

RS-06-158

October 19, 2006

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

Dresden Nuclear Power Station, Unit 3
Renewed Facility Operating License No. DPR-25
NRC Docket No. 50-249

Subject: Additional Information Supporting Request for Technical Specifications
Change for Minimum Critical Power Ratio Safety Limit

- References:
1. Letter from K. R. Jury (Exelon Generation Company, LLC) to U. S. NRC, "Request for Technical Specifications Change for Minimum Critical Power Ratio Safety Limit," dated July 21, 2006
 2. Letter from J. Honcharik (U. S. NRC) to C. M. Crane (Exelon Generation Company, LLC), "Dresden Nuclear Power Station, Unit 3 – Request for Additional Information Related to Safety Limit Minimum Critical Power Ratio (TAC No. MD2706)," dated October 12, 2006

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Renewed Facility Operating License No. DPR-25 for Dresden Nuclear Power Station (DNPS) Unit 3. The proposed change revises the values of the safety limit minimum critical power ratio (SLMCPRR) in Technical Specification (TS) Section 2.1.1, "Reactor Core SLs."

In Reference 2, the NRC requested additional information to complete its review. In response to Reference 2, EGC is providing the attached information.

EGC has reviewed the information supporting a finding of no significant hazards consideration that was previously provided to the NRC in Attachment 1 of Reference 1. The information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration.

There are no new regulatory commitments made in this letter. Should you have any questions concerning this letter, please contact Mr. Kenneth Nicely at (630) 657-2803.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 19th day of October 2006.

Respectfully,

A handwritten signature in black ink that reads "Darin M Benyak". The signature is written in a cursive style with a long horizontal flourish at the end.

Darin M. Benyak
Manager – Licensing

Attachments:

Attachment 1: Response to Request for Additional Information

Attachment 2: Markup of Proposed Technical Specifications Page

ATTACHMENT 1
Response to Request for Additional Information

NRC Request

Section 2.0 of Attachment 4 to the July 21, 2006, submittal letter provides a justification on why the GE14 fuel analysis for Cycle 19 remains applicable and bounding for Cycle 20 operation. However, the NRC staff needs additional clarifying information concerning how the fact that "the SLMCPR was established by contributions from GE14 fuel assemblies during Cycle 19" provides an adequate basis for concluding that the minimum critical power ratio for once-burned GE14 fuel assemblies remains valid.

Response

The intent of the discussion provided in Section 2.0 of Attachment 4 to Reference 1 was to confirm compliance with the NRC-approved methodology described in CENPD-300-P-A (i.e., Reference 2) relative to the treatment of the safety limit minimum critical power ratio (SLMCPR) in mixed cores involving non-Westinghouse legacy fuel. Use of this methodology resulted in the conclusions that the SLMCPR values shall be:

1. ≥ 1.10 for two recirculation loop operation, and ≥ 1.11 for single recirculation loop operation, for Global Nuclear Fuel (GNF) fuel; and
2. ≥ 1.12 for two recirculation loop operation, and ≥ 1.14 for single recirculation loop operation, for Westinghouse fuel.

During discussions with the NRC on October 16 and 17, 2006, the NRC questioned the justification for applying the SLMCPR values listed above to GNF fuel (i.e., GE14 fuel). The information requested by the NRC is not readily available, since it is not generated as part of the Westinghouse methodology described in Reference 2. As an alternative to supplying the information requested by the NRC, and as discussed during the conference call with the NRC on October 17, 2006, Exelon Generation Company, LLC will apply the calculated SLMCPR value for Westinghouse SVEA-96 Optima2 fuel (i.e., 1.12 and 1.14 for two and single recirculation loop operation, respectively) to all fuel types in the Dresden Nuclear Power Station (DNPS) Unit 3 Cycle 20 core. Specifically, rather than establishing a unique SLMCPR for the GE14 fuel, the more conservative SVEA-96 Optima2 fuel SLMCPR will be applied to all fuel types. This change results in significant additional conservatism relative to the values originally proposed in Reference 1. The SLMCPR value for SVEA-96 Optima2 fuel provides a conservative representation of the SLMCPR value for GE14 fuel relative to the Reference 2 methodology for mixed cores. Attachment 2 provides a revised markup of the affected DNPS Technical Specification page, incorporating this change.

The proposed change to the GE14 SLMCPR value requires re-calculation of the operating limit minimum critical power ratio (OLMCPR) values. However, the change in the SLMCPR value for GE14 fuel does not impact the transient analyses because the initial assumptions for the transient analyses are not being changed. The change in the SLMCPR values and the results from transient analyses are two independent events. They are inter-related only when the OLMCPR values are determined.

ATTACHMENT 1
Response to Request for Additional Information

Revised OLMCPR values for SVEA-96 Optima2 and GE14 fuel have been calculated using equations described in Reference 2. The OLMCPR conservative multiplication factor of 0.934 was maintained in the revised OLMCPR calculations.

For the DNPS Unit 3 Cycle 20 design, the Rod Withdrawal Error (RWE) transient is the limiting event that establishes the OLMCPR values. Table 1 and Table 2 summarize the preliminary RWE results based on the original and revised GE14 fuel SLMCPR values, respectively. OLMCPR values for SVEA-96 Optima2 fuel are also provided for comparison.

Table 1: DNPS Unit 3 Cycle 20, Original OLMCPR

SVEA-96 Optima2 Fuel		GE14 Fuel	
Dual Loop SLMCPR	1.12	Dual Loop SLMCPR	1.10
Single Loop SLMCPR	1.14	Single Loop SLMCPR	1.11
Dual Loop OLMCPR	1.52	Dual Loop OLMCPR	1.67
Single Loop OLMCPR	1.55	Single Loop OLMCPR	1.69

Table 2: DNPS Unit 3 Cycle 20, Revised OLMCPR for Change in SLMCPR

SVEA-96 Optima2 Fuel		GE14 Fuel	
Dual Loop SLMCPR	1.12	Dual Loop SLMCPR	1.12
Single Loop SLMCPR	1.14	Single Loop SLMCPR	1.14
Dual Loop OLMCPR	1.52	Dual Loop OLMCPR	1.70
Single Loop OLMCPR	1.55	Single Loop OLMCPR	1.73

References

1. Letter from K. R. Jury (Exelon Generation Company, LLC) to U. S. NRC, "Request for Technical Specifications Change for Minimum Critical Power Ratio Safety Limit," dated July 21, 2006
2. CENPD-300-P-A, "Reference Safety Report for Boiling Water Reactor Reload Fuel," dated July 1996

ATTACHMENT 2
Markup of Proposed Technical Specifications Page

DRESDEN NUCLEAR POWER STATION, UNIT 3
RENEWED FACILITY OPERATING LICENSE NO. DPR-25

REVISED TECHNICAL SPECIFICATIONS PAGE

2.0-1

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be \leq 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10% rated core flow:

For Unit 2 two recirculation loop operation, MCPR shall be \geq 1.11, or for single recirculation loop operation, MCPR shall be \geq 1.12.

~~For Unit 3 two recirculation loop operation, MCPR shall be \geq 1.10, or for single recirculation loop operation, MCPR shall be \geq 1.11.~~

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be \leq 1345 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

For Unit 3 two recirculation loop operation, MCPR shall be \geq 1.12, or for single recirculation loop operation, MCPR shall be \geq 1.14.