

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-322/85-35

Docket No. 50-322

License No. NPF-19

Category C

Licensee: Long Island Lighting Co.  
175 East Old Country Road  
Hicksville, New York 11801

Facility Name: Shoreham Nuclear Power Station

Inspection At: Shoreham, New York

Inspection Conducted: August 30-September 13, 1985

Inspectors: C. Petrone 10/1/85  
C. Petrone, Lead Reactor Engineer date

Approved by: Jon R. Johnson 10/2/85  
J. Johnson, Chief, Operational Programs date  
Section, OB, DRS

Inspection Summary: Routine unannounced inspection of startup test program activities and licensee investigation of reactor water level indication problems and unplanned reactor scrams. The inspection involved 89 hours onsite by one region based inspector.

Results: No violations were identified.

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## DETAILS

### 1.0 Persons Contacted

#### Long Island Lighting Company and Contractors

\*R. Grunseich, Supervisor Nuclear Licensing  
R. Lawrence, Project Advisory Engineer  
L. Lewin, Modifications and Outage Manager  
R. Macina, Reactor Engineer  
J. Notaro, QA Department Manager  
\*G. Rhodes, Compliance Engineer  
J. Riley, GE Ops Manager  
J. Scalice, Operations Manager  
\*W. Steiger, Plant Manager  
\*C. Seaman, QC Department Manager  
D. Terry, Maintenance Manager

\* Denotes those present at exit meeting on September 13, 1985

The inspector also contacted several other licensee personnel in the course of the inspection including Watch Engineers, other shift operations personnel, startup test shift personnel and members of the technical staff.

### 2. Plant Activities

Due to a series of reactor scrams and problems with the reactor vessel water level instrumentation, the inspector did not witness any significant startup test activities during this inspection. The inspector did witness power ascension and reduction activities in the control room and observed troubleshooting activities associated with the instrument air system, the reactor protection system, and the reactor vessel level instrumentation. During this inspection the following events were noted:

The plant was manually tripped on August 31, 1985, at 0330 due to a loss of instrument air which brought up a low pilot air pressure alarm and caused the control rods to begin to drift in. This was reported to the NRC at 0430. The licensee investigated and determined that the problem was caused by the failure to use the correct barrier desiccant material in the air dryer canisters. This barrier desiccant should have been loaded in the lower (inlet) end of the air dryer to protect the finer silica gel desiccant from excessive amounts of water in the air supply. Since this barrier was not loaded, the lower end of the silica gel became saturated and partially blocked the flow of air through the dryer, causing a drop in the instrument air supply pressure.

As a result of this problem, the plant manager directed the Chief Maintenance Engineer to investigate the cause of the error and provide a written evaluation to him. At the exit meeting the plant manager stated that although the final report had not yet been issued, the Chief Maintenance Engineer had determined that the cause of the error was a combination of an inadequate procedure and maintenance personnel who were unfamiliar with the routine activity. The licensee committed to revise the maintenance procedure to include more specific desiccant loading instructions.

The inspector verified that following the reloading of the air dryers with the proper mix of desiccants, the Instrument Air Supply system operated satisfactorily. The inspector had no further concerns.

On September 6, 1985, at 1307 the reactor scrambled on a spurious low reactor vessel water level signal. At the time the reactor was operating at 1.17% power and 440 psig. The reactor pressure was being increased for the planned resumption of startup testing at 600 psig. The reactor water level perturbation was apparently caused when an I&C technician valved a core plate differential pressure instrument back into service during a routine surveillance. This instrument is connected to the "A" side reactor vessel level instrumentation variable leg.

At approximately 0645 on September 8, 1985, the licensee declared an Unusual Event when all the level indicators on the reactor vessel "B" reference leg began to increase, while those on the "A" reference leg remained constant. At the time, the reactor power was 1.25% and the pressure was 806 psig. The "B" reference level instruments increased to about 5" above the "A" reference leg instruments. The Watch Engineer directed operators to begin reducing power at 0645. At 0700 the State of New York and Suffolk County were notified (a 15 minute notification is required by EPIP-1-1) and at 0715 the NRC Headquarters Duty Officer was notified (a 1 hour notification is required). At 0720, and at a reactor pressure of 750 psig, the "B" reference leg instruments returned to normal. At 0735 New York and Suffolk County were informed that plant conditions had returned to normal. Reactor pressure was reduced to 400 psig and held there while plant management met and formulated a course of action to troubleshoot the "B" level problems.

The inspector reviewed the licensee's action in response to this unusual event. This review included discussions with the plant operations staff and plant management, review of control room logs, the Emergency Director's log, and the Emergency Director's Implementing Actions Checklist. The inspector verified that the appropriate actions specified in the licensee's Emergency Preparedness Plan, and Emergency Preparedness Implementing Procedure (EPIP) 1-1, "Unusual Event", had been completed satisfactorily. The event had been appropriately classified as a UE-15 (Category 15 unusual event) as defined in Section 4 of the Shoreham Emergency Preparedness Plan.



