

NUCLEAR REGULATORY COMMISSION  
REGION I

Report Nos. 50-309/89-23

Docket Nos. 50-309

License Nos. DPR-36 Priority \_\_\_\_\_ Category C

Licensee: Maine Yankee Atomic Power Company  
83 Edison Drive  
Augusta, Maine 04336

Facility Name: Maine Yankee Nuclear Generating Station

Inspection At: Wiscasset, Maine

Inspection Conducted: November 13-16, 1989

Inspectors: *Josyph Duran*  
J. Faria, Radiation Specialist, ERPS

11/21/89  
date

Approved by: *Robert A. Bores*  
R. Bores, Chief, Effluent Radiation  
Protection Section, FRSSB

11/21/89  
date

Inspection Summary: Inspection on November 13-16, 1989 (Inspection Report No. 50-309/89-23)

Areas Inspected: Routine unannounced inspection of the solid radioactive waste systems and transportation programs including: Management controls, audits, quality assurance, and implementation of the above programs.

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

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## DETAILS

### 1.0 Personnel Contacted

#### 1.1 Licensee Personnel

- \* R. Blackmore, Plant Manager
- D. Ouellette, Hazardous Waste Coordinator
- \* G. Pillsbury, Radiation Protection Manager
- \* E. Heath, Radiological Controls Supervisor
- \* R. Nelson, Manager, Technical Support Department
- S. LeClerc, Quality Programs Section Head
- M. Hinkley, Health Physics Technician
- \* J. Frothingham, Manager, Quality Programs Department
- \* R. Crosby, Senior Licensing Engineer

#### 1.2 State of Maine

- \* P. Dotsie, State Nuclear Safety Inspector

#### 1.3 NRC Personnel

- \* R. Freudenberger, Resident Inspector

\* Denotes those present at the exit meeting on November 16, 1989.

### 2.0 Purpose

The purpose of this routine inspection was to review the licensee's program to properly prepare, package and ship licensed radioactive materials for transport and disposal.

### 3.0 Previously Identified Items

(Closed) Violation (50-309/88-23-01) Failure to properly quantify isotopes on radwaste manifests. The licensee procured and installed a computer program for the calculation of transportation and waste classifications. In addition, the licensee revised Procedure 9.1.2, "Quality Control for Radioactive Waste Program", to require a review of all shipping documents by the Radiological Controls Supervisor prior to a shipment leaving the licensee's site. This item is closed.

(Open) Unresolved Item (50-309/89-15-02) Inoperable sump in the radwaste storage bunker. The licensee has repaired the sump, and drained out all freestanding water in the radwaste storage bunker. The licensee has not established a formal surveillance schedule to ensure the continued proper operation of this sump. This item remains open.

#### 4.0 Transportation and Solid Radwaste

In accordance with plant procedures, preparation, packaging and transportation of wastes are the responsibility of the Hazardous Waste Coordinator, who reports to the Radiological Controls Supervisor. The incumbent Hazardous Waste Coordinator has been in this position since May, 1989. Wastes included spent resins, evaporator bottoms, filters and Dry Active Wastes (DAW).

#### 4.1 Quality Assurance /Quality Control

The Quality Assurance/Quality Control program at Maine Yankee involved Quality Assurance audits of inplant and principle vendor activities, Quality Control reports on selected radwaste activities, and Quality Control hold points and checklists to examine each shipment and major radwaste evolutions. Audit MY-89-09, dated August 24, 1989 was an evaluation of the licensee's Radwaste and Process Control Program. There was one deficiency and two observations identified in this audit, none having direct safety significance. The deficiency was promptly addressed by the licensee, and corrective actions were verified by Quality Assurance. The auditing of the radwaste area has significantly improved since the last NRC inspection in this area, conducted in December, 1988.

Audit 87-078, dated August 6, 1987, was conducted to evaluate Westinghouse/Hittman (now Westinghouse RS) which provided shipping casks, waste solidification and transportation services, identified eight deficiencies, none of which involved significant safety issues. This audit was conducted by the Yankee Atomic Electric Company on behalf of its affiliated member companies, including the licensee.

The Quality Program Department (QPD) conducted periodic evaluations of radwaste activities, and in addition had mandatory radioactive material shipment hold points. Evaluation 89E-003 was based upon the observation of a waste solidification conducted in February, 1989. One deficiency and 12 observations were noted, which related to plant specific procedures and procedural violations but which had no direct impact on the quality of the radwaste processed. Hold points for QPD review were documented for each shipment of radwaste.

This program of Quality Assurance and Control activities was determined to have significantly improved since the last NRC inspection in this area. The inspector had no further questions in this area.

#### 4.2 Transportation

As part of this inspection, the inspector reviewed the records of the eight radioactive material shipments listed below.

