

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-277/82-02
50-278/82-02

Docket No. 50-277
50-278

License No. DPR-44 & DPR-56 Priority - - Category C

Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Facility Name: Peach Bottom Atomic Power Station

Inspection at: Delta, Pennsylvania

Inspection conducted: February 2-5, 1982

Inspector: *Edward G. Greenman* / for
K. E. Plumlee, Radiation Specialist

AUG 3 1982

date signed

date signed

Approved by: *Edward G. Greenman*
E. G. Greenman, Acting Chief, Facilities
Radiation Protection Section, Technical
Programs Branch

AUG 3 1982

date signed

Inspection Summary:

Inspection on February 2-5, 1982, (Combined Report Nos. 50-277/82-02 and 50-278/82-02)

Areas Inspected: Routine, unannounced safety inspection by a region-based inspector of preparations for radiation protection during refueling including outstanding items, procedures, advanced planning and preparation, training, exposure control, posting, radioactive and contaminated material control, surveys, independent measurements, and transportation of radioactive material. The inspection consisted of 30 inspector-hours onsite.

Results: One violation was identified (failure to post an outdoor radioactive materials area, paragraph 3).

DETAILS

1. Persons Contacted

- * N. Gazda, Radiation Protection Manager
- * A. Hilsmeier, Health Physics & Chemistry Supervisor
- * R. Fleischmann, Assistant Station Superintendent, PBAPS
S. Nelson, ALARA Coordinator
- * W. Ullrich, Station Superintendent, PBAPS
J. Valinski, Health Physics Supervisor
H. Watson, Engineer, Chemistry
J. Wheeler, Superintendent - Nuclear Training

* Denotes presence at the exit interview on February 5, 1982.

2. Licensee Action on Previously Identified Items

(Closed) Violation (278/77-27-01): Temporarily exceeded an instantaneous release limit on gaseous effluents (iodine). The inspector reviewed the licensee's evaluation of iodine release pathways, summarized in a letter dated March 22, 1978, and verified the controls were implemented as stated in the letter. Review of current log sheets and surveillance records showed the reactor coolant chemistry, steam leakage, and sampling of drains were controlled in accordance with the commitments. The inspector verified the drain caps were in place.

(Closed) Inspector Follow Item (278/77-39-06): Review of reactor coolant chemistry and airborne radioiodine release rate. Review of current records effluent release summaries, and recent semi-annual reports of effluent releases identified no violations. Specifically, there were no identified errors in controlling reactor coolant pH, conductivity, and dose equivalent I-131 concentration within limits required by TS 3.6.B and 3.8.C.

(Closed) Inspector Follow Item (278/78-RN-01): Review of termination reports due to ex-employees and NRC. Licensee records of 10 terminated employees were reviewed and no violations were identified. (paragraph 7.b)

(Closed) Inspector Follow Items (277/79-02-05 and -09; 278/79-02-05 and -09): Review of the adequacy of certain surveillance test procedures and the completion of the Surveillance Test Sheets (STS). The inspector reviewed the current ST procedures (see item 79-02-08 below). The inspector verified by interviews of personnel and reviews of selected STS that the responsible individuals were identified by signatures or initials including the workers signatures and a foreman's or supervisor's initials. Each STS as committed to in a letter dated March 16, 1979, was verified complete.

(Closed) Inspector follow item (278/79-02-06): Verify the correction of a radwaste transfer record. Review of the corrected record was documented in Inspection Report No. 277/81-07. The inspector had no further questions.

(Closed) Unresolved item (277/79-02-07 and 278/79-02-07): Review licensee's procedural provisions for isotopic analyses and classification of radioactive material shipments. The inspector reviewed procedures HPO/CO-19, "Preparation of Radwaste Samples and Analysis," HPO/CO71B, "Sampling and Analysis of Spent Resins," and HPO/CO-71M, "Verification of Packages of Radioactive Waste as Low Specific Activity (LSA)". Review of records of recent radwaste shipments classified pursuant to those procedures did not identify any violations.

(Closed) Violation (277/79-02-08 and 278/79-02-08): Failure to complete steps indicated on the periodic Surveillance Test Sheets (STS) for one area radiation monitor, the main steam line monitors, and three effluent monitors; and failure to initiate maintenance requests to correct conditions preventing STS completion. Corrective actions to prevent recurrence were described above (79-02-05). The adequacy of the revised calibration procedures was described in Combined Inspection Report Nos. 50-277/80-18 and 50-278/80-10. The inspector noted the records showed the monitor calibrations were current during this inspection, and the procedural commitments were met.

