

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-382/89-31

Operating License: NPF-38

Docket: 50-382

Licensee: Louisiana Power & Light Company (LP&L)  
317 Baronne Street  
New Orleans, Louisiana 70160

Facility Name: Waterford Steam Electric Station, Unit 3 (Waterford 3)

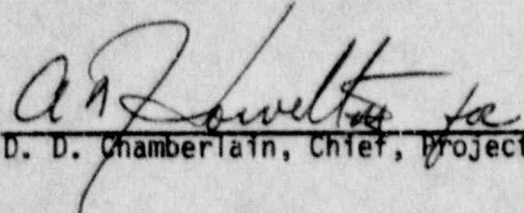
Inspection At: Taft, Louisiana

Inspection Conducted: September 21-29, 1989

Inspectors: W. F. Smith, Senior Resident Inspector  
Project Section A, Division of Reactor Projects

T. R. Staker, Resident Inspector  
Project Section A, Division of Reactor Projects

Approved:

  
D. D. Chamberlain, Chief, Project Section A

10-6-89  
Date

Inspection Summary

Inspection Conducted September 21-29, 1989 (Report 50-382/89-31)

Areas Inspected: The licensee's performance of main steam safety valve testing and the licensee's actions taken during testing when test data indicated an out of specification setpoint on MS-106A on September 21, 1989.

Results: One apparent violation was identified for failure to adhere to Technical Specifications (TS) Limiting Conditions for Operation (LCO). When test data indicated that the setpoint for Main Steam Safety Valve MS-106A was outside of the required tolerance, the licensee failed to enter the appropriate TS LCO in a timely manner. As a result, the plant was operated at a higher power level than permitted by the TS. A second apparent violation was identified involving a failure to provide an adequate test procedure for main steam safety valve testing.

When problems were encountered with the testing of MS-106A, licensee personnel involved with the test did not appear to adequately assess the significance of the situation and promptly take actions to ensure compliance with the TS. From the inspector's viewpoint, this was a test with a high potential of causing entry into a TS action statement which could have required a reduction in power within a short period (less than 4 hours).

Although 9 out of the 12 safety relief valves had to be adjusted, there were no further problems encountered with testing of the remaining valves.

DETAILS1. Persons ContactedPrincipal Licensee Employees

- \*J. R. McGaha, Plant Manager, Nuclear
- \*P. V. Prasankumar, Assistant Plant Manager, Technical Support
- \*D. F. Packer, Assistant Plant Manager, Operations and Maintenance
- \*G. M. Davis, Manager of Events Analysis Reporting & Responses
- \*L. W. Laughlin, Onsite Licensing Coordinator
- \*T. R. Leonard, Maintenance Superintendent
- R. S. Starkey, Operations Superintendent
- \*H. J. Aubert, Mechanical Maintenance Supervisor
- \*D. T. Dormandy, Mechanical Maintenance Superintendent

\*Present at exit interview.

In addition to the above personnel, the inspectors held discussions with various operations, engineering, technical support, maintenance, and administrative members of the licensee's staff.

2. Main Steam Safety Valve Testing (61726)

On September 21, 1989, at 11:40 a.m. with the plant at full power, the licensee commenced main steam safety valve testing per Procedure MM-007-015, Revision 0, "Trevitest on Main Steam Safety Valves." Test data was taken on Valve MS-106A at 12:41 p.m. The lift setpoint was calculated to be 1030 psig and was noted to be lower than required by TS 3.7.1.1 (1070 psig  $\pm$  1 percent). TS 3.7.1.1 requires, in part, that with one main steam safety valve inoperable (outside of setpoint specification or otherwise), the valve shall be restored to operable or the linear power level high trip setpoints shall be reduced to 86.8 percent within 4 hours. The licensee did not declare the valve inoperable in accordance with TS 3.7.1.1 at this time. The licensee suspected that the gauge used to measure steam header pressure was in error, which was the data used for the setpoint calculations. Testing was secured to investigate the gauge problem. The licensee noted that the gauge was not installed in a vertical position. The gauge was repositioned and the header pressure reading increased by about 10 psig. In addition, the licensee stated that when the gauge was depressurized, it read over 10 psig below zero. The licensee had the gauge removed for replacement or recalibration. At this time, the inspector identified a concern to the shift supervisor over the possible adverse effect on valve operability of having the test rig installed on the relief valve.

