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10 CFR 50.46(a)(3)

ComEd

July 10, 2000

PSLTR: #00-0099

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

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 - 10CFR50.46 Annual Report

This letter fulfills the annual reporting requirement of 10CFR50.46(a)(3) for Dresden Nuclear Power Station (DNPS) Units 2 and 3. The Peak Cladding Temperature (PCT) data reported in this letter are based on estimates by Siemens Power Corporation. Since the sum of the absolute values of the estimated PCT changes does not exceed 50 degrees, reanalysis by an acceptable evaluation model is not required at this time per NRC Information Notice (IN) 97-15, Supplement 1, "Reporting of Errors and Changes in Large-Break/Small-Break Loss-of-Coolant Evaluation Models of Fuel Vendors and Compliance with 10CFR 50.46(a)(3)."

Attachments 1 and 2 provide PCT information for the limiting LOCA evaluations for DNPS, including all assessments as of July 1, 2000. The assessment notes in Attachment 3 provide a detailed description for each change or error reported.

If there are any questions or comments concerning this letter, please contact Mr. D.F. Ambler at (815) 942-2920, extension 3800.

Respectfully,

Preston Swafford
Site Vice President
Dresden Nuclear Power Station

Attachment 1: Dresden Unit 2 10 CFR 50.46 Report
Attachment 2: Dresden Unit 3 10 CFR 50.46 Report
Attachment 3: Dresden Unit 2 and Unit 3 PCT Assessment Notes

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

A001

Attachment 1

Dresden Unit 2 10CFR 50.46 Report

PLANT NAME: Dresden Unit 2
ECCS EVALUATION MODEL: EXEM BWR
REPORT REVISION DATE: 7/10/00
CURRENT OPERATING CYCLE: 17

ANALYSIS OF RECORD

Evaluation Model: Advanced Nuclear Fuels Corporation Methodology for Boiling Water Reactors EXEM BWR Evaluation Model, ANF-91-048(P)(A), dated January 1993.

Calculations:

1. "Dresden LOCA-ECCS Analysis MAPLHGR Limits for ATRIUM-9B and 9x9-2 Fuel – Reduced LPCS Runout Flow," EMF-98-007(P), Supplement 2, Siemens Power Corporation, dated January 1998 (see Note 1).

2. "LOCA Break Spectrum Analysis for Dresden Units 2 and 3," EMF-97-025(P), Revision 1, Siemens Power Corporation, dated May 1997.

Fuel: 9x9-2, ATRIUM-9B LFA and ATRIUM-9B
Limiting Fuel Type: 9x9-2
Limiting Single Failure: LPCI Injection Valve
Limiting Break Size and Location: 1.0 Double-Ended Guillotine (DEG) in a Recirculation Suction Pipe

Reference PCT (see Note 2) PCT = 2018°F

MARGIN ALLOCATION

A. PRIOR LOCA MODEL ASSESSMENTS

50.46 report dated July 10, 1997 (See Note 3)	ΔPCT = 0°F
50.46 report dated July 10, 1998 (See Note 4)	ΔPCT = 3°F
50.46 report dated July 10, 1999 (See Note 5)	ΔPCT = 20°F

NET PCT **PCT = 2041°F**

Attachment 1

Dresden Unit 2 10CFR 50.46 Report (Continued)

B. CURRENT LOCA MODEL ASSESSMENTS

Cycle 17 reload fuel (See Note 6)	ΔPCT = 0°F
Input parameter changes (See Note 8)	ΔPCT = 0°F
Loop select logic limitation (See Note 9)	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 **PCT = 2041°F**

Attachment 2

Dresden Unit 3 10CFR50.46 Report

PLANT NAME: Dresden Unit 3
ECCS EVALUATION MODEL: EXEM BWR
REPORT REVISION DATE: 7/10/00
CURRENT OPERATING CYCLE: 16

ANALYSIS OF RECORD

Evaluation Model: Advanced Nuclear Fuels Corporation Methodology for Boiling Water Reactors EXEM BWR Evaluation Model, ANF-91-048(P)(A), dated January, 1993.

Calculations:

1. "Dresden LOCA-ECCS Analysis MAPLHGR Limits for ATRIUM-9B and 9x9-2 Fuel," EMF-98-007(P), Siemens Power Corporation, dated January 1998 (see Note 1).

2. "LOCA Break Spectrum Analysis for Dresden Units 2 and 3," EMF-97-025(P), Revision 1, Siemens Power Corporation, dated May 1997.

Fuel: 9x9-2 and ATRIUM-9B
Limiting Fuel Type: 9x9-2
Limiting Single Failure: LPCI Injection Valve
Limiting Break Size and Location: 1.0 Double-Ended Guillotine (DEG) in a Recirculation Suction Pipe

Reference PCT (see Note 2) PCT = 1920°F

MARGIN ALLOCATION

A. PRIOR LOCA MODEL ASSESSMENTS

July 10, 1997 50.46 report (See Note 3)	ΔPCT = 0°F
July 10, 1998 50.46 report (See Note 4)	ΔPCT = 16°F
July 10, 1999 50.46 report (See Note 5)	ΔPCT = 20°F

NET PCT **PCT = 1956°F**

Attachment 2

Dresden Unit 3 10CFR50.46 Report (Continued)

B. CURRENT LOCA MODEL ASSESSMENTS

Effects of loading D3C16 offset fuel next to non-offset fuel (See Note 7)	$\Delta PCT = 0°F$
Input parameter changes (See Note 8)	$\Delta PCT = 0°F$
Loop select logic limitation (See Note 9)	$\Delta PCT = 0°F$
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 **PCT = 1956°F**

Attachment 3

Dresden Unit 2 and Unit 3 PCT Assessment Notes

1. Analysis of Record

   The 50.46 report dated July 10, 1997, noted that the analyses of record were EMF-97-031(P), Revision 1 and EMF-97-031(P) respectively for Units 2 and 3. These reports were reissued in January, 1998, as EMF-98-007(P), Supplement 2 and EMF-98-007(P) respectively.

