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The Northeast Utilities System

DEC 21 1999

Docket Nos. 50-245
50-336
50-423
B17941

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 Nuclear Power Station, Unit Nos. 1, 2, and 3
Emergency Plan Operating Procedure (EPOP) 4429 Revision 5

The purpose of this letter is to inform the Nuclear Regulatory Commission (NRC) Staff that EPOP 4429, Revision 5, "Radiation Monitoring Team Development and Control" was implemented on November 24, 1999. A copy of the revised procedure is attached for your record.

There are no commitments contained within this letter.

If you have any additional questions concerning this submittal, please contact Mr. Paul R. Willoughby at (860) 447-1791, extension 3655.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Raymond P. Necci
Vice President - Nuclear Oversight and
Regulatory Affairs

cc: See next page

A045

OS3422-5 REV. 12-95

PDR ADOCK 05000245

Attachment

cc: H. J. Miller, Region I Administrator (2)
M. C. Modes, Chief, Emergency Preparedness and Safeguards Branch
L. L. Wheeler, NRC Project Manager, Millstone Unit No. 1
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P. C. Cataldo, NRC Inspector

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Attachment 1

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

Emergency Plan Operating Procedure (EPOP) 4429 Revision 5

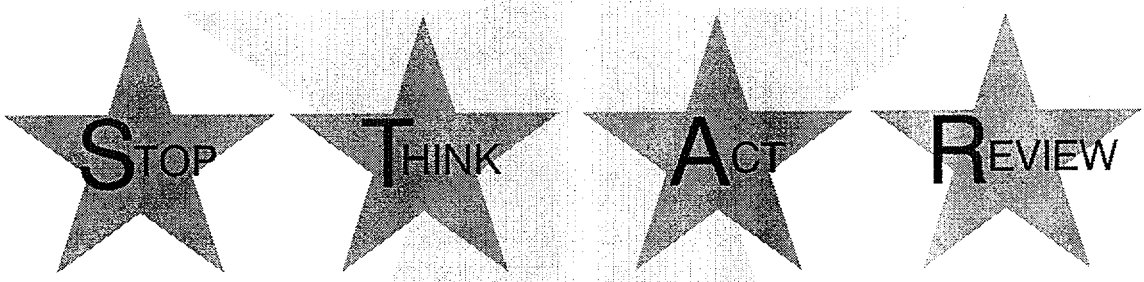
December 1999

MILLSTONE NUCLEAR POWER STATION
EMERGENCY PLAN OPERATING PROCEDURE

Radiation Monitoring Team Deployment and Control [✣Ref. 6.1.1]

EPOP 4429

Rev. 5



Approval Date: 11-17-99

Effective Date: 11-24-99

Verified Revision 5
Initial KmA Date 12-14-99

Millstone All Units
Emergency Plan Operating Procedure

Radiation Monitoring Team Deployment and Control

TABLE OF CONTENTS

1. PURPOSE

1.1 Objective

Provide guidance for the deployment of field teams during a station or plant emergency.

1.2 Discussion

This procedure provides guidance for emergency response actions during an event that activates the Station Emergency Response Organization. These actions include:

- Communicating with off–site RMTs
- Providing survey results to the MRDA or AMRDA

The goal of the Field Team Data Coordinator or Designee is to ensure at least one Radiation Monitoring Team is deployed within 60 minutes of event notification.

1.3 Applicability

This procedure is performed by the FTDC or Designee assigned by the MRDA.

