

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-245/91-22
50-336/91-26
50-423/91-23

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

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

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

Facility Name: Millstone Nuclear Power Station Units 1, 2 & 3

Inspection At: Waterford, Connecticut

Inspection Conducted: September 23-27, 1991

Inspector:

J. Furia
J. Furia, Senior Radiation Specialist,
Facilities Radiological Protection Section
(FRPS), Facilities Radiological Safety and
Safeguards Branch (FRSSB), Division of
Radiation Safety and Safeguards (DRSS)

10/1/91
date

Approved by:

W. Pasciak
W. Pasciak, Chief, FRPS, FRSSB, DRSS

10-1-91
date

Inspection Summary: Inspection on September 23-27, 1991
(Combined Inspection Report Nos. 50-245/91-22; 50-336/91-26; 50-
423/91-23)

Areas Inspected: Routine unannounced inspection of the radwaste and transportation programs including: management organization, training of staff, shipping records, assurance of quality, and implementation of the above programs.

Results: Within the areas inspected, no violations or deviations were noted.

DETAILS

1. Personnel Contacted

1.1 Licensee Personnel

- P. Burke, Training Coordinator
- * R. Factora, Unit Services Director
- * J. LaWare, Senior Engineering Technologist
- * C. Palmer, Manager, Health Physics Support
- * M. Ross, Radwaste Operations, Unit 1
- * G. Seckinger, Assistant Supervisor, Radioactive Materials
- * J. Sullivan, Manager, Health Physics Operations
- * S. Turowski, Supervisor, Radioactive Materials

1.2 NRC Personnel

- D. Dempsey, Resident Inspector
- P. Habighorst, Resident Inspector
- K. Kolacsyk, Resident Inspector
- W. Raymond, Senior Resident Inspector

* Denotes those present at the exit interview on September 27, 1991.

2. Purpose

The purpose of this routine inspection was to review the licensee's programs for radwaste collection, processing and transportation.

3. Previously Identified Items

(Closed) Violation (50-245/90-08-01; 50-245/91-08-02) Failure to comply with 10 CFR 61.56 and 10 CFR 71.12. These two items were combined into one Notice of Violation. The licensee had completed all corrective actions indicated in their response to the Notice, including revision of the cask utilization procedure for the TN-RAM shipping cask, a review of radwaste and transportation procedures by the Radioactive Materials staff, and an independent review of the radwaste and transportation procedures. This item is closed.

(Open) Unresolved (50-245/90-15-01) Process evaporator bottoms in Tank C. The licensee initiated a cleanup campaign in the room where the "C" Concentrated Waste Tank (CWT) was located, along with the "A" and "B" Floor Drain Collector Tanks (FDCT), which were still in use. This effort included decontaminating the room, removal of sludge on the floor, and flushing the two FDCTs. In addition, the licensee took samples of the CWT contents, and have contracted with Chem-Nuclear Systems, Inc., for processing and disposal of the CWT contents. This item remains open, pending final processing and disposal of the CWT contents.

(Closed) Unresolved (50-245/90-15-02; 50-336/90-16-01; 50-423/90-14-01) Identify barrel of unknown material. The contents of the barrel located in the Unit 1 radwaste holding area was identified as previously processed spent resins in urea formaldehyde. Due to this stabilization media being no longer acceptable at the Barnwell, South Carolina, disposal facility, the licensee was investigating alternatives for disposal of this material. The contents of the barrel are now available for review in accordance with 10 CFR 20.203(f). This item is closed.

4. Transportation and Solid Radwaste

The radwaste and transportation programs at Millstone were the responsibilities of the three units respective Radwaste Operations Sections and the Radioactive Materials Group of the Health Physics Support Department. This structure had remained the same since the last inspection in this area.

4.1 Solid Radwaste

Processing of plant water systems was the responsibility of the respective Units Operations Departments. All three units utilized demineralizers for high conductivity wastes in lieu of existing waste evaporators. At Units 1 and 3, spent resins were then sluiced to High Integrity Containers which were dewatered by a vendor, NuPac Services, Inc., under the direction of the Radioactive Materials Group. The vendor dewatering system included provisions for a hot air drying regime, which was performed at Unit 1. Resins from Unit 3 had gross dewatering performed at the Unit, and then the HIC was transferred to Unit 1 for the final hot air drying. At Unit 2, the Operations Department was responsible for dewatering the resins in HICs utilizing a sandpiper pump, and the dewatered HIC provided to the Radioactive Materials Group for transport to the disposal site. Spent filters were collected in HICs or liners and solidified utilizing a Chem-Nuclear Systems, Inc. process. During this inspection, observations were made of the licensee and its vendor performing solidifications of filter cartridges from Unit 2. This activity was being conducted in the Unit 1 Solid Radwaste Facility, and was performed in a professional manner.

Unit 1 utilized a zinc injection program to inhibit plant corrosion, and this usage was reflected in the plant waste streams which had significant levels of zinc-65 present. During 1991, Unit 2 processed its primary letdown resins for disposal, and it was noted

that a large percentage of the isotopic content of this material was nickel-63. Also of note at Unit 2 was the relatively low level of iron-55 in its waste streams.

