Composition
(Range)	38'6" East Penetration Room	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic
(Range)	38'6" East Penetration Room	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic
	Stack Sample Room	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic

By: _____ Date: _____ Time: _____
(MRDA/AMRDA)

Docket Nos. 50-245
50-336
50-423
B18748

Attachment 7

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP11-011, "Unit 3 Reactor Coolant and Liquid Waste Sample Worksheet"
Major Revision 0, Minor Revision 1

8/22/02
Approval Date

8/29/02
Effective Date

Unit 3 Reactor Coolant and Liquid Waste Sample Worksheet

TABLE 1

RE-04A/05A Reading \geq 500 R/hr ($>$ 5% Clad Damage)
RE-04A/05A Reading \geq 5 R/hr without RCS Release into CTMT ($>$ 5% Clad Damage)

_____ Appropriate indicator circled.

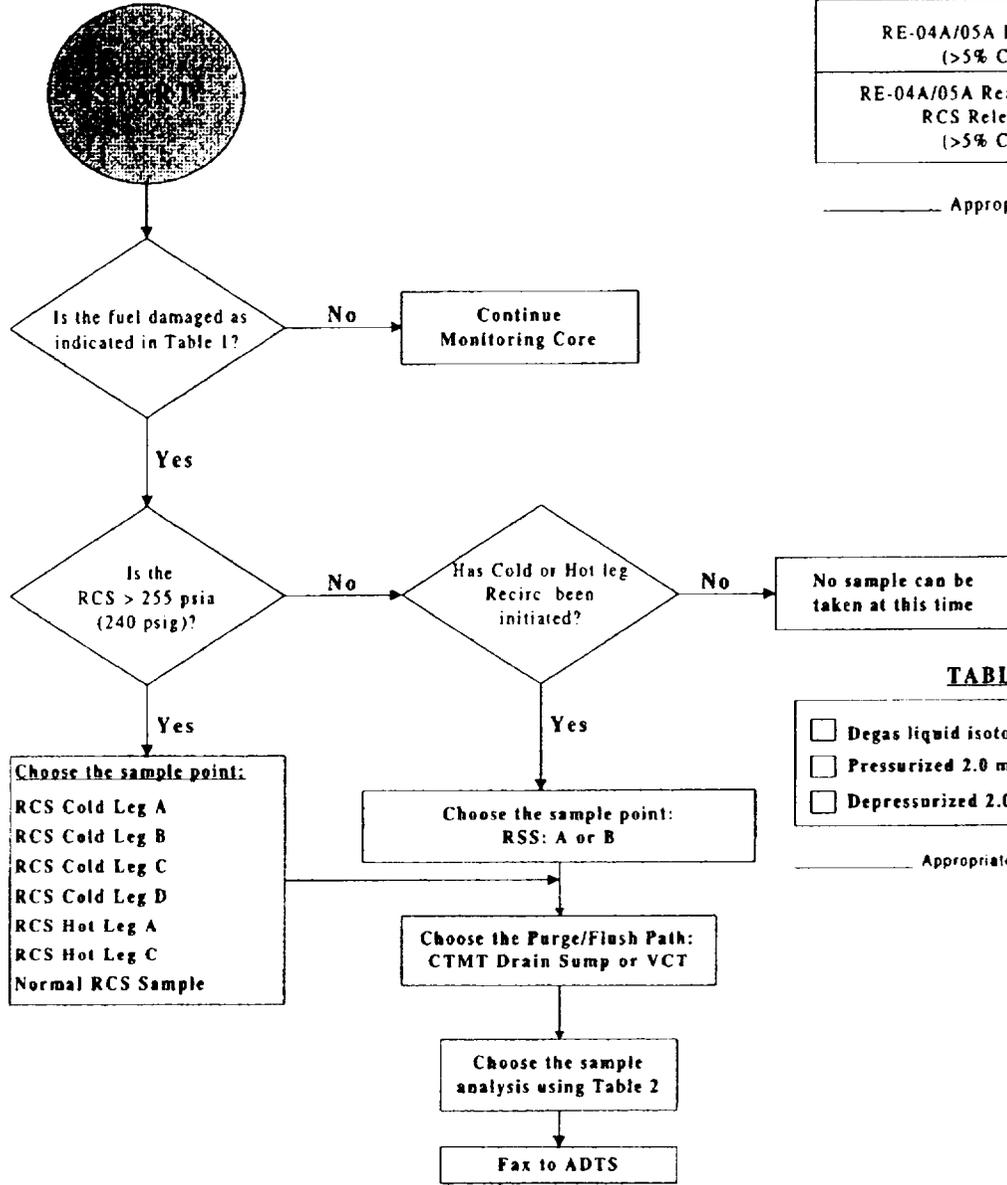


TABLE 2

<input type="checkbox"/> Degas liquid isotopic
<input type="checkbox"/> Pressurized 2.0 ml grab sample
<input type="checkbox"/> Depressurized 2.0 ml grab sample

