Northeast
Nuclear Energy

Rope Ferry Rd (Route 156), Waterford, CT 06385

Millstone Nuclear Power Station
Northeast Nuclear Energy Company
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The Northeast Utilities System

Donald B. Miller Jr.,
Senior Vice President - Millstone

Re: 10CFR20.402(b)

May 23, 1994
MP-94-362

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

Reference: Facility Operating License No. DPR-21
Docket No. 50-245
Licensee Event Report 94-016-00

Gentlemen:

This letter forwards Licensee Event Report 94-016-00 required to be submitted within thirty (30) days pursuant to 10CFR2201(a)(i),(ii) and 10CFR70.52(a),(b).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Donald B. Miller, Jr.
Senior Vice President - Millstone Station

DBM/GN:ljs

Attachment: LER 94-016-00

cc: T. T. Martin, Region I Administrator
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2 and 3
J. W. Andersen, NRC Acting Project Manager, Millstone Unit No. 1

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NRC Form 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB NO. 3150-0104
EXPIRES: 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Millstone Nuclear Power Station Unit 1	05000245	1 OF 03

TITLE (4)
Loss of Special Nuclear Material Accountability

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
04	22	94	94	-- 016 --	00	05	23	94	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	R	THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	000	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X OTHER
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Drexel N. Harris, Site Licensing	(203) 437-5903

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 22, 1994, with the plant shutdown for a scheduled refueling outage and the drywell under vessel area accessible, a discrepancy was noted between the number of Intermediate Range Monitors (IRMs) stored in the drywell equipment drain sump and the number indicated in the Special Nuclear Material Inventory Log. Actions were initiated to recover the four (4) IRMs that were recorded as being stored in the sump. Two (2) IRMs could not be accounted for.

No safety systems were required to actuate as a result of this event.

This event is reportable pursuant to 10CFR20.2201(a)(i)(ii), which requires reporting the theft or loss of licensed material and 10CFR70.52(a) and (b) which requires immediate notification of accidental criticality or loss of special nuclear material.

APPROVED BY OMB NO. 3150-0104
EXPIRES: 5/31/95

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Millstone Nuclear Power Station Unit 1	05000245	94	-- 016 --	00	02 OF 03

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

I. Description of Event

On April 22, 1994, with the plant shutdown for a scheduled refueling outage and the drywell under vessel area accessible, a discrepancy was noted between the number of Intermediate Range Monitors (IRMs) stored in the drywell equipment drain sump and the number indicated in the Special Nuclear Material Inventory Log. Actions were initiated to recover the four (4) IRMs that were recorded as being stored in the sump. Two (2) IRMs could not be accounted for.

During a cleanup/inspection of the drywell equipment and floor drain sumps prior to a startup from a refueling outage, only two (2) of four (4) expected detectors could be located in the drywell equipment drain sump. An inventory of the other plant Item Control Areas (ICAs) was also conducted in an attempt to reveal any other potential discrepancies. No other discrepancies were identified as a result of that investigation.

II. Cause of Event

The cause of this event is attributed to management's failure to establish and monitor adequate standards and expectations with regards to the appropriate handling and control of nonfuel Special Nuclear Material.

III. Analysis of Event

Intermediate Range Monitors (IRMs) are nuclear instruments used to detect reactor power level that are installed and removed from the underside of the reactor vessel. The IRM detector (fission chamber) is approximately one inch long, 0.187 inch in diameter and completely enclosed inside the tip of a flexible cable. Each unirradiated IRM detector is internally coated with a solid film that contains 0.00075 grams of uranium-235 and 0.00005 grams of uranium-238 which classifies them as special nuclear material (SNM). The fission process within the detector results in depletion of this uranium and production of trace amounts of other transuranic elements.

Due to the desire to minimize radiation exposure to workers when the detectors were removed for replacement, it was customary, prior to 1985, to store the detector in the nearest approved Item Control Area (ICA). The nearest area suitable for storing irradiated hardware removed from under the vessel was the equipment drain sump which utilized the water for shielding from the radiation. The Special Nuclear Material Inventory Log, which was started in 1980 and maintained since then, indicated four (4) IRMs stored in the sump.

A review of Material Transfer Forms (MTFs) revealed that two (2) IRMs replaced in 1978 were removed from the reactor vessel and transferred to the drywell (no specific sump mentioned) and had remarks indicating "temporary move." There were no subsequent steps or separate MTFs to document movement of the two (2) IRMs out of the drywell. Two (2) additional IRMs (one in 1983 and one in 1985) were documented on MTFs as being transferred to the drywell equipment drain sump and were also recorded as being in the sump. Therefore, it was recorded in the inventory log and expected that four (4) IRMs would be found stored in the sump.

It is concluded that the two (2) IRMs not accounted for are still within the sump or have been removed during prior sump cleanup operations and disposed of as low level radioactive waste. We believe the latter is the most probable.

Review of recent surveys of other IRMs removed from the reactor indicated the unaccounted for IRMs would have low radiation levels relative to the levels found in the sump. Based on the fact that the IRMs had low radiation levels and existing controls for performing work in the drywell sump area, no radiation exposure to personnel in unrestricted areas occurred as a result of this event.

This event is reportable pursuant to 10CFR20.2201(a)(i)(ii), which requires reporting the theft or loss of licensed material and 10CFR70.52(a) and (b) which requires immediate notification of accidental criticality or loss of special nuclear material.

IV. Corrective Action

Previous actions to enhance the SNM control program after 1985 included posting forms on SNM containers and discontinuing the practice of placing SNM in the drywell sump area ICA or surrounding area.

The following immediate actions were taken upon identification of the potential loss of the subject SNM:

- Performed extensive search of drywell floor drain sump which is located adjacent to equipment drain sump,
- Reviewed inventory logs and Material Transfer Forms to reveal potential omissions in recording documentation,
- Performed inspection of all other ICAs and surrounding areas to identify any other potential discrepancies,
- Removed SNM from sump, transferred it to Spent Fuel Pool and documented the move in the inventory log.

The following actions will be taken and implemented prior to September 30, 1994 to prevent recurrence:

- Establish clear management expectations for control of nonfuel SNM
- Revise the station procedure that provides guidance for SNM control to provide precise steps directing inventory methods for areas accessible only during a refueling outage.
- Review and reevaluate all designated ICAs for suitability with regard to elimination of any inaccessible areas when possible.
- Provide additional posting and identification labeling of non-fuel SNM and SNM storage areas.

V. Additional Information

None