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Exelon Nuclear

September 14, 2001

10 CFR 50.4

PSLTR: #01-0099

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Dresden Nuclear Power Station, Units 2 and 3
Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Revision to Reactor Vessel Material Specimen Removal Schedule, Response to Request for Additional Information

References: (1) Letter from Preston Swafford (EGC) to U. S. NRC , "Revision to Reactor Vessel Material Specimen Removal Schedule," dated May 23, 2001

(2) Letter from L. W. Rossbach (U. S. NRC) to O. D. Kingsley (EGC), "Request for Additional Information Regarding Request By Exelon Generation Company to Modify the Dresden Nuclear Power Station, Units 2 and 3 Reactor Vessel Surveillance Capsule Withdrawal Schedules," dated August 31, 2001

In Reference 1, Exelon Generation Company (EGC), LLC, requested deferral for one additional fuel cycle for each unit, of the Dresden Nuclear Power Station Units 2 and 3 reactor pressure vessel (RPV) surveillance capsule withdrawal schedules. In an August 23, 2001, teleconference between representatives of EGC and members of the NRC, additional information regarding these proposed changes was requested. The attachment to this letter provides the requested information.

Should you have any questions regarding this letter, please contact Mr. Dale Ambler at (815) 416-2800.

Respectfully,

Preston Swafford
Site Vice President
Dresden Nuclear Power Station

Attachment: Response to Request for Additional Information – Reactor Vessel Surveillance Capsule Withdrawal Schedule

cc: Regional Administrator-NRC Region III
NRC Senior Resident Inspector, Dresden Nuclear Power Station
Office of Nuclear Facility Safety-Illinois Department of Nuclear Safety

A001

Dresden Nuclear Power Station, Units 2 and 3
Response to Request for Additional Information
Reactor Vessel Surveillance Capsule Withdrawal Schedule

Question

In order for the staff to independently verify the statement in your May 23, 2001, submittal, that the projected Charpy shifts for the Dresden Nuclear Power Station, Units 2 and 3 surveillance materials will not exceed the scatter inherent in the Charpy test method, provide the following:

a. *The best-estimate projection of the fluence for the next Dresden, Unit 2 surveillance capsule at the time of refueling outage D2R17 (October 2001).*

b. *The best-estimate projection of the fluence for the next Dresden, Unit 2 surveillance capsule at the time of refueling outage D2R18 (October 2003).*

c. *The best-estimate projection of the fluence for the next Dresden, Unit 3 surveillance capsule at the time of refueling outage D3R17 (October 2002).*

d. *The best-estimate projection of the fluence for the next Dresden, Unit 3 surveillance capsule at the time of refueling outage D3R18 (October 2004).*

Staff requests docketable clarification for both plants. If a best-estimate method and baseline reference are used to answer this question, Nuclear Regulatory Commission (NRC) staff has Ref. 1 and 2, mentioned in the phone conversation on August 23, 2001, between NRC staff and Exelon.

Response

References 1 and 2 are used to provide the calculated neutron flux and fluence for Dresden Nuclear Power Station (DNPS) Units 2 and 3, respectively, for the current licensed power levels. Using the flux values reported in these reports, the fluence for the 95° location for DNPS 2 and the 245° location for DNPS 3 capsules have been projected. This was done using the peak vessel flux at the inside diameter (ID) of the reactor vessel reported in these referenced reports of 3.57×10^8 n/cm^2/sec and 5.06×10^8 n/cm^2/sec, respectively, for DNPS Units 2 and 3. This flux was then adjusted for capsule location (i.e., azimuth and elevation) to derive the capsule flux of 1.04×10^8 n/cm^2-sec and 2.8×10^8 n/cm^2-sec respectively, for DNPS Units 2 and 3.

Assuming 100 percent capacity factor going forward, vessel wall fluence is then determined from Figure 3 from References 1 and 2 for the periods up to D2R17 and D3R17. For the periods extending to the next refueling outage for each unit, i.e., D2R18 and D3R18, extended power uprate (EPU) fluence values for DNPS Units 2 and 3 of 3.31×10^8 n/cm^2-sec and 2.93×10^8 n/cm^2-sec were used.

Date	Capsule Fluence (n/cm^2)
D2R17 (October 2001)	6.7×10^{16}
D2R18 (October 2003)	8.8×10^{16}
D3R17 (October 2002)	1.6×10^{17}
D3R18 (October 2004)	1.8×10^{17}

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As a result of the low accumulated fluence of the subject capsules, it is not expected that the Charpy data provided from these coupons will provide shift values distinguishable from the test method scatter. That is, based on equation 2 of NRC Regulatory Guide 1.99, "Radiation Embrittlement of Reactor Vessel Materials," Revision 2, the shift values will not exceed 56°F for welds and 34°F for plate materials.

References:

[1] E.B. Norris, "Dresden Nuclear Power Station Unit 2 Reactor Vessel Irradiation Surveillance Program Analysis of Capsule No. 8," SwRI #06-6901-002, March 1983.

[2] E.B. Norris, "Dresden Nuclear Power Station Unit 3 Reactor Vessel Irradiation Surveillance Program Analysis of Capsule No. 18," SwRI #06-7484-003, February 1984.

[3] Letter from R. M. Krich (Commonwealth Edison Company) to U. S. NRC, "Request for License Amendment for Power Uprate Operation," dated December 27, 2000.