The licensee entered the drywell, removed the insulation on the "A" and "B" side reactor vessel reference legs, performed contact temperature measurements on the reference legs and made ambient temperature measurements. To facilitate reinstallation of the insulation, the plant was shutdown at 2215 on September 10.

At 0805 on September 12 the "B" reference leg Reactor Pressure Vessel level instrumentation began to indicate an increase in level while the "A" reference leg instruments continued to indicate a normal 40" level. The licensee began a power reduction. At 0834 the "B" reference leg level indication returned to a normal 40" indication as the pressure decreased to 513 psig. The "B" reference leg instrument level had reached a peak of 56" before returning to normal. All other instruments indicated that the actual level remained at 40".

At 0909 the reactor scrambled on a momentary Reactor Protection System (RPS) A1 and B1 low reactor vessel level signal. The A1 and B1 instruments are located on the "A" reference leg. All level indicators were indicating a normal level. The inspector reviewed the narrow range level recorder trace and verified that the level, before and after the scram, was approximately 40". Review of the reactor trip alarm typer printout showed that the trip signal had reset in 96 milliseconds, indicating that the signal was spurious. Subsequently, the licensee identified that at the time of the scram an operator in the plant was performing a valve position verification on one of the sample valves connected to the "A" reference leg. During this verification test, the operator, in accordance with standard procedure, attempted to turn the valve in the closed direction. By 1030 the licensee had duplicated the operators action and verified that the slight movement associated with checking the valve shut was enough to generate a trip signal. The licensee is evaluating this problem which appears to be independent of the "B" reference leg indication problem.

The licensee plans to make a hand over hand inspection of the reference legs at 150 psig, then cool down the plant to below 125°F. Then they will remove the insulation and perform a dye penetrant inspection of the "B" reference leg piping welds. They also plan to isolate and hydrostatically test the "B" reference and variable legs. These activities were still in progress on the last day of the inspection.

### 3.0 Tour of the Facility

The inspector made several tours of the facility during the course of the inspection including the turbine building, reactor building, control structure and control room.

During a tour of reactor building on August 31 the inspector examined the ongoing installation of scaffolding (for Appendix R fire protection modifications) and noted that the scaffolding had been attached (wired or

clamped) to electrical conduit in several places on the Northwest side of elevation 112. In addition, the scaffolding on elevation 40' had been wired to the manual valve operator handle on 1M50-04V-0156B, Unit Cooler IT46-UC002B Supply Isolation Valve. However, there did not appear to be any damage to the conduit or the valve operator. The licensee took immediate action to remove the attachments from conduit and the valve operator. At the inspector's request, the licensee also examined the remaining scaffolding in the plant for similar problems and reinstructed the contractor workers regarding proper installation of scaffolding.

The inspector made subsequent inspections of the reactor building and did not identify additional cases of scaffolding being attached to plant equipment. The inspector had no further concerns.

#### 4.0 Surveillance Test Witnessing

On September 4, 1985, the inspector witnessed the performance of surveillance SPF 24.202.052, High Pressure Coolant Injection System (HPCI) Flow Rate Test at a reactor pressure of 150 psig. The inspector verified that the test was performed in accordance with the procedure and test results met acceptance criteria.

No unacceptable conditions were identified.

#### 5.0 Shift Advisor Examination

On September 3, 1985, the inspector witnessed portions of the oral examination of one of the on-shift SRO advisors. The examination was administered to the candidate by the Operations Manager, the Training Supervisor and the Operations Supervisor. The questions were appropriate in scope and difficulty and the candidate answered the questions satisfactorily. The licensee determined that the candidate had demonstrated sufficient site specific knowledge to qualify as a shift advisor at Shoreham.

There are now five qualified advisors at Shoreham. The licensee is planning to qualify three additional shift advisors. The inspector identified no concerns.

#### 6.0. Quality Assurance and Quality Control

The inspector observed QC inspectors conducting routine surveillances of startup test activities.

The inspector also noted that the QC Division Manager had been reassigned as the Quality Assurance Division Manager, and a new QC Manager had been selected. The inspector reviewed the qualifications of the new QC Manager and verified that he met the commitments specified in the Shoreham FSAR,

Rev. 33, September 1984. The inspector also reviewed the training program established for the new manager and noted that it appeared to be comprehensive.

The inspector identified no concerns.

#### 7.0 Exit Meeting

At the conclusion of the inspection on September 13, 1985, an exit meeting was conducted with the licensee's senior site representatives (denoted in paragraph 1). The findings were identified and discussed. At no time during the inspection did the inspector provide written inspection findings to the licensee.