



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 1, 2008

Mr. Charles G. Pardee  
Chief Nuclear Officer  
and Senior Vice President  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - REQUEST FOR ADDITIONAL INFORMATION RELATED TO LICENSE AMENDMENT REQUEST TO REVISE LOCAL POWER RANGE MONITOR CALIBRATION FREQUENCY (TAC NOS. MD9414 AND MD9415)

Dear Mr. Pardee:

By letter to the Nuclear Regulatory Commission (NRC) dated July 25, 2008, Exelon Generation Company, LLC submitted a request to revise Technical Specification (TS) 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Surveillance Requirement (SR) 3.3.1.1.8 and TS 3.3.1.3, "Oscillation Power Range Monitor (OPRM) Instrumentation," SR 3.3.1.3.2 to increase the frequency interval between local power range monitor calibrations from 1000 effective full power hours (EFPH) to 2000 EFPH, for the LaSalle County Station, Units 1 and 2.

The NRC staff has accepted your license amendment request for review and has determined that additional information is required to complete the review. The specific information requested is addressed in the enclosure to this letter. During a discussion with your staff on September 10, 2008, it was agreed that you would provide a response 30 days from the date of this letter.

The NRC staff considers that timely responses to requests for additional information help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-3154.

Sincerely,

A handwritten signature in black ink that reads "Stephen P. Sands".

Stephen P. Sands, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosure:  
Request for Additional Information

cc w/encl: See next page

**LaSalle County Station, Units 1 and 2**

**cc:**

Distribution via Listserv

Robert Cushing, Chief, Public Utilities Division  
Illinois Attorney General's Office  
100 W. Randolph Street  
Chicago, IL 60601

REQUEST FOR ADDITIONAL INFORMATION

LASALLE COUNTY STATION, UNITS 1 AND 2

DOCKET NOS. 50-373 AND 50-374

In reviewing the Exelon Generation Company's (Exelon's) submittal dated July 25, 2008, related to your request for a license amendment to revise Local Power Range Monitor (LPRM) calibration frequency, for the LaSalle County Station (LSCS), Units 1 and 2, the NRC staff has determined that the following information is needed in order to complete its review:

1. Provide the plant specific LPRM uncertainty analysis to demonstrate that the LPRM response uncertainty value used in the Minimum Critical Power Ratio (MCPR) safety limit analysis would remain bounding if the LPRM calibration interval were extended from 1000 Effective Full Power Hours (EFPH) to 2000 EFPH. This analysis should account for 25 percent extension (i.e., 2500 EFPH) allowed by SR 3.0.2.
  - 1.1. Include a description of the method and assumptions used for this analysis.
  - 1.2. Include the derivation of the values of the standard deviations summarized in Attachment 5 and provide an example of a calculation. This example should include the applicable LPRM calibration data and the associated data deduction that are used to calculate the exposure uncertainty for a LPRM.
  - 1.3. Explain how the LPRM decay factor was obtained and provide an example calculation to show the result of the calculated decay factor from the exposure data for one LPRM. Also, provide information to demonstrate that the value specified in the attachments is adequate for determining the LPRM uncertainties.
  - 1.4. Explain how the accumulated exposure values were obtained.
  - 1.5. The analysis summarized in Attachment 5 evaluates the increase in LPRM response uncertainty when accounting for the TS SR 3.0.2 allowed 25 percent extension of the calibration interval (i.e., 2500 EFPH), however the upper bound calibration interval used was of 2500 MWD/MT. This value equates to 2336 EFPH. When comparing the results shown in Attachment 4 to those in Attachment 5, it was noted that the difference between them increases as the exposure interval increases. Based on the information provided, the NRC staff does not have confidence that if the analysis was performed for 2500 EFPH instead of 2336 EFPH, the increase of standard deviation not would be significantly higher than stated in Attachment 5. Thus, the uncertainty value assumed in the MCPR analysis could be exceeded. Provide an analysis that confirms that the change in LPRM calibration frequency continues to allow the 25 percent extension.
2. Provide a description of the method used to collect the data used by the analyses referenced in Attachments 4 and 5.

- 2.1. Include the nature of the data points used by Attachment 5 for each interval and the reason of why the range selection of  $\pm 500$  MWD/MT is conservative and acceptable.
- 2.2. Explain the criteria for double counting the collected data used and how the double counting of data contributed to the total uncertainty.
- 2.3. The third paragraph on page 6 of Attachment 1 indicates that the calculation data between 2000 MWD/MT and 2500 MWD/MT were used to calculate the standard deviations for both 2000 MWD/MT and 2500 MWD/MT calibration intervals. Provide an analysis to quantify the effect of the use of overlapping data range on the calculated standard deviations for the 2000 MWD/MT and 2500 MWD/MT calibration intervals.
3. The first paragraph on page 5 of Attachment 1 states that "LSCS currently uses an improved POWERPLEX – III core monitoring system and newer design LPRM chambers that exhibit more consistent sensitivity behavior than the older LPRM detectors." Provide a comparison of the LPRM exposure uncertainties based on appropriate core monitoring systems (CMS) and LPRM calibration data to show that the newer CMS and LPRM detectors provides more accurate power indications than that based on the older CMS and LPRM detectors.
4. Address the newer design of LPRM chambers in more detail? How was the plant exposure data collected from 1996 through 2006 applied to the new LPRM chambers?
5. The last paragraph on page 4 of Attachment 1 states that the current frequency interval is based, in part, on operating experience with previous core monitoring systems and that LSCS currently uses an improved POWERPLEX – III core monitoring system. The NRC staff found several records that document LSCS issues regarding POWERPLEX – II from 1999 to 2002. Specifically, the issues are: POWERPLEX – II use of non-conservative steam tables for core monitoring; an error in one input into POWERPLEX – II calculation resulting in exceeding the authorized thermal power; feedwater flow input problems; and Unit 2 use of a revised POWERPLEX – II deck which did not contain all the gamma TIP data constants necessary to monitor core thermal limits to the correct accuracy. How does the LSCS transition to POWERPLEX – III assure that errors of this nature are not repeated?
6. Provide a discussion to confirm that the OPRM and RBM systems will not be adversely affected by the requested extension of calibration frequency with respect to the LPRM input to these systems.
7. Demonstrate that there is no reduction in opportunity to detect the failure of the LPRM by the requested extension of calibration frequency. If there is a reduction in opportunity to detect the failure of the LPRM, demonstrate that the increased risk is small and acceptable.

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/RA/  
Stephen P. Sands, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
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