

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-322/84-25

Docket No. 50-322

License No. CPPR-95 Priority - Category B

Licensee: Long Island Lighting Company
175 East Old Country Road
Hicksville, NY 11801

Facility Name: Shoreham Nuclear Power Station

Inspection At: Shoreham, New York

Inspection Conducted: June 26-28, 1984

Inspectors: R. L. Nimitz 8/1/84
R. L. Nimitz, Senior Radiation Specialist date

Approved by: J. J. Kottan 8-2-84
for W. J. Pasciak, Chief, Effluent Radiological date
Protection Section, DETP

Inspection Summary: Inspection on June 26-28, 1984 (Report No. 50-322/84-25)

Areas Inspected: Routine announced preoperational inspection of licensee action on previous inspection finding and licensee action on bulletins and circulars. The inspection involved 20 inspector hours onsite by one region-based inspector.

Results: No violations were identified.

DETAILS

1. Persons Contacted

1.1 Long Island Lighting Company

- *N. DiMascio, Health Physics Engineer
- M. Donegan, Health Physics Supervisor
- *N. Morcos, Radiation/Chemistry Section Head (Acting)
- *A. Muller, Operation QA Engineer
- S. Rifaey, Compliance Engineer
- *J. Schmitt, Radiochemistry Engineer
- *W. Steiger, Plant Manager
- C. Wallen, Modification Engineer
- *J. Wynne, Lead Engineer - Compliance

1.2 Contractors

- K. Broghe, Magnetronics, HVAC
- *A. Dobrzeniecki, Stone and Webster, Start-Up
- J. Endler, ANCO, HVAC
- G. Rhoads, Impell Corporation, Compliance
- *K. Swenson, Stone and Webster, Modifications
- *M. Yazbek, Stone and Webster, Modifications

1.3 NRC

- *P. Eselgroth, Senior Resident Inspector
- *C. Petrone, Resident Inspector
- *N. Blumberg, Lead Reactor Engineer
- *W. Pasciak, Chief, Effluents Radiological Protection Section

*Denotes those individuals attending the exit meeting on June 28, 1984

The inspector also contacted other licensee and contractor employees during the inspection.

2. Purpose of Inspection

The purpose of this routine inspection was to review licensee action on a number of previous NRC findings which required licensee action prior to fuel load. These findings were in the areas of: monitoring and control (as necessary) of potential unmonitored release paths; radiation dosimetry; radiological access control; radioactive waste system preoperational testing, and testing of safety related ventilation systems.

The evaluation of the licensee's performance on these findings was based on discussions with cognizant licensee and contractor personnel; review of applicable documents; and independent observations.

3. Licensee Action on Previous Findings

3.1 (Closed) Follow-up Item (50-322/81-20-02). Licensee to evaluate five unmonitored potential airborne release paths from the Turbine Building. These release points are the:

- H₂ seal oil on detrainng tank;
- H₂ seal oil vacuum pump discharge;
- Vapor extractor discharge from the reactor feed pump turbine oil reservoir tanks;
- Vapor extractor discharge from the main turbine lube oil reservoir tanks; and
- Vapor extractor discharge from the main turbine lube oil conditioning tank.

The licensee reviewed these release points and also performed an additional review of the turbine building, radwaste buiding and heater bay to identify any other release points. The licensee identified the ventilation discharge of the clean/dirty lube oil room as an additional potential unmonitored release point.

The licensee evaluated these release points with respect to source of potential contamination of effluents from the points and volumetric flow from each point as compared to total monitored exhaust flow from each building in which the release point exists. The licensee concluded that the additional radioactive effluents from these points was insignificant in comparison to that of the monitored effluent flow. Consequently, the licensee concluded that the release points need not be monitored. The NRC's Office of Nuclear Reactor Regulation (NRR) reviewed each of the five release points and determined that release points need not be monitored. NRR, however, required that these potential release points be described in the Final Safety Analysis Report (FSAR). On June 28, 1984, the inspector examined each of the release points and reviewed appropriate plant process diagrams showing the points. The inspector also examined Revision 30 of the FSAR to determine if the licensee had included all information in the description of the release points requested by NRR. The inspector's review identified the following matters requiring licensee attention:

- Include maximum and minimum exhaust flows of the release points in the FSAR. The FSAR currently indicates either normal or maximum flows but not both.

