U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-387/84-13
50-388/84-15

Docket No. 50-387
50-388

License No. NPF-14
CPPR-102

Priority -- --

Category C B

Licensee: Pennsylvania Power and Light Company
2 North Ninth Street
Allentown, Pennsylvania

Facility Name: Susquehanna Steam Electric Station, Units 1 and 2

Inspection At: Berwick, Pennsylvania

Inspection Conducted: March 14-15 and 20-21, 1984

Inspectors: R L Nimitz
R. L. Nimitz, Senior Radiation Specialist

5/16/84
date

Approved by: M. S Shanbaky
M. M. Shanbaky, Chief, Facilities Radiation Protection Section

5/21/84
date

Inspection Summary: Inspection on March 14-15, 1984 and March 20-21, 1984 Combined Report No. 50-387/84-13; 50-388/84-15

Areas Inspected: Special, announced inspection of the following: licensee review and evaulation of recent spills or releases at the site; status of outstanding items needed for fuel load of Unit 2; ALARA controls for repairs of a Unit 1 recirculation pump discharge valve; worker concerns; and radiation protection organization and staffing. The inspection involved 55 hours onsite by one inspector and two NRC Region I Section Chiefs.

Results: No violations were identified.

DETAILS

1. Persons Contacted

1.1 Pennsylvania Power and Light

1,2 M. Buring, Health Physics Supervisor
2 S. Dension, System Manager - QA Operations
1 R. Doebles, Chemistry Supervisor
2 J. Grahm, Compliance
2 R. Harris, Compliance
1,2 H. Keiser, Station Superintendent
B. Kenyon, Vice President - Nuclear Operations
2 R. Prego, Operation QA Supervisor
D. Thompson, Assistant Plant Superintendent
2 L. Venuk, Senior Chemist

1.2 Bechtel Power Corporation

B. Bastion, Engineer
E. Figard, ISG Supervisor

1.3 NRC

1 R. Jacobs, Senior Resident Inspector
2 L. Plisco, Resident Inspector

1 Denotes those individuals attending the exit interview on March 15, 1984
2 Denotes those individuals attending the exit interview on March 21, 1984

The inspector also contacted other licensee and contractor personnel.

2. Purpose of Inspection

The purpose of this special safety inspection was to review the following:

- Status of licensee action on radiological controls outstanding items requiring resolution by fuel loading of Unit 2. This matter is discussed in Section 3 of this report.

- Circumstances, licensee evaluations and corrective actions for a number of spills/releases of radioactive material which occurred at the site during the period January 1983 through January 1984. This matter is discussed in Section 4 of this report.

- Adequacy of Radiological Safety Controls for the replacement of the valve stem on the Unit 1 'B' loop Recirculation Pump Discharge Valve. This matter is discussed in Section 5 of this report.

3. Licensee Action on Previous Inspection Finding

3.1 (Closed) Follow-up Item (50-388/83-30-01) Licensee to install and calibrate 5 remaining Unit 2 area radiation monitors (ARMs), review accuracy of calibration data for previously calibrated ARMs and revise Technical Specifications to show actual range of ARM channel RE-23713. The licensee revised the Technical Specifications to show the actual range of RE-23713 and performed a review of ARM calibration data. The calibration data was found to be accurate. The licensee has been unable to procure the remaining 5 ARM detectors. In the interim, the licensee plans to install calibrated temporary portable ARMs to support fuel load. The licensee's plans are acceptable. The licensee's installation and calibration of the 5 remaining ARMs will be reviewed during a subsequent inspection. Follow-up Item 50-388/84-15-01 is assigned to this item.

3.2 (Closed) Follow-up Item (50-388/84-02-01) Licensee to complete preoperational testing of Unit 2 Liquid Radioactive Waste System, as necessary, to support fuel load. The license completed the ncessary preoperational testing to support fuel load. This matter is discussed in Section 6 of this report.

