

NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-277/90-05
50-278/90-05

Docket Nos. 50-277
50-278

License Nos. DPR-44
DPR-56

Licensee: Philadelphia Electric Company
P. O. Box 7520
Philadelphia, Pennsylvania 19101

Facility Name: Peach Bottom Atomic Power Station Units 2 & 3

Inspection At: Delta, Pennsylvania

Inspection Conducted: January 22-26, 1990

Inspector: *Joseph Duran* 1-30-90
J. Furia, Radiation Specialist, Effluents Radiation date
Protection Section (ERPS)

Approved By: *Jason C. King* 1-30-90
Jo R. Boyes, Chief, ERPS, Facilities Radiological Safety date
and Safeguards Branch

Inspection Summary: Inspection on January 22-26, 1990 (Combined Inspection Report Nos. 50-277/90-05; 50-278/90-05)

Areas Inspected: Routine unannounced inspection of the transportation and solid radwaste 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

- * W. Birely, Director, Waste Management, Philadelphia Electric
- * D. Cribbe, Regulatory Engineer
- * F. Crosse, Radwaste Shipping Supervisor
- G. Dworsak, Radioactive Material Shipping Coordinator
- * D. Foss, Licensing Engineer
- * J. Hesler, Radwaste Engineering Supervisor
- * M. Moore, Nuclear Quality Assurance Engineer
- * M. Ryan, Senior Engineer, Radwaste
- D. Smith, Vice President - Peach Bottom
- R. Sware, Coordinator, Plant Housekeeping

1.2 NRC Personnel

- J. Lyash, Senior Resident Inspector
- * L. Myers, Resident Inspector
- R. Urban, Resident Inspector

* Denotes those present at the exit meeting on January 26, 1990.

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 Transportation and Solid Radwaste

In accordance with plant procedures, the radwaste program was under the direction of the Senior Engineer - Radwaste, who reported to the Superintendent of Services. Within the scope of the Senior Engineer - Radwaste's management area was inplant radwaste processing, packaging of radioactive materials, shipment of radioactive materials and station decontamination. The incumbent Senior Engineer - Radwaste was appointed to the position in December, 1989. Within the radwaste program, there appeared to be adequate staff to perform appointed duties.

3.1 Quality Assurance/Quality Control

The Quality Assurance (QA) program developed by the licensee involved four groups performing specific tasks within the QA Plan. The Corporate Vendor Audit Group performed audits of vendors who provided materials and/or services to the licensee. Audit D-158, dated November 18, 1987, was conducted at Westinghouse-Hittman (now

Westinghouse RS), which provided NRC-approved shipping casks to the licensee. This audit had several findings, none involving significant safety issues, which were resolved in a timely manner. The Quality Assurance Audit Group conducted audits of the radwaste program on a biennial basis. An audit was scheduled to be conducted this year, although at the time of this inspection, an audit plan had not yet been developed. A newly created Technical Monitoring Group conducted random surveillance type inspections of various plant activities, including radwaste. The results of these inspections were provided to the appropriate plant management on a monthly basis. The Radwaste Group performed its own Quality Control inspections at various stages of the processing program. This utilization of radwaste personnel was new to the site, and was the subject of several surveillances by the Technical Monitoring Group. At the time of this inspection, no findings of any safety significance had been noted regarding this program.

3.2 Transportation

Preparation of documentation in support of radioactive materials shipments was the responsibility of the Radwaste Shipping Supervisor and his staff, who report to the Senior Engineer - Radwaste. As part of this inspection, direct observation was made of two radwaste shipments, numbers 08-90 and 09-90. These shipments were of spent resins contained in a polyethylene High Integrity Container (poly-HIC), and transported in Westinghouse RS HN-215H shipping casks. The inspector observed the receipt of the transport vehicles and shipping casks on site; transfer of the poly-HICs to their respective shipping casks; post-loading inspection and surveys of the shipping casks; and final documentation of the shipments. All activities were accomplished in a highly professional manner by plant staff, especially the Radioactive Material Shipping Supervisor.

