Exelon Nuclear

10 CFR 50.90

RS-12-039

March 5, 2012

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

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Additional Information Supporting Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate

References:

1. Letter from Craig Lambert (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate," dated June 23, 2011
2. Letter from B. Mozafari (U. S. NRC) to M. J. Pacilio (Exelon Generation Company, LLC), "Byron Station, Unit Nos. 1 and 2 and Braidwood Station, Units 1 and 2 – Request for Additional Information RE: Measurement Uncertainty Recapture Power Uprate Request (TAC NOS. ME6587, ME6588, 6589, and ME6590)," dated February 14, 2012 [ML 120260936]
3. Letter from Kevin F. Borton (Exelon Generation Company, LLC) to U. S. NRC, "Additional Information Supporting Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate," dated February 20, 2012
4. E-mail from B. Mozafari (U. S. NRC) to L. Holden (et. al.) (Exelon Generation Company, LLC), "FW: Draft Balance of Plant RAIs related to MUR dated June 23, 2011," dated February 8, 2012

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Facility Operating License Nos. NPF-72, NPF-77, NPF-37 and NPF-66 for Braidwood Station, Units 1 and 2, and Byron Station, 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 1.63% based on increased feedwater flow measurement accuracy. In Reference 2, the NRC requested additional information to support review of the proposed

changes. In Reference 3, EGC provided responses to the requests in Reference 2 with the exception of this response. It was noted in Reference 3 that the response to Balance of Plant Branch [SBPB] Request 1 would be provided under a separate transmittal.

During a clarification call conducted with the NRC on February 1, 2012, the NRC agreed to revise SBPB Request 1 to address the EGC questions concerning this request. This revised request was provided to EGC in an e-mail dated February 8, 2012 (Reference 4). In response to this request, EGC is providing the attached information.

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 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 Leslie E. Holden at (630) 657-3316.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 5th day of March 5, 2012.

Respectfully,

Kevin F. Borton
Manager, Licensing - Power Uprate

Attachment

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector – Braidwood Station
NRC Senior Resident Inspector – Byron Station
Illinois Emergency Management Agency – Division of Nuclear Safety

Braidwood and Byron Stations
Measurement Uncertainty Recapture License Amendment Request (MUR LAR)

ATTACHMENT

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
March 5, 2012

(NON-PROPRIETARY)

NON-PROPRIETARY

NRC Balance of Plant (NRC/SBPB)

NRC/SBPB Request 1

The licensee provides a new steam generator tube rupture (SGTR) analysis, taking credit for plant modifications in order to ascertain an adequate margin to overfill. The new analysis for a SGTR credits the use of two steam generator (SG) power operated relief valves (PORVs) to cooldown the reactor coolant system (RCS) rapidly to achieve a subcooling margin in order to depressurize the RCS to stop the break flow prior to overfilling the SGs. The analysis identifies the most limiting single failure is a failure of a SG PORV on an intact steam generator. Thus, the licensee credits the SG PORVs with a high significance for successfully mitigating a SGTR.

Technical Specification (TS) 3.7.4 for the SG PORVs currently allows 24 hours completion time to restore all but one of the four SG PORVs when two or more are inoperable. Hence, the TS action statement allows all four SG PORVs to be inoperable for up to 24 hours. Westinghouse Standard TS does provide some guidance on multiple SG PORVs inoperable based upon availability of the steam bypass system and main steam safety valves. However, for Byron/Braidwood these components may not be available in a loss of off-site power or may not provide the same cool down function. Hence, the licensee may have to provide alternate (safety-related or available during a LOOP) components that can perform the same function to justify continued operations with no operable SG PORVs to provide the safety function.

The staff requests the licensee to provide confirmation that the current TS action statement allowing all four SG PORVs to be inoperable (loss of function) remains valid based on the new SGTR analysis.

Response

The current steam generator tube rupture margin to overfill (SGTR/MTO) analysis as documented in UFSAR Section 15.6.3, “Steam Generator Tube Rupture,” assumes two steam generator (SG) power operated relief valves (PORVs) from the intact steam generators are available to cooldown the reactor coolant system (RCS). In accordance with UFSAR Section 15.6.3, there are six major recovery phases during the SGTR event. One of these phases is cooldown of the RCS. As stated in UFSAR Section 15.6.3.1, cooldown would normally be performed by using the steam dumps. However, a Loss of Offsite Power (LOOP) makes the condenser unavailable, and the operator initiates the RCS cooldown by opening the intact steam generator PORVs.

The revised SGTR/MTO analysis as presented in Attachment 5a, “Byron and Braidwood Stations Steam Generator Tube Rupture Analysis Report,” of the Measurement Uncertainty Recapture (MUR) power uprate license amendment request (LAR) (Reference 1) uses the same assumption that two PORVs from the intact SGs are available for cooldown. In addition, there is no change to the systems that are assumed to be unavailable during the cooldown phase of the SGTR event in the revised SGTR/MTO analysis. This description of the cooldown capabilities for the SGTR event as presented in UFSAR Section 15.6.3 remains valid for the new analysis. Therefore, the Limiting Conditions for Operation (LCO) for Technical Specification (TS) 3.7.4, “Steam Generator (SG) Power Operated Relief Valves (PORVs),” continues to be appropriate since the number of available SG PORVs in the SGTR/MTO analysis required for the cooldown has not changed.

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As stated in the current TS 3.7.4 Bases, the Required Action B.1 Completion Time of 24 hours is based on the availability of the Steam Dump System and Main Steam Safety Valves (MSSVs), and the low probability of an event occurring during this period that would require the SG PORV lines. Based on the above, the current TS action statement allowing all four SG PORVs to be inoperable (loss of function) remains valid for the new SGTR analysis. Since the availability of the Steam Dump System and the MSSVs does not change and the probability of an event occurring during the period that would require the SG PORVs will not change , the basis for the 24 hour completion time for two or more SG PORVs inoperable remains valid.

REFERENCES

1) Letter from Craig Lambert (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate," dated June 23, 2011]