U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-322/85-14

Docket No. 50-322

License No. NPF-19 Priority -- Category C

Licensee: Long Island Lighting Company

175 East Old Country Road

Hicksville, New York 11801

Facility Name: Shoreham Nuclear Power Station

Inspection At: Shoreham, New York

Inspection Conducted: March 4-8, 1985

Inspectors: D. Florek for — 4/8/85
S. Kucharski, Reactor Engineer — date

D. Florek — 4/8/85
D. Florek, Lead Reactor Engineer — date

Approved by: L. Bettenhausen — 4/14/85
L. Bettenhausen, Chief — date
Operations Branch, DRS

Inspection Summary:

Inspection on March 4-8, 1985 (Report 50-322/85-14)

Areas Inspected: Routine, unannounced inspection of the startup test program: including the overall startup test program, startup test program training, startup test procedures, test results evaluation; preventive maintenance program; QA/QC interfaces and tours of the facility. The inspection involved 66 hours on site by two region based inspectors.

Results: No violations were identified.

DETAILS

1. Persons Contacted

*J. Alexander, Reactor Engineer
*B. Beytin, Lead System Engineer
*D. Bouchie, Lead STD and A Engineer - GE
*E. Brynolfson, I&C Supervisor
*W. Burnett, Compliance Engineer, IMPELL
*R. Grunseich, Supervisor Nuclear Licensing
*R. Gutman, Maintenance Engineer
A. Himle, Shift Test Director, GE
B. Hobbs, Shift Test Director, GE
*C. Kim, Maintenance Consultant, INTERGLOBAL
*R. Lawrence, Project Advisory Engineer, SWEC
*L. Lewin, I&C Engineer
*J. Livingston, Test Coordinator, GE
A. Mullen, QC Division Manager
S. Petty, QC Supervisor
*G. Rhodes, Compliance Engineer, IMPELL
*J. Riley, GE Operations Manager, GE
*C. Rowe, QA Supervisor
*H. Solk, M and TE Supervisor, GE
W. Steiger, Plant Manager
*D. Terry, Manager, Maintenance
J. Wynne, Operations Compliance

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P. Eselgroth, Senior Resident Inspector
*C. Woodard, Reactor Engineer

*Denotes those present at exit interview on March 8, 1985.

2. Startup Test Program

References:

- Shoreham Nuclear Power Station (SNPS), Final Safety Analysis Report
- SNPS Safety Evaluation Report
- Regulatory Guide 1.68 "Initial Test Programs" for Water Cooled Reactor Power Plants"
- SNPS Power Ascension Phase Planning Schedule
- SP-12.075.01 Administration of Startup Testing

2.1 Overall Startup Test Program

The inspector reviewed the following procedures:

SP-12.075.01, "Administration of Startup Testing", Revision 9, draft copy.

SP-12.004.02, "Safety Evaluation", Revision 1, dated September 25, 1984.

SP-12.006.01, "Station Procedures - Preparation, Review Approval, Change Revision and Cancellation", Revision 24 dated November 23, 1984.

SP-12.003.01, "Personnel Qualification and Responsibility", Revision 1, dated March 29, 1984.

The procedures were reviewed to verify that formal administrative measures have been established governing the conduct of testing including: method for verifying a test procedure is current prior to its use, methods to assure personnel involved in the conduct of a test are knowledgeable of the test procedures, methods to change (both major and minor) a test procedure during the conduct of testing, criteria for interruption of a test and continuation of an interrupted test, methods to coordinate the conduct of testing, methods to document significant events, unusual conditions, or interruptions to testing, and methods for identifying deficiencies, documenting their resolutions, and documenting retesting; verify that formal methods have been established to control scheduling of test activities; verify that a formal program for evaluation of test results has been established. The program should provide for the following: the test data are properly reduced to meaningful and understandable form, the test results are checked and compared to previously determined performance standards or limits; deficiencies are clearly identified and appropriate corrective action is proposed, reviewed and completed; after corrective actions or modifications have been completed, tests or portions of a test are rerun as necessary to assure that performance of the system is adequate; and the results of the evaluations are reviewed by appropriate licensee personnel and/or contractor personnel, including the person(s) responsible, for approving the original test procedures.

The inspector also reviewed the licensee administrative procedure ST-12.075.01 and the SNPS Power Ascension Phase Planning Schedule against the FSAR commitments for the heat-up portion of the test program to ascertain that they were consistent. The logic of the planning schedule was also assessed for adequacy.

Findings

The inspector review of the procedures identified that except as noted below the attributes identified above were contained within

the procedures. However, there were several items in the draft administrative procedure that were not internally consistent and did not represent the licensee plans for the startup program. The inspector observed that the licensee had identified some of these discrepancies and the licensee indicated that they would correct the administrative procedure. These included: identification of all the startup tests to be conducted during the heat-up phase, conduct of plateau reviews at each test condition, verification of partial test results review, and test results review activities. Following issuance of revision 9 of the administrative procedure, the inspector will reassess the administrative procedure.