As part of this inspection, the inspector reviewed the records of the 14 radioactive material shipments listed below.

| <u>Shipment #</u> | <u>Volume (cu ft)</u> | <u>Activity (Ci)</u> | <u>Type</u> |
|-------------------|-----------------------|----------------------|-----------------|
| 82-89 | 57.70 | 8.44E+02 | Core Components |
| 83-89 | 202.10 | 1.86E+00 | Resin |
| 84-89 | 202.10 | 5.93E+00 | Resin |
| 85-89 | 202.10 | 5.09E+00 | Resin |
| 86-89 | 202.10 | 1.16E+00 | Resin |
| 01-90 | 202.10 | 6.75E-01 | Resin |
| 02-90 | 202.10 | 1.66E+00 | Resin |
| 03-90 | 202.10 | 1.97E+00 | Resin |
| 04-90 | 202.10 | 8.87E-01 | Resin |
| 05-90 | 202.10 | 9.44E-01 | Resin |
| 06-90 | 202.10 | 1.22E+00 | Resin |

| | | | |
|------------|---------|----------|-------|
| 07-90 | 202.10 | 1.22E+00 | Resin |
| RMS-115-89 | 1280.00 | 7.97E-01 | DAW |
| RMS-003-90 | 2560.00 | 1.84E-01 | DAW |

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 licensee utilized three computer codes or programs for the calculation of transport classification, waste classification and preparation of documentation. A Lotus Development Corporation LOTUS 1-2-3 program was used to perform classification calculations; a Bechtel PACKRAD code was used to prepare documentation based upon the results of the LOTUS 1-2-3 calculations; and a MICROSIELD program was used for dose-to-curie calculations for Dry Active Waste (DAW) shipments.

3.3 Radwaste

The licensee processed primary plant water through demineralizers, generating a primary plant spent resin waste stream; chemical, high and low conductivity waste water through the radwaste demineralizers, generating a radwaste spent resin waste stream; mop water through an Epicor system, generating small volumes of spent resins; and collected DAW for bulk loading in SeaVans for shipment to the Quadrex Recycling Center for sorting, decontamination, and where necessary, disposal.

As part of the inspection, the following procedures related to the radwaste program were reviewed.

RW-110, Rev 1, "10 CFR 61 Compliance Program"

RW-120, Rev 0, "Solid Radwaste System Process Control Program"

RW-140, Rev 1, "Security Requirements for Low Level Waste Storage Facility (LLWSF) and U/1 Fuel Vault"

RW-210, Rev 2, "Collection/Sorting/Segregation of Trash"

RW-260, Rev 1, "Operation of Resin Drying (Dewatering) System"

RW-520, Rev 4, "10 CFR 61 Sampling"

RW-541, Rev 2, "Packaging Radioactive and Non-Radioactive Material for Storage at Unit 1 or LLWSF"

RW-570, Rev 2, "Storage of Radioactive and Non-Radioactive Material and Radwaste at U/1 New Fuel Vault and Low Level Waste Storage Facility (LLWSF)"

These procedures were determined to be comprehensive in scope and to adequately reflect current plant operations.

Scaling factors were determined annually for the DAW, primary spent resin, and radwaste spent resin waste streams through the submission of composited plant samples to Scientific Application International Corporation (SAIC) for analysis. In addition, results of plant chemistry analyses were provided to the Senior Engineer - Radwaste, to ensure that any changes in plant chemistry which could effect the scaling factors used would be noted and corrected for.

As part of this inspection, the inspector conducted direct observation of the transfer of spent vacuum filter cartridges stored in the Units 2 and 3 spent fuel pools to a Chem Nuclear Systems, Inc. 8-120B shipping cask. This activity was accomplished in a highly professional manner utilizing contractor, maintenance and health physics personnel. Also observed was the acceptance inspection of this shipping cask upon arrival at the plant site.

3.4 Training

The training program for station personnel involved in the radwaste program was contained in Procedure TP-371, Rev 0, "Radwaste Shipping, Handling and Minimization Course Plan". The program provided for separate training and retraining courses for three groups of station personnel. The first group included radwaste supervisory personnel and members of the QA organization. The second group included plant radwaste technicians and health physics personnel assigned to support the radwaste program. The third group included plant auxiliary operators. Each group had both initial and retraining course programs. Retraining was conducted on an annual basis. The scope and technical depth of these training programs was determined to be excellent.

3.5 Interim Radwaste Storage

The licensee had constructed and was partially utilizing the Low Level Waste Storage Facility (LLWSF), which was designed to provide onsite interim radwaste storage capability. This building contained facilities for the storage of DAW, spent resins and other types of plant waste, and could accommodate the use of mobile radwaste processing systems. Storage capacity of the facility appeared adequate for interim storage of two and one-half to five years of plant wastes with the exception of DAW which was dependent upon the continued access to the Quadrex facility for segregation and supercompaction of this material. The licensee had plans to install segregation and compaction facilities within the plant site as part of a new radwaste processing facility.

4.0 Exit Interview

The inspector met the licensee representatives (denoted in Section 1) at the conclusion of the inspection on January 26, 1990. The inspector summarized the purpose, scope, and findings of the inspection.