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RS-11-025

10 CFR 50.46

March 8, 2011

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

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report

Reference: Letter from P. R. Simpson (Exelon Generation Company, LLC) to U.S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated March 9, 2010

In accordance with 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," Exelon Generation Company, LLC (EGC) is submitting the attached information to fulfill the annual reporting requirements for LaSalle County Station (LSCS), Units 1 and 2.

In the referenced letter, EGC reported a fuel peak cladding temperature (PCT) of 1470°F for LSCS, Unit 2 for the General Electric (GE) fuel, calculated based on an acceptable model. For the current reporting period, there is no change in the PCT for the GE fuel.

The referenced letter also provided a fuel PCT of 1729°F for LSCS, Units 1 and 2, for the AREVA NP (formerly Framatome Advanced Nuclear Power (FANP)) fuel, calculated based on an acceptable model. For the current reporting period, there is no change in the PCT for the AREVA NP fuel.

For the current reporting period, Unit 1 is using AREVA NP fuel only, while Unit 2 employs a mixed core design containing co-resident GE and AREVA NP fuel. The loss-of-coolant accident (LOCA) analyses of record for both GE and AREVA NP fuel are within the acceptance criteria set forth in 10 CFR 50.46.

Attachments 1 and 2 provide the PCT information for the limiting LOCA evaluations for LSCS, Units 1 and 2, including all assessments, as of February 8, 2011. The assessment notes are contained in Attachment 3 and provide a detailed description for each change reported.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Mr. Mitchel A. Mathews at (630) 657-2819.

Respectfully,

Jeffrey L. Hansen
Manager – Licensing

Attachments:

1. LaSalle County Station, Unit 2, 10 CFR 50.46 Report (GE Fuel)
2. LaSalle County Station, Units 1 and 2, 10 CFR 50.46 Report (AREVA NP Fuel)
3. LaSalle County Station, Units 1 and 2, 10 CFR 50.46 Report (Assessment Notes)

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – LaSalle County Station

ATTACHMENT 1
LaSalle County Station, Unit 2, 10 CFR 50.46 Report (GE Fuel)

PLANT NAME:	LaSalle County Station, Unit 2
ECCS EVALUATION MODEL:	SAFER/GESTR LOCA
REPORT REVISION DATE:	February 8, 2011
CURRENT OPERATING CYCLE:	L2C13

ANALYSIS OF RECORD

Evaluation Model Methodology:	NEDE-23785-1-PA, Rev. 1, "GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident (Volume III), SAFER/GESTR Application Methodology," October 1984.
Calculation:	GE-NE-0000-0022-8684-R2, "Exelon LaSalle Units 1 and 2 SAFER/GESTR Loss-of-Coolant Accident Analysis for GE 14 Fuel," November 2006.
Fuel:	GE14
Limiting Single Failure:	High Pressure Core Spray Diesel Generator
Limiting Break Size and Location:	0.08 ft^2 Recirculation Pump Suction Line Break
Reference Peak Cladding Temperature (PCT):	**1460°F**

MARGIN ALLOCATION

A. PRIOR LOSS-OF-COOLANT ACCIDENT (LOCA) MODEL ASSESSMENTS

10 CFR 50.46 report dated August 28, 2006 (Note 1)	ΔPCT = 0°F
10 CFR 50.46 report dated March 30, 2007 (Note 3)	ΔPCT = 0°F
10 CFR 50.46 report dated March 28, 2008 (Note 4)	ΔPCT = 0°F
10 CFR 50.46 report dated March 27, 2009 (Note 5)	ΔPCT = 10°F
10 CFR 50.46 report dated March 9, 2010 (Note 6)	ΔPCT = 0°F
Net PCT	**1470°F**

B. CURRENT LOCA MODEL ASSESSMENTS

Void in LPCI Piping (Note 8)	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	**1470°F**

ATTACHMENT 2
LaSalle County Station, Units 1 and 2, 10 CFR 50.46 Report (AREVA NP Fuel)

PLANT NAME:	LaSalle County Station, Units 1 and 2
ECCS EVALUATION MODEL:	EXEM BWR-2000 Evaluation Model
REPORT REVISION DATE:	February 8, 2011
CURRENT OPERATING CYCLES:	L1C14 and L2C13