By approximately 3 p.m., a calibration check and rezero were performed on the test gauge with results indicating that it was operating correctly and accurately. The mechanics also removed the test rig from the valve while

the inspector's concerns over operability of the valve with the rig installed were dispositioned. At approximately 3:30 p.m., the inspector identified a concern to the shift supervisor regarding operability of MS-106A with the unsatisfactory test results and conformance with the TS 3.7.1.1 requirements. The inspector also informed the shift supervisor that the test gauge had been calibrated and checked with satisfactory results. The TS action statement was still not entered by the licensee at this time. The licensee then resumed testing.

After the testing equipment was, again, set up, problems developed with the test rig chart recorder. The entire Trevitest device was taken to the shop area to determine the cause of the problem. The contractor technician determined that the problem was intermittent, and a calibration check was performed with satisfactory results. When the inspector asked the contractor what he had determined, he stated that he had found no other problems and was confident with the original test results. A calibration check was performed on a second Trevitest assembly and it was installed on Valve MS-106A.

A second test was performed at 8:37 p.m., and the calculated setpoint (1038 psig) was found to be outside of the TS requirements (1070 psig  $\pm$  1 percent). The licensee then declared the valve inoperable. The valve setpoint was adjusted to the proper value at 9 p.m., over 8 hours after the initial test. This is an apparent violation of TS 3.7.1.1, which requires restoration of the valve to an operable status or reduction of the linear power level high trip setpoint to 86.6 percent within 4 hours when one main steam safety valve is outside of its relief setpoint tolerance.

Because of the inspector's concern regarding the operability of a main steam safety valve with the test rig installed, the licensee performed an evaluation and determined that the valve would remain fully operable if a 1.5-inch clearance was maintained between the moving parts of the valve and the hydraulic lift rig. Prior to the 8:37 p.m. test, instructions were added to the work packages to insure this.

Procedure MM-007-015 appeared inadequate to the circumstances. The procedure was reviewed by the Plant Operations Review Committee and approved by the Plant Manager as required by the TS, however, the licensee could not provide the inspectors with any evidence that consideration was given as to whether or not the test rig would have any impact on the operability of the steam safety reliefs. Consequently, the procedure contained no reference to the required 1.5-inch clearance discussed above. In addition, the following deficiencies were identified to the licensee:

- a. The procedure did not address the operability requirement or reference the TS for main steam relief valves to ensure that personnel performing the test would promptly inform the shift supervisor when the TS requirements were not being met.

- b. Step 3.2.3 required an onsite calibration verification of the test device. No further references or instructions were given on the calibration requirements or acceptance criteria.
- c. There were no Quality Assurance (QA) hold points in the procedure, just a statement in Step 3.1.9 to provide a QA inspector, "if required." Step 3.1.11 required communications to be established between testing personnel and the control room "if required." Step 5.3 had QA witness the calibration of the test equipment only "if required." No direction was apparent from any of these steps as to when it was required.
- d. The procedure did not include any criteria for the accuracy of the test equipment. Test equipment accuracy was not considered when calculating the acceptability of test results.
- e. The procedure did not include a step to warn station personnel in the area above the safety valves prior to initiating testing. However, the inspector did observe that the control room made an announcement prior to the start of each test to accomplish this.
- f. No guidance on proper test gauge installation was included. Proper gauge installation would probably have eliminated the initial concerns over gauge operability and the resultant delays in meeting TS 3.7.1.1.
- g. There were no precautions or guidance on what actions to take if the safety reliefs fail to reseal.
- h. The inspectors noted that Procedure MM-007-015 was about 9 months overdue for the licensee's required 2-year update review. The issue over late procedure 2-year reviews is the subject of a noncited violation in NRC Inspection Report 50-382/89-16. It appeared that the licensee had failed to prioritize this procedure such that an update and human factors improvement would have been completed in support of the test as scheduled.

Failure to provide an adequate procedure for the testing of main steam safety reliefs appears to be in violation of TS 6.8.1.a, which requires, in part, that written procedures shall be established and maintained as recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

### 3. Exit Interview

The inspection scope and findings were summarized on September 29, 1989, with those persons indicated in paragraph 1 above. The licensee acknowledged the inspectors' findings. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection.