

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-245/90-15
50-336/90-16
50-423/90-14

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

License Nos. DPR-21
DPR-65
NPF-49

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06141-0270

Facility Name: Millstone Units 1, 2 and 3

Inspection At: Waterford, Connecticut

Inspection Conducted: July 30 - August 3, 1990

Inspectors: *Le Roy J. Buser* 8/10/90
L. Person, Project Manager, Low-Level
date
Waste Section (LLW), Operations Branch (OB),
Division of Low-Level Waste Management and
Decommissioning, Office of Nuclear Materials
Safety and Safeguards (NMSS)

Alexander Bausp. for 8/28/90
J. Furia, Radiation Specialist, Effluents
date
Radiation Protection Section (ERPS), Facilities
Radiological Safety and Safeguards Branch (FRSSB)
Division of Radiation Safety and Safeguards (DRSS)

Approved by: *Alexander Bausp. for* 8/28/90
R. Bores, Chief, ERPS, FRSSB, DRSS
date

Inspection Summary: Inspection of July 31 to August 3, 1990 Combined
Inspection Report Nos. 50-245/90-15; 50-336/90-16; 50-423/90-14

Areas Inspected: Routine, announced inspection of the transportation and solid radioactive waste programs including: management controls, audits, quality assurance, training, and implementation of the above program.

Results: Within the areas inspected, no violations or deviations were noted, however, two items were identified which warrant licensee followup actions. These items concerned the processing of long-stored evaporator bottoms and the identification of the radioactive contents and activity in a stored drum (See Section 4.1).

DETAILS

1.0 Personnel Contacted

1.1 Licensee Personnel

- *P. J. Burke, NTD, Technical Training, NUSCO
- *R. L. Cimmino, NTD, Operator Training - Unit 2
- J. W. Duroski, Senior Engineer, Health Physics Support
- *H. Haynes, Unit Services Director
- *C. Hinze, Quality Services Department
- A. Mozcak, MP-2 Operations Assistant
- *C. Palmer, Manager of Health Physics Support Services
- M. Pearson, Operations Assistant - Unit 3
- *M. Ross, MP-1 Operations Assistant
- *T. Sullivan, Manager, Health Physics Operations
- S. Turowski, Supervisor, Rad Materials Handling

1.2 NRC Personnel

- *William Raymond, Senior Resident Inspector

*Denotes those present at exit interview on August 3, 1990.

2.0 Purpose

The purpose of this routine inspection was to review the licensee's program for the preparation, packaging, and transportation of radioactive materials and to assess the overall effectiveness of management oversight and controls in the area of radioactive materials handling.

3.0 Previously Identified Open Items

(Closed) Violation (50-245/89-23-01, 50-336/89-22-01, 50-423/89-23-02): Package of radioactive material exceeds regulatory limits for contact radiation level. The inspectors reviewed the licensee's corrective action in response to the borescope shipment violation. The licensee has incorporated increased supervisory review of radioactive material shipments into current operating procedures. Based on the inspector's review of these actions, this item is closed.

(Closed) Violation (50-245/90-03-01, 50-336/90-04-01, 50-423/90-03-01) Package of radioactive material exceeds regulatory limits for contact radiation level. The inspector reviewed the licensee's actions in response to the cutting tool shipment violation. The licensee has incorporated increased supervisory review of radioactive material shipments into current operating procedures. The inspector determined that the revised procedures were acceptable and this item is closed.

4.0 Transportation and Solid Radwaste

The Millstone program for packaging and transporting solid radwaste is a site activity conducted by the Radiological Materials Handling Group of Health Physics Support Services. Processing plant liquids is the responsibility of the Operations Department of each unit.

4.1 Radwaste

Current licensee waste processing operations at the Millstone site include resin dewatering, compaction of most Dry Active Waste (DAW), and solidification of certain liquid wastes on an infrequent basis.

High Integrity Containers (HICs) from resin dewatering, compacted DAW and periodically, solidified liquids are shipped for disposal to the Barnwell Low-Level Waste Disposal Facility in Barnwell, South Carolina. The Radiological Materials Handling Group had contracted with NuPac Services, Inc. for dewatering services at Units 1 and 3, while the Operations Department of Unit 2 uses an in-plant dewatering system to dewater spent resins. The Rad Materials Section is responsible for preparing decontaminated items and DAW for disposal.

The following procedures were reviewed as part of the radwaste inspection.

RW 6010/26010/36010, Rev. 4, "Loading of Chem-Nuc Shipment Cask"

RW 6002/26002/36002, Rev. 1, "Determination of the Waste Classification for Radioactive Waste Offered for Shallow Land Burial"

These procedures were determined to be complete and to accurately reflect current plant operations.

The licensee uses an in-house computer program which uses scaling factors and dose-to-curie values for the determination of proper waste and transportation classification. The licensee method for determining and using scaling factors to classify waste was reviewed for adequacy and found acceptable.

The records of 31 shipments (listed below) of radioactive materials were reviewed to ascertain compliance with NRC and U. S. Department of Transportation regulations.

