

Exelon Generation Company, LLC  
LaSalle County Station  
2601 North 21<sup>st</sup> Road  
Marseilles, IL 61341-9757

www.exeloncorp.com

March 9, 2004

10 CFR 50.46

United States Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

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 S. R. Landahl (Exelon Generation Company, LLC) to U. S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated June 9, 2003.

In accordance with 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," Exelon Generation Company (EGC), LLC, submits the enclosed attachments to fulfill the 30-day and annual reporting requirements for LaSalle County Station, Units 1 and 2. In the referenced letter, EGC reported the fuel peak cladding temperatures (PCTs) calculated based on an acceptable model to be 1301°F for General Electric (GE) fuel and 1807°F for Framatome ANP (FANP) fuel. The referenced letter also estimated the effects of changes that occurred since the PCT values had been calculated using an acceptable model. As earlier reported these changes resulted in an increase of 25°F to 1832°F for FANP Fuel. The previous GE analysis supported a fuel type no longer in use for power operation at LaSalle County Station, Units 1 and 2, and GE14 fuel has been introduced into Unit 1. As a result, a new analysis was performed for the GE fuel in Unit 1. Based on the new analysis, the PCT for GE fuel increased to a value of 1380°F. This is a change of 79°F from the last evaluation using an acceptable model.

Unit 1 employs a mixed core design containing co-resident GE and FANP fuel. Unit 2 employs a core design containing only FANP fuel. The Loss of Coolant Accident (LOCA) analyses of record for both GE and FANP fuel are within all of the acceptance criteria set forth in 10 CFR 50.46.

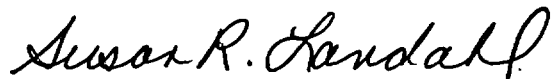
Attachments 1 and 2 provide PCT information for the limiting LOCA evaluations for LaSalle County Station, Units 1 and 2, including all assessments as of February 20, 2004. The assessment notes are contained in Attachment 3 and provide a detailed description for each change or error reported.

A001

U. S. Nuclear Regulatory Commission  
March 11, 2004  
Page 2

Should you have any questions concerning this letter, please contact Mr. Glen Kaegi, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,



Susan R. Landahl  
Plant Manager  
LaSalle County Station

Attachments

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

## Attachment 1

### LaSalle Units 1 10 CFR 50.46 Report (GE Fuel)

PLANT NAME: LaSalle Unit 1  
ECCS EVALUATION MODEL: SAFER/GESTR LOCA  
REPORT REVISION DATE: February 20, 2004  
CURRENT OPERATING CYCLES: L1C11

#### 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: "Project Task Report, Exelon LaSalle Unit 1 SAFER/GESTR Loss-of-Coolant Accident Analysis for GE 14 Fuel," GE report number GE-NE-0000-0022-8684-R0, dated December 2003.

Fuel: GE14

Limiting Single Failure: HPCS Diesel Generator

Limiting Break Size and Location: Double Ended Guillotine of Recirculation Pump Suction Piping

Reference PCT: 1380°F

#### MARGIN ALLOCATION

##### A. PRIOR LOCA MODEL ASSESSMENTS

Complete Break spectrum analysis was performed in December 2003 for the introduction of GE 14 and all errors were addressed.	$\Delta PCT = 0 \text{ }^\circ\text{F}$
Net PCT	1380 °F

##### B. CURRENT LOCA MODEL ASSESSMENTS

Unit 1 Jet Pump Riser Leakage, LPCS and HPCS Leakage and Displacement of Water (Note 1)	$\Delta PCT = 0 \text{ }^\circ\text{F}$
Total PCT Change from Current Assessments	$\Sigma \Delta PCT = 0 \text{ }^\circ\text{F}$
Cumulative PCT Change from Current Assessments	$\Sigma  \Delta PCT  = 0 \text{ }^\circ\text{F}$
Net PCT	1380 °F

## Attachment 2

### LaSalle Units 1 and 2 10 CFR 50.46 Report (FANP Fuel)

PLANT NAME:	LaSalle Units 1 and 2
ECCS EVALUATION MODEL:	EXEM BWR Evaluation Model
REPORT REVISION DATE:	February 20, 2004
CURRENT OPERATING CYCLE:	L1C10 and L2C10

#### ANALYSIS OF RECORD

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

BWR Jet Pump Model Revision for RELAX, ANF-91-048(P)(A), Supplement 1 and Supplement 2, Siemens Power Corporation, October 1997.