- Identify the vents of the clean/dirty oil tank (which exhaust to the tank room) as a potential radioactive effluent source of tank room exhaust air. The FSAR currently indicates that the Turbine Building northwest corner air is the only source of potential contamination of the Turbine Building exhaust.
- Evaluate and describe in the FSAR potential contamination of seal and lubricating oil systems by sealing steam. (Note: the licensee contacted the inspector on June 29, 1984 and stated that the steam seal system uses uncontaminated steam).

In addition, the inspector noted that the licensee performed a review of the Reactor Building to identify any unmonitored release paths. The licensee did not identify any unmonitored release paths from the building.

Based on the above review, the only issue remaining is the licensee's updating of the FSAR as described above. This issue is an administrative matter and will be reviewed using follow-up number 50-322/84-25-01.

- 3.2 (Closed) Follow-up Item (50-322/84-06-03). Licensee to evaluate the airflow distribution through the charcoal beds of the Control Room Emergency Ventilation System to ensure that the system will maintain doses to Control Room personnel below those specified in 10 CFR 50, Appendix A, General Design Criterion 19, "Control Room". The licensee determined that the air residence time in the charcoal beds fell within $\pm 20\%$ of the design criterion as permitted by ANSI-N510, 1975, "Testing of Nuclear Air-Cleaning System". The licensee's Control Room Emergency Ventilation System was designed to maintain doses to personnel below GDC-19 values when the system is operated within $\pm 20\%$ of the design residence time (i.e. .25 seconds/2 inches of charcoal bed depth). The inspector noted, however, that the charcoal bed depth in the system was 2.187 inches. The inspector normalized the residence time to a 2 inch bed depth and found that the residence time was 0.196 seconds. This value fell out of the $\pm 20\%$ envelope used by the licensee. The inspector brought this matter to the licensee's attention. On July 16, 1984 the licensee notified the inspector that an evaluation was performed and that the doses to personnel in the control room would be within the GDC-19 values at the residence time. Based on the above, this matter is closed. Documentation of the licensee's evaluation will be reviewed during a subsequent inspection (50-322/84-25-07).
- 3.3 (Closed) Follow-up Item (50-322/83-19-05). Licensee to resolve open test exceptions for Solid Radioactive Waste System Testing. The inspector reviewed Solid Radioactive Waste Solidification Test Procedures No. PT713.20 and CS-713-02. The licensee resolved and administratively approved the outstanding test exceptions for the procedures. These exceptions dealt with solidification of bead resin and filler pipe binding. No open test exceptions exist for these procedures.

- 3.4 (Closed) Follow-up Item (50-322/84-06-01). Licensee to review adequacy of beta dosimetry and access control to the restricted area. The licensee evaluated the capabilities of current beta dosimetry to support fuel load. The licensee determined that the beta dosimetry and calibration sources are acceptable for fuel load. The licensee is developing a program to evaluate the beta dosimetry for routine plant operations. The licensee's beta dosimetry program for routine operations will be reviewed during a subsequent inspection. Follow-up item 50-322/84-25-02 is assigned for tracking this matter. Regarding restricted area access control, the licensee has established adequate access control to new fuel for purposes of radiological control. The licensee's plans for access control at fuel loading (i.e., reactor building access control) were found acceptable. The licensee's access control for initial criticality and routine operation will be reviewed during a subsequent inspection. Follow-up item number 50-322/84-25-03 is assigned for tracking these matters.
- 3.5 (Closed) Follow-up Item (50-322/84-06-02). Licensee is to establish and/or upgrade the In-Plant Radiation, Contamination and Airborne Radioactivity Surveillance Program. The open items and the licensee action on these items is as follows:

Item 1

Complete review, revision and reissuance of procedures for airborne radioactivity sampling.

