

U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report Nos. 50-277/92-12  
50-278/92-12

Docket Nos. 50-277  
50-278

License Nos. DPR-44 Category C  
DPR-56 C

Licensee: Philadelphia Electric Company  
Correspondence Control Desk  
P.O. Box 195  
Wayne, Pa 19087-0195

Facility Name: Peach Bottom Atomic Power Station, Units 2 and 3

Inspection At: Delta, Pennsylvania

Inspection Period: June 1 - 5, 1992

Inspector: D. Chawaga  
D. Chawaga, Radiation Specialist  
Facilities Radiation Protection Section

6-19-92  
Date

Approved by: W. Pasciak  
W. Pasciak, Chief  
Facilities Radiation Protection Section

6-22-92  
Date

Areas Inspected: The inspection was a radioactive waste and transportation inspection. Both reactor units were operating during the inspection. Areas reviewed included organization, staffing, training, shipping and processing records for recent radioactive material and waste shipments, radiological incidents attributable to radwaste activities, field observations, sealing factors and chemistry, plant tours, and Quality Assurance audits.

Results: Good performance was noted in several areas and no violations were identified.

## DETAILS

### 1.0 Persons Contacted

#### 1.1 Philadelphia Electric Company

- \* F. Crosse, Radwaste Shipping Supervisor
- \* J. Hesler, Jr., Radwaste Technical Support Supervisor
- \* J. Jordan, Branch Head, Technical Support
- \* S. Lee, Engineer, Nuclear Quality Assurance Auditor
- \* D. LeQuia, Superintendent of Plant Services
- \* D. Meyers, Technical Support
- \* K. Powers, Plant Manager
- \* G. Ruf, Technical Support
- \* M. Ryan, Radwaste Senior Engineer
- \* R. Smith, Regulatory Inspection Coordinator
- \* G. Stephenson, Radwaste Training
- \* R. Sware, Jr., Radwaste Field Supervisor

#### 1.2 NRC Personnel

- \* S. Barr, Resident Inspector
- \* H. Kaplan, Reactor Engineer
- \* J. Schoppy, Reactor Engineer

#### 1.3 Others

- \* R. Knieriem, Delmarva Power Site Representative
- \* P. Ott, PSE&G Site Representative
- \* S. Maingi, PA BRP, Reactor Engineer

\* Denotes attendance at the exit meeting.

### 2.0 Purpose

The purpose of this routine unannounced inspection was to assess the licensee's radiological controls program. Areas reviewed included organization, staffing, training, shipping and processing records for recent radioactive material and waste shipments, radiological incidents attributable to radwaste activities, field observations, scaling factors and chemistry, plant tours, and Quality Assurance audits.

### 3.0 Organization, Staffing and Training

The Radwaste Branch of the Plant Services Section is responsible for radioactive waste packaging and shipping activities at the station. Operations and Radwaste personnel share the responsibility for safe processing and transfer of radioactive waste within plant systems. Health Physics personnel provide radiation protection support as necessary to support these activities.

The Radwaste Branch is divided into the following five areas of responsibility: Radwaste Engineering; Radwaste Shipping; Housekeeping/Laundry; Liquid/Heavy Decontamination; and Field Supervision. The lead supervisor position in each of these areas was filled by permanent PECO staff employees. The Radwaste Engineering and Shipping groups were also predominately staffed by permanent PECO personnel below the supervisor level. Contractors make up the entire staff of foremen and technicians (approximately 40 persons) under the direction of the Supervisors of Liquid/Heavy Decontamination, Housekeeping/Laundry and Field Supervision.

The inspector verified that the responsibility for transportation activities were clearly defined in writing. Each Radwaste Procedure has a section which clearly defined "Responsibilities" and "Authorities." Radwaste Training Indices, Lesson Plans, and training attendance lists were also reviewed and no weaknesses were noted regarding compliance with NRC training regulations as clarified in Bulletin 79-19. Station personnel were reviewing the need for increasing the frequency of retraining on NRC Bulletin 79-19 specifics for operators at the de-watering facility.

The Radwaste Branch maintained current copies of NRC and DOT Regulations which were readily available to personnel. Reference copies of the regulations were supplied to Peach Bottom Atomic Power Station (PBAPS) through a contract vendor in an "easy to use" format which highlighted recent regulatory changes.

Overall, Radwaste personnel were observed to be qualified and competent in all activities observed by the inspector.

### 4.0 Review of Shipment Records

The inspector verified through manual calculation that the following resin shipments were properly classified in accordance with 10 CFR 61.55 (waste type) and 49 CFR 173.403 and 173.425 (LSA definition and shipping requirements).