<u>Shipment</u>	<u>Activity(Ci)</u>	<u>Volume(Ft³)</u>	<u>Type</u>
90-024-3	1.79E-04	4.0	Samples
90-002-3	1.32E-06	<1.0	Samples
90-020-2	7.66E-05	4.0	Samples
90-017-3	1.00E-07	91.9	Test Equipment
90-019-3	4.08E-11	<1.0	Source

<u>Shipment</u>	<u>Activity(Ci)</u>	<u>Volume(Ft³)</u>	<u>Type</u>
90-018-3	2.59E-08	<1.0	Cable Connector
90-015-3	1.24E-04	4.0	Samples
90-008-3	6.82E-04	5.6	Samples
90-012-3	9.35E-05	4.0	Samples
89-048-3	1.92E-07	<1.0	Samples
89-071-3	1.20E-04	4.0	Samples
90-027-2	9.69E-03	456.0	Laundry
90-010-2	3.71E-01	741.6	DAW
90-028-1	1.46E-05	5.6	Samples
90-036-1	3.81E-01	174.3	Resin
90-034-2	4.53E-02	870.0	DAW
90-038-2	5.99E-06	<1.0	Samples
90-032-2	2.99E-02	97.1	Equipment
90-032-1	3.62E-01	202.1	Resin
90-038-1	5.24E+00	202.1	Resin
90-033-1	1.20E+01	202.1	Resin
90-035-1	6.22E-01	202.1	Resin
90-025-1	2.06E-03	90	Equipment
90-029-1	3.78E-03	60	Equipment
90-027-1	1.16E-03	70	Equipment
90-031-1	10.39E-06	4.5	Samples
90-030-1	65.19E-03	87	Equipment
90-040-2	4.20E-04	9	Equipment (Cameras)
90-017-2	2.02E-03	96	Filter Equipment
90-014-2	12.06E-03	4.5	Equipment
90-018-1	31.40E+00	174	Resin

During walkdowns of the radwaste areas, the inspectors identified the Unit 1 "C" Concentrated Waste Tank which was half full of evaporator bottoms. The inspector noted that the evaporator had not been used for a number of years. The inspector discussed with the licensee any plans to process and dispose of these evaporator bottoms. The licensee had no immediate plans in this area but committed to process this material by June 1, 1991. Licensee action in this area will be reviewed during a subsequent inspection. (50-245/90-15-01).

The inspectors also noted in the Unit 1 Solid Rad Waste Building that a number of barrels of material were stored there, awaiting processing and/or disposition. The licensee maintained a status board on which the barrels were each identified along with their contents and radiation levels, as applicable. One barrel, No. C01529, had an indicated contact reading of 40 R/hr and contents designated as "Unknown". In discussions with the licensee, the inspector determined that the licensee could not identify the contents of the barrel, where it came from or how long it had been there. The licensee committed to determine this information by January 1, 1991. The inspector noted that the available information

and its storage in a locked High Radiation Area precluded any short-term personnel exposure hazard. The inspector stated that this area would be reviewed during a subsequent inspection (50-245/90-15-02; 50-336/90-16-01; 50-423/90-14-01).

4.2 Transportation

Transportation activities at Millstone were the responsibility of the Rad Materials Handling Group. This group selected shipping containers, prepared shipping manifests and performed radiological surveys in conjunction with the Health Physics Department. The transportation procedures reviewed as a part of this inspection are listed below.

RW 6003/26003/36003, Rev. 3, "Radioactive Materials Shipping Compliance"

RW 6004/26004/36004, Rev. 8, "Shipment of Radwaste"

RW 6009/26009/36009, Rev. 4, "Radwaste Shipment Survey Procedure"

The inspector determined that these procedures accurately described the licensee's process and methodology for radioactive materials shipping and fully complied with the requirements.

The inspectors observed the preparation of a shipment of spent dewatered resins on August 2, 1990. The personnel involved were noted to transfer the liner to the shipping cask, prepare the shipping papers and conduct the required surveys, all in a highly professional manner. No weaknesses were observed in this area.

4.3 Training

The licensee had an exemplary training program for employees in the Rad Materials Handling Section. The training program included both extensive formal and on-the-job training. This inspection included review of the training manual for new employees, "Millstone Radioactive Materials Workers Training Program Implementing Procedure", (NTM-3.145), Rev. 0, and the program manual for refresher training, "Millstone Radioactive Material Handlers Continuing Training", (NTM-2.02), Rev. 0. Additionally, operations personnel at each unit who served as equipment operators were given unit-specific training in radwaste processing. This training was conducted both in a classroom setting and on the job. These training programs exceed the requirements of NRC IE Bulletin 79-19.

4.4 Quality Assurance/Quality Control

The licensee's quality assurance program included 100-percent surveillances for the processing and packaging of radwaste for shipment. Mandatory QC hold points have been established for selected waste processing parameters. Audits of the following

vendors who provide services or equipment for radwaste processing and disposal at Millstone were reviewed.

TE 56640-K001, Chem Nuclear Systems, Incorporated, Audit by Nuclear Procurement Issues Council (NUPIC) (Wolf Creek) August 1, 1989

AO 4333, NuPac Services, Inc., November 22, 1989 by Northeast Utilities Services Company (NUSCO) Procurement Vendor Services

AO 4104, Transnuclear, Inc., August 7, 1989 by NUSCO.

The inspector noted that the scope and technical depth of the audits were excellent; no significant findings were identified; and areas identified for action or resolutions were tracked and resolved by the licensee in a timely manner.

5.0 Exit Interview

At the conclusion of the inspection an exit meeting was held with the licensee's staff (indicated in Section 1.0 of this report) to discuss the findings of the inspection. The licensee made commitments associated with the two open items identified during the radwaste inspection as discussed in Section 4.1 of this report.