

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-352/85-28

Docket No. 50-352

License No. NPF-39

Priority --

Category C

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

Facility Name: Limerick Generating Station

Inspection At: Limerick, Pennsylvania

Inspection Conducted: September 16-19, 1985

Inspectors: Marie Miller
M. Miller, Radiation Specialist

10/17/85
date

Approved by: W. Pasicak
W. Pasicak, Chief
BWR Radiological Protection Section

10/22/85
date

Inspection Summary:

Inspection on September 16-19, 1985 (Report No. 50-352/85-28)

Areas Inspected: Routine, unannounced safety inspection of the status of the licensee's Radioactive Waste Management Program, two facility contamination events, and Radiation Protection Startup Testing. The inspector involved 29 inspector hours onsite by one regionally-based inspector.

Results: No violations were identified.

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DETAILS

1.0 Persons Contacted

1.1 Licensee Personnel

- *G. Leitch, Plant Manager
- *W. Knapp, Director, Radiation Protection Section (Corp.)
- *D. DuBiel, Senior Health Physicist
- *J. Wiley, Senior Chemist
- *J. Rubert, Quality Assurance Site Supervisor - EP
- *C. Endriss, Regulatory Engineer
- *J. McElwain, Auditor
- *G. Murphy, Technical Support Health Physicist
- *R. Titilo, Applied Health Physicist
- K. Walsh, Engineer
- L. Wells, Radwaste Physicist

1.2 Vendor Personnel

- *J. Ferguson, Radwaste Consultant
- *K. Folta, Quality Control Site Supervisor - OPS

*denotes attendance at the exit interview on September 19, 1985.

2.0 Purpose

The purpose of this routine safety inspection during the start-up phase was to review the following areas:

- Status of Previously Identified Items Concerning the Licensee's Radioactive Waste Management Program.
- Radiation Protection Start-up Testing.
- Follow-up of Corrective Actions Concerning the August 1, 1985 and September 7, 1985 Upset Events.

3.0 Status of Previously Identified Items

- 3.1 (Open) Inspector Follow-up Item (352/85-26-01): Develop the following Radioactive Waste Management Controls; administrative procedure for conduct of operations; liquid radioactive waste volume and liquid discharge goals; and qualification of radwaste supervisor. The inspector noted that the station administrative procedure to describe the responsibilities and interfaces of the Radwaste Management Organization had been drafted, and the water balance program would be initiated after Start-up Testing. The inspector discussed the assignment of a new radwaste supervisor and changes to the Radwaste Management Organization chart. As a management control,

the individual did not assume this duty until completing a one week training course in Radwaste systems, packaging and shipping requirements and a one week turnover period with the former supervisor. The licensee stated that the radwaste supervisor would be qualified by the Radwaste Engineer, in the applicable radwaste procedures by November 1, 1985. This item remains open, and will be reviewed during a subsequent inspection.

- 3.2 (Closed) Inspector Follow-up Item (352-85-26-02): Improve radwaste handlers understanding of radiation protection requirements. The licensee conducted ten safety meetings with the radwaste handlers to reinforce appropriate radiation protection practices, such as frisking, the RWP process, ALARA, Whole Body Counting, and Radwaste Volume Reduction. In addition, in response to IE Bulletin 79-19, support personnel attended an 8 hour training course on radwaste classification packaging and shipping; and the foremen attended an 24 hour training course on radwaste systems, classification packaging and shipping. The inspector noted that some individuals did not meet the 70 percent criteria. The licensee stated that follow-up training, including review of incorrect answers would be completed within one month.
- 3.3 (Open) Inspector Follow-up Item (352/85-26-03): Status of the licensee's program for implementation of their Process Control Program (PCP) and readiness for radwaste shipment. The inspector determined that the licensee had undertaken a major rewrite of the radwaste procedure to clarify the responsible department and to streamline the procedures to ensure implementation of the PCP. This rewrite delayed the licensee's plans for radwaste shipment from July to October, 1985. In addition, three surveillance test procedures to ensure compliance with Section 5.4 of the licensee's PCP were in draft. The inspector noted these procedures were not available during the previous inspection, and the radwaste operations procedures with regard to dewatered resin transfer to high integrity containers and resin sampling were not revised to clarify the options available to the operator or to address representative sampling. The licensee stated that all procedures necessary for the implementation of the PCP would be completed by October 21, 1985 with the first shipment to follow within that week.

The inspector noted that the licensee was storing temporarily 700 barrels of dewatered resins in a posted and secured location. However, the licensee had not performed a 50.59 safety evaluation of this temporary radwaste storage area. The licensee stated an 50.59 review would be completed. This item will be considered unresolved pending completion of the safety evaluation (352/85-28-01).

The inspector also reviewed the Site Acceptance Test (SAT) for the licensee's computer assisted program to ensure compliance with 10 CFR 61 and 10 CFR 71. This test was conducted August 6-9, 1985 to

verify the correctness of the DOSCON and scaling factor libraries, and the related assumptions used within the code. The inspector noted that the SAT was accurately performed and included quality control surveillances. The licensee also stated that further enhancement of the PAK-RAD program was being developed including, entering all known isotopes, all DOT classifications, and specific container types labels and markings.