<u>SHIPMENT #</u>	<u>ACTIVITY (mCi)</u>	<u>VOLUME (FT<sup>3</sup>)</u>	<u>CASK</u>	<u>WASTE</u>
92	1.110E4	202.10	9176/A	Resin
27-92	8.644E5	132.40	9208/B	Resin
10-92	3.920E3	202.10	9176/A	Resin
23-92	3.085E3	202.10	9176/A	Resin
24-92	3.697E3	202.10	9176/A	Resin
29-92	2.657E4	202.10	9176/A	Resin
31-92	3.424E3	202.10	9176/A	Resin

Each shipment record contained copies of the Radioactive Waste Shipment Certification and Notification (when applicable) and Manifest forms required by the South Carolina Department of Health and Environmental Control. A copy of advanced notification to NRC and subsequent amendments to that notification were included in the record for Shipment Number 27-92. Prior notification of shipment records were completed in accordance with 10 CFR 71.97 and were consistent with licensee shipment records and those records maintained in the NRC's Region I office. The inspector reviewed the Certificate of Compliance's (COCs) for the 9176 and 9208 shipping casks which had expiration dates of May 31, 1993 and June 30, 1996. The inspector verified that PECO was listed as a registered user of the aforementioned casks.

The inspector verified, through manual calculation, that the following shipments were performed in compliance with 49 CFR 173.421 (Limited Quantities), 173.403 and 173.425 (LSA definition and shipping requirements).

<u>SHIPMENT #</u>	<u>ACTIVITY(mCi)</u>	<u>VOLUME(FT<sup>3</sup>)</u>	<u>CONTAINER</u>	<u>MATERIAL</u>
L-007-92	1.64E1	900.90	L-42 Box	Contaminated PCs
L-008-92	1.61E1	943.80	L-42 Box	Contaminated PCs
RMS-037-92	3.64E1	2560.00	(2) Seavan	DAW
RMS-038-92	1.01E0	7.5	DOT 17C Drum	Underwater Camera
RMS-039-92	2.66E1	2560	(2) Seavan	DAW
RMS-040-92	9.19E-5	1.10	5 Gal Buckle	Chemistry Samples
RMS-041-92	3.66E2	2560	(2) Seavan	DAW

Shipment records were observed to have been complete and consistent with the requirements of station procedures. The inspector verified that proper documentation was readily available for reference on DOT Specification 7A packages.

The shipments reviewed during the course of this inspection were made to the following consignees:

<u>Facility</u>	<u>License</u> <u>Expiration Date</u>
Barnwell Waste Management Facility	12-31-92
Limerick Generating Station	06-22-2029
Quadrex HPS, Inc./Oak Ridge	10-31-94
Scientific Ecology Group, Inc./Oak Ridge	05-31-94
Teledyne Isotopes, Inc./Westwood	06-30-95
Westinghouse/Waltz Mill	09-28-87 (10 CFR 70.33(b) expiration exemption)

Licensee personnel maintained copies of NRC license for each of the above listed facilities.

Each "Exclusive Use" shipment record reviewed contain a copy of Attachment 8.2 to Station Procedure RW-400, "Instructions for Maintenance of Exclusive Use Controls." The licensee's records for processing, sampling, classifying and shipping of the above listed shipments were found to be complete and consistent.

Licensee records indicated that the burial volume of waste that was shipped each year from PBAPS was as follows:

<u>Year</u>	<u>Cubic Feet</u>	<u>Year</u>	<u>Cubic Feet</u>
1992	5,434	1988	29,0
1991	21,060	1987	55,7
1990	28,557	1986	52,631
1989	31,557		

The licensee has been successful in steadily decreasing the backlog of radwaste inventory stored at the station.

No weaknesses were noted in this review of recent radwaste records.

#### 5.0 Contamination Event in the De-watering Facility

A Health Physics Technician became contaminated on April 29, 1992 while changing an air sample on the top of the de-watering fill-head during processing of a liner containing Reactor Water Clean-Up (RWCU) resin. The liner was contained in a 10-142 shipping cask at the time that contamination controls were compromised. According to the licensee's investigation, a defective latch and hinge on the fill-head access door allowed contamination to escape from the liner to the room during processing. Contamination levels on near-by radwaste equipment were as high as 200 mrad/hour. The general area surfaces in the truck bay were contaminated up to 30,000 dpm/100cm<sup>2</sup>.

Corrective actions taken to prevent recurrence included:

- o Replacement of the seals and latches on the fill-head
- o Installation of a vacuum HEPA to remove initial "shock" of drying cycle
- o Counseling of the operator who provided the procedure required inspection of the door's gasket but failed to report and/or recognize the faulty condition of the door's latching mechanism.