_____ Appropriate sample analysis checked.

Completed by: _____ Date: _____ Time: _____
(MRDA/AMRDA)

Docket Nos. 50-245
50-336
50-423
B18748

Attachment 8

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP11-012, "Unit 3 Vent and Containment Air Sample Worksheet"
Major Revision 0, Minor Revision 2

02/13/02
Approval Date



02/14/02
Effective Date

Document Action Request SPG # 020624-083806

A

Initiated By: Patty Luckey Date: 06/24/2002 Department EP Ext 5474
Document No MP-26-EPI-FAP11-012 Rev. No: 000 Minor Rev No. 02
Title: **Unit 3 Vent and Containment Air Sample Worksheet**

B

For New Documents only → QA RI Title _____
Reason for Request (attach commitments, CR's, AR's, OE's etc)
AR 02000439-10/02000440-10
Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change Continued

C

Intent Change (SQR Independent, RCD, ENV Screen Required) **Edit Corr** **Non-Intent Change**
(Other reviews may be required. See MP-05-DC-FAP 01.1 Att 3) (Only Tech IR, SQR IR and Env. signature Required)

D

Editorial Correction Approval _____
Plant Mngt Staff Member - Approval / Date

TPC Interim Approval _____
(1) Plant Mngt Staff Member Print/Sign/Date _____
(2) SM/SRO/CFH on Unit Print/Sign/Date _____

E

Procedure Request/Feedback Disposition
Priority: Perform Now Perform Later - See Comments
Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
 TPC OTC Place in Void

F

Reviews continued <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			If Comments
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<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
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<input checked="" type="checkbox"/> Env Screen	<u>Tom Rigney</u>	<u>Tom Rigney</u>	<u>8/16/02</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>EPD</u>	<input type="checkbox"/>
<input type="checkbox"/> Licensing Basis							<input type="checkbox"/>
<input checked="" type="checkbox"/> Tech Independent	<u>Tom Gilbert</u>	<u>[Signature]</u>	<u>8/19/02</u>			<u>EPD</u>	<input type="checkbox"/>

G

An NRRL update was required? Yes

H

1. **SQR Program Final Review and Approval**

Approval Disapproval

Marks Birch 18/21/02
SQR Qualified Independent Reviewer / Date

[Signature]
Department Head/Responsible Individual

8/22/02
Approval Date

SORC Final review and Approval
N/A
DH/RI Sign _____
Meeting No. _____

RI/DH (Ref Mans. GDL's Handbook)

SQR Signature _____ DH / RI Signature _____
Approval Date _____

I

Effective Date 8/29/02

8/22/02
Approval Date

8/29/02
Effective Date

Unit 3 Vent and Containment Air Sample Worksheet

INSTRUCTIONS;

Circle desired Sample, Sample Location, Sample Type, and Analysis.

SAMPLE	LOCATION	TYPE	ANALYSIS
Containment Air	Hydrogen Recombiner Train "A"	Gas	Gas Isotopic Gas Composition
Containment Air	Hydrogen Recombiner Train "B"	Gas	Gas Isotopic Gas Composition
Vent (High Range)	3HVR*RE10A Aux. Bldg. 66'6"	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic
Vent (Normal Range)	"3HVR*RE10B Aux. Bldg. 66'6"	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic
SCLRS (High Range)	3HVR*RE19A Aux. Bldg. 66'6"	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic
SCLRS (Normal Range)	3HVR*RE19B Aux. Bldg. 66'6"	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic
ESF Vent	3HVQ*RE49 ESF Bldg. 36'6"	Gas Particulate Iodine	Gas Isotopic Particulate Isotopic Iodine Isotopic