Shipment #	Volume (cu ft)	Activity (Ci)	Type
89-SEG-9	820	1.81E-1	DAW
89-SEG-10	1603	1.63E+0	DAW
0889-262	981	2.73E-1	DAW
0989-230	158.1	6.70E+1	Resin
1089-174	84	1.35E+1	Filters
1089-130	158.1	5.35E+1	Resin
1189-072	158.1	4.73E+0	DAW
89-L-12	360	4.94E-2	Laundry

All records were found to be complete, and to accurately classify the material in accordance with 10 CFR 71 and 49 CFR Parts 100-179.

The inspector also observed the loading and shipment of a resin High Integrity Container (HIC), shipment 1189-191. Licensee actions observed included incoming inspection of the transport vehicle and shipping cask (a Hittman HN-100, Series III cask), loading of the HIC (NUHIC Model 120) into the shipping cask, and the outgoing survey of the shipping cask and transport vehicle. The licensee personnel involved in this evolution included representatives of the maintenance, operations, radiological controls and QPD departments. This shipment was conducted in a highly professional manner, and no violations or deviations were observed.

In addition, the inspector reviewed the following transportation procedures.

9.1.14, Rev 12, "Receipt of Radioactive Material"

9.1.15, Rev 23, "Shipment of Radioactive Material"

9.1.18, Rev 11, "Receipt and Handling of New Reactor Fuel"

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

#### 4.3 Radwaste

In accordance with plant procedures, liquids were processed through the plant evaporator, and the evaporator bottoms were then solidified utilizing a Hittman procedure, or were processed through a DURATEK demineralization system. Spent resins were sluiced to a High Integrity Container and dewatered by the licensee. Spent filters were stored on site in shielded containers. Uncompactable DAW was bulk loaded in B-88 containers or SeaVars for shipment to Scientific

Ecology Group (SEG). Compactable DAW was compacted by the licensee in B-88 containers, which were then sent to SEG for supercompaction. Laundry was processed by Interstate Nuclear Services (INS).

The inspector reviewed the following procedures related to radwaste.

9.1.13, Rev 3, "Transfer and Storage of Radioactive Waste Containers in the Low Level Waste and Equipment Temporary Storage Building"

9.1.21, Rev 3, "Preparation of Radioactive Solid Waste for Disposal"

9.1.29, Rev 2, "Quality Control for Radioactive Waste Program"

1.18.4, Rev 6, "Spent Resin Storage and Processing".

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

The inspector examined the radwaste storage bunker and discussed with the licensee staff the concerns raised during a previous NRC inspection (50-309/89-15). The sump pump for the bunker was repaired and was found to be operational at the time of this inspection, however no surveillance system had been established to verify sump pump operability. Material in the bunker included three small HICs, which the licensee indicated were to be shipped for burial during the week of November 20, 1989, a neutron source in a long shielded pipe, and several miscellaneous contaminated items wrapped in Herculite. All items were on pieces of lumber which prevented them from coming into contact with the floor of the bunker. Licensee personnel indicated that utilization of the bunker would be limited in the future, with its principle use being temporary storage of HICs containing processed radwaste awaiting disposal.

Scaling factors for plant wastes were evaluated on an annual basis by Yankee Atomic Electric Company for all waste streams in accordance with plant procedures. This met the sampling criteria set forth in the NRC Branch Technical Position for Waste Classification.

The licensee has made two significant improvements in the radwaste area, in the calculation of transport and waste classification. These were the purchase and utilization of the RADMAN computer code for the calculation of waste and transport classification, and the requirement for the Radiological Controls Supervisor to review all shipping paperwork prior to the transport vehicle leaving the Maine Yankee site.

The inspector had no further questions in this area.

#### 4.4 Training

Training in the areas of transportation and radwaste was presented to Radiological Controls Technicians on an annual basis. This training program consisted of the presentation of one course per year from those listed below.

RP-SRM-02, "Radwaste Shipping Preparation"

RP-SRM-03, "Radwaste Transport Vehicle"

RP-SRM-04, "Labelling, Marking and Classification"

Additionally, the Hazardous Waste Coordinator and the Radiological Controls Supervisor are given biennial training via a vendor supplied training course. This program was determined to meet the requirements of NRC IE Bulletin 79-19 for the training of radwaste workers.

#### 4.5 Interim Radwaste Storage

The licensee has designed and constructed a Low Level Waste Storage Building, located outside the Radiation Controlled Area of the plant. This facility has sufficient capacity to store all packaged radwaste generated at Maine Yankee for five years or more, assuming current radwaste generation rates. This facility is currently in limited use, with DAW in B-88 boxes, a solidified liner containing evaporator bottoms, contaminated asphalt and sand in 55-gallon drums, empty HICs, and some outage equipment currently in storage. The inspector had no further questions in this area.

#### 5.0 Exit Interview

The inspector met the licensee representatives (denoted in Section 1) at the conclusion of the inspection on November 16, 1989. The inspector summarized the purpose, scope, and findings of the inspection.