The licensee is currently reviewing and revising airborne radioactivity sampling procedures. The licensee's program is adequate to support fuel load. The licensee's program in this area to support initial criticality and routine operations will be reviewed during a subsequent inspection.

Item 2

Establish procedural guidance for sampling and analysis of noble gas airborne radioactivity.

The licensee has established procedures for sampling and analyses of noble gasses.

Item 3

Establish criteria for initiation of alpha radioactivity sampling.

The licensee is currently reviewing and revising procedures for initiation of alpha radioactivity sampling. The licensee's program is acceptable for fuel loading. The licensee's procedures for alpha radioactivity sampling at initial criticality and routine operation will be reviewed during a subsequent inspection.

Item 4

Establish appropriate administrative controls to ensure routine and special radiation, contamination and airborne radioactivity surveys are reviewed in a timely manner.

The licensee has included appropriate administrative controls in procedures to ensure timely review of surveys.

Item 5

Upgrade the radiological incident reporting system to include incident/event trending and criteria for initiation of generic corrective actions.

The licensee has upgraded the reporting system to include incident/event trending and criteria for initiation of generic corrective actions.

Based on the above review, the following matter remains open and will be examined during a subsequent inspection:

- Complete review, revision and reissuance of procedures for initiation of airborne alpha radioactivity sampling. Follow-up item number 50-322/84-25-05 is assigned to this matter.

- 3.6 (Closed) Follow-up Item (50-322/82-20-05). Licensee to review and evaluate the test results for the Control Room Emergency Ventilation System and the Reactor Building Standby Ventilation System. The open items in this area and the licensee's action on these items is as follows:

Item 1

The flow rate through Control Room Vent System Train B as presented in adsorber test data was below Technical Specification flow rate limits. The licensee could not demonstrate that the adsorber test was performed at the proper flow rate.

The inspector reviewed additional test data and log books for the December 8, 1983 test in question. The additional data showed that the testing was performed at the proper flow rate.

Item 2

A preliminary test report of iodine retention capability of a sample from train A of the Reactor Building Standby Ventilation System (RBSVS) indicated the adsorber did not meet the iodine retention requirements of Technical Specifications.

Licensee test data indicates that train A adsorber does not meet Technical Specification iodine retention requirements. The licensee plans to change out the adsorber and retest it. The RBSVS is required to be operational in Reactor Modes 1, 2, and 3, and when spent fuel is to be handled. Based on current proposed Technical Specifications, the system need not be operational at fuel load.

The licensee's change out and testing of RBSVS Train A adsorber will be reviewed during a subsequent inspection. Follow-up item, 50-322/84-25-05 is assigned to this matter.

Item 3

The flow rate of train B of the Control Room vent system did not meet Technical Specification acceptance criteria.

The licensee changed the proposed Technical Specification (T.S.) acceptance criteria from $\pm 10\%$ to $\pm 20\%$. The flow rate is now within acceptance criteria.

NOTE: Report 50-322/84-17 indicated the flow rate of Train A of the Control Room vent system did not meet T.S. requirements. The actual train was train B. This matter is closed.

Item 4

The control room indicator for train A of the Reactor Building Standby Ventilation System was signed off as indicating operability of train B of this system.

Discussions with licensee compliance personnel indicated that the applicable procedure sign-off step was in error. Licensee compliance personnel further indicated that train B indicator was actually used.

Based on the above, this matter is closed.

- 3.7 (Closed) Follow-up Item (50-322/82-18-11). Licensee to complete installation of instrumentation in the Technical Support Center to provide data for support of operations. The inspector review indicated all read-outs from the radiological monitoring system needed to support operations in the center at fuel load were available via computer readout. One monitor, the post-accident sample station gas and particulate monitor was not yet in service due to power supply problems. This monitor is not needed to support fuel load but should be in service prior to exceeding 5% power. The licensee's post-accident sampling and monitoring capabilities will be reviewed during a special inspection prior to exceeding 5% power. This item is closed.