Completed by: _____ Date: _____ Time: _____
(MRDA/AMRDA)

Docket Nos. 50-245
50-336
50-423
B18748

Attachment 9

Millstone Power Station, Unit Nos. 1, 2 and 3

Emergency Procedures Implementing (EPI) Functional Administrative Procedure (FAP)
MP-26-EPI-FAP14, "Recovery"
Major Revision 1

Document Action Request

SPG # 020807-152106

Initiated By: Patricia Luckey Date: 07/31/2002 Department EP ~~ENR~~ Ext 5474
 Document No MP-26-EPI-FAP14 Rev. No: 1 Minor Rev No. 0
 Title: **Recovery**

For New Documents only → QA RI Title

Reason for Request (attach commitments, CR's, AR's, OE's etc)
 Biennial Review completed with no actions required.
 Includes EPI-FAP14-001
AR 01000841-14

Select One if performing a change See MP-05-DC-SAP01 sect 2.3 to determine type of change

Continued

Intent Change (SQR Independent, RCD, ENV Screen Required) Edit Corr Non-Intent Change
(Other reviews may be required. See MP-05-DC-FAP 01.1 Att 3) (Only Tech R, SQR R and Env signature Required)

Editorial Correction Approval

TPC Interim Approval

 Plant Mngt Staff Member - Approval / Date

(1) Plant Mngt Staff Member Print/Sign/Date

(2) SM/SRO/CFH on Unit Print/Sign/Date

Procedure Request/Feedback Disposition

Priority: Perform Now Perform Later - See Comments

Activity: Revision Minor Revision Cleanup Rev Biennial Review Cancellation Supercedure
See DC-GDL01 for guidance
 TPC OTC Place in Void

Reviews continued <input type="checkbox"/>	Print	Sign	Date	SQR Qualified			If Comments
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<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
<input checked="" type="checkbox"/> DPC	Kathy Burgess	Kathy Burgess	8/6/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	<input type="checkbox"/>
<input checked="" type="checkbox"/> Writers Guide	Maria Maryeski	M. Maryeski	8/12/02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SPG	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Biennial Review	Kathy Burgess	Kathy Burgess	8/6/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EPD	<input checked="" type="checkbox"/>
<input type="checkbox"/> Licensing Basis							<input type="checkbox"/>
<input type="checkbox"/> Tech Independent							<input type="checkbox"/>

An NRRL update was required? Yes

1. SQR Program Final Review and Approval

Approval Disapproval

Kathy Burgess 8/12/02
 SQR Qualified Independent Reviewer / Date
Patricia A. Luckey
 Department Head/Responsible Individual
8/20/02
 Approval Date

SORC

Final review and Approval

RI/DH (Ref Mans. GDL's Handbook)

DH/RI Sign _____
 Meeting No. _____

SORC Signature _____

DH / RI Signature _____

Approval Date

Effective Date 8/23/02

**Functional
Administrative
Procedure**



Millstone Station

Recovery

MP-26-EPI-FAP14

Rev. 001

Approval Date: 8/20/02

Effective Date: 8/23/02



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MP-26-EPI-FAP14-001, "Recovery Issue and Strategies Form"

1. PURPOSE

1.1 **Objective**

This procedure provides guidance to the Director of Station Emergency Operations (DSEO) and the Director of Recovery Operations (DRO) for directing the transition into the Recovery phase of an event and performing associated activities. It also provides guidance to other individuals who will perform supporting functions during Recovery.

1.2 **Applicability**

While in a declared emergency, conditions have stabilized and the DSEO is prepared to terminate the emergency in accordance with EPI-FAP06, "Classification and PARs."

1.3 **Supporting Documents**

EPI-FAP06, "Classification and PARs"

EPI-FAP07, "Notifications and Communications"

1.4 **Discussion**

Recovery takes place after the emergency phase of an accident has occurred, the plant is in a relatively stable condition, and the emergency has been terminated by the Director of Station Emergency Operations. Recovery actions may require normal resources to recover the plant or extensive resources which could require months of support.

Members of the Recovery Organization are chosen based on their experience, managerial skills, and the needs of the plant. Conditions are evaluated to determine what repairs need to be performed, and when normal operations may be restored.

The Director of Recovery Operations will ensure that all work performed during Recovery is in accordance with approved station procedures unless specific actions have been approved by SORC.