3. Posting of Radioactive Materials Areas

a. Regulatory Requirements, and Licensee Implementing Procedures

10 CFR 20.203(e) states:

"Additional requirements. (1) Each area of room in which licensed material is used or stored and which contains any radioactive material (other than natural uranium or thorium) in an amount exceeding 10 times the quantity of such material specified in Appendix C of this part shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

CAUTION ¹

RADIOACTIVE MATERIAL(S)"

¹ or DANGER

Further, the licensee's procedure, HPO/CO-11, "Establishing and Posting Radiologically Controlled Areas", states in part:

5. Radioactive Materials Area

- (a) Definition - An area where radioactive materials are used, stored, or which contains any radioactive material in excess of a total of 10 μ Ci for beta-gamma emitters, ...
- (b) Posting - A barrier is established at the point which will encompass the area containing the radioactive materials and is posted with signs which read CAUTION (or DANGER) RADIOACTIVE MATERIALS...

b. Outdoor Radioactive Materials Area

About noon on February 3, 1982, the inspector observed stored radioactive materials in an area that was neither encompassed by a barrier nor posted with applicable signs. The area was located southwest of the Unit 2 Reactor Building. There were more than 100 55-gallon drums, 13 Type B and 25 LSA shipping containers, and numerous bagged or wrapped miscellaneous objects deposited on the ground. The covers were not secured on eight of 25 containers examined. Several of the eight had been partially emptied onto the ground. No one was present in the vicinity.

The licensee representative stated that the items were contaminated tools and equipment to be used during torus modification work in Unit-2 and had been stored outdoors. The container labels indicated the dose-rates were less than one mrem/hr at a distance of three feet, and the container contents were less than 4.4 μ Ci. The contents were determined in accordance with procedure no. HPO/CO-71M - Appendix B.

The inspector made survey measurements at each of the 25 LSA shipping containers. The dose rate at three feet distance was generally 0.2 mrem/hr, which indicated activity of approximately 0.4 millicuries (400 μ Ci). This far exceeded the 10 μ Ci action level of the procedure and the referenced regulatory requirement for the typical isotopes, Co-60 and Cs-137.

This failure to properly post a radioactive materials area is a violation of 10 CFR 20.203(e). (277/82-02-01; 278/82-02-01)

4. Radiation Protection Procedures

The inspector determined, by interview of the Radiation Protection Manager, that the licensee did not anticipate changing any of the routine radiation protection procedures because of outage work.

The licensee routinely reviews and reissues about 20% of the procedures annually to ensure that these procedures are up to date.

The inspector reviewed completed copies of four Surveillance Test Sheets for a radiation monitor and three effluent monitors. Four procedures were reviewed as described in paragraphs 3 and 6. The inspector verified that procedures were being followed for the issuance of radiation work permits, issuing and wearing of personnel dosimeters, issuing and use of respiratory protection equipment, and keeping of personnel dosimetry records.

No inadequate procedures or failure to follow procedures examples were identified.

5. Advance Planning and Preparation for the Outagea. Increased Health Physics Staff

The licensee representative stated 11 contract senior health physics technicians were on site and 19 more were scheduled to arrive in time for the outage.

Senior health physics technician qualifications are given in procedure HPO/CO-80, "Contract Health Physics Technician Entry Procedure", Level B.

The inspector reviewed the resumes and the Form NRC-4 information for 13 of these individuals to verify that their selection complied with the minimum qualification requirements of Technical Specifications 6.3.1 and ANSI N18.1 - 1971 for comparable positions. The inspector interviewed five of these personnel. No violations were identified.

b. Decontamination Crew

The licensee stated that 20 personnel were processing containers of tools and equipment at a rate of about 40 per week, and checking out staging, tools, etc. to be used during the outage. This was planned to expedite major jobs requiring specialized equipment, scaffolds, decontamination, or shielding as examples.

No violations were identified.

c. Mockups and Special Training

The licensee representatives stated the in-service inspection equipment was being inspected, and the responsible personnel were qualifying on test standards. Control rod guide cut-off and non-regenerative heat exchanger repair tasks were being rehearsed.

No violations were identified.

d. Supplies and Equipment

The inspector toured the facility and interviewed personnel to observe the availability of supplies and equipment used during outages. The licensee maintained an inventory control system.

No violations were identified.

6. Traininga. Full-time Radiation Protection Personnel

The licensee representative stated 20 personnel were on full-time training as assistant HP or Chemistry technicians.

The retraining program commitments following Combined Inspection No. 277/80-18 and 278/80-10, and letters dated June 5, 1981, and December 30, 1981, had not yet been fully implemented. Inspection of this area is still outstanding.

b. Contract Health Physics Technician Training

Review of procedure no. HPO/CO-80, Rev. 2, 3/20/81, "Contract Health Physics Technician Entry Procedure" indicated there was a record sheet to show what items the individual had completed. Training involved 36 procedures and 7 types of survey instruments.

Review of records of 11 individuals indicated that the procedure had been implemented.