3.3 (Closed) Follow-up Item (50-388/84-02-02) Licensee to complete preoperational testing of Unit 2 Solid Radioactive Waste System, as necessary, to support fuel load. The licensee completed the necessary preoperational testing to support fuel load. This matter is discussed in Section 6 of this report.

3.4 (Closed) Follow-up Item (50-388/84-02-04) Licensee to complete preoperational testing of Unit 2 process sampling system, as necessary, to support fuel load. This matter is discussed in Section 6 of this report.

4. Review of Radioactive Material Spills/Releases

The circumstances, licensee evaluations, and licensee actions to preclude recurrence were reviewed for the following spills/releases:

- Spill of reactor coolant to residual Heat Removal Room (Unit 1) on January 7, 1983.
- Overflow of Reactor Water Clean-up Phase Separator to Separator Room Flow on January 21, 1983
- Release of airborne activity from Unit 1 to Unit 2 via hydrogen recombiner sample line on March 11, 1983.
- Spill from Unit 1 Resin Holding Tank to Tank Room Floor on October 14, 1983.
- Spill of Fuel Pool Demineralizer Water to Fuel Pool Demineralizer Cell on December 9, 1983.

- Release of contaminated water to Unit 2 from Condensate Transfer System on December 9, 1983.

- Spill from Unit 1 Condensate Demineralizer to Unit 1 Turbine Building floor on January 26, 1984.

- Spill of water from Condensate Storage Tank to Unit 1 Turbine Building on January 26, 1984.

The licensee's performance in this area was based on discussions with licensee senior management and technical staff, examination of documentation, and observations by the inspectors.

Findings

The spills and/or releases had been individually reviewed by NRC Region I personnel.

The purpose of this review was to examine the spills collectively in order to identify any possible generic deficiencies requiring licensee attention.

On March 15, 1984 the inspector, the Region I Facilities Radiation Protection and Reactor Projects No. 2 Section Chiefs met with the site management to discuss the spills and/or releases. At this meeting, licensee personnel described each of the spills and/or releases and the corrective actions taken.

In December 1983, the licensee consolidated the Incident/Event Reporting System into a Significant Operating Occurrence Report (SOOR) System. The Incident/Event Report System was proceduralized as is the current SOOR Program (ADA-QA-424). Both programs provide examples of occurrences requiring report generation.

The licensee issued either an Incident Report or a Significant Operating Occurrences Report for each event. The reports were issued in a timely manner and included immediate and long term corrective actions.

In February 1984, the licensee revised Procedure AD-00-720, "Contamination Control," to include Area and Personnel Contamination Reports. The report provides for immediate and long term corrective action for these types of contamination events.

Twenty Area Contamination Reports were issued as of March 15, 1984. Of the twenty, three had been returned as complete. Of the remaining reports, a number contained no indication of immediate corrective actions or indications of supervisory notifications. Discussions with licensee representatives indicated the licensee was aware of the back-log of reports and had initiated action to resolve the reports and implement appropriate corrective actions. Licensee representatives indicated immediate and long term corrective actions for this backlog of reports was expected to be completed by the end of March 1984.

Within the scope of the review the following potential improvement items were identified:

- Specific inclusion, in the preventive maintenance program, of system components whose failure could result in radioactive liquid spillage (e.g. tank level indications, tank level alarms)

- Faster notification of appropriate personnel of safety significant changes in the design and operation of a system or component prior to the issuance of a Document Change Notice (DCN) to effected Piping and Instrument Drawings (P&IDs). Change notices are typically issued 30-60 days after initiation of the DCN.

The licensee indicated they would provide their analysis of the spills and releases at an upcoming enforcement conference to be held in NRC Region I (See Conference Report No. 50-387/84-11).

Regarding the licensee's Area Contamination report system, the following items for improvement were identified:

- Include provisions on Area Contamination Reports for shift supervision acknowledgment (when appropriate) of spill/release immediate corrective actions.

- Provide periodic review of area contamination reports in order to identify possible generic corrective actions for implementation.