4. Licensee Action on Bulletins and Circulars

4.1 IE Circular No. 81-09

Documents Reviewed

- IE Circular No. 81-09, "Containment Effluent Water that Bypasses Radioactivity Monitor", dated July 10, 1981.
- Shoreham Correspondence and Information Letter Action Request (CILAR) No. 81-09, dated June 18, 1983.
- NRC Inspection Report No. 50-322/84-17, dated June 15, 1984.
- Station Modification Package SM 84-016, "Immediate Compliance with IE Bulletin 80-10".

The licensee's action on this circular was reviewed during inspection 50-322/84-17. The items remaining to be resolved were as follows:

Item 1

Determine why six of ten systems, identified by the licensee as meeting IE Circular No. 81-09 criteria were noted monitored in accordance with guidance of the circular.

The inspector review indicated that the six systems were primary systems that did not flow to the environment and did not require monitoring. The six systems had automatic isolation capability.

Item 2

Determine why two of ten systems, identified by the licensee as meeting IE Circular No. 81-09 criteria, could not be isolated.

The inspector review indicated that the two systems did not penetrate containment. Consequently, they did not meet the criteria of the circular regarding isolation. The review indicated that the two systems were monitored.

Based on the above, this circular is closed.

4.2 IE Bulletin No. 80-10

Documents Reviewed

IE Bulletin No. 80-10, "Contamination of Nonradioactive System and Resulting Potential for Umonitored, Uncontrolled Release of Radioactivity to Environment", dated May 6, 1980.

NRC Inspection Report No. 50-322/84-17, dated June 15, 1984.

The licensee's actions on this bulletin was reviewed during Inspection No. 50-322/84-17. The items remaining to be resolved and the licensee's actions on these matters are as follows:

Item 1

Determine status of licensee review of operating procedures to identify potentials for cross contamination.

The licensee established a master punch list of items to be reviewed. The punch list included the necessity to review applicable operating procedures to identify potentials for cross contamination and identified the applicable procedures. The inspector determined that the Service and Instrument Air procedure had not been reviewed in accordance with guidance in the bulletin. The licensee subsequently reviewed this procedure and found that adequate administrative controls were included in the procedure to preclude cross-contamination. Excluding the above no other deficiencies were identified.

Item 2

Determine licensee progress in the installation of check-valves to preclude back-flow and siphoning from contaminated to non-contaminated systems.

The licensee's divided the installation program into two sections, fuel load and initial criticality. The licensee has installed all check-valves to support fuel load. Inspector examination of two such valves, indicated via modification packages to have been installed, found them to be installed. No deficiencies in the licensee's fuel load check valve installation program were identified.

Licensee progress in completing the second phase of check valve installation will be reviewed during a subsequent inspection. Follow-up item number 50-322/84-25-06 is assigned to this matter.

Item 3

Licensee selection of a lower limit of detection (LLD) of radioactivity for use in establishing methodology for analyzing samples collected from non-contaminated system which interfaces with contaminated systems.

The inspector found that the licensee had not included an LLD for all systems to be sampled and had not identified all systems to be sampled. The licensee subsequently revised applicable procedures to specify the LLD and to identify all applicable systems to be sampled. The licensee's actions are acceptable.

Item 4

Licensee to establish criteria for use in reviewing temporary modification to identify potentials for cross contamination.

The licensee has established appropriate procedural controls for use in reviewing temporary modifications to identify potentials for cross contamination.

5. Exit Interview

The inspector met with licensee representatives, (denoted in Section 1) at the conclusion of the inspection on June 28, 1984. The inspector summarized the purpose, scope and findings of the inspection. At no time during the inspection did the inspector provide written material to the licensee.