The inspector interviewed five individuals who had received the above training prior to February 1982. No inadequate training was evident during these contacts.

The inspector noted that no written examinations were required other than General Employee Indoctrination.

No violations were identified.

c. General Employee Indoctrination

General Employee Indoctrination Training was provided to comply with 10 CFR 19.12 and involved a program outline, a contract instructor, and written examinations (licensee procedure A-50, "Training Procedure").

No violations were identified.

d. Escorted Individuals

Untrained individuals such as short term visitors and arrivals who had not yet attended training were instructed to stay with the escort and follow his instructions. They were specifically instructed to comply with emergency signals and public address system announcements and warnings, and to observe posted information and signs, barriers, and local alarms.

7. Exposure Controla. ALARA Considerations

While not fully implemented, an ALARA program appeared to be under development. An ALARA Coordinator had been designated for the outage, and a program description had been drafted. Some job planning was noted such as tasks involving the non-regenerative heat exchanger; and exposure reduction techniques were being considered for certain over-haul work. Adequacy of ALARA staff, training, program implementation and procedural development will be further reviewed in a subsequent inspection. (277/82-02-02; 278/82-02-02)

b. Dosimetry Practices

The inspector carried out the following activities during a review of dosimetry practices:

- (1) Reviewed licensee compliance with the requirements of 10 CFR 20.101 "Radioactive dose standards...", 10 CFR 20.102 "Determination of prior dose", 10 CFR 20.401, "Records of surveys, radiation monitoring, and disposal", 10 CFR 20.408, "Reports of personnel monitoring on termination...", 10 CFR 20.409, "Notifications and reports to individuals", and 10 CFR 19.13(a), "Notifications and reports to individuals";
- (2) Toured the facility, including the reactor building, radwaste facilities and turbine building to observe dosimetry practices on several decontamination, maintenance, and refueling related-jobs;
- (3) Reviewed 10 RWPs to evaluate the instructions for special dosimetry;
- (4) Reviewed the computer printout of dosimetry records;
- (5) Reviewed 13 record files of individuals who were either administratively authorized, or likely to be authorized, to exceed $1\frac{1}{2}$ rems (Each Form NRC-4 was either complete or on hold pending receipt of further information); and;
- (6) Verified by examination of ten personnel files that dosimetry reports were routinely provided to terminated workers and to NRC.

No violations were identified.

c. Adherence to Respiratory Protection Program

The inspector toured the facility to observe compliance with the requirements of 10 CFR 20.103 and Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection." No problems were identified with regard to the issue, use, collection, cleaning, testing, or storage of respirators.

Review of 13 personnel folders verified records were maintained of determinations of physical fitness for respirator use.

Review of records of examples of calculated exposures to airborne radioactive materials, air samples, nasal swipes, contamination surveys, skin contamination and whole body counts did not identify any indications of exposures in excess of 10 CFR 20.103 limits.

8. Posting and Control of Access to Radiation, High Radiation, Contaminated and Airborne Radioactivity Areas

In order to verify compliance with the requirements of 10 CFR 20.203, "Caution signs, labels, signals and controls," the inspector toured the facility and verified the adequacy of posted radiological and survey information, barriers, enclosures, locked gates, and control points.

The inspector also surveyed the outdoor radioactive waste storage area fence and barrier ropes, and vehicles being loaded with material to be transported.

The inspector toured the fenceline around the facility and verified that the accessible areas near the fence did not exceed 0.1 mr/hr.

One violation was identified (paragraph 3).

9. Surveys and Independent Measurements

The inspector conducted a survey of several areas inside the facility, and of the outdoor fenced areas. No errors were identified in the licensee survey records and posted information, except as identified in paragraph 3.

10. Transportation

Part of the inspection effort was to observe the licensee's adherence to regulatory and procedural controls for the transportation of radioactive materials.

The inspector interviewed the individual responsible for the transportation program, and verified he exercised positive management controls over each shipment of radioactive materials. The following attributes were examined:

- The QA/QC department exercised control by means of a procedural hold point, for Type B and Large Quantity container shipments. Records were maintained of QA/QC inspections.
- The training program was documented and attendance records of training were maintained.
- The inspector observed the packaging stocked on site and in use at the facility. No inappropriate packaging was identified.
- Record review verified the licensee maintained the required Certificates of Compliance and QA/QC documentation for packaging.
- The licensee stated that no shipments within the previous 12 months were of special form, or contained plutonium as a major constituent.
- The shipping records indicated the containers were properly placarded before departure.
- Review of the radiation survey records of five shipments did not identify any problems.
- The licensee maintained appropriate copies of procedures for use of each package approved for transport of Type B and large quantities of radioactive materials.

No violations were identified.

11. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection. The inspector summarized the purpose and the scope of the inspection, and the findings as presented in this report.