

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-277/79-21
50-278/79-23
50-277
Docket No. 50-278
DPR-44
License No. DPR-56 Priority -- Category C, C

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

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

Inspection at: Delta, Pennsylvania

Inspection conducted: September 17-21, 1979

Inspectors: L. H. Thonus 3/4/80
L. H. Thonus, Radiation Specialist date signed

date signed

date signed

3/3/80

3/4/80

date signed

Approved by: George J. Knapp
P. J. Knapp for
P. J. Knapp, Chief Radiation Support
Section, FF&MS Branch

Inspection Summary:

Inspection on September 17-21, 1979 (Report Nos. 50-277/79-21 and 50-278/79-23)

Areas Inspected: Routine unannounced inspection by a regional based inspector of radiation protection during refueling including licensee action on IE Circulars, supplies and equipment, training, exposure control, respiratory protection, posting and control, surveys, and radioactive material control. Upon arrival a tour of the radiation control area was conducted to observe radiation safety practices. The inspection involved 40 inspector-hours onsite by one NRC regional based inspector.

Results: Of the eight areas inspected, one item of noncompliance was identified in one area (failure to evaluate exposures to airborne activity - paragraph 6).

DETAILS

1. Persons Contacted

*Mr. J. Austin, PECO Construction Division
*Mr. W. Barley, Engineer - Health Physics
Mr. N. Gazda, Health Physics Support Supervisor
*Mr. C. Mengers, PECO QA Site Supervisor
*Mr. J. Mitman, Test Engineer
Mr. S. Nelson, Training Assistant
*Mr. W. Ullrich, Station Superintendent
Mr. J. Valinski, Plant Health Physicist
*Mr. A. Wasong, Test Engineer

The inspector also interviewed approximately 15 other licensee and contractor employees including health physics area supervisors, technicians and clerks, maintenance workers and plant operations personnel.

*denotes those present at the exit interview

2. Licensee Action on IE Circulars

The inspector observed licensee respiratory protection equipment and interviewed licensee personnel regarding IE Circulars 79-09 and 79-15.

79-09: Occurrences of split or punctured regulator diaphragms in certain self-contained breathing apparatus. The licensee does not use the types of respirators referenced in the bulletin. This item is closed.

79-15: Bursting of high pressure hose and malfunction of relief valve and "O"-ring in certain self-contained breathing apparatus. The licensee does not use the type of respirator referenced in the bulletin. This item is closed.

The inspector had no further questions in this area.

3. Supplies and Equipment

The inspector observed the licensee's supply and availability of the following items which come into increased usage during a refueling outage:

- Anti-contamination clothing
- survey instruments
- respiratory protection equipment
- temporary shielding
- posting, labeling and barricading materials

The supplies and distribution appeared adequate; no instances were noted where personnel needed this equipment and it was not accessible.

No items of noncompliance or deviations were identified.

4. Training

Radiation protection training for personnel working in the licensee's restricted area is required by 10 CFR 19.12. Respiratory protection training is required by 10 CFR 20.103 and regulatory guide (RG) 8.15 if the licensee utilizes protection factors when personnel wear respiratory protection devices.

The inspector reviewed "radiation worker" training records and examinations of 13 individuals who were working in the licensee's restricted area. Respiratory protection training records of 12 individuals who used respirators were examined.

No items of noncompliance or deviations were identified.

5. Exposure Control

The licensee is required by 10 CFR 20.102 to obtain exposure estimates of their current quarterly exposure from all incoming personnel whose exposure is likely to exceed 25% of the 10 CFR 20.101(a) limits. The licensee routinely obtains such estimates from all personnel entering the radiation control area (RCA). Exposure files of 12 individuals who had entered the RCA were reviewed to verify that the estimates had been obtained.

The inspector reviewed the licensee's exposure control system for compliance with 10 CFR 20.101(a), 20.101(b) and 20.401. Three individuals had quarterly exposures in excess of 1250 mrem. The requirements of 10 CFR 21.101(b), which allows quarterly exposures up to 3000 mrem, had been completed prior to exceeding 1250 mrem.

No items of noncompliance or deviations were identified.

6. Respiratory Protection

Surveys

Airborne activity surveys for particulates and iodines taken during the time period September 17-20, 1979 were reviewed. In general the most limiting concentrations were in the vicinity of the reactor cavity where iodine concentrations were approximately at the concentrations listed in 10 CFR 20, Appendix B, Table I, Column 1 (MPC). Airborne activity concentrations were approximately 1.5 times MPC in the area where work was being performed on the "D" residual heat removal (RHR) system for several hours on September 17, 1979. Again, this was primarily due to iodines.

