



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

September 10, 2010

Mr. Michael J. Pacilio  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, AND BYRON STATION, UNIT NOS. 1 AND 2 - REQUEST FOR ADDITIONAL INFORMATION RELATED TO LARGE BREAK LOSS-OF-COOLANT ACCIDENT ANALYSIS USING ASTRUM (TAC NOS. ME2941, ME2942, ME2943, AND ME2944)

Dear Mr. Pacilio:

By letter to the Nuclear Regulatory Commission (NRC) dated December 16, 2009, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML093510099), as supplemented by letter dated April 26, 2010 (ADAMS Accession No. ML101160431), Exelon Generation Company, LLC (the licensee), submitted a license amendment request to revise Technical Specifications Section 5.6.5, "Core Operating Limits Report (COLR)," to replace the existing reference for the large break loss-of-coolant accident (LOCA) analysis methodology with a reference to WCAP-16009-P-A, "Realistic Large Break LOCA Evaluation Methodology Using Automated Statistical Treatment of Uncertainty Method (ASTRUM)."

The NRC staff is reviewing your submittal, and has determined that additional information is required to complete its review. The specific information requested is addressed in the enclosed Request for Additional Information (RAI). The RAI was discussed with your staff on September 3, 2010, and they agreed to respond within 45 days after 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) 415-1547.

Sincerely,

A handwritten signature in black ink, appearing to read "Marshall J. David".

Marshall J. David, Senior Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. STN-456, STN-457,  
STN 50-454, and STN 50-455

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

BRAIDWOOD STATION, UNITS 1 AND 2

AND BYRON STATION, UNIT NOS. 1 AND 2

DOCKET NOS. STN 50-456, STN 50-457

STN 50-454, AND STN 50-455

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The NRC staff has identified the following concerns with the licensee's responses to NRC Requests 1 and 2, which were provided to the NRC staff on April 26, 2010.

Although the range extends 30 pounds per square inch (psi) below the TS-allowed range, and 30 psi above the TS-allowed range, if the sampling is performed using a flat distribution, this means that 28.6 percent of cases would have pressures lower than allowed at the plant, 42.8 percent would be within the TS-allowed range, and 28.6 percent would be too high. Greater than half of the sampled cases, therefore, are reflective of plant operation in a forbidden range.

Furthermore, the sampled range for accumulator pressure exceeds the NRC staff's recent experience with ASTRUM implementation. Based on study of recently-approved ASTRUM implementation requests, the NRC staff observes that none of the studied licensees had proposed a sampling range of accumulator pressures that exceeded TS limits by more than 48 percent. For the case of the Byron and Braidwood Stations, the sampled accumulator injection pressures exceed the TS-allowable range by 57 percent.

The NRC staff does not conclude that the proposed range of sampled accumulator pressures is acceptable in light of the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36, "Technical specifications," insofar as it establishes the requirements for limiting conditions for operation, nor does the NRC staff conclude that the proposed ranges provide analytic results that demonstrate compliance with the requirements of 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," because a large portion of sampled cases reflect assumed plant parameters that are not permissible at the plant.

The NRC staff believes that similar findings are applicable to the assumed range of safety injection temperature.

Please provide additional information demonstrating that this parametric widening produces a conservative or insignificant effect on the analytic results.

ENCLOSURE

September 10, 2010

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*/RA/*  
Marshall J. David, Senior Project Manager  
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