

10 CFR 50.90

RS-10-127
July 28, 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: Additional Information Supporting Request for License Amendment Regarding 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 P. Bamford (U. S. NRC) to M. J. Pacilio (Exelon Generation Company, LLC), "Limerick Generating Station, Unit Nos. 1 and 2 – Request for Additional Information Related to Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate," dated July 2, 2010

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Facility Operating License Nos. NPF-39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively. Specifically, the proposed changes revise the Operating License and Technical Specifications to implement an increase in rated thermal power of approximately 1.65%. In Reference 2, the NRC requested additional information to support review of the proposed changes. In response to this request, EGC is providing the attached information for questions one, two, and three of the requested information. The response for question four will be provided by August 16, 2010.

EGC 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

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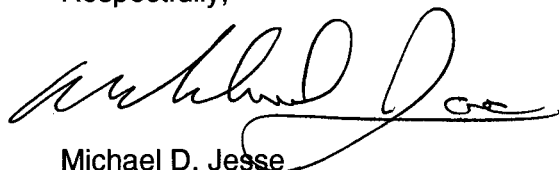
license amendment does not involve a significant hazards consideration. In addition, the additional information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no regulatory commitments contained in this letter.

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

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 28th day of July 2010.

Respectfully,

A handwritten signature in black ink, appearing to read "Michael D. Jesse". The signature is fluid and cursive, with a long horizontal stroke at the end.

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

Attachments Response to Request for Additional Information

cc: USNRC Region I, Regional Administrator
USNRC Senior Resident Inspector, LGS
USNRC Project Manager, LGS
R. R. Janati, Bureau of Radiation Protection

ATTACHMENT
Response to Request for Additional Information

NRC Request 1

Attachment 1 to the LAR letter, dated March 25, 2010, states that the scope and content of the evaluations performed and described in the LAR are consistent with the guidance of NRC Regulatory Issue Summary (RIS) 2002-03, "Guidance on the Content of Measurement Uncertainty Recapture Power Uprate Applications." RIS 2002-03, Attachment I, Section VII.2.A requests:

A statement confirming that the license has identified all modifications associated with the proposed power uprate with respect to the following aspects of plant operations that are necessary to ensure that changes in operator actions do not adversely affect defense in depth or safety margins:

- A. emergency and abnormal operating procedures...

In the submittal dated March 25, 2010, attachment 6, section 10.9, emergency operating procedures are discussed. However, there is no mention of required changes to the current abnormal operating procedures. Please provide, if any, a summary of the required changes for the abnormal operating procedures.

Response

Changes to the abnormal operating procedures (AOPs) have been identified. Required changes are limited to values of parameters affected by the uprate (e.g., reactor power and feedwater flow). No new operator actions or changes to current actions are required as a result of the proposed power uprate. The changes will be addressed using standard Exelon procedure updating processes prior to implementation of the power uprate.

NRC Request 2

Section VII.4 of attachment 1 to RIS 2002-03 requests: "A statement confirming licensee intent to revise existing plant operating procedures related to temporary operation above "full steady-state licensed power levels" to reduce the magnitude of the allowed deviation from the licensed power level. The magnitude should be reduced from the pre-power uprate value of 2 percent to a lower value corresponding to the uncertainty in power level credited by the proposed power uprate application." In the submittal, dated March 25, 2010, attachment 1, section 3.2.6, Exelon states that LGS procedure GP-5 section 3.0, notes 5 and 6 provides guidance for monitoring and controlling reactor power consistent with Nuclear Energy Institute (NEI) guidance. However, this information is not available in the submittal. Please provide procedure GP-5, or the information contained therein.

Response

Limerick Generating Station Procedure GP-5, "Steady State Operations," Revision 144, notes 5 and 6 state the following regarding adherence to licensed power limits.

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- While operating at rated power, the goal of the operator is to achieve a one hour average less than or equal to maximum allowed (i.e., the maximum thermal power as stated in the plant operating license).
- At no time should reactor power be intentionally raised above maximum allowed.
- It is recognized that normal changes in plant parameters can cause small fluctuations in thermal power. However, operators are expected to take prompt action to reduce thermal power whenever it is found above the licensed limit.
- In no case should core thermal power average for a shift exceed 100% power, where a shift can be no longer than 12 hours.
- For pre-planned evolutions that may cause a transient increase in reactor power that could exceed 100% rated power, prudent action to reduce power prior to the evolution should be taken.