1.4 Frequency

N/A

2. PREREQUISITES

2.1 General

N/A

2.2 Documents

2.2.1 EPUG–05, "Radiological Communications"

2.2.2 Millstone Nuclear Power Station Field Monitoring Maps

2.2.3 EPOP 4430, "Off–site Radiological Surveys"

2.2.4 EPOP Form 4426–2, "Radiation Monitoring Point Data Sheet"

2.3 **Definitions**

2.3.1 ADEOF – Assistant Director Emergency Operations Facility

2.3.2 AMRDA – Assistant Manager of Radiological Dose Assessment

2.3.3 FTDC – Field Team Data Coordinator

2.3.4 CBETS – Computer Based Exposure Tracking System

2.3.5 MRDA – Manager of Radiological Dose Assessment

2.3.6 MOS – Manager of Security

2.3.7 RMT – Radiation Monitoring Team

3. PRECAUTIONS

N/A

4. INSTRUCTIONS

4.1 FTDC Initial RMT Deployment Actions

4.1.1 Refer To EPUG−05, "Radiological Communications," and PERFORM the following:

- Radio net sign−on
- Radio operability checks

4.1.2 OBTAIN a sufficient number of the following:

- EPOP Form 4426−2, "Radiation Monitoring Point Data Sheet"
- Attachment 1, "Radiation Monitoring Team Exposure Tracking Sheet"

4.1.3 OBTAIN map of the Millstone Nuclear Power Station Radiation Monitoring Points.

4.1.4 ASSEMBLE initial off−site RMT using first available HP Technician and RMT Driver.

4.1.5 REQUEST CBETS Operator review personnel radiation exposure reports for off−site RMT personnel.

4.1.6 IF CBETS report is *not* available, ASSUME off−site RMT personnel available exposure is 1.5 rem TEDE.

4.1.7 DETERMINE off−site RMT assignments based on off−site RMT personnel available exposure and RECORD available exposure on Attachment 1.

4.1.8 DIRECT off−site RMTs to refer to and implement EPOP 4430, "Off−Site Radiological Surveys."

4.1.9 BRIEF off–site RMTs on the following:

- Plant conditions (current and projected)
- Radiological conditions (current and projected)
- Meteorological conditions (current and projected)
- Survey locations
- Low background areas
- Access routes
- Exposure limits and turnback values
- Backup telephone number

4.1.10 OBTAIN approval from the MRDA or AMRDA for initial deployment of each off–site RMT.

4.1.11 DISPATCH RMTs to monitoring points specified by the MRDA or AMRDA.

4.1.12 IF instructions from the MRDA or AMRDA are *not* available, Refer To Attachment 2 and provide survey strategy to RMTs.

4.1.13 IF over water monitoring team is required, PERFORM the following:

a. DIRECT MOR obtain a boat and crew.

b. VERIFY boat crew has dosimetry and has been briefed on weather and plant conditions.

4.1.14 PROVIDE RMTs guidance on meter usage as shown in Table 1.

NOTE

ASP−1 does not accurately respond to beta radiation and therefore window open results should only be used in a qualitative manner.

Table 1 Meter Guidance

Meter	Recommended Use	Range (mR/hr)
ASP−1	Less than 2 mR/hr	0.04 − 1,000
RO−2A	Greater than 2 mR/hr	2 − 50,000

4.1.15 DIRECT RMTs to stay in radio contact every 15 to 30 minutes.

4.1.16 DIRECT RMTs to use telephones in areas where radio reception is poor.

4.1.17 DISPATCH RMTs.

4.1.18 RECORD RMT radiation data on the following:

- EPOP Form 4426−2, "Radiation Monitoring Point Data Sheet"
- Radiological Survey Data Boards, as appropriate.

4.1.19 NOTIFY the MRDA or AMRDA of significant changes in measured radiation levels or elevated air sample counts.

4.1.20 IF the MRDA or AMRDA is *not* available, NOTIFY the ADEOF or the DSEO of significant changes in measured radiation levels or elevated air sample counts.

4.1.21 NOTIFY RMTs of changing event conditions.

4.1.22 Refer To Attachment 1 and MONITOR RMT personnel radiation exposure.

NOTE

RMT exposure should be kept ALARA. It is good practice to monitor and limit time spent by RMTs in areas of elevated radiation exposure.

