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10 CFR 50.90
10 CFR 50, Appendix K

RS-10-085

April 26, 2010

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: Supplement to License Amendment Request for Measurement Uncertainty Recapture Power Uprate

References:
1. Letter from M. D. Jesse (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate," dated March 25, 2010
2. Letter from U. S. NRC to C. G. Pardee (Exelon Generation Company, LLC), "Supplemental Information Needed for Acceptance of Requested Licensing Action RE: Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate," dated April 19, 2010

In Reference 1, Exelon Generation Company, LLC (Exelon) submitted a license amendment request for Limerick Generating Station, Units 1 and 2. The proposed license amendment request would implement a power uprate of approximately 1.65% for each LGS unit by utilizing increased accuracy of feedwater flow measurement. The proposed amendment also includes a related modification to the Standby Liquid Control System that is needed to support Anticipated Transient Without Scram response at the proposed uprated conditions. In Reference 2, the NRC staff requested that Exelon supplement the application for the amendment request to include information necessary for the NRC staff to make an independent assessment regarding the acceptability of the proposed amendment.

The NRC staff's supplemental information requests and the Exelon response for each request are provided in Attachment 1 to this letter.

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Exelon has reviewed the information supporting a finding of no significant hazards consideration, and the environmental consideration provided to the NRC in Reference 1. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the additional information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this request, please contact Mr. Kevin F. Borton at (610) 765-5615.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 26th day of April 2010.

Respectfully,

Michael D. Jesse
Manager, Licensing - Power Uprate
Exelon Generation Company, LLC

Attachment 1 - Supplemental Information

cc: NRC Regional Administrator, Region I
NRC Senior Resident Inspector - Limerick Generating Station
NRC Project Manager, NRR – Limerick Generating Station
Pennsylvania Department of Environmental Protection - Bureau of Radiation Protection

Attachment 1
Supplemental Information

NRC Request 1
The NRC staff is assessing two-pump standby liquid control system (SLCS) operation for conformance to Title 10 of the *Code of Federal Regulations* (10 CFR), paragraph 50.62(c)(4), which requires a system capable of injecting the equivalent of 86-gallons per minute of 13 weight-percent sodium pentaborate decahydrate solution at the natural boron-10 isotope abundance into a 251-inch inside diameter reactor pressure vessel for a given core design. To establish this equivalency, the reactor vessel inside diameter is required. Please provide the reactor vessel inside diameter for LGS, Units 1 and 2.

Response:
Limerick Units 1 and 2 have 251 inch inside diameter vessels.

NRC Request 2
Criterion 4 of 10 CFR 50.36(c)(2)(ii) requires the establishment of a Limiting Condition for Operation (LCO) for structures, systems or components which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. This requirement applies to the SLCS, as reflected in the current LGS Unit 1 and 2 Technical Specifications. Because the proposed changes result in an LCO that allows any two pumps to remain operable to meet the LCO, the same degree of assurance should be provided that each pump can meet the specified requirements. Verify that system surveillance, testing, inspection, and maintenance requirements for the 'C' SLCS pump will remain the same as those for the 'A' and 'B' pumps, thereby providing the same degree of assurance exists regarding the operability of the 'C' pump, should it need to be placed in service.

Response:
The Limerick Units 1 and 2 SLCS system surveillance, testing, inspection, and maintenance requirements for the 'C' SLCS pump will remain the same as those for the 'A' and 'B' pumps, should it need to be placed in service.

NRC Request 3
The Anticipated Transient Without Scram (ATWS) definition in 10 CFR 50.62(b) describes an anticipated operational occurrence followed by a failure of the reactor trip system, for which systems must be in place to mitigate. In this case, the SLCS is demonstrated to perform its reactivity control function under the conditions of a postulated main steamline isolation valve closure. Although injection against the predicted peak pressure is not necessary, the system must perform its function when required. Please provide additional details regarding the selection of the required injection pressure:

a. Confirm that the selected pressure corresponds to the pressure predicted at an appropriate time after receipt of an injection signal to account for the system automatic initiation delay.

Response:
Based on the results of the Limerick ATWS analysis, the maximum reactor upper plenum pressure following the limiting ATWS event is 1224 psig (1239 psia) during the time the SLCS is analyzed to be in operation (SLCS pumps automatically start when the high pressure ATWS set point is reached plus a 120 second delay as shown in Table 9-6, and Table 9-7 of NEDC-33484P). This peak upper plenum pressure, shown in Table 9-5 of NEDC-33484P, was used in the SLCS pump analysis.

b. Under conditions indicative of the limiting ATWS pressurization event, what is the average operator time to initiate the SLCS manually?

Response:
Limerick is equipped with a Redundant Reactivity Control System which will automatically initiate SLCS (start of 2 pumps) if ATWS conditions are present after a time delay. There is no assumed manual start of SLCS pumps for the limiting ATWS event.

c. How many pumps would the operator be instructed to start under ATWS conditions?

Response:
Following the proposed modification, controls will be in place to ensure only two SLCS pumps will be started. Operating procedures will be revised to direct the operators to ensure only two pumps are started (assuming the automatic initiation fails). In addition, operator training and physical controls will ensure that the third pump will not be inadvertently initiated (i.e., key removed from third SLCS pump key lock control switch).

d. What is the pressurization effect of an operator initiating a single pump, followed by an automatic initiation?

Response:
Based on response 3c above, starting more than two SLCS pumps will be prohibited. Therefore, there is no pressurization effect of an operator initiating a single pump, followed by an automatic initiation.

e. Is the possibility described in Item d, above, included in the evaluation of SLCS injection pressures presented in the LAR? If not, why not?

Response:
Based on response 3c and 3d above, starting more than two SLCS pumps will be prohibited. Therefore, there was no evaluation required to be performed.