4.0 Start-up Testing: Radiation Surveys

Documents Reviewed

- Final Safety Analysis Report (FSAR), Chapter 14, "Initial Test Program"
- Start-up Test Procedure STP 2.0, Revision 1, "Radiation Measurements - Main Body", dated September 13, 1984
- Start-up Test Procedure STP 2.1-4, Revision 1, "Start-up Radiation Surveys-Prior to Fuel Load", dated August 23, 1985
- ANSI/ANS-6.3.1, 1980, "Program for Testing Radiation Shields in Light Water Reactors (LWR)"

Review of the test procedures and test data indicated that the licensee was conducting startup radiation surveys in accordance with FSAR commitments and procedures requirements. No unexpected levels of radiation were encountered. All reading were less than 0.2 mr/hr gamma and/or less than 0.5 mrem/hr neutron. The licensee PORC reviewed these test results on September 18, 1985.

This test will be repeated under Test Condition 3 (60% power) and TC 6 (100% power).

5.0 Follow-up of Corrective Actions Regarding Two Recent Upset Events

5.1 Unit 1 Radwaste Discharge to Unit 2 Pipe Tunnel Access Room on August 1-2, 1985

The description of the upset event, clean-up activities, and initial corrective and preventive actions had been discussed in NRC Inspection Report 50-352/85-30. Discussed below are the two licensee's corrective actions that previously were identified but not completed:

Licensee Action No. 1

- A third independent review of all Unit 1/Unit 2 interfaces in radwaste piping will be completed.

Findings

- The inspector noted that a third review of radwaste system piping and instrument drawings (i.e. Systems 53, 54, 61, 62, 64, 66, 67, 69 and 70) was completed. A comparison to the Unit 2 Safety Boundary Review Log was completed to determine, if all valves were blocked and tagged in accordance with procedure A-97, "Isolation Tag Control". This review also included system walkdowns and some isometric drawing reviews.

Based on this independent review, approximately twelve valves were identified that should have been tagged. Of these, the licensee's preliminary findings indicated that seven valves in the Liquid Waste Collection System were not tagged; and if opened, the liquid would go to a Unit 2 sump.

Because of the August 1, 1985 event, all liquid collected at this Unit 2 sump would be pumped to Unit 1 for processing, therefore eliminating a potential for an unmonitored release pathway. However, the preventive action to pump any Unit 2 water to Unit 1 was a verbal administrative control.

At the time of the inspection, the result of this third piping/valve isolation review had not been evaluated by the PORC. This item will be reviewed during a future inspection by the Senior Resident Inspector to review the actions taken by the licensee, and to determine if a generic concern exists with regard to the other major system isolation/tagging reviews (352/85-28-02).

Licensee Action No. 2

- All Unit 2 sumps will be sampled and analyzed prior to transfer.

Findings

- The licensee was sampling all water from Unit 2 sumps prior to transfer with the exception of water in Unit 2 systems that collected from hurricane Gloria. The licensee in the future plans on collecting water from Unit 2 sumps into a Unit 2 tank where it could be recirculated for representative sampling. This action will be reviewed during a subsequent inspection (352/85-28-03).

5.2 Failure of the "A" RWC Valve HV-1-07A and Resulting Resin Spill and Equipment Contamination on September 7, 1985

The description of the upset event and initial clean-up activities had been discussed in NRC Inspection Report 50-352/85-30. Discussed below are the licensee's corrective and preventative actions, and status of recovery efforts:

License Action No. 1

- Prevent Filter/Demineralizer From Being Subject to Reactor Pressure

Findings

- The inspector reviewed procedure S.45.8.A, Revision 2, "Regeneration of a Reactor Water Clean Up System (RWCU) Filter/Demineralizer," dated September 11, 1985 and determined that the filter/demineralizer and upstream instruments and piping would be isolated prior to RWCU pressurization. The operator action now involves manually closing 45-1-39A and 45-1-39B prior to pressurization.

The licensee preventative actions included review of the failure of HV-1-07A and similar system valves, and investigating the use of logic interlocks to ensure full closure before deisolation.

In addition, the licensee submitted on September 19, 1985 a temporary procedure change which manually lifted PSV-1-67 for three seconds to ensure that pressure relief valve PSV-1-67 had properly seated after lifting during the event. The inspector noted that a safety review was performed for this procedure change. However, the inspector observed in the RW Control Room that a controlled copy of S.45.8.A, which did not have the attached temporary change notice, was revised inappropriately to reflect this procedural change. The licensee stated they were unaware that the procedure was a controlled copy and had provided advance notice of the change to the operators for information only. The licensee destroyed the procedure and drafted an administrative procedure for control of radwaste procedures. This item will be reviewed during a subsequent inspection (352/85-28-04).

Licensee Action No. 2

- Control Contamination and Decontaminate RWCU Precoat Tank Area and the "A" Holding Pump Room

Findings

- The inspector reviewed Radiation Work Permits RWP Nos. 100-85-122 and 100-85-123, which controlled the initial surveys and decontamination work on the 318' Reactor Building area around the precoat tank. The inspector noted that the initial survey outside the holding pump room indicated contamination levels in excess of 800 mRad/hr on September 7, 1985. There was no air-

borne radioactivity measured with regard to the resin spill or clean-up operation. Contamination levels during the decontamination efforts averaged 20,000 dpm/100cm², and by September 18, 1985, the area outside the holding pump room was reclaimed. Decontamination of the holding pump room was to start the following day.

The inspector noted contamination control measures included isolation of the 318 elevation followed by installation of a tent enclosure. Although respirators were initially used, the majority of the decontamination was performed using beta shields.

6.0 Exit Interview

The inspector met with the licensee representatives (denoted in section 1.0) on September 19, 1985. The inspector summarized the purpose, scope and findings of the inspection.

At no time during the inspection was written material provided to the licensee by the inspector.