Dry Active Wastes (DAW) were collected by the units, and brought to the licensee's collection and processing building, where the wastes were sorted, compacted, and staged for shipment. DAW was segregated by unit such that each container of DAW sent to the disposal site contained only one unit's wastes.

The licensee utilized waste stream specific scaling factors based upon the analysis of samples sent annually to TMA Norcal for analysis. In addition, the licensee tracks the fission product to activation product ratios at each unit to detect any possible fuel failure which might invalidate the scaling factors being utilized.

4.2 Transportation

Preparation and shipment of radioactive materials off-site was the responsibility of the Radioactive Materials Group. The licensee maintained current copies of receiver licenses to meet the requirements of 10 CFR 30.41; and maintained copies of cask manuals and Certificates of Compliance for NRC approved shipping casks utilized.

As part of this inspection, the following radioactive material shipping records were reviewed:

<u>Shipment #</u>	<u>Activity (Ci)</u>	<u>Volume (cu ft)</u>	<u>Type</u>
91-006-1	6.65E+00	174.3	Resin
91-007-1	7.03E+00	202.1	Resin
91-010-1	1.29E-01	741.6	DAW
91-011-1	7.21E+00	202.1	Resin
91-012-1	2.58E+00	202.1	Resin
91-013-1	2.19E+00	207.4	DAW
91-016-1	7.92E-01	202.1	Resin
91-048-1	1.83E+02	132.4	Resin
91-053-1	2.62E+02	132.4	Resin
91-096-1	7.22E-04	17.5	Equipment
91-103-1	6.65E-03	310.4	Laundry
91-002-2	8.46E+02	120.3	Resin
91-009-2	3.14E-01	834.3	DAW
91-029-2	1.55E-02	1137.0	Equipment
91-034-2	3.98E+00	202.1	Resin
91-004-3	5.79E+00	202.1	Resin
91-034-3	2.28E-01	806.6	DAW
91-041-3	9.03E+00	202.1	Resin

91-043-3	5.72E-01	834.3	DAW
91-050-3	6.50E+01	202.1	Resin

All shipping records were found to be complete, and to meet the requirements set forth in 10 CFR Parts 61 and 71, and 49 CFR Parts 100-178.

In addition, the inspector made direct observations of a licensee shipment of DAW to the Barnwell, South Carolina, disposal site (Shipment # 91-106-1). The DAW containers were braced inside a trailer, with Health Physics Technicians present to conduct surveys of the trailer and tractor. This shipment was prepared in a professional manner by the licensee's staff.

4.3 Assurance of Quality

The licensee's program for assurance of quality in the radwaste and transportation area involved conducting vendor and in-plant audits, surveillances of plant activities, and having sign-off points within the licensee's procedures for preparing and shipping radioactive materials.

The licensee's vendor audit group was responsible for conducting periodic audits of vendors who provided NRC approved shipping casks. An audit of Chem-Nuclear Systems, Inc. was conducted under the auspices of the Nuclear Utilities Procurement Issues Council, of which the licensee was a member. This audit, number TE 56640-K001, was dated August 1, 1989, and the licensee's records included documentation on the closeout of findings and recommendations made in the audit.

The licensee's Quality Assurance Audit Group conducted biennial audits of the in-plant radwaste and transportation program. Audit A60504, dated August 14, 1990, was the most recent audit in this area. Four findings were noted in the audit report, none of which had significant safety interest. The audit primarily examined transportation of packages and procedural compliance. No examination of the licensee's Process Control Program or waste management techniques and practices was included in this audit. A Millstone Health Physics Radioactive Waste Appraisal, dated April 15, 1991, was also reviewed as part of this inspection. This licensee initiative did examine some of the licensee's waste management techniques and practices.

The licensee's Quality Surveillance Department (QSD) performed surveillances of radwaste activities and

provided 100% coverage of all radwaste shipments. During 1991, one surveillance was performed of the work orders utilized by the Radioactive Materials Group.

4.4 Training

The licensee's program for meeting its commitments in response to NRC IE Bulletin 79-19 included conducting both initial and continuing training for Radioactive Materials Handlers, Quality Services Department and supervisory personnel. These personnel received two training programs per year in 1990 and 1991. The training materials covered changes in plant procedures and equipment, updates and refresher training on 10 CFR Parts 61 and 71 requirements, and videotapes of guest speakers and topics. In 1990, the licensee had a representative from the State of Connecticut give a talk to the Supervisory personnel on the status of the State's actions to establish a low-level disposal site in Connecticut. This talk was videotaped, and later utilized in the training programs for the other two groups. The licensee's program for training in this area continues to be a notable strength.

5. Exit Interview

The inspector met with the licensee representatives denoted in Section 1 at the conclusion of the inspection on September 27, 1991. The inspector summarized the purpose, scope and findings of the inspection.