ANALYSIS OF RECORD

Evaluation Model Methodology:	EMF-2361 (P)(A) Revision 0, EXEM BWR-2000 ECCS Evaluation Model, Framatome ANP, May 2001.
Calculation:	EMF-3230 (P) Revision 0, LaSalle Units 1 and 2 EXEM BWR-2000 LOCA Break Spectrum Analysis for ATRIUM – 10 Fuel, November 2005. EMF-3231 (P) Revision 0, LaSalle Units 1 and 2 EXEM BWR-2000 LOCA-ECCS Analysis MAPLHGR Limit for ATRIUM – 10 Fuel, November 2005.
Fuel:	ATRIUM – 10
Limiting Single Failure:	Low Pressure Coolant Injection Diesel Generator
Limiting Break Size and Location:	Double Ended Guillotine/0.8 discharge coefficient of Recirculation Pump Suction Piping
Reference Peak Cladding Temperature (PCT):	**1729°F**

MARGIN ALLOCATION

A. PRIOR LOSS-OF-COOLANT ACCIDENT (LOCA) MODEL ASSESSMENTS

10 CFR 50.46 report dated August 28, 2006 (Note 2)	ΔPCT = 0°F
10 CFR 50.46 report dated March 30, 2007 (Note 3)	ΔPCT = 0°F
10 CFR 50.46 report dated March 28, 2008 (Note 4)	ΔPCT = 0°F
10 CFR 50.46 report dated March 27, 2009 (Note 5)	ΔPCT = 0°F
10 CFR 50.46 report dated March 9, 2010 (Note 6)	ΔPCT = 0°F
Net PCT	**1729°F**

B. CURRENT LOCA MODEL ASSESSMENTS

RELAX Code Error (Note 7)	ΔPCT = 0°F
Void in LPCI Piping (Note 8)	ΔPCT = 0°F
MUR Power Uprate (Note 9)	ΔPCT = 0°F
Total PCT change from current assessments	ΣΔPCT = 0°F
Cumulative PCT change from current assessments	$\Sigma \lvert$ΔPCT$\rvert$ = 0°F
Net PCT	**1729°F**

ATTACHMENT 3
LaSalle County Station, Units 1 and 2, 10 CFR 50.46 Report (Assessment Notes)

1. Prior Loss-of-Coolant Accident (LOCA) Model Assessment for General Electric (GE) Fuel

   To address the impact of axial power shape on the small break LOCA (SBLOCA) a complete SBLOCA break spectrum analysis was performed in November 2006. Additionally all reported 10 CFR 50.46 errors/issues that affect the small break Emergency Core Cooling Systems (ECCS) LOCA analysis have been accounted for in this analysis. As reported in the referenced letter, the large break LOCA (LBLOCA) is non-limiting. There are no input errors, code errors, or modeling changes that have been identified which would require adjustment to the LBLOCA results reported in the referenced letter.

   [Reference: Letter from D. J. Enright (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated August 28, 2006.]

2. Prior LOCA Model Assessment for AREVA NP Fuel

   An AREVA NP (formerly Framatome Advanced Nuclear Power (FANP)) LOCA evaluation was performed in November 2005 due to the discharge of ATRIUM-9 fuel and the reanalysis of the ATRIUM-10 fuel for cycle L1C12. This analysis was reported to the NRC in the referenced letter. The AREVA NP analysis for cycle L2C12 demonstrated that the LOCA analysis performed for cycle L1C12 in November 2005 is applicable to cycle L2C12. Since the performance of the November 2005 LOCA analysis, no input errors, code errors, or modeling changes have been identified which would require adjustment to the results. The referenced letter also provided the Unit 2 peak cladding temperature (PCT) of 1832°F (i.e., including all assessments) for the AREVA NP fuel based on an acceptable model for a mixed core of ATRIUM-9 and ATRIUM-10, with ATRIUM-9 being the limiting fuel type. Since the last evaluation, ATRIUM-9 fuel has been discharged from the Unit 2 core, making ATRIUM-10 fuel the limiting fuel type. Because the PCT for the ATRIUM-10 fuel for Unit 2 is 1729°F, this is a change of over 50°F from the last evaluation using an NRC approved acceptable model. For Unit 1, there were no changes for ATRIUM-10 fuel and the PCT remains at 1729°F.