- Provide guidance for recourse to higher management when adequate corrective action resolution cannot be agreed to by Health Physics personnel and effected work group supervision.

Within the scope of this review, no violations were identified.

5. Recirculation Pump Discharge Valve

The licensee's Radiological Controls for replacement of the valve stem on the Unit 1 'B' loop Recirculation Pump discharge valve were reviewed with respect to criteria contained in the following:

- 10 CFR 20.201; "Surveys"

- Technical Specification 6.11 "Radiation Protection Program"

- Technical Specification 6.12, "High Radiation Area"

- Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Plants will be as low as reasonably achievable", Revision 3, 1978

- Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Reasonably Achievable"

The licensee's performance in this area was based on:

- Review of Radiation Work Permit (RWP)/ALARA Checklists
- Review of Radiation Survey Data
- Review of applicable RWPs
- Examination of Unit 2 System Components used for Mock-up Training
- Discussions with cognizant personnel

Findings

Within the scope of this review, no violations were identified. The licensee performed commendable pre-job planning and on-going job review for purposes of maintaining occupational radiation exposure as low as reasonably achievable. The licensee also utilized adequate measures to preclude release of primary coolant from the valve under repair. The licensee utilized the Unit 2 valve for purposes of mock-up training.

Within the scope of this review, no violations were identified.

6. Preoperational Testing

The licensee's testing of the following Unit 2 systems was reviewed:

- Liquid radioactive waste system
- Solid radioactive waste system
- Process sampling system

The testing was reviewed with respect to criteria contained in the following:

- Final Safety Analysis Report (FSAR), Chapter 14, "Initial Test Program"
- Regulatory Guide 1.68, November 1978, "Preoperational and Initial Start-up Test Program for Water-Cooled Power Reactors"
- ANSI-N13.1, 1969, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities"
- AD7.6, "Preoperational/Acceptance Test Procedures Control"
- AD7.7, "Preoperational/Acceptance Test Implementation"
- Startup Administrative Manual

6.1 Liquid Radwaste System Testing

Documents Reviewed

- P269.1A, Revision 0, "Liquid Radwaste Collection System"
- A269.2A, Revision 1, "Acceptance Test/Liquid Radwaste System"
- P269.1B, Revision 0, "Preoperational Liquid Radwaste Collection System"
- TP 1.15, Revision 2, "Verification of Drain Separation"
- P261.1A, Revision 0, "Preoperational/Reactor Water Cleanup and Demineralizer System"

Findings

The licensee has completed the testing of the liquid radioactive waste system, as needed, to support fuel load. No deficiencies or unacceptable conditions were identified.

Within the scope of this review, the following matters requiring licensee attention were identified:

- Resolve three open test exceptions for procedure P269.1A. Licensee representatives stated these were to be resolved prior to initial criticality.
- Resolve two open test exceptions for procedure P261.1A, Licensee representatives stated that the calibration of flow transmitter FT-2NU37 would be resolved by initial criticality. The other test exception, dealing with out-of-specification condensate demineralizer effluent, would be resolved during start-up.
- Issuance of a composite work list addenda to track completion of procedure TP 1.15. The floor drains, located under the dry-well head and reactor vessel head on the refueling floor, had not yet been verified as being connected to the proper sump. Licensee representatives indicated this matter whill be resolved prior to initial criticality.

The above matters will be reviewed during a subsequent inspection (50-388/84-15-02).

6.2 Solid Radwaste System Preoperational Testing

Documents Reviewed

- A268.1B, Revision 0, "Acceptance Test/Solid Radwaste System"
- A239.1B, Revision 0, "Spent Resin Flush"

- A239.2A, Revision 0, "Ultrasonic Resin Cleaner" (Draft)
- A239.1A, "Condensate Demineralizer Operation"

Findings

The licensee has completed the testing of the solid radwaste system, as needed, to support fuel load. No deficiencies or unacceptable conditions were identified.

