

Exelon Generation Company, LLC
Dresden Nuclear Power Station
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10 CFR 50.46(a)(3)(ii)

November 16, 2005

SVPLTR: #05-0044

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

Reference: Letter from D. Bost (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated November 24, 2004

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 LLC, is submitting this letter and its attachment to meet the annual reporting requirements.

Dresden Nuclear Power Station Units 2 and 3 is maintaining the same emergency core cooling (ECCS) model as reported in the referenced letter. No vendor 10 CFR 50.46 LOCA model change/error notifications have been received since the last annual report. The Peak Cladding Temperatures (PCTs) of record are provided as an attachment to this letter. The attachment provides the PCT value for each unit and the "rack-up" sheets for the GE LOCA analyses, along with assessment note summaries.

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

Respectfully,



Danny Bost
Site Vice President
Dresden Nuclear Power Station

Attachment : Dresden Nuclear Power Station Units 2 and 3 - 10 CFR 50.46 Report

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

4001

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

PLANT NAME: Dresden Nuclear Power Station, Unit 2
 ECCS EVALUATION MODEL: SAFER/GESTR-LOCA
 REPORT REVISION DATE: 10/31/2005
 CURRENT OPERATING CYCLE: 19

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 2, GE Nuclear Energy, September 2003.

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)	$\Delta PCT = 0^{\circ}F$
10 CFR 50.46 report dated November 25, 2002 (See Note 2)	$\Delta PCT = 0^{\circ}F$
10 CFR 50.46 report dated November 25, 2003 (See Note 3)	$\Delta PCT = 0^{\circ}F$
10 CFR 50.46 report dated November 24, 2004 (See Note 4)	$\Delta PCT = 0^{\circ}F$
Net PCT	2110 °F

B. CURRENT LOCA MODEL ASSESSMENTS

None	$\Delta PCT = 0^{\circ}F$
Total PCT change from current assessments	$\sum \Delta PCT = 0^{\circ}F$
Cumulative PCT change from current assessments	$\sum \Delta PCT = 0^{\circ}F$
Net PCT	2110 °F

**Attachment
Dresden Nuclear Power Station Units 2 and 3
10CFR50.46 Report**

PLANT NAME: Dresden Nuclear Power Station, Unit 3
ECCS EVALUATION MODEL: SAFER/GESTR-LOCA
REPORT REVISION DATE: 10/31/2005
CURRENT OPERATING CYCLE: 19

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-3299QP, Revision 2, GE Nuclear Energy, September 2003.

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 November 25, 2002 (See Note 2)	$\Delta PCT = 0^{\circ}F$
10 CFR 50.46 report dated November 25, 2003 (See Note 3)	$\Delta PCT = 0^{\circ}F$
10 CFR 50.46 report dated November 24, 2004 (See Note 4)	$\Delta PCT = 0^{\circ}F$
Net PCT	2110 °F

B. CURRENT LOCA MODEL ASSESSMENTS

GE Reload (Note 5)	$\Delta PCT = 0^{\circ}F$
Core Spray Line Lower Sectional Replacement (Note 6)	$\Delta PCT = 0^{\circ}F$
Total PCT change from current assessments	$\Sigma \Delta PCT = 0^{\circ}F$
Cumulative PCT change from current assessments	$\Sigma \Delta PCT = 0^{\circ}F$
Net PCT	2110 °F

**Attachment
Dresden Nuclear Power Station Units 2 and 3
10CFR50.46 Report**

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. Prior LOCA Model Assessment

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. In the referenced letter, the impact of GE LOCA error in the WEVOL code was reported for Dresden Units 2 and 3 and determined to be negligible.

[Reference: Letter from Robert J. Hovey (RHLTR: #02-0083) (Exelon) to USNRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," November 25, 2002.]

3. Prior LOCA Model Assessment

The annual 50.46 report provided information on the LOCA model assessments for SAFER Level/Volume table error and Steam Separator pressure drop error. In the referenced letter, the impact of these two GE LOCA errors was reported to be negligible.

[Reference: Letter from Robert J. Hovey (RHLTR: #03-0077) (Exelon) to USNRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," November 25, 2003.]

4. Prior LOCA Model Assessment

The referenced annual 50.46 report provided information on reload of GE14 fuel for Dresden Unit 2 Cycle 19 and impact of postulated hydrogen-oxygen recombination on PCT. GE determined that there is no PCT impact because of the change due to the new reload of GE14 fuel and the postulated hydrogen –oxygen recombination.

[Reference: Letter from Danny Bost (SVPLTR: #04-0075) (Exelon) to USNRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," November 24, 2004.]

**Attachment
Dresden Nuclear Power Station Units 2 and 3
10CFR50.46 Report**

5. Current LOCA Model Assessment

Dresden Unit 3 Cycle 19 started on December 8, 2004 with a reload of GE14 fuel. GE determined that there is no PCT impact because of the change due to the new reload of GE14 fuel.

[Reference: "Supplemental Reload Licensing Report for Dresden 3 Reload 18 Cycle 19," 0000-0025-1300-SRLR, Revision 1, October 2004.]

6. Current LOCA Model Assessment

Dresden Unit 3 implemented lower sectional replacement and T-box clamp repairs. GE evaluated the leakage flow and core spray flow into the upper plenum after the sectional replacement. GE showed that Dresden Unit 3 has core spray flow margin available to fulfill the licensing basis LOCA inputs after the sectional replacement has been implemented. Therefore, there is no PCT impact because of this change.

[Reference: "Dresden Power Station, Unit 3 Core Spray Line Lower Sectional Replacement Leakage Analysis," GENE-0000-0021-4342-04, Revision 2, November 2004.]