Other actions taken included decontamination of personnel, survey and decontamination of the area and local equipment. The inspector toured the truck bay area and noted that the area had been fully recovered as "clean". Although unnecessary radiation exposure was expended during clean-up and recovery efforts, no regulatory limits were exceeded and reporting of the event to the NRC was not required. The licensee escalated the event investigation from a Radiological Occurrence Report (ROR) to a Reportability Evaluation/Event Investigation Form (RE/EIF). The RE/EIF was still active at the close of the inspection period.

Overall, performance indicators suggest that the contamination control program was improving at PBAPS. The radwaste branch has continued floor cleaning efforts in "clean" areas and had significantly reduced the percentage of contaminated area within the plant. Recently, as would be expected, the rate of Personnel Contamination Report generation has declined with completion of high risk outage work evolutions.

Recent RORs did not contain any other significant incidents attributable to radwaste activities.

#### 6.0 Scaling Factors and Chemistry

The licensee annually updates the scaling factors for isotopes in six waste streams at PBAPS. Scaling factors are updated more frequently if surveillance tests indicate that isotopic percentages have changed significantly. These waste streams included Condensate Resin, RWCU Resin, DAW, oil and the fuel pool for each unit. The inspector reviewed the licensee's records for update of isotopic scaling factors and found them to have been done in accordance with station procedures. The licensee compares the ratio of Co-60 to Cs-137 at a two month frequency to determine if reevaluation of scaling factors might be warranted. The inspector reviewed the data sheets from these surveillance from February of 1991 to April of 1992. The ratios did not differ by greater than a factor of 10 and practices were determined to be in compliance with Station Procedure, "10 CFR 61 Sampling." New scaling factors became effective with the annual update on May 1, 1992.

No weaknesses were noted in this area.

#### 7.0 Field Observations

No weaknesses were noted in direct observation of processing, preparation and shipment of a spent condensate resin from the station. Observations included the filling and de-watering, liner transfer from a process cask to the transport cask (14-210L), rigging, cask lid gasket inspection, bolt torquing during cask lid installation, rain cover installation, surveys, placarding and vehicle inspection. Each task in the shipment process was performed efficiently and personnel radiation exposures were maintained ALARA.

#### 3.0 Plant Systems Walkdown

The inspector toured the radwaste control room, de-watering facility, Low Level Waste Storage Facility (LLWSF) and many areas of the plant containing tanks, filters, demineralizers, sumps and other pumps associated with transfer and processing of radioactive waste in the floor drain and liquid waste collection systems. Areas were posted and controlled in accordance with 10 CFR 20 and Technical Specification requirements. Housekeeping was good in all areas observed within the plant and did not negatively impact radiological control efforts. No radiological safety concerns were noted during the inspector's tour of these areas.



## 9.0 Water Balance Graphics and Performance Trending

The Plant Services Section has developed a series of data sheets which graphically depict the movement of water in various radwaste, chemistry and operations support systems at the station. These data sheets describe equipment and floor drain collection, surge and sample tank levels; refueling, condensate and demineralizer water storage tank levels; leak rates; chemistry parameters; sump pump operating hours and information on the status of the filter/demineralizers and phase separators in the solid radioactive waste system. The data sheets allowed plant management personnel to provide a rapid summary of bulk water inventories and trends. The inspector found that the information presented on the data sheets was clear, concise and easily understood.

## 10.0 Quality Assurance

The inspector discussed the preliminary results of an on-going annual Nuclear Quality Assurance Audit of radwaste activities at the station. The audit was being performed by two individuals and was scheduled to last approximately three weeks. Areas reviewed included radioactive material control, use of the LLWSF, 10 CFR 61 compliance, HP support, Process Control Plan, radwaste management, packaging and transportation.

Overall, the NQA auditors found the program to be strong. The auditors noted that, although Radioactive Material postings on containers met the requirements of 10 CFR 20.203(f), containers stored in the yard at the plant could have been posted with additional information regarding contents and radiological parameters. In addition, the auditors noted that five out of six Area Radiation Monitors (ARMs) in the resin de-watering facility were out of service. The station is required by procedure to have one ARM operable for de-watering operations. Personnel were evaluating the need to restore additional monitors to service. The auditors noted that housekeeping could be improved in the LLWSF.

The auditors found no deficiencies in the programs for packaging, shipping, analyzing and categorizing waste, surveys and completion of paperwork for these activities. In addition, the auditors noted the addition of sump cleaning to the Plant Maintenance schedule and the use of the water balance data sheets (described in Section 9.0) as program improvements.

A preliminary review of the audit scope and findings indicated that the audit was performance based, comprehensive and well performed.

## 11.0 Exit Meeting

A meeting was held with licensee representatives at the end of this inspection on June 5, 1992. The purpose and scope of the inspection were reviewed and the findings of the inspection were discussed in detail at that time.