4.1.23 NOTIFY the MRDA or AMRDA if any RMT member receives 75% of the allowable exposure.

NOTE

Air samples may be taken as directed by the Radiological Dose Assessment Team. Air samples are usually taken only if indications show plume immersion. The value of 1.5 times the closed window reading provides an adequate margin to indicate a significant monitor increase caused by the beta response due to plume immersion.

4.1.24 IF the dose rate measurement with window open is greater than or equal to 1.5 times higher than with the window closed, DIRECT RMTs to take air samples.

4.1.25 DIRECT RMTs to count iodine and particulate filters in a low background area.

4.2 **Subsequent Actions**

4.2.1 CONTINUE to perform the following until SERO termination is directed:

a. WHEN RMTs report in by radio or telephone, NOTIFY team of changes in plant conditions and REQUEST information resulting from radiological surveys.

b. RECORD reported information on Form 4426–2, "Radiation Monitoring Point Data Sheet," and log book.

c. Using the Radio Net Console Radio, TRANSFER all information between RMTs and MRDA.

d. RECORD RMT radiological survey results on Radiological Data Status Boards.

e. REQUEST RMTs perform the following when delivering samples to the EOF:

1) Enter EOF through the North door.

2) If the portal monitor alarms, contact the MRCA.

3) Proceed to the count room with samples.

4.2.2 WHEN SERO is terminated, PERFORM the following:

a. NOTIFY all RMTs of event termination.

b. IF any RMTs cannot be reached, immediately NOTIFY MRDA or AMRDA of unaccounted team members.

c. PERFORM a radio net sign–off.

d. RECORD SERO termination in log book.

e. SEND copies of log book entries and any completed forms to the MRDA.

f. SEND all samples to MRCA.

4.3 Relocation Surveys – RMT Deployment

4.3.1 WHEN radioactive plume has passed, ENSURE MRDA maintains control of the RMTs to assist the State DEP.

4.3.2 Refer To Attachment 3 and REQUEST RMTs use the same kit as before with the supplemental equipment available in the EOF.

4.3.3 DIRECT RMTs perform the following:

- Obtain 100 cm^2 smear samples on smooth surfaces or fixed structures.
- Obtain general area dose rates at each smear location.
- Record all surveys on Attachment 4.

5. REVIEW AND SIGNOFF

N/A

6. REFERENCES

6.1 Developmental Documents

6.1.1 NRC commitment (February 16, 1981, compliance with NUREG 0654/FEMA−REP−1, Rev. 1) commits NU to maintain station procedures that describe the monitoring and sampling calculations to be performed and the criteria used to dispatch personnel to perform these tasks.

6.1.2 "Final Safety Analysis Report, Unit 2"

6.1.3 "Final Safety Analysis Report, Unit 3"

6.1.4 NUREG−0654, "Criteria for Preparation and Evaluation of Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"

6.1.5 NUREG−0737, "Clarification of TMI Action Plan Requirements Supplement 1, Requirements for Emergency Response Capability"

6.1.6 "Millstone Nuclear Power Station Emergency Plan"

6.2 Supporting Documents

6.2.1 EPOP 4426, "On−site Emergency Radiological Surveys"

6.2.2 EPOP 4428A, "Radiological Dose Assessment Team"

6.2.3 Ingestion Pathway Database Map Book for the State of Connecticut

7. SUMMARY OF CHANGES

7.1 Modified step 1.2 by changing MRCA to AMRDA to clarify that the MRCA is not responsible for off−site RMTs and that the FTDC reports to the MRDA or AMRDA not the MRCA. Deleted reference to the MRCA in steps 2.3.5 and 4.1.19.

7.2 Added reference to EPOP Form 4426−2, "Radiation Monitoring Point Data Sheet," in step 2.2.4.

7.3 Added bullet to step 4.1.1 to perform a radio net sign–on.

7.4 Replaced "Designee" with AMRDA in steps 4.1.10 and 4.1.11 and added AMRDA to step 4.1.23.

7.5 Modified step 4.1.12 to provide survey strategy to RMTs if instructions from the MRDA or AMRDA are not available.

7.6 Added step 4.1.13.a for the Field Team Data Coordinator to direct the MOR to obtain a boat and crew if over water monitoring is required.