Recovery Goals

- Assess the on site and off site consequences of the emergency.
- Perform cleanup and repair to return plant to pre-event conditions.
- Investigate the causes of the event and plan actions to prevent reoccurrence.

Federal Response

- The NRC or FEMA will coordinate support from multiple federal government agencies.
- Federal Agencies may request resources (space, phones and so forth) be provided to aid in their recovery efforts.

Definitions and abbreviation are contained in Attachment 1.

Responsibilities are contained in Attachment 2.

Recovery process is illustrated in Attachment 3.

2. INSTRUCTIONS

2.1 **Transition and Recovery Following an Unusual Event**

2.1.1 Director of Station Emergency Operations

NOTE

1. An Event Summary Report is required within 24 hours of terminating an Unusual Event.
2. For an Unusual Event, the Incident Report Form may be considered the Event Summary Report for purposes of termination notification.

- a. Designate a Director of Recovery Operations by contacting the Site Vice President (or designee).
- b. Direct the completion and transmission of an Incident Report Form, per EPI-FAP07, "Notifications and Communications," to signify termination of the Unusual Event.
- c. Announce the following (or similar) message to plant personnel over the public address system:

Attention all personnel, attention all personnel. The Unusual Event has been terminated and Recovery has been initiated. I repeat, the Unusual Event has been terminated and Recovery has been initiated.

Include any instructions for restrictions on areas or activities that still exist.

- d. Ensure any reportable events are captured and reported as required.
- e. Maintain log of events.

2.1.2 Director of Recovery Operations:

- a. Convene an event review meeting as soon as practical following termination from the Unusual Event.
- b. Start the investigation and corrective action process per plant procedures.

- End of Section 2.1 -

2.2 Transition Following an Alert or Higher Classification

DSEO

NOTE

As conditions improve and additional personnel and resources become available, certain Recovery activities may be initiated before terminating the emergency.

- 2.2.1 Determine appropriate Emergency Response Facilities staffing and maintain until a Recovery Organization has been identified and activated.

NOTE

1. Detailed plans and procedures are not required to be developed before event termination and entry into Recovery. However, a Recovery Plan Outline should be completed and the recovery organization management positions identified and ready for staffing.
2. For events at an Alert classification, SERO personnel may be adequate to perform any necessary Recovery actions before returning to a normal organization.
3. For events at the Site Area Emergency or General Emergency classification level, the basic Recovery Organization staffing described in Attachment 2 should be used as guidance. Additional positions may be assigned to perform specific recovery activities.

- 2.2.2 Direct the ADTS, the ADEOF, and the Executive Spokesperson to review Attachments 4 through 7, as applicable, and convene a meeting of key plant SERO personnel to perform the following:
- a. Review existing conditions and ongoing activities.
 - b. Determine the Onsite, Offsite, and Public Information Recovery Organization staffing requirements.
 - c. Outline the issues to be resolved and develop an Issues/Strategies Package using EPI-FAP14-001, "Recovery Issue/Strategies Form," to form the basis for the Recovery Plan.
- 2.2.3 Convene a joint conference with the ADTS, ADEOF, and the Executive Spokesperson to review and approve the following:
- a. The recovery issues and strategies.
 - b. The Recovery Organization staffing requirements.
 - c. The recovery plan outline
- 2.2.4 Conduct a formal discussion with regulatory and State authorities to ensure coordination and agreement are met for entry into Recovery.

- 2.2.5 Discuss conditions with the Senior Vice President, Nuclear Operations. |
- 2.2.6 Contact and stage all Recovery Organization personnel used to relieve SERO (organize relief and turnover of responsibilities through SERO and Recovery Managers).
- 2.2.7 Direct the completion and transmission of an Incident Report Form, per EPI-FAP07, "Notifications and Communications," to signify termination of the emergency.
- 2.2.8 Make an announcement of the following message (or similar message) to plant personnel over the public address system:

Attention all personnel, attention all personnel. The emergency has been terminated and Recovery has been entered. I repeat, the emergency has been terminated and Recovery has been entered. [Name of DRO] has taken over as the Director of Recovery operations. Assigned Recovery Organization personnel are to relieve the SERO at this time.

Include any instructions for restrictions on areas or activities that still exist.