NRC Request 3

According to the LGS Updated Final Safety Evaluation Report, section 3.1, page 3.1-23, the SLCS provides an independent backup system for reactivity control in accordance with the requirements of 10 CFR 50, Appendix A, Criterion 26, "Reactivity control system redundancy and capability." In order to assess the reliability of the SLCS in the proposed revised configuration as specified in Criterion 26, the following information is needed:

- a. Describe how the modification will be integrated with the probabilistic risk assessment and risk analysis.
- b. Describe how the modification addresses operator task requirements.
- c. Describe the alarms, displays and controls needed for the operator to operate the SLCS system with the proposed switch alignment.
- d. Describe how the modification will be incorporated into operator training.
- e. Describe how the normal, abnormal, and emergency operating procedures will be modified to support this change.

Response

- a. The current Limerick PRA model includes the SLCS system. Review of the change indicates that the risk impact is very small and does not meet the criteria established in Exelon Generation Company, LLC risk procedures that would require an unscheduled update to the PRA model to incorporate this change. Therefore, after implementation of the TPO update and the SLCS modification, the changes to the plant and procedures will be incorporated into the next scheduled PRA model revision to maintain the model consistent with the as-built, as-operated plant.
- b. Operator tasks are minimally affected by the modification. For anticipated transient without scram (ATWS) events, the SLCS is an automatic system but can also be initiated manually. Operator actions in response to an ATWS are unaffected. If a pump fails to start, the current operator response as directed by procedures is to manually start SLCS pumps. The action to manually start SLCS pumps is not changed, with the exception that the operator may need to obtain a key for the C SLCS pump control switch if the A and B pumps fail to manually start. The key for this switch will be available locally in the control room. The task of manipulating a key lock switch is familiar to operators. The removal of the key from the

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switch for the C SLCS pump is intended to reduce the potential for the operator to manually start three SLCS pumps in an ATWS situation, since the operator would need to obtain and insert the key before manually actuating the C SLCS pump.

- c. The proposed change modifies the C SLCS pump control switch such that it can be aligned to maintain the "stop" position to inhibit automatic start of the C SLCS pump in response to an ATWS signal.

Additionally, the modification adds a main control room (MCR) alarm and associated alarm switch. The new MCR alarm is labeled "C SLCS Pump Auto-Start Status Trouble." The new alarm switch is a two-position hand switch. The alarm will actuate when the C SLCS pump control switch is misaligned in the following two conditions.

- With the alarm switch in the "inhibit" position, the annunciator alarms when the C SLCS pump control switch is aligned to the "norm" position, which would allow C SLCS pump auto-start. Procedures will direct that the alarm switch be placed in the "inhibit" position when the A and B SLCS pumps are aligned for automatic operation. This will alert the operators if the C SLCS should inadvertently become aligned for automatic operation with the A and B pumps already so aligned.
- With the alarm switch in the "enable" position, the annunciator alarms when the C SLCS pump control switch is aligned to the "stop" position, which would inhibit C SLCS pump auto-start. Procedures will direct that the alarm switch be placed in the "enable" position when either the A or B SLCS pump is not aligned for automatic operation, for example, during maintenance of the A or B pump. This will alert the operators if the auto-start capability of the C SLCS pump is unavailable when needed.

The alarm switch affects only the functioning of the alarm, and does not affect the operation of the C SLCS pump.

- d. As noted in the LAR, the modified C SLCS pump control switch has been installed on Limerick Generating Station, Unit 1, but the use of the maintain in stop position for the C SLCS pump will not be implemented until the modification is approved by the NRC and the power uprate is implemented. Operators have been trained on the modification. Additional training will be provided prior to implementing the modified configuration of the C SLCS pump switch in stop with the key removed. Additionally, the modifications to the system will be reflected in the SLCS lesson plan for future operator training.
- e. Normal system operating procedures will be revised to ensure that only two pumps are aligned for automatic operation, and to direct positioning of the modified key lock switch for the C SLCS pump. Additionally, the normal system operating procedures will be revised to direct positioning of the alarm switch to ensure that C SLCS Pump Auto-Start Status Trouble alarm functions as described in the response to part c above. An annunciator response procedure has been developed to direct operator response to the new alarm. No changes to the abnormal or emergency procedures are necessary regarding the SLCS modification.