7.7 Added step 4.1.20 for the FTDC to notify the ADEOF or DSEO of significant changes in radiation levels or elevated air sample counts if the MRDA or AMRDA is not available.

7.8 Modified note prior to step 4.1.24 to clarify that air samples are usually taken only if indications show plume immersion, and the value of 1.5 times the closed window reading provides an adequate margin to indicate a significant monitor increase caused by beta response due to plume immersion.

7.9 Modified step 4.1.24 for the FTDC to direct RMTs to take air samples if the dose rate measurement with window open is greater than or equal to 1.5 times higher than with window closed.

7.10 Added step 4.2.1.e to provide instructions to RMTs when delivering samples to the EOF.

7.11 Added reference to EPOP 4428A, "Radiological Dose Assessment Team," in step 6.2.2.

7.12 Modified Attachment 1 as follows:

- Added columns for TEDE and Whole Body exposure.
- Deleted note to verify with the MRCA that the allowable whole–body exposure limit will ensure TEDE does not exceed the allowable limit.
- Added note to clarify that the CBETS Operator will provide allowable exposure in TEDE, and the MRDA or AMRDA will convert this value for whole body limits.
- Added note to clarify that if the MRDA or AMRDA is not available, the default value of "5" is used as the conversion factor for the TEDE/DDE ratio.

7.13 Performed minor editorial corrections.

Attachment 1
Radiation Monitoring Team Exposure Tracking Sheet
(Sheet 1 of 1)

Date:__________

Time:__________

TEAM #	Allowable Exposure in mR*		Time	Time	Time	Time	Time	Time
	TEDE	DDE						
			PIC EXPOSURE IN mR					

TEAM #	Allowable Exposure in mR*		Time	Time	Time	Time	Time	Time
	TEDE	DDE						
			PIC EXPOSURE IN mR					

TEAM #	Allowable Exposure in mR*		Time	Time	Time	Time	Time	Time
	TEDE	DDE						
			PIC EXPOSURE IN mR					

*The CBETS Operator will provide allowable exposure in TEDE, and the MRDA or AMRDA will convert this value for whole body limits. If the MRDA or AMRDA is not available, the default value of "5" is used as the conversion factor for the TEDE to DDE ratio, i.e. $\frac{TEDE}{5} = DDE$

STOP THINK ACT REVIEW

Attachment 2
Millstone General Guidance on Survey Strategy
(Sheet 1 of 1)

For MP 1 Stack Releases – Obtain data from the 374′ met data

For Roof Top Releases – Obtain data from the 142′ met data

For Ground Releases – Obtain data from the 33′ met data

Daytime – Wind speed less than or equal to 4 mph (2m/sec)

Survey in downwind sector and 3 sectors on 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 or equal to 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

Initial Positioning

- Consistent with above. Dispatch the first team near the site boundary.
- If an over water monitoring team is required, dispatch the second team with the boat crew.
- Consistent with above. Dispatch remaining teams in the 1–5 mile range.

Attachment 3
Relocation Sampling Team Kit
(Sheet 1 of 1)

The following supply quantities will be recommended by the MRDA or Designee depending on the expected scope of the survey:

a. Full protective clothing

b. State of Connecticut 50 mile grid map

c. Smears

d. Bags and labels for smears and smear results

e. Plastic bags to hold contaminated waste

Attachment 4
Post Plume Contamination Survey Data

(Sheet 1 of 1)

Team #	Location	Date	Time	Dose Rate @ 2 Inches From Ground (RO–2A)		Dose Rate @ Waist Level Window Closed	Type of Surface Smeared*	Smear Result DPM/100 cm^2**
				Window Open mR/hr	Window Closed mR/hr			

*e.g., mailbox, pavement, car, aluminum siding

**Assume 1 cpm/100 cm^2 = 10 dpm/100 cm^2