

April 3, 2006

Mr. Christopher M. Crane  
President and Chief Nuclear Officer  
Exelon Nuclear  
Exelon Generation Company, LLC  
200 Exelon Way, KSA 3-E  
Kennett Square, PA 19348

SUBJECT: LIMERICK GENERATING STATION UNIT NOS. 1 AND 2 - REQUEST FOR  
ADDITIONAL INFORMATION REGARDING PROPOSED USE OF ALTERNATE  
SOURCE TERM (TAC NOS. MC2295 AND MC2296)

Dear Mr. Crane:

By letter dated February 27, 2004, as supplemented by letters dated October 25, 2004, and October 10, 2005, Exelon Generation Company, LLC submitted a request for an amendment to the Technical Specifications for Limerick Generating Station, Unit Nos. 1 and 2 (LGS). The amendment would allow for the use of an alternate source term in the LGS design-basis radiological accident analysis.

The Nuclear Regulatory Commission has determined that responses to the enclosed Request for Additional Information are necessary in order for the staff to complete its review. The questions in the enclosure are similar to those that were discussed with members of your staff during a teleconference on March 23, 2006.

In order to complete our timely review of your amendment request, we request your response within 30 days from the date of this letter.

If you have any questions, please contact Theresa Valentine at 301-415-4048.

Sincerely,

*/RA/*

Richard V. Guzman, Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosure:  
Request for Additional Information

cc w/encl: See next page

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cc:

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Dear Mr. Crane:

By letter dated February 27, 2004, as supplemented by letters dated October 25, 2004, and October 10, 2005, Exelon Generation Company, LLC submitted a request for an amendment to the Technical Specifications for Limerick Generating Station, Unit Nos. 1 and 2 (LGS). The amendment would allow for the use of an alternate source term in the LGS design-basis radiological accident analysis.

The Nuclear Regulatory Commission has determined that responses to the enclosed Request for Additional Information are necessary in order for the staff to complete its review. The questions in the enclosure are similar to those that were discussed with members of your staff during a teleconference on March 23, 2006.

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Docket Nos. 50-352 and 50-353

Enclosure:  
Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION  
REGARDING PROPOSED AMENDMENT REQUEST  
FOR IMPLEMENTATION OF ALTERNATIVE SOURCE TERM (AST)  
LIMERICK GENERATING STATION, UNITS 1 AND 2 (LGS)  
DOCKET NOS. 50-352 AND 50-353

By letter dated February 27, 2004, as supplemented by letters dated October 25, 2004, and October 10, 2005, Exelon Generation Company, LLC submitted a request for an amendment to the Technical Specifications for Limerick Generating Station, Unit Nos. 1 and 2 (LGS). The amendment would allow for the use of an alternate source term in the LGS design-basis radiological accident analysis. The following questions refer to the October 10, 2005, LGS response to the Nuclear Regulatory Commission (NRC) staff's request for additional information dated August 18, 2005. The NRC has determined that a response to the following questions is necessary in order for the staff to complete its review.

1. The submittal states that the release point for the secondary effluent is through the North Stack without credit for the standby gas treatment system (SGTS) filters. Please clarify if there are other release points, such as seals on doors, penetrations, and cracks, that leakage could escape from during the transition period from normal operation to SGTS operation when the building has a potential to increase in pressure and why these potential release points do not have to be considered.
2. At the bottom of page 47 of the loss-of-coolant accident (LOCA) analysis, LM-0646, Revision 1, under P1, it is stated that "For the first 15.5 minutes, flow is directed through the North Stack without RERS [reactor enclosure recirculation system] or SGTS filter credit." Page 24 of the LOCA calculation states that LGS conforms to Regulatory Position 4.2 Appendix A, Regulatory Guide 1.183. Regulatory Positions 4.2 states "Leakage from the primary containment is assumed to be released directly to the environment as a ground-level release during any period in which the secondary containment does not have a negative pressure as defined in technical specifications." The NRC staff then noted that, on page A-14 of the calculation, under compartment filter data for compartment No. 2, Reactor Enclosure, the RERS filters are assumed to be operating at time equals 1 minute and continue to operate through the drawdown period and the 30-day analysis. Thus, there appears to be an inconsistency in the credit given for RERS filters. The Standard Review Plan (SRP, NUREG-0800) does not allow credit for filters during the drawdown period. Please clarify if credit is being taken for the RERS filters, provide justification for the credit if it is taken, and adjust the LOCA analysis if necessary.
3. In the submittal, credit is taken for a 50-percent mixing efficiency in the reactor enclosure building during the drawdown period. The SRP does not allow credit for mixing during the drawdown period, thus additional justification to support a non-standard review is required. Although mixing does begin when the RERS starts at 3 minutes, the mixing is not instantaneous and the time it takes to assure sufficient

Enclosure

dilution of the primary containment leakage in the secondary containment has not been established. In addition, only a portion of the volume of the reactor enclosure is processed by the RERS during the drawdown. Please provide additional information to justify the assumption that a credit for 50 percent mixing during drawdown in the reactor enclosure building is conservative and acceptable.

4. Please provide the technical basis for an apparent change in the licensing basis for the RERS organic filter efficiency from 30 percent to 95 percent. The Safety Evaluation Report, issued on September 22, 2000, as a result of Generic Letter 99-02, authorized a change in test requirements for carbon filter testing based on the adoption of the American Society for Testing and Materials (ASTM) D3803 as the test protocol. It did not address licensing basis assumptions used in design basis accident analyses for the RERS filter efficiency for organic iodine, which appears to still be 30 percent (see Updated Final Safety Analysis Report Table 15.6-13). The NRC staff is concerned that the RERS system does not have heaters and has an exception to test at 70 percent relative humidity in lieu of the 95 percent relative humidity specified in ASTM D3803. Testing at the higher relative humidity of 95 percent would remove that exception and facilitate acceptance of the change.