Within the scope of this review, the following matters requiring licensee attention were identified:

- Resolve three open test exceptions for procedure A239.1A. Licensee representatives indicated these were to be resolved by heat-up.
- Complete testing of spent resin flush system (procedure A239.1B). Licensee representatives stated this system was to be tested prior to the first use or commercial operation.
- Complete testing of ultrasonic resin cleaner system (procedure A239.2). Licensee representatives indicated the test was to be completed prior to heat-up.

The licensee's resolution of the above outstanding testing will be reviewed during a subsequent inspection (50-388/84-15-03).

6.3 Process Sampling System

Documents Reviewed

- A276.2A, "Acceptance Test/Process Sampling"
- P276.3A, "Post-Accident Sampling"

Findings

The licensee has tested the normal process sampling system to support fuel load. Test exceptions are outstanding for procedure A276.2A. These deal primarily with collection of samples at operating temperatures and pressures. Test exceptions are also outstanding for analytical discrepancies between inline and grab samples and for deletion of acceptance criteria for automatic hood louvers. The licensee plans to resolve these latter exceptions at initial criticality and heat-up respectively.

The remainder of the test exceptions are to be resolved prior to commercial operation. The licensee's plans are acceptable.

The licensee has completed preoperational testing of the post-accident sampling system. The acceptability of the testing was reviewed during a specia inspection (see Report No. 50-387/84-10; 50-388/84-11)

The licensee's resolution of the outstanding test exception for normal process sampling will be reviewed during a subsequent inspection (50-388/84-15-04).

7. Worker Concerns (Radiation Protection)

7.1 General

On September 12, 1983 a contractor employee, who had worked at the licensee's facility, contacted NRC Region I to relay some concerns regarding the licensee's Radiation Protection Program. The employee stated that he had not received a termination report following his work in Unit 1 and had not received a whole body count prior to his termination. A review of the workers concerns was initiated on September 12, 1983.

The initial review of the worker's concerns are discussed in Inspection Report 50-387/83-28; 50-388/83-30. The concerns regarding transmittal of termination reports was resolved by the review documented in the reference report. The concern dealing with whole body counting was left unresolved due to unavailability of work location data. The review of the worker's concern for whole body counting is discussed in the following section.

7.2 Whole Body Counting (Worker Concern)

Documents Reviewed

- 10 CFR 20.103, "Exposure of Individuals to Concentrations of Radioactive Materials in Air In Restricted Areas"
- AD-00-740, Revision 0, "Internal Dosimetry Program", dated April 20, 1982
- Radiation Work Permit No. 83-202, "General Inspection In Drywell", dated April 8, 1983

Findings

The licensee performed a review of all Radiation Work Permits (RWP) issued during the period that the worker was at the site. The licensee identified only one RWP that the worker signed in on (RWP No. 83-202). Inspector review of this RWP and associated airborne radioactivity surveys did not identify any airborne radioactivity concentrations which would necessitate bioassays in accordance with 10 CFR 20.103. The licensee's procedures do not require a whole body count for each individual that terminates employment from the site.

Based on the above, the matter is resolved.

No violations were identified.

8. Organization and Staffing

The inspector discussed the licensee's plans for filling the recently vacant position of Health Physics Specialist Internal Dosimetry/Respiratory Protection. Licensee representatives indicated a potential candidate for the position had been selected.

The candidate's resume was reviewed by the inspector. It was found that the individual had no previous experience in the areas that this position would be responsible for overseeing. In addition, the individual did not meet minimum qualification requirements specified in the Technical Specifications or licensee procedures. Licensee representatives were notified of this matter.

The licensee's Station Superintendent stated that the duties of this position will be carried out by a qualified individual. The inspector indicated that the licensee's action on this matter will be reviewed during subsequent inspections.

No violations were identified.

9. Exit Interview

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection. The inspector summarized the purpose, scope and findings of the inspection. At no time during this inspection was written material provided to the licensee by the inspector.