- 2.2.9 Maintain log of events. |

- End of Section 2.2 -

2.3 Recovery Following an Alert or Higher Classification

NOTE

Select emergency response facilities or portions thereof may be used for some time after event termination while in Recovery (for example, the JMC, Communications portions of the EOF, etc.). Steps should be taken to restore each facility to a state of readiness as soon as possible following termination of the emergency.

2.3.1 Terminate the use of emergency exposure controls.

- a. Revert to non-emergency (10 CFR 20) limits and controls for repair activities conducted during Recovery.
- b. Refer To existing plant exposure control procedures for guidance.

2.3.2 Terminate the use of other Emergency Procedures (e.g., MP-26-EPI-FAPs).

- a. Ensure existing plant procedures or procedures developed for specific tasks are used for plant repair activities during Recovery.
- b. Ensure SORC approves any special procedures developed for Recovery activities.

NOTE

Attachment 8, "Event Summary Report Format," illustrates the format and content of the Event Summary Report.

2.3.3 Within eight (8) hours of entering Recovery, complete and transmit an approved Event Summary Report to offsite authorities.

2.3.4 Convene an event review meeting as soon as practical following entry into Recovery and begin the investigation and corrective action process per plant procedures.

2.3.5 Maintain a log of specific recovery actions taken such as the following:

- Specific actions taken per this procedure.
- Communication with offsite authorities related to the emergency and/or Recovery.
- Any meetings held to discuss conduct or closeout of the Recovery Phase.

2.3.6 Ensure any events are reported as required.

2.3.7 Ensure communications are established and maintained with the following:

- Senior corporate officials.
- Legal, Financial, Insurance, and Purchasing Departments.
- INPO, NEI, and ANI

2.3.8 Approve any reports, including press releases provided to offsite authorities.

- End of Section 2.3 -

2.4 Exit from Recovery

2.4.1 Director of Recovery Operations - Unusual Event Classifications

- a. Terminate the Recovery Phase for an Unusual Event when the following has occurred:
 - 1) Corrective items are assigned to the responsible organizations.
 - 2) Plant conditions warrant exiting the Recovery Phase.
 - 3) Offsite agencies have been notified of the exit from Recovery.
- b. Log termination of the Recovery phase.
- c. Send all documentation to Emergency Preparedness.

2.4.2 Director of Recovery Operations - Alert or higher classification

- a. Terminate the Recovery Phase for an Alert or higher classification when the following has occurred:
 - 1) Corrective items are assigned to the responsible organizations.
 - 2) Plant conditions warrant exiting the Recovery Phase.
 - 3) Onsite and offsite organizations involved with Recovery have been apprised of the existing conditions and the anticipated termination of activities.
 - 4) The news media has been informed of the Recovery phase termination.
 - 5) Necessary revisions of the Emergency Plan and Implementing Procedures have been identified to the Emergency Preparedness Department.
- b. Log termination of the Recovery phase.
- c. Send all documentation to Emergency Preparedness.

- End of Section 2.4 -

3. SUMMARY OF CHANGES

3.1 **Revision 001**

3.1.1 Editorial changes only.

3.2 **Revision 000-01**

3.2.1 Updated titles to reflect the current organization.

Attachment 1

Abbreviations

(Sheet 1 of 1)

ADEOF - Assistant Director Emergency Operations Facility

ADTS - Assistant Director Technical Support

ANI - American Nuclear Insurers

DRO - Director of Recovery Operations

DSEO - Director of Station Emergency Operations

INPO - Institute of Nuclear Power Operations

NEI - Nuclear Energy Institute

SERO - Station Emergency Response Organization

Attachment 2 Responsibilities

(Sheet 1 of 6)

The Senior Vice President, Nuclear Operations

- Provides overall authority and responsibility for coordinating the station Recovery Operations with the rest of the Nuclear Group.
- Supervises:
 - Director of Recovery Operations
- Principal Working Relationships:
 - Corporate Senior Management
 - Director of Recovery Operations
 - Nuclear Vice Presidents or Directors

The Director of Recovery Operations

- Has overall responsibility for directing station Recovery operations.
 - Establishes command of station Recovery operations.
 - Plans Recovery operations and implements actions through appropriate managers.
- Reports to the Senior Vice President, Nuclear Operations
- Supervises :
 - Manager of Technical Support
 - Manager of Plant Operations
 - Manager of Radiation Control and Radwaste Operations
 - Manager of Engineering Support
 - Manager of Nuclear Regulatory Affairs
 - Manager of Public Information
 - Millstone's Representative in the State EOC and Joint Media Center

