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November 21, 2003

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

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: Additional Information Regarding Request for Technical Specifications Changes
Related to Main Steam Safety Valve Operability Requirements

- References:
- (1) Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Request for Technical Specifications Changes Related to Main Steam Safety Valve Operability Requirements," dated October 10, 2002
 - (2) Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Additional Information Regarding Request for Technical Specifications Changes Related to Main Steam Safety Valve Operability Requirements," dated October 10, 2003

In Reference 1, Exelon Generation Company, LLC (EGC) requested changes to the Technical Specifications (TS) of Facility License Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station (DNPS), Units 2 and 3. The proposed changes increase the number of main steam safety valves that are required to be operable from eight to nine. In Reference 2, EGC provided additional information regarding these proposed changes.

In a teleconference between Ms. M. Banerjee and other members of the NRC and Mr. A. R. Haeger and other members of EGC and representatives of General Electric (GE) Company on October 28, 2003, the NRC requested additional information regarding these proposed changes. The attachment to this letter provides the requested information.

Should you have any questions concerning his letter, please contact Mr. Kenneth M. Nicely at (630) 657-2803.

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I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

11/21/03
Executed on

Patrick R. Simpson
Patrick R. Simpson
Manager – Licensing

Attachment

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

Attachment
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Background

In an October 28, 2003, teleconference between Ms. M. Banerjee and other members of the NRC and Mr. A. Haeger and other members of Exelon Generation Company, LLC (EGC) and representatives of General Electric Company (GE), the NRC requested that EGC provide additional information that shows that the anticipated transient without scram (ATWS) analysis results for peak vessel pressure and peak suppression pool temperature will be acceptable, considering both the effects of the change in fuel loadings experienced since extended power uprate (EPU) and the effect of the proposed change in the main steamline low pressure isolation setpoint (LPIS) submitted in Reference 1.

Response

In Reference 1 (Table 3 of Attachment 4), EGC provided the results of analyses performed to show the effect of the proposed 40 pounds per square inch (psi) reduction in the analytical limit for the LPIS. These results indicate that the effect of a 40 psi reduction on the ATWS analysis results with a pressure regulator failure open (PRFO) for both the peak vessel pressure and peak suppression pool temperature are minimal. For example, with a legacy core [beginning of cycle (BOC) case, 9 turbine bypass valves (TBV) available], the peak vessel pressure result decreased by 2 psi (from 1499 psi to 1497 psi) as a result of the setpoint reduction. This case was the most limiting result presented in Table 3. A similar result, although less limiting, was demonstrated for an equilibrium core of GE14 fuel. As noted in Reference 1, Attachment 4, Section 3.1.1.1, these results show that the LPIS reduction of 40 psi has negligible impact on the peak vessel pressure. Section 3.1.1.4 provides a similar discussion of the results for peak suppression pool temperature.

In Reference 2 (Table 1 of Attachment 1), EGC provided the results of analyses performed to show the effects of core loadings on the ATWS analysis results. This table shows that the current Dresden Nuclear Power Station (DNPS) Unit 3 Cycle 18 core results show a decrease in the result for peak vessel pressure from 1499 psi for the legacy core to 1488 psi for the D3C18 core at BOC. The peak suppression pool temperature results showed a negligible change of one degree Fahrenheit between the same cases. A case was also analyzed for the current DNPS Unit 3 Cycle 18 core configuration with a hypothetical 10% increase in void coefficient, which as noted in Reference 2 was selected to bound the difference in void coefficient observed between the GE14 equilibrium core and the legacy core. This result shows a small increase in the peak vessel pressure and no change in the peak suppression pool temperature at BOC.

The results of Table 1 of Reference 2 and Table 3 of Reference 1 are directly comparable. All analyses were performed with the same inputs, except where specifically noted in the tables. In both of these tables the most limiting cases for peak vessel pressure are identical (i.e., PRFO with the legacy core, BOC, 9 TBV available).

In summary, review of the information presented in the two tables leads to the following conclusions.

1. The most limiting cases presented are directly comparable and show the ATWS analysis results, including the effect of the LPIS reduction, are acceptable.

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2. Other cases representing both the current D3C18 core and a hypothetical core with a variation in void coefficient are less limiting.
3. In all cases, the effect of the LPIS reduction on the ATWS results is consistent and minimal. A minimal change was demonstrated on two very different core designs. The cycle specific core would thus have a similar small sensitivity to the LPIS change.
4. Both the LPIS reduction and the cycle specific core design indicate very minimal changes to peak vessel pressure / peak suppression pool temperature and the results were improved. Because the results were insensitive to the perturbations described above, the LPIS reduction will not change the conclusion from the analysis in Reference 2. Thus, the combination of the LPIS reduction and cycle specific core design changes is acceptable.

References

1. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Request for Amendment to Technical Specifications for Main Steam Line Low Pressure Isolation Function," dated March 28, 2003
2. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Additional Information Regarding Request for Technical Specifications Changes Related to Main Steam Safety Valve Operability Requirements," dated October 10, 2003