   [Reference: Letter from D. J. Enright (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated August 28, 2006.]

3. Prior LOCA Model Assessment for GE and AREVA NP Fuel

   The 10 CFR 50.46 report submitted to the NRC in the referenced letter did not report any LOCA model assessments for GE fuel or AREVA NP fuel.

   [Reference: Letter from D. J. Enright (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated March 30, 2007.]

4. Prior LOCA Model Assessment for GE and AREVA NP Fuel

   During the performance of the Unit 2 Reload 11 outage inspection of the Core Spray sparger, a bent flow deflector in one of the High Pressure Core Spray sparger nozzles was noted. Both GE and AREVA NP performed an evaluation and determined that the impact of this bent flow deflector on the LOCA analyses was insignificant. A zero degree PCT impact was assigned. This evaluation was reported to the NRC in the referenced letter. This PCT impact was only applicable to Unit 2.

   [Reference: Letter from D. P. Rhoades (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated March 28, 2008.]

5. Prior LOCA Model Assessment for GE and AREVA NP Fuel

   The referenced letter provided an annual 10CFR 50.46 reports for LaSalle Units 1 and 2 for the 2009 reporting period. There was one error reported which impacted the GE LOCA evaluation (steam flow induced error (SFIE), or Bernoulli Error). This error resulted in a 10°F PCT penalty for GE fuel. The AREVA NP LOCA evaluation was not impacted by this error. In addition during the Unit 2 reload 12 outage eight ATRIUM-10XM lead test assemblies (LTA) were loaded into the core. The PCT of the ATRIUM-10XM LTAs was less than the PCT for ATRIUM-10 fuel. The cycle L1C14 core does not have any ATRIUM-10XM fuel.

   [Reference: Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated March 27, 2009.]

6. Prior LOCA Model Assessment for GE and AREVA NP Fuel

   The 10 CFR 50.46 report submitted to the NRC in the referenced letter did not report any LOCA model assessments for GE fuel or AREVA NP fuel. At the time of the 2010 report, there was no GE 14 fuel in the Unit 1 core. During the L1 Reload 13 outage, all the GE 14 fuel was discharged.

   [Reference: Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated March 9, 2010.]

7. Current LOCA Model Assessment for AREVA NP Fuel

   The referenced report identifies a RELAX code error. The RELAX code is part of the EXEM BWR-2000 LOCA methodology. Based on an assessment of LaSalle Break Spectrum calculations, the impact on the analysis of record PCT is reported to be 0°F.

   [Reference: AREVA Engineering Information Record 51-9132238-000, "10 CFR 50.46 PCT Error Reporting for LaSalle Units (CR 2010-312)," AREVA NP. Transmitted by Letter, A.W. Will (AREVA) to Ed McVey (Exelon), AWW:10:014 / FAB10-2090, February 23, 2010.]

8. Current LOCA Model Assessment for GE and AREVA NP Fuel

   The referenced evaluation addresses the allowable air void in ECCS – LPCI Piping. The configuration change revised the design basis to clarify that a small amount of air can exist in the LaSalle Division 1, Residual Heat Removal (RHR) – Low Pressure Core Injection (LPCI) piping. As stated in the reference this change has a 0°F impact on the analysis of record PCT for both GE and AREVA fuel types.

   [Reference: Engineering Change (EC) #377369, Rev. 0, "Allowable Air Void in ECCS – LPCI Piping Design Considerations Summary."]

9. Current LOCA Model Assessment for AREVA NP Fuel

   The referenced Reload report addresses the measurement uncertainty recapture (MUR) power uprate implemented on LaSalle Unit 1 during Cycle 14. As stated in the reference, the current licensing PCT remains bounding under the MUR conditions. Thus, the MUR power uprate has a 0°F impact on the analysis of record PCT for the AREVA fuel in LaSalle Unit 1.

   [Reference: ANP-2924 Revision 1, "LaSalle Unit 1 Cycle 14 MUR Reload Analysis," AREVA NP, July 2010.]