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November 25, 2002

10 CFR 50.46(a)(3)

RHLTR: #02-0083

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: Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report

References
1) Letter from S. N. Bailey (U. S. NRC) to O. D. Kingsley (Exelon Generation Company, LLC), "Issuance of Amendments," dated November 2, 2001

2) Letter from L. W. Rossbach (U. S. NRC) to O. D. Kingsley (Exelon Generation Company, LLC), "Issuance of Amendments for Extended Power Uprate" dated December 21, 2001

3) Letter from Preston Swafford (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report, " dated December 6, 2001

In accordance with 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," paragraph (a)(3)(ii), Exelon Generation Company (EGC), LLC, is reporting a change to the evaluation model used for evaluating the emergency core cooling system (ECCS) performance and the peak cladding temperature (PCT) at Dresden Nuclear Power Station (DNPS), Unit 3.

In Reference 1, the NRC approved changes to the Technical Specifications (TS) for DNPS to allow a change in fuel vendors from Framatome ANP (formerly Siemens Power Corporation (SPC)) to General Electric (GE) Company and a transition to GE14 fuel. In accordance with these changes, the GE SAFER/GESTR ECCS evaluation model was used for DNPS, Unit 3 Cycle 18 (D3C18), instead of the SPC evaluation model used for the previous cycle (D3C17). In Reference 2, the NRC approved changes to the TS and operating license to permit operation at uprated power. The change in evaluation models, along with the transition to GE14 fuel and the operation at uprated power levels has resulted in a change to the PCT for the fuel.

As of October 25, 2002, DNPS Unit 3 has implemented the change in ECCS models and the GE14 fuel transition for D3C18. For D3C17, the PCT of record, based on the Framatome ANP evaluation method, was 1973 degrees F, as reported in Reference 3. The calculated PCT for D3C18, based on the GE evaluation model, is 2110 degrees F. This is a change of more than

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50 degrees F and is being reported in accordance with 10 CFR 50.46(a)(3)(ii). An attachment to this letter provides details regarding this change.

Based on the current GE evaluation model assessments, although a minor error was discovered, it resulted in no changes in the current PCT for DNPS Unit 2. The PCT of record is being provided as an attachment to this letter to meet the annual reporting requirements per 10 CFR 50.46(a)(3)(ii).

If there are any questions concerning this letter, please contact Mr. Jeff Hansen at (815) 416-2800.

Respectfully,

Robert J Hovey
Site Vice President
Dresden Nuclear Power Station

Attachment 1: Dresden Nuclear Power Station, Unit 2 10 CFR 50.46 Report
Attachment 2: Dresden Nuclear Power Station, Unit 3 10 CFR 50.46 Report
Attachment 3: Dresden Nuclear Power Station, Units 2 and 3 10 CFR 50.46 Report Assessment Notes

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

Attachment 1
Dresden Nuclear Power Station Unit 2
10CFR50.46 Report

PLANT NAME:	Dresden Nuclear Power Station, Unit 2
ECCS EVALUATION MODEL:	SAFER/GESTR-LOCA
REPORT REVISION DATE:	10/29/2002
CURRENT OPERATING CYCLE:	18

ANALYSIS OF RECORD

Evaluation Model: The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident, Volume III, SAFER/GESTR Application Methodology, NEDE-23785-1-PA, General Electric Company, Revision 1, October 1984.

Calculations:

"SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis for Dresden Nuclear Station 2 and 3 and Quad Cities Nuclear Station Units 1 and 2," NEDC-32990P, Revision 1, GE Nuclear Energy, September 2001.

Fuel: 9x9-2, ATRIUM-9B and GE14
Limiting Fuel Type: GE14
Limiting Single Failure: Diesel Generator
Limiting Break Size and Location: 1.0 Double-Ended Guillotine in a Recirculation Suction Pipe

Reference Peak Cladding Temperature (PCT) PCT = 2110°F

MARGIN ALLOCATION

A. PRIOR LOCA MODEL ASSESSMENTS

10 CFR 50.46 report dated December 6, 2001 (See Note 1)	ΔPCT = 0°F
Net PCT	**2110 °F**

B. CURRENT LOCA MODEL ASSESSMENTS

WEVOL S1 Volume Error (See Note 3)	ΔPCT = 0°F
Total PCT change from current assessments	$\sum\Delta PCT = 0$ °F
Cumulative PCT change from current assessments	$\sum \lvert\Delta PCT\rvert = 0$°F
Net PCT	**2110 °F**

Attachment 2
Dresden Nuclear Power Station Unit 3
10CFR50.46 Report

PLANT NAME:	Dresden Nuclear Power Station, Unit 3
ECCS EVALUATION MODEL:	SAFER/GESTR-LOCA
REPORT REVISION DATE:	10/29/2002
CURRENT OPERATING CYCLE:	18

ANALYSIS OF RECORD

Evaluation Model: The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident, Volume III, SAFER/GESTR Application Methodology, NEDE-23785-1-PA, General Electric Company, Revision 1, October 1984.

Calculations:

"SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis for Dresden Nuclear Station 2 and 3 and Quad Cities Nuclear Station Units 1 and 2," NEDC-32990P, Revision 1, GE Nuclear Energy, September 2001.

Fuel: 9x9-2, ATRIUM-9B and GE14
Limiting Fuel Type: GE14
Limiting Single Failure: Diesel Generator
Limiting Break Size and Location: 1.0 Double-Ended Guillotine in a Recirculation Suction Pipe

Reference Peak Cladding Temperature (PCT) PCT = 2110°F

MARGIN ALLOCATION

A. PRIOR LOCA MODEL ASSESSMENTS

None (See Note 2)	ΔPCT = 0°F
Net PCT	**2110 °F**

B. CURRENT LOCA MODEL ASSESSMENTS

WEVOL S1 Volume Error (See Note 3)	ΔPCT = 0°F
Total PCT change from current assessments	ΣΔPCT = 0 °F
Cumulative PCT change from current assessments	Σ |ΔPCT |= 0°F
Net PCT	**2110 °F**

Attachment 3
Dresden Nuclear Power Station Units 2 and 3
10 CFR 50.46 Report Assessment Notes

1. Prior LOCA Model Assessment

   The 50.46 letter dated December 6, 2001 reported a new LOCA analysis to support extended power uprate (EPU) and transition to GE14 fuel for Dresden Unit 2 Cycle 18. The same report assessed impact of errors in Framatome ANP LOCA analysis model for Dresden Unit 3 Cycle 17 at pre-EPU power level.

   [Reference: Letter from Preston Swafford (PSLTR: #01-0122) (Exelon) to USNRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," December 6, 2001.]

2. New LOCA Analysis for Dresden Unit 3

   Unit 3 implemented GE LOCA analysis and GE14 fuel with Dresden Unit 3 Cycle 18 startup on October 25, 2002. Therefore, both Dresden Units 2 and 3 are being maintained under the same LOCA analysis.

   [Reference: "SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis for Dresden Nuclear Station 2 and 3 and Quad Cities Nuclear Station Units 1 and 2," NEDC-32990P, Revision 1, GE Nuclear Energy, September 2001.

3. Current LOCA Assessment

   GE reported that an error was found in the WEVOL code, which affects the calculated vessel volume in the downcomer region. The free volume in the region of the shroud head is calculated incorrectly. The code did not properly account for the volume of the standpipes inside the shroud head thickness. This resulted in the value for the free volume in the downcomer being too small by 4-10 ft^3. GE determined the PCT impact of this error on all fuel types to be negligible.

   [Reference: 10 CFR 50.46 Notification Letter, 2002-05, August 26, 2002.]