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United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Unit 1
Facility Operating License No. NPF-11
NRC Docket No. 50-373

Subject: LaSalle County Station Unit 1 Cycle 14 Startup Test Report Summary for the Measurement Uncertainty Recapture Power Uprate

Reference: Letter from Christopher Gratton, Sr., U.S. Nuclear Regulatory Commission to Michael Pacilio, Exelon Nuclear dated September 16, 2010, "LaSalle County Station Station Units 1 and 2 - Issuance of Amendments Re: Measurement Uncertainty Recapture Power Uprate"

Enclosed for your information is the LaSalle County Station (LSCS) Unit 1 Cycle 14 Measurement Uncertainty Recapture (MUR) Power Uprate (PU) Startup Test Report Summary. This report is submitted in accordance with Technical Requirements Manual Section 5.0.b.

The referenced license amendment revised the Operating License and Technical Specification (TS) to implement an increase of approximately 1.65 percent in rated thermal power from the current licensed thermal power of 3489 megawatts thermal (MWt) to 3546 MWt. The changes were based on increased feedwater flow measurement accuracy, and achieved by utilizing the Cameron International CheckPlus ™ Leading Edge Flow Meter (LEFM) ultrasonic flow measurement instrumentation.

LSCS Unit 1 Cycle 14 MUR PU commenced operation on September 27, 2010 following successful testing, which was conducted from September 25 through September 27, 2010 per LSCS procedure LST-2010-006 "Unit 1 MUR Power Uprate Ascension Testing."

Attached is a summary of the test that contains an evaluation of the test results, test exceptions and conclusion. All test data was reviewed in accordance with the applicable test procedure and exceptions to any results were evaluated to verify compliance with TS limits and to ensure the acceptability of subsequent test results.

Should you have any questions concerning this letter, please contact Mr. Terrence W. Simpkin, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,

David P. Rhoades
Site Vice President
LaSalle County Station

Attachment - Startup Test Report Summary for Measurement Uncertainty Recapture Power Uprate

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – LaSalle County Station

Startup Test Report Summary for Measurement Uncertainty Recapture Power Uprate

The license amendment associated with the Measurement Uncertainty Recapture (MUR) Power Uprate (PU) revised the Operating License and Technical Specification (TS) for implementation of an increase of approximately 1.65 percent in rated thermal power from a thermal power of 3489 megawatts thermal (MWt) to 3546 MWt. This power increase was evaluated for its impact on the operating margin of various plant systems, structures, and components (SSCs) due to increased flow, temperature, and electrical output. An Operational and Technical Decision Making (OTDM) associated with Plant Margins was developed to identify and track SSCs with potentially degraded margin resulting from the MUR PU. To address any potential issues, MUR Task Reports were developed by General Electric Hitachi (GEH), Sargent & Lundy (S&L), Areva and General Electric Energy Services (GEES) for all impacted SSCs.

During implementation of the license amendment, all potential margin issues contained in the MUR Task Reports were again reviewed and re-evaluated against the results of the MUR PU testing, which was performed on September 25-27, 2010. This review took into consideration data obtained during testing, which are documented in LST-2010-006 "Unit 1 MUR Power Uprate Ascension Testing", and was also based on general observations from test participants (i.e., from Operations, Engineering, etc.). Re-evaluation of each of the potential margin issues determined that in some cases, further performance monitoring of some of the affected SSCs is recommended. Special station procedure LLP-2010-004 "Unit 1 MUR Power Uprate Performance Monitoring Plan," will be used for this purpose and this will augment normal system monitoring with a more focused long-term monitoring of SSCs with high impact on reliability.

EVALUATION

Feedwater Heaters

There was no unexpected plant response/performance data noted during MUR PU testing. However, the 4th and 5th stage Feedwater (FW) Heaters will experience increased shell side flow, which is in excess of Heat Exchange Institute (HEI) guidelines. This could lead to elevated tube vibration due to vortex shedding. In addition, the 5th stage FW Heaters have high steam velocities such that they will have low margin that could potentially cause additional wear on steam inlet nozzles.

Each of these issues will be managed with increased Eddy current tube inspections on the 4th and 5th stage heaters including inspection of two nozzles on the 5th stage heaters to identify, in a timely manner, any adverse wear trend.