Attachment 2 Responsibilities

(Sheet 2 of 6)

- Principle Working Relationships :
 - Senior Vice President, Nuclear Operations
 - Advisory Support Staff
 - Recovery Managers

The Recovery Operations Manager of Technical Support

- Performs reactor core physics and thermal hydraulic systems analysis for reconstructing event timeline.
 - Provides technical support services to the Recovery Operations.
 - Performs reactor systems analysis.
 - Provides post accident data analysis, timeline for the accident, etc.
 - Provides a central facility for collecting, retaining, and retrieving data.
 - Develops Recovery procedures, modifies existing plant procedures, systems, and equipment.
 - Determines Recovery activities needed to be documented in accordance with the QA Program.
- Reports to the Director of Recovery Operations.
- Supervises personnel assigned to technical support activities.
- Principle Working Relationships:
 - Director of Recovery Operations
 - Manager Plant Operations and Recovery Managers
 - Reactor Engineering

Attachment 2 Responsibilities

(Sheet 3 of 6)

The Recovery Operations Manager of Plant Operations

- Provides interface between station and unit operations staff and the Recovery Operations.
 - Supervises and maintains station support staff.
 - Maintains station security operations.
 - Implements maintenance and repair operations with station staff as assigned by the Director of Recovery Operations.
 - Coordinates SORC activities as necessary.
- Reports to the Director of Recovery Operations.
- Supervises affected unit operations staff.
- Principle Working Relationships:
 - Director of Recovery Operations
 - Plant Operations staff
 - Other Recovery Operations Managers

The Recovery Operations Manager of Radiation Control and Radwaste Operations

- Supervises and maintains radiological control of Recovery Operations.
 - Maintains Field Survey Team, Environmental Sampling Teams, and data assessment operations as long as necessary to support the state and local communities.
 - Develops and implements procedures to sample, process, and control liquid, gaseous, and solid radioactive waste discharge and disposal.
 - Ensures personnel exposure is kept ALARA during recovery both in system design and operation.
 - Develops and performs evaluations of Health Physics equipment and procedures for Recovery.

Attachment 2 Responsibilities

(Sheet 4 of 6)

- Performs special personnel dosimetry evaluations and provides specialized dosimeters.
- Develops decontamination plans.
- Assists the State DEP in determining total integrated population dose.
- Reports to the Director of Recovery Operations.
- Supervises Radiation Control and Radwaste Operations Staff.
- Principle Working Relationships:
 - Director of Recovery Operations
 - Manger Plant Operations and Recovery Operation Managers
 - State DEP

The Recovery Operations Manager of Engineering Support

- Provides necessary civil, mechanical, and electrical engineering support for Recovery and provides other recovery support such as project schedules, management, cost control, construction, resources and purchasing, legal, and insurance services.
 - Develops procedures and design for required civil, mechanical, and electrical engineering modifications.
 - Schedules Recovery Operations and ensures prompt execution.
 - Performs construction engineering activities.
 - Arranges for purchasing, legal, and insurance assistance, as necessary.
 - Coordinates Recovery staff meetings.
 - Tabulates, expedites, and closes commitment lists.
- Reports to the Director of Recovery Operations.
- Supervises the Engineering Staff.

Attachment 2 Responsibilities

(Sheet 5 of 6)

- Principle Working Relationships:
 - Director of Recovery Operations
 - Nuclear Engineering Department
 - NSSS/AE
 - Other Recovery Operations Managers

The Recovery Operations Manager of Public Information

- Coordinates and prepares media information releases and supports Millstone's Representative in the Joint Media Center.
 - Obtains technical information from Recovery managers.
 - Prepares media information releases.
 - Provides assistance in the preparation of materials for news conferences, as necessary.
- Reports to the Director of Recovery Operations.
- Supervises assigned staff.
- Principle Working Relationships:
 - Director of Recovery Operations
 - Millstone's Representative in the Joint Media Center
 - Systems Communications personnel

Recovery Operations Manager of Nuclear Regulatory Affairs

- Manages interface and submittals to regulatory agencies.
 - Provides regulatory interface with the NRC, State, etc.
 - Coordinates the preparation of documents for submittal to regulatory agencies.
 - Reports to the Director of Recovery Operations.
 - Supervises the Licensing staff.
 - Principle Working Relationships:
 - Director of Recovery Operations
 - Regulatory agencies
 - Other Recovery Operations Managers

Attachment 2 Responsibilities

(Sheet 6 of 6)

Advisory Support

- Industry specialists and experts who provide advisory support to the Recovery Operations and appointed, as necessary, by the Director of Recovery Operations.
- Reports to the Director of Recovery Operations.