The inspector review of the test schedule identified different tests referenced than described in the administrative program procedure. Following discussion with the reactor engineer, the licensee indicated that the heat-up phase portion of the test schedule was still being refined and the two documents would be consistent. In addition the licensee representative agreed to reassess the sequence of testing to perform control rod drive testing at rated conditions, prior to performing RCIC, HPCI (other than the required technical specification testing) and MSIV testing, rather than after this testing. This assures that the control rods perform acceptably should a reactor scram be required if problems develop as a result of RCIC/HPCI/MSIV startup testing.

The inspector also questioned the adequacy of the preparations related to conducting the initial main turbine testing under the heat-up test condition. The inspector reiterated, and the licensee was aware of, the need to perform a 10 CFR 50.59 determination for performance of this test. The inspector expressed concern on the timing of its activity prior to completing the RCIC vessel injection testing and testing on the electro hydraulic control (EHC) system for the turbine control valve/turbine bypass valve interaction. The licensee acknowledged the NRC concerns and would address the concerns as part of their evaluation. The evaluation will be reviewed in a subsequent inspection.

The licensee addressed the required FSAR committed types of testing for the heat-up test condition in the administrative procedure. Testing activities beyond the heat-up test condition will be assessed in subsequent inspections.

2.2 Startup Test Program Training

The inspector conducted interviews with the Reactor Engineer, Test Coordinator, Lead STD and A Engineer, Shift Test Directors, and Lead Advisory Operations Engineer and reviewed the training log to ascertain the adequacy of training in the startup test program.

Based on the interviews and review the inspector ascertained that training on the startup administrative procedures, safety evaluation

training and technical training on the startup test procedures up through initial criticality were completed. Training of the test program personnel for the heatup phase and remainder of the program has been initiated but is not completed. The licensee plans to provide additional training in the new administrative procedure and technical training in the startup test procedures. A major training activity is in the area of system expansion testing which requires visual inspection of pipe, hangers and snubbers throughout the plant. Due to the uncertainties associated with obtaining a 5% license, the licensee was forced to let go all but a few of the individuals being trained for system expansion testing. This will require retraining of new personnel, if necessary, prior to performance of heatup testing. The licensee representative indicated that the necessary training would be provided to startup test program personnel prior to the conduct of heatup testing. The adequacy of this training will be assessed in a subsequent inspection.

2.3 Startup Test Procedures

The inspector utilized the following procedures, STP-811, "BOP System Thermal Expansion Testing", Revision 1 and STP-15, "RCIC System", Revision 2, to assess the implementation of the administrative procedure. STP-811, utilizes Stone and Webster personnel to direct the testing activities and STP-14 utilizes General Electric personnel.

During the review of STP-811, the inspector noted that the procedure contained general statements, rather than specific statements, to demonstrate that the level one test acceptance criteria were satisfied. The inspector and licensee discussed the concerns and the licensee agreed to define the factors that would establish that the level one test acceptance criteria were satisfied.

At the exit meeting as described in Section 7, the inspector indicated that in his review of selected 800 series test procedures, the same concern may also be present in those procedures and a review of the 800 series procedures may be appropriate. The licensee acknowledged the inspectors comments. The licensee actions in this area will be assessed in a subsequent inspection.

2.4 Test Results Evaluation

Scope

The completed startup test listed in the Finding Section was reviewed to assess that:

-- Each was approved in accordance with administrative procedures;

-- Test changes were annotated and completed if appropriate;

-- Basic test objectives were met;

-- Changes and test exceptions were noted;

-- Test exceptions were resolved and accepted by management;

-- Retests were completed if required;

-- System or process change necessitated by a test deficiency were properly documented and reviewed;

-- Proper reporting of deficiencies;

-- Data sheets were completed;

-- Data was within tolerances;

-- Test steps and data sheets were properly signed and dated;

-- Engineering evaluation of test data;

-- Test results were compared with established acceptance criteria;

-- Documented review and acceptance of tests results;

-- Offsite review committee and followup if audited;

-- QA or independent review of tests results; and

-- Test results have been approved by appropriate management.

Findings

STP-10, Section 8.1 "SRM/IRM Overlap", conducted on February 16, 1985 was reviewed. Review of the test results was in process by the licensee. The inspector also reviewed portions of STP-6, "SRM Performance and Control Rod Sequence", conducted on February 15, 1985, referenced in STP-10. SRM/IRM overlap was demonstrated. The following results were obtained.