Main Condenser

Margin to the main condenser high backpressure alarm will be reduced in the summer months as a result of the MUR PU. Although the testing conditions did not identify current adverse conditions, further evaluation is needed to determine if a contingency modification to raise the alarm setpoint is needed to address the condition for summer readiness.

Reactor Pressure Vessel Flow Induced Vibration

No anomalies in reactor jet pump performance were noted during MUR PU testing. Jet pump main wedge wear is anticipated to continue or slightly increase as a result of the MUR PU. However, monitoring jet pump wedge wear within existing processes will continue (i.e., in-vessel inspection program). Long-term trends in cobalt concentration will also be monitored for indications of abnormal wear.

Startup Test Report Summary for Measurement Uncertainty Recapture Power Uprate

High Presure Turbine Steam Control Valve Margin
The main Turbine Control Valve (TCV) positions were seen to be as predicted during the testing. As a consequence of the higher valve position, the TCVs cycle in a slightly wider band for pressure control. This was expected because the flow vs. position curve is flatter at higher flows, which drives several plant variables to also draw at slightly wider bands. These are primarily the Reactor Pressure response, and the Reactor Water Level indications, which respond to the slightly wider reactor pressure band. Both of these are very small and are incremental increases in bandwidth and occur only at the higher frequency of the TCV position control band. This will continue to be monitored under the performance monitoring procedure LLP-2010-004.

Moisture Separator Reheater (MSR)
No significant data anomalies were noted during the MUR PU ascension testing. However, the existing degraded material condition of the MSRs may have an impact on long-term operation under increased rated power level. Both MSRs will be inspected during preceding outages following MUR PU implementation, and repair kits will be installed if necessary to maintain margin under MUR PU operation. Inspection of MSRs will continue in accordance with current plant practices and frequency.

Steam Separator/Dryer Performance
The testing limitations for moisture carryover were not approached based on chemistry samples taken during the testing. The MUR PU ascension test determined a carryover value of 0.01%, which corresponds to the carryover prior to the MUR PU implementation. The station will continue to periodically monitor and trend moisture carryover within the existing process.

Condensate Polisher (CP) Flow Capacity
The flow rate across the filter demineralizers was marginally acceptable under pre-MUR PU and will be slightly more limiting under MUR PU operations. System flow requirements can be met with six of the total seven CP vessels in service with essentially no remaining margin. This will be closely monitored under LLP-2010-004.

Steam Jet Air Ejector (SJAE) Temperature
The MUR PU ascension testing did not reveal any anomalous data. However, to ensure proper SJAE summer operation, condensate temperature should remain as low as possible. It is possible that temperature could be elevated in hot summer conditions under the MUR PU power level. SJAE performance, when condensate temperatures are high will be closely and continuously monitored during summer operations.

TEST EXCEPTIONS

The only plant performance data, which was seen to trigger a Test Exception was the Reactor Water Level (RWL) response to a +/- 3" step change in setpoint. This response is measured by the "Decay Ratio" (DR) of the performance, which is intended to confirm how strongly the control system converges to the new setpoint.

Testing procedure LST-2010-006 has a Level 2 Criteria of DR > 0.25, which requires that the response be evaluated to determine the cause or if the resulting response is indicative of a problem. In addition, a Level 1 Criteria of DR > 0.8 requires that testing be stopped due to low

margin to divergent control. The MUR PU ascension testing response obtained a DR = 0.54 for the -3.0" RWL step, and DR = 0.69 for the +3.0" RWL step.

The actual responses were seen to be an artifact of the low overshoot on the first peak after the step, combined with the immediate control within the control band of +/- 3" control band. The DR calculates high (the overshoot value is in the denominator of the calculation; therefore, a low overshoot causes a higher calculated DR) since the overshoot was very low, and the response was inside the required band. The cause of the indicated DR was immediately reviewed by site experts, and determined that this is not a problem condition, but an artifact of the digital control system's tight performance. No further actions are required.

CONCLUSION

Overall plant performance during MUR PU ascension testing was as expected and predicted with no significant performance concerns, and the procedure LST-2010-006, as written, was performed successfully. All of the above noted SSCs will continue to be thoroughly monitored through special procedure LLP-2010-004, which will be used primarily for this purpose. The use of this SSC monitoring procedure will augment normal system monitoring with a more focused long-term monitoring of SSCs with high impact on reliability.