Exposure Control

Individual stay times from radiation work permits (RWP) and airborne activity concentrations were evaluated and compared with licensee records. No individuals were found to have exceeded the limits of 10 CFR 20.103(a)(1) or the 40-hour control measure of 10 CFR 20.103(b)(2).

The licensee is required by 10 CFR 20.103(a)(3) to make assessments of individual intakes of radioactivity. In part, 10 CFR 20.103 (a)(3) states, "When assessment of a particular individual's intake of radioactive material is necessary, intakes less than those which would result from inhalation for 2 hours in any one day or for 10 hours in any one week at uniform concentrations specified in Appendix B, Table I, Column 1 need not be included in such assessment, provided that for an assessment in excess of these amounts the entire amount is included."

The licensee's control point technicians routinely obtain entry times from radiation work permits and air concentrations from logs at the control point. Data for those individuals for whom assessments are required is forwarded to a member of the health physics support staff for evaluation and exposure tracking which is kept on an "MPC-hr log".

The inspector reviewed the data from September 18, 1979 which was forwarded for the support staff evaluation and noted that there were no entries from the refuel floor. A check of air concentrations and entry times of September 18 revealed that two individuals had exposures exceeding 2 hours at the concentrations specified in 10 CFR 20, Appendix B, Table I, Column 1, (MPC) and that the exposure of one individual could not be determined since there was no exit time listed after his entry time. The inspector noted that failure to make assessments for these individuals constituted noncompliance with 10 CFR 20.103(a) (3) (50-278/79-23-01).

The licensee believed that both the 2hr/day and 10 hr/week had to be exceeded before an assessment was required based on discussion of this topic with personnel from the Office of Standards Development (OSD). The licensee requested that the inspector check with OSD personnel regarding this item. After the inspection, personnel from OSD who had derived this regulation, were contacted and they stated that an assessment was required if either the 2 hr/day or 10 hr/week measure was exceeded as stated in 10 CFR 20.103(a)(3); they knew of no exemptions or public misinformation regarding the same. The inspector telephoned the licensee on September 28, 1979 and confirmed the discussion with the OSD personnel. The licensee had changed his criteria for assessment at the time the noncompliance was identified.

Respirator Control, Inspection, and Maintenance

The following criteria were used to evaluate the licensee's control, issue and maintenance of respiratory protection devices:

- 10 CFR 20.103 "Exposure of individuals to concentrations in restricted areas."
- Regulatory Guide 8.15, Acceptable Programs For Respiratory Protection

- NUREG 0041, Manual of Respiratory Protection Against Radioactive Materials
- procedure HPO/CO-9 Respiratory Protection Program
- procedure HPO/CO9b Respiratory Protective Equipment Selection and Use
- procedure HPO/CO-9c Respiratory Protective Equipment Maintenance and Quality Assurance

The operation of the licensee's respirator cleaning and decontamination facility was observed. The inspector observed personnel at another portion of the licensee's facility survey and examine respirators. Respirators ready for issue were so indicated by several spaces on a tag being initialed signifying that all operations (cleaning, survey, inspection, etc.) were complete. The tag and respirator were then typically bagged and sealed to denote the respirator's readiness for use.

7. Posting and Control

Posting and control of radioactive materials areas, radiation areas, and high radiation areas were reviewed against the criteria in 10 CFR 20.203 and technical specification 6.11. Locks to several locked high radiation areas were examined. Access control to the drywell and contaminated area control were checked against the requirements in licensee procedures.

Personnel adherence to radiation work permit requirements including respiratory protection, dosimetry, protective clothing and check-in/check-out requirements were examined. The inspector observed contamination control practices including instrument availability and calibration, personnel surveys and use of contamination control barriers (i.e. plastic wrapping, step-off pads).

No items of noncompliance or deviations were identified.

8. Surveys

Radiation and contamination surveys of several outage activities were reviewed against the criteria in the licensee's procedures (HPO/CO-1 and HPO/CO-2) and 10 CFR 20.201. These activities included work on main steam isolation valves (MSIV), the high and low pressure sections of the turbine, combine intermediate valves (CIV), and refuel floor activities. Instruments used in the surveys and beta correction factors were reviewed.

No items of noncompliance or deviations were identified.

9. Radioactive Material Control

Radioactive material labeling and identification was examined against the criteria in 10 CFR 20.203(f) and licensee procedures bagging, wrapping, marking and storage of contaminated items were observed to be in accordance with licensee procedures. Housekeeping, posting and temporary storage of baleable waste was observed.

No items of noncompliance or deviations were identified.

10. Exit Interview

The inspector met with licensee management representatives (denoted in paragraph 1) at the conclusion of the inspection on September 21, 1979. The inspector summarized the purpose and scope of the inspection and the findings.