2. Reporting of Different Peak Cladding Temperatures for Each Unit

   Dresden Unit 2 and Unit 3 are being maintained under separate analyses of record (EMF-98-007(P), Supplement 2 and EMF-98-007(P) respectively) as a result of a degraded Core Spray runout flow condition that exists at Dresden Unit 2. This flow condition is lower with respect to the LOCA analysis assumption for Dresden Unit 3.

   [References:

   "Dresden LOCA-ECCS Analysis MAPLHGR Limits for ATRIUM-9B and 9x9-2 Fuel – Reduced LPCS Runout Flow," EMF-98-007(P), Supplement 2, Siemens Power Corporation, dated January, 1998.

   "Dresden LOCA-ECCS Analysis MAPLHGR Limits for ATRIUM-9B and 9x9-2 Fuel," EMF-98-007(P), Siemens Power Corporation, dated January, 1998.]

3. Prior LOCA Model Assessment

   The 1997 LOCA model assessment was a new baseline analysis for Dresden Units 2 and 3. Therefore, there is no PCT change.

   [Reference: Letter from J. S. Perry (JSPLTR #97-0131) (ComEd) to USNRC, "Dresden Nuclear Power Station Units 2 and 3, Plant Specific ECCS Evaluation Changes - 10CFR50.46 Report DPR-19 and DPR-25, NRC Docket Nos. 50-237 and 50-249," dated July 10, 1997.]

4. Prior LOCA Model Assessment

   The 50.46 report dated July 10, 1998, assessed the impact of plant parameter changes and errors in the LOCA evaluation model. Calculations were performed to determine the PCT changes for both units.

   [Reference: Letter from J.M.Heffley (JMHLTR #98-0199) (ComEd) to USNRC "Dresden Nuclear Power Station Units 2 and 3, Plant Specific ECCS Evaluation Changes - 10CFR50.46 Annual Report DPR-19 and DPR-25, NRC Docket Nos. 50-237 and 50-249," dated July 10, 1998.]

Attachment 3

Dresden Unit 2 and Unit 3 PCT Assessment Notes

5. Prior LOCA Model Assessment

   The 50.46 report dated July 10, 1999, assessed the impact of errors in the LOCA evaluation model. The PCT reported was based on estimates by Siemens Power Corporation. SPC also calculated the PCT for the new ATRIUM fuel loaded into the D3C16 core.

   [Reference: Letter from J.M.Heffley (JMHLTR #99-0080) (ComEd) to USNRC "Plant Specific ECCS Evaluation Changes - 10CFR50.46 Annual Report," dated July 10, 1999.]

6. Unit 2 Cycle 17 reload fuel

   The calculated PCT for the new ATRIUM-9B fuel loaded into the D2C17 core is bounded by the PCT of the limiting 9x9-2 fuel. Therefore, the ΔPCT is reported as 0 °F.

   [Reference: "Dresden Unit 2 Cycle 17 Reload Analysis," EMF-2275, Revision 0, Siemens Power Corporation, dated September 1999.]

7. Effects of loading offset fuel next to non-offset fuel

   The D3C16 reload and D2C17 reload fuel consisted of ATRIUM fuel assemblies with a new design feature that has an offset lower tie plate. The effects of loading offset fuel next to non-offset fuel were included in the D2C17 PCT calculation but not in the D3C16 PCT calculation. The impact on the D3C16 reload fuel was estimated to be an increase of 20 degrees in PCT for the ATRIUM fuel. The PCT for the 9x9-2 fuel is not affected by this new offset design and the 9x9-2 fuel remains to be the limiting fuel. Therefore, the ΔPCT is reported as 0 °F.

   [Reference: Letter from D. Garber (DEG:99:299) (Siemens Power Corporation) to R. J. Chin, "10 CFR 50.46 Reporting for the Dresden Units," dated October 15, 1999.]

8. Input parameter changes

   Changes in input parameter values were evaluated and resulted in no change in limiting PCT. Therefore, the ΔPCT is reported as 0 °F. The changes are: reactor pressure permissive for loop select logic in single loop operation, loop select logic delay time, time to detect LOOP, HPCI and LPCI pump flow instrument uncertainties, MSIV closure time, and reactor water level.

   [Reference: Letter from D. Garber (DEG:00:130) (Siemens Power Corporation) to R. J. Chin, "Disposition of LOCA Parameters Document Changes for Dresden Units 2 and 3," dated May 26, 2000.]

Attachment 3

Dresden Unit 2 and Unit 3 PCT Assessment Notes

9. Loop select logic limitation

   The loop select logic may select the broken loop for LPCI injection for breaks of 0.15 sq ft or smaller. Siemens Power Corporation evaluated this limitation and concluded that breaks of 0.15 sq ft or smaller does not become the limiting break. Therefore, the ΔPCT is reported as 0 °F.

   [Reference: Letter from D. Garber (DEG:00:131) (Siemens Power Corporation) to R. J. Chin, "Dresden and Quad Cities Loop Select Logic Limitation," dated May 26, 2000.]