The Millstone Representative in the State EOC and Joint Media Center

- Provides advisory support to the state and local communities resolving FEMA questions and concerns and local town questions and needs.
 - Consults with the State and responds to questions and concerns from the following:
 - FEMA
 - State
 - Local communities
 - Responds as official media spokesperson for Millstone Station.
- Reports to the Director of Recovery Operations.

Attachment 3 Illustrated Recovery Process

(Sheet 1 of 1)

① ↓	Emergency Event	<ul style="list-style-type: none"> • Emergency Plan is implemented. • Actions are taken to return the plant to a safe condition.
	Transition	<ul style="list-style-type: none"> • Selected facilities are maintained at full or partial staffing. • The DSEO, ADTS, ADEOF, and Executive Spokesperson prepare a Recovery Issues/Strategies Package. • A Recovery Plan Outline is developed. • A DRO is designated. • Organizational requirements are determined. • Personnel are on stand-by to assume the identified recovery positions.
② ↓	Recovery	<ul style="list-style-type: none"> • An Event Summary Report is developed and issued. • A Root Cause Investigation is conducted and action items identified • A detailed Recovery Plan is developed and implemented. • Activities to restore the plant to pre-incident conditions are conducted.
③ ↓	Post Recovery	<ul style="list-style-type: none"> • A Detailed Incident Report is developed and issued. • Records are collected and retained.

The above arrows represent points in time in the chronology of a classified emergency:

- ① The initiating state of emergency no longer exists.
- ② Formal termination of the emergency occurs (Notification of termination to Federal, State and Local Officials by the DSEO).
 - Emergency dose limits and special exceptions to procedures no longer apply.
 - Organizational titles are changed to reflect the new status.
- ③ Post Recovery and Exit.

Attachment 4
Recovery Plan Outline

(Sheet 1 of 1)

- SECTION I. RECOVERY ORGANIZATION
 - A. Organization Structure
 - B. Assignment of authorities or responsibilities

- SECTION II. ONSITE RECOVERY PLAN
 - A. Major Goals
 - B. Issues and Strategies

- SECTION III. OFFSITE RECOVERY PLAN
 - A. Major Goals
 - B. Issues and Strategies

- SECTION IV. PUBLIC INFORMATION RECOVERY PLAN
 - A. Major Goals
 - B. Issues and Strategies

Attachment 5

Onsite Recovery Issues and Strategies Guide

(Sheet 1 of 3)

Present Activities Being Performed by Plant Staff (Onsite SERO)

- Identify ongoing activities and determine the need to continue

Equipment Status Verifications

- Perform and document secured lineups
- List and identify inoperable equipment
- Hang appropriate tagouts
- Document temporary repairs and lineup
- Obtain appropriate samples to verify core or spent fuel status

Stabilization of Plant for Long Term Cooling

- Identify present cooling lineups
- Document available back-up cooling lineups
- Confirm condition of RHR/CCW/ESW/CVCS/Cont. Spray/Spent Fuel Pool Cooling
- Develop a plan to transition to long term cooling if required

System Repairs and Restorations

- Prioritize out-of-service equipment for restoration
- Plan restoration process by milestones
- Determine testing to increase or ensure equipment reliability
- Determine long term resolution of temporary repairs
- Examine options for temporary systems
- Obtain industry expertise (such as INPO, Westinghouse, CE) as necessary
- Ensure proper QA on any repairs made during the emergency

Attachment 5

Onsite Recovery Issues and Strategies Guide

(Sheet 2 of 3)

Radiological Controls and Area Decontamination

- Perform comprehensive surveys of onsite areas
- Establish additional survey and sampling frequency requirements
- Determine if additional monitoring equipment is required
- Develop a decon plan based on prioritized recovery of plant areas
- Commence Bioassay program
- Contract for large volume decontamination equipment and expertise
- Identify State DEP requirements, if any, on reentry into plant areas, radwaste treatment, and radwaste releases.
- Identify State DOT requirements, if any, on radwaste transportation.