SRM	Overlap Reading	IRM	All Rods In Reading	Overlap Reading
A	3E4	A	1.6	11.5
B	3E4	B	1.2	17
C	3E4	C	1.3	9
D	3E4	D	1.3	9.8
		E	1.6	13.6
		F	1.1	11.5
		G	1.3	13.8
		H	1.3	7

The inspector noted that the test was attempted twice. In the first attempt, the licensee reached control rod block limits and terminated the test. The second attempt was successful. The inspector noted that on the evaluation of the test data, the startup test personnel utilized the all rods in IRM readings that occurred in the shutdown between the first and second attempt. The test procedure indicated that all rods in IRM data should be obtained from STP-6 which was the all rods in reading in the first attempt. It should be noted that the values were essentially the same in both cases. STP-6 was not required to be performed in the second startup. While this difference had no effect on the acceptance criteria evaluation, the inspector expressed concern to the licensee management on the test personnel not following the test procedure step as written or utilizing the controls in the administrative procedure to change the procedure. The in process licensee review could also identify a test exception if this situation was discovered. The licensee representatives acknowledged the inspectors concerns and indicated the situation would be corrected. The inspector will review the entire results package and adequacy of the licensee actions following completion of the licensee review of the test results.

3. Preventive Maintenance Program (P.M.)

Based on the results of previous NRC inspections (50-322/85-04 and 50-322/85-12), the NRC inspector reviewed the licensee's Preventive Maintenance Program in the following areas:

-- Planning and Working Schedule

-- Outstanding preventative maintenance (PM)

-- Required Conditions for PM

-- Health Physics Requirements

-- Maintenance Work Request (MWR)

-- Scheduled Activity Worksheets (SAWS)

-- Priority System

The NRC inspector also reviewed the following documentation:

-- SP12.013.01, "Maintenance Work Request", Revision 21, dated February 1, 1985

-- SP12.015.01, "Preventive Maintenance Program", Revision 7, dated February 6, 1985

-- Standing Order Number 16, "Operator Duties", Revision 3, dated January 24, 1985

The inspection of the preventive maintenance program was performed in two areas: Instrumentation and Control Section and the Maintenance Section.

Findings

Instrumentation and Control Section

The preventive maintenance items are divided into three priorities and they are categorized as follows:

-- Priority 1 - Technical Specification related and Safety related items.

-- Priority 2 - affects non-category 1 but affects station generation capabilities.

-- Priority 3 - other equipment.

The inspector reviewed the incomplete list for Priority 1 items. The licensee had items in all three priorities beyond their due dates but had very few items in the Priority 1 category beyond the extension date. The Priority 1 items that were beyond the extension date were items of systems that were not required at the present time.

During the review process the inspector noted that, according to the computer print out of the I&C incomplete list, the Measuring and Test Equipment (M.T.E.) had an extension date column. According to 10 CFR part 50, Appendix B criteria XII, Control of Measuring and Test Equipment, instruments, gages and other testing devices are properly controlled and calibrated at specific periods. The inspector questioned the licensee about the process for test equipment. The licensee does conform to the regulations as specified in 10 CFR part 50, Appendix B. This was confirmed by the inspector in the review of the test equipment. No M.T.E. equipment was found to be in use beyond the calibration date. The inspector noted at the exit that the extension date column for M.T.E. items could lead to problems in the future. The licensee acknowledged the inspector concern.

Maintenance Section

The inspector reviewed the incomplete list for the Maintenance Section. During the review process the inspector noted various items with extension dates as far back as 1981. Also, there were various items such as truck registrations and maintenance of vehicles, which has nothing to do with the safety of the plant. When questioned the licensee stated that the computer listing for incomplete items requires updating. The computer listing also contained duplicate items in which the licensee would continually do one and ignore the other. This would cause an incomplete listing showing items a few years old while in validity the item was current. During the inspection, at the request of the inspector, the licensee reviewed the incomplete list for the true numbers of outstanding items. The total number of outstanding items based on the incomplete report as of 3/9/85 showed 83 Category 1 items and 339 Category 2 and 3

items for a total of 422 outstanding items. After the licensee's review at the inspectors request, there were 17 Category 1 items and 138 Category 2 and 3 items for a total of 155 outstanding items. The 17 category 1 items were for systems that were not required at this time. The licensee indicated they would improve their documentation and keep updating their incomplete listing on a regular basis. This is an unresolved item pending subsequent NRC:R1 inspection. (50-322/85-14-01).

4. QA/QC Interface

The inspector held discussions with the QC Supervisor and discussed plans for the Startup Test Program. QC will provide shift coverage and perform surveillance reviews of ongoing tests. Startup test results will also be reviewed by QC. No unacceptable conditions were noted.

5. Tours 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.

No unacceptable conditions were noted.

6. Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable items, items of noncompliance or deviations. Unresolved items disclosed during the inspection are discussed in Section 3.

7. Exit Interview

At the conclusion of the site inspection on March 8, 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. The licensee indicated that no proprietary information was contained in the scope of this inspection.