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RS-03-131

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

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Additional Information Supporting the Relief Request for Alternative Reactor Pressure Vessel Circumferential Weld Examinations for Fourth Interval Inservice Inspection Program

Reference: Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Relief Request for Alternative Reactor Pressure Vessel Circumferential Weld Examinations for Fourth Interval Inservice Inspection Program," dated May 16, 2003

In the referenced letter, Exelon Generation Company, LLC (EGC) requested approval of an alternative reactor pressure vessel examination for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. The proposed alternative would allow EGC to permanently defer the volumetric examination of circumferential reactor pressure vessel shell welds for the remaining term of the operating licenses for QCNPS Units 1 and 2.

On June 19, 2003, the NRC requested additional information related to the end-of-license peak inside surface vessel fluence. The Attachment provides the requested information.

If you have any questions or require additional information, please contact Mr. Kenneth M. Nicely at (630) 657-2803.

Respectfully,

Patrick R. Simpson

Patrick R. Simpson
Manager – Licensing
Mid-West Regional Operating Group

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Attachment:
Response to Request for Additional Information

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

ATTACHMENT
Response to Request for Additional Information

NRC Request

By letter dated May 16, 2003, Exelon Generation Company, LLC, the licensee for Quad Cities, requested relief for alternative reactor pressure vessel circumferential weld examination for the fourth interval in-service inspection program.

To satisfy the requirements of 10 CFR 50.55(a)(3)(i), Generic Letter (GL) 98-05 (criterion 1), requires comparison of the end-of-license peak inside surface vessel fluence to the value specified by the NRC limiting plant analysis study. In this context, please respond to the following questions:

- How did you calculate the values given in the submittal? Did the method follow the guidance in RG 1.190?

- The end of the current license is indicated as 32 effective full power years (EFPYs). Does this include any past or future power uprates? Does this include any increases in the load factor of 80%?

Response

Fluence estimates were calculated using the fluence methodology of General Electric (GE) Nuclear Energy licensing topical report NEDC-32983P (i.e., Reference 1), which was approved by the NRC in Reference 2, and adheres to the guidance of Regulatory Guide 1.190 (i.e., Reference 3).

The end of the current license operating time of 32 EFPY includes the extended power uprate (EPU) approved by the NRC in Reference 4. There are no additional uprates planned for QCNPS.

On May 20, 2003, Unit 1 was shutdown to support a planned maintenance outage. The total operating time as of May 20, 2003, was approximately 21.1 EFPY. Assuming a 100% load factor at the EPU power level of 2957 Mwt for the remaining term of the current operating license, which expires on December 14, 2012, the maximum possible operating time at the end of the current license is approximately 30.7 EFPY. The previous operating time of 21.1 EFPY combined with the assumed 100% load factor for the remaining term of the operating license results in an overall load factor of 76.6%. Therefore, assuming a load factor of 80% for Unit 1 is conservative.

On June 11, 2003, Unit 2 was shutdown to support a planned maintenance outage. The total operating time as of June 11, 2003, was approximately 20.4 EFPY. Assuming a 100% load factor at the EPU power level of 2957 Mwt for the remaining term of the current operating license, which expires on December 14, 2012, the maximum possible operating time at the end of the current license is approximately 29.9 EFPY. The previous operating time of 20.4 EFPY combined with the assumed 100% load factor for the remaining term of the operating license results in an overall load factor of 74.9%. Therefore, assuming a load factor of 80% for Unit 2 is conservative.

ATTACHMENT
Response to Request for Additional Information

References

1. NEDC-32983P, "General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluations," dated August 2000

2. Letter from S. A. Richards (U. S. NRC) to J. F. Klapproth (GE Nuclear Energy), "Safety Evaluation for NEDC-32983P, 'General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluation' (TAC No. MA9891)," dated September 14, 2001

3. NRC Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," dated March 2001

4. Letter from S. N. Bailey (U. S. NRC) to O. D. Kingsley (Exelon Generation Company, LLC), "Quad Cities Nuclear Power Station, Units 1 and 2 – Issuance of Amendments for Extended Power Uprate (TAC Nos. MB0842 and MB0843)," dated December 21, 2001