Water Management

- Identify sources, volumes and activity of water inventories
- Prioritize clean-up
- Verify and evaluate condition of existing clean-up systems
- Establish tagouts and controls to preclude inadvertent discharges
- Evaluate need to contract portable filtering systems and expertise
- Establish berms and restraints for control and mitigation of spills
- Evaluate need for additional onsite waste storage capability
- Evaluate need for additional burial space for waste

Attachment 5 Onsite Recovery Issues and Strategies Guide

(Sheet 3 of 3)

Logistics (Use Guidelines for Forced Outage Scheduling)

- Identify manpower needs
- Obtain damage control equipment, as necessary
- Consider use of outside specialist (INPO, Westinghouse, CE)
- Set up training for off normal conditions (ALARA)
- Consider restricting site access
- Order extra HP supplies to support recovery
- Evaluate the need for additional security (crowd control)
- Evaluate the need for remote technology for inspections and cleanup
- Evaluate the need for additional communications capabilities
- Evaluate logistic and legal constraints on the continued operation of the unaffected unit.

Documentation

- Initiate actions to complete any required NRC reports as required
- Develop onsite portions of Detailed Incident Report
- Develop onsite Recovery Plan (short and long term)
- Develop special procedures to perform tasks outside the scope of normal procedures

Attachment 6

Offsite Recovery Issues and Strategies Guide

(Sheet 1 of 1)

Present Activities Being Performed by EOF Staff

- Identify ongoing activities and determine the need to continue

Radiological

- Evaluate the need for an environmental sampling program
- If required, estimate total population dose
- Evaluate clean-up requirements
- Evaluate the need to bring in outside expertise for radiological monitoring

Support to Offsite Authorities

- Evaluate outstanding requests from offsite authorities
- Apprise offsite authorities of onsite conditions and activities
- Determine if support for State and Local relocation and reentry activities is desired.

Corporate Interface

- Apprise corporate management of conditions and activities
- Provide information to legal organization as requested
- Identify issues applicable to HR and Employee Assistance

Logistics

- Identify manpower needs to support offsite recovery activities
- Identify all non-Millstone personnel and activities currently in place
- Review equipment and material needs for EOF recovery activities
- Assist onsite and Public Information organizations in obtaining offsite support
- Evaluate the need for additional communications capabilities

Documentation

- Develop offsite portions of Detailed Incident Report
- Develop offsite Recovery Plan (short and long term)

Attachment 7

Public Information Recovery Issues and Strategies Guide

(Sheet 1 of 1)

Present Activities Being Performed by State Armory/JMC Staff

- Identify ongoing activities and determine the need to continue

Offsite Interface

- Identify activities needed to keep offsite authorities apprised of Millstone Public Information activities
- Determine the need for Media Center representation. Consider using Media Center representation as necessary for the periodic briefing on recovery operations.
- Establish a rumor control system, as necessary.
- Ensure internal corporate communications from the employee information hotline.

Documentation

- Develop the Public Information portion of the Recovery plan

Attachment 8
Event Summary Report Format

(Sheet 1 of 1)

[Date]

[Time]

To: [Offsite Authority] (as a minimum, IRF locations and the NRC)

From: [Name] (Directory of Recovery Operations)

Subject: Event Summary Report of Emergency Declared at Millstone Station

The Millstone Station has terminated from emergency status at [time] and entered into Recovery.

The following is a review of events and items pertaining to the [Emergency] reported on [date].

[Provide a narrative of the event] (describe the event giving the facts of the emergency including as a minimum:)

1. Time and description of initiating events and any upgrades in classification (i.e., "On July 4, 2004, at 0640 hours a bomb threat was received at....."). Include information on personnel injuries and status. **(DO NOT INCLUDE NAME(S) OF VICTIMS UNLESS THE FAMILY HAS BEEN NOTIFIED).**
2. Initial notifications to offsite authorities, to include time, location and mode of notification (That is: fax, radio, telephone, etc.).
3. Requests for offsite assistance, including time and type.
4. The magnitude of any radiological release and Protective Action Recommendation information as applicable.
5. Telephone numbers which people can call to obtain any additional information (such as the Corporate Public Affairs, Rumor Control or Joint Media Center).

Approval: [Signature]