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ComEd

July 17, 2000

PSLTR# 00-0103

U.S. Nuclear Regulatory Commission
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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: Supplement to Request for an Amendment to Technical Specification Section 3/4.6K, "Primary System Boundary" and Section 3/4.12.C, "Special Test Exceptions" and Request for Exemption from 10CFR50.60 "Acceptance Criteria for fracture prevention measures for lightwater nuclear power reactors for normal operation"

References:
(1) Letter from P. Swafford (ComEd) to USNRC, "Request for an Amendment to Technical Specification Section 3/4.6K, 'Primary System Boundary' and Section 3/4.12.C, 'Special Test Exceptions' and Request for Exemption from 10CFR50.60 'Acceptance Criteria for fracture prevention measures for lightwater nuclear power reactors for normal operation,' " dated February 23, 2000

(2) Letter from P. Swafford (ComEd) to USNRC, "Supplement to Request for an Amendment to Technical Specifications Section 3/4.6.K, 'Primary System Boundary' and Section 3/4.12.C 'Special Test Exceptions' and Request For Exemption from 10CFR50.60, 'Acceptance Criteria for fracture prevention measures for lightwater nuclear power reactors for normal operations,' " dated June 19, 2000.

In the referenced letters, we requested changes to the Technical Specifications (TS) for Dresden Nuclear Power Station (DNPS). The proposed changes revise the Pressure-Temperature (P-T) limits for the reactor pressure vessel (RPV) of each unit for a maximum of 32 Effective Full Power Years (EFPY). The purpose of this letter is to request interim NRC approval of the 32 EFPY P-T limits until November 30, 2001, for DNPS Unit 2, and October 31, 2002, for DNPS Unit 3.

In a teleconference between members of the NRC and Commonwealth Edison (ComEd) Company on July 6, 2000, the NRC stated that the neutron fluence used to develop the revised P-T limits did not reflect the guidance contained in Draft Regulatory Guide DG-1053, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence,"

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dated September, 1999 and therefore, the NRC can not support approval of the new P-T limits.

General Electric (GE) is currently preparing new fluence calculations to support the DNPS power uprate project. These calculations will predict fluence based on current neutron transfer calculation methods and modern fluence libraries.

This request for interim approval is conservative for the reasons described in the paragraphs below.

The power uprate outages are projected to be complete in November, 2001, for Unit 2 and October, 2002, for Unit 3. The maximum vessel operating times attained at the time of these outages will be 19.37 EFPY for Unit 2 and 19.62 EFPY for Unit 3. These operating times represent a maximum of 61.3% of the proposed 32 EFPY limit for the P-T limits. This provides significant margin to ensure that the current 32 EFPY fluence projection of 5.1×10^{17} n/cm^2 will not be exceeded prior to further NRC review.

Additionally, two features of DNPS design result in minimizing the neutron fluence at the vessel walls. While these features do not change the assumptions made in the current fluence calculations, they do reduce the absolute uncertainty in these calculations by minimizing total fluence.

First, DNPS RPV's are unique in that they have an unusually large diameter (i.e., 251inches inside diameter (ID)) with a low thermal power core (i.e., 2527 megawatts thermal (MWt)). Many BWR's with low thermal power cores have significantly smaller diameter RPV's (i.e., 218 inches ID). These smaller ID RPV's have a narrower annulus and less clearance between the fuel and shroud, and therefore less water shielding to the reactor vessel. Additionally, most BWR RPV's with 251 inches IDs have considerably higher thermal powers and a resulting higher flux density. As a result, the fluence at the DNPS reactor vessel walls is significantly lower than most BWR's.

Second, DNPS cores are designed to obtain low neutron leakage. To achieve this, a fresh fuel assembly is placed into a central core location. After an operating cycle, fissionable U-235 is consumed and the fuel assembly is relocated to a position radially further out from the center. Eventually, it is placed in a peripheral location, which provides shielding to the reactor vessel. The DNPS core designs have been low leakage since the initial core load. As a result, the fluence at the vessel wall has been significantly reduced.

In summary, the requested approval of our proposed 32 EFPY P-T limits until November 30, 2001, and October 30, 2002 for DNPS Units 2 and 3, respectively, is conservative because the limited term of the approval provides significant margin against the proposed P-T limits and because the reduced total fluence of our RPVs reduces the absolute uncertainty in the fluence calculation.

This proposed change has been reviewed in accordance with ComEd procedures.

ComEd is notifying the State of Illinois of this interim request by transmitting a copy of this letter to the designated State Official.

Should you have any questions concerning this letter, please contact Mr. D.F. Ambler at (630) 663-3741.

Respectfully,

Preston Swafford
Site Vice President – DNPS

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