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10 CFR 50.90

RS-05-171

December 9, 2005

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 Related to Application of Alternative Radiological Source Term – Dose Calculations

References:
(1) Letter from K. R. Jury (Exelon Generation Company, LLC) to NRC, "Request for License Amendment Related to Application of Alternative Radiological Source Term," dated February 15, 2005

(2) Letter from J. A. Bauer (Exelon Generation Company, LLC) to NRC, "Additional Information Related to Application of Alternative Radiological Source Term – Atmospheric Dispersion Coefficients," dated December 9, 2005

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Appendix A Technical Specifications (TS), of 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. The proposed amendment was requested to support application of an alternative source term methodology in accordance with 10 CFR 50.67, "Accident Source Term." During a conference call on December 1, 2005, NRC technical reviewers and EGC personnel discussed aspects of the Reference 1 submittal that required additional information to be provided to allow the NRC to complete its review. EGC agreed to provide the calculations associated with the implementation of the alternative radiological source term to the NRC. Reference 2 provided the associated onsite and offsite atmospheric dispersion coefficients calculation. This submittal transmits the remainder of the associated calculations. The remainder of the NRC requests for additional information discussed during the December 1, 2005, conference call will be addressed in a separate submittal.

The information provided in this submittal does not affect the supporting analysis for the original license amendment request as described in Reference 1. No other information submitted with Reference 1 is affected by this additional information. The No Significant Hazards Consideration and the Environmental Consideration provided in Attachment 1 of Reference 1 are not affected by this additional information.

EGC is providing the State of Illinois with a copy of this letter and its attachments to the designated State Official.

If you have any questions about this letter, please contact J. A. Bauer at (630) 657-2801.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 9th day of December 2005.

Respectfully,

Joseph A. Bauer

Joseph A. Bauer
Manager – Licensing

Attachments:

Attachment 1: BYR04-045 & BRW-04-0039-M, "Re-analysis of Control Rod Ejection Accident (CREA) Using Alternative Source Terms," Revision 1, dated November 30, 2004

Attachment 2: BYR04-046 & BRW-04-0040-M, "Re-analysis of Main Steam Line Break (MSLB) Accident Using Alternative Source Terms," Revision 1, dated November 29, 2004

Attachment 3: BYR04-047 & BRW-04-0041-M, "Re-analysis of Fuel Handling Accident (FHA) Using Alternative Source Terms," Revision 1, dated November 29, 2004

Attachment 4: BYR04-048 & BRW-04-0042-M, "Re-analysis of Steam Generator Tube Rupture (SGTR) Accident Using Alternative Source Terms," Revision 1, dated November 30, 2004

Attachment 5: BYR04-049 & BRW-04-0043-M, "Re-analysis of Locked Rotor Accident (LRA) Using Alternative Source Terms," Revision 1, dated November 30, 2004

Attachment 6: BYR04-051 & BRW-04-0038-M, "Re-analysis of Loss of Coolant Accident (LOCA) Using Alternative Source Terms," Revision 1, dated November 30, 2004