Calculation:	<ol style="list-style-type: none"> <li>1. LaSalle LOCA-ECCS Analysis MAPLHGR Limits for ATRIUM™-9B Fuel, EMF-2175(P), March 1999.</li> <li>2. LOCA Break Spectrum Analysis for LaSalle Units 1 and 2, EMF-2174(P), March 1999.</li> <li>3. LaSalle Units 1 and 2 LOCA-ECCS Analysis MAPLHGR Limit for ATRIUM™-10 Fuel, EMF-2641(P), November 2001.</li> <li>4. LaSalle Units 1 and 2 LOCA Break Spectrum Analysis for ATRIUM™-10 Fuel, EMF-2639(P), November 2001.</li> </ol>
--------------	---

Fuel:	ATRIUM™-9B and ATRIUM™-10
Limiting Fuel	ATRIUM™-9B
Limiting Single Failure:	HPCS Diesel Generator
Limiting Break Size and Location:	1.1 ft <sup>2</sup> Recirculation Pump Discharge Side Line Break
Reference PCT:	1807 °F

#### MARGIN ALLOCATION

##### A. PRIOR LOCA MODEL ASSESSMENTS

10 CFR 50.46 report dated May 7, 1999 (See Note 2)	ΔPCT = 0 °F
10 CFR 50.46 report dated February 9, 2000 (See Note 3)	ΔPCT = 18 °F
10 CFR 50.46 report dated June 12, 2000 (See Note 4)	ΔPCT = 0 °F
10 CFR 50.46 report dated June 8, 2001 (See Note 5)	ΔPCT = 0 °F
10 CFR 50.46 report dated June 8, 2002 (See Note 6)	ΔPCT = 2 °F
10 CFR 50.46 report dated June 9, 2003 (See Note 7)	ΔPCT = 5 °F
Net PCT	1832 °F

##### B. CURRENT LOCA MODEL ASSESSMENTS

Data Transfer from PREHUXY to HUXY (8)	ΔPCT = 0 °F
Unit 1 Jet Pump Riser Leakage, LPCS and HPCS Leakage and Displacement of Water (Note 1)	ΔPCT = 0 °F
Total PCT Change from Current Assessments	ΣΔPCT = 0 °F
Cumulative PCT Change from Current Assessments	Σ  ΔPCT  = 0 °F
Net PCT	1832 °F

## **Attachment 3**

### **LaSalle Units 1 and 2 10 CFR 50.46 Report Assessment Notes**

#### **1. Jet Pump Riser Leakage, LPCS/HPCS Leakage and Displacement of Water for Unit 1**

During the startup of LaSalle Unit 1 Cycle 11 several evaluations were performed as documented in the Exelon Engineering Evaluation (EC) process. The net results of these evaluations were that there was a zero degree PCT impact.

[References: (i) EC 347217, Evaluate the Impact of the Jet Pump Riser Leakage for the LaSalle Unit 1 GE and the Framatome LOCA Analyses. (ii) EC 346839, Impact of the LPCS and HPCS Leakage on the LaSalle Unit 1 GE and Framatome LOCA Analyses. (iii) EC 346969, Evaluate the Impact on the Safety Analyses due to 10 Gallons of Water Displaced at LaSalle Unit 1 due to the Installation of Wedges and Clamps to Repair the Jet Pumps.]

#### **2. Prior LOCA Model Assessment for FANP fuel**

The May 1999 LOCA model assessment was a new analysis of record for Framatome (Formerly Siemens) due to the introduction of ATRIUM-9B fuel into the Unit 2 Cycle 8 core. Therefore, there is no PCT change. Analysis was performed for a core power of 3722 MWt that bounds the current uprated power of 3489 MWt.

[Reference: Letter from J. A. Benjamin (ComEd) to U.S. NRC, "Report of Significant Change in Calculated Peak Cladding Temperature (PCT) – 10CFR 50.46 Report," dated May 7, 1999.]

#### **3. Prior LOCA Model Assessment for FANP fuel**

The February 2000 50.46 report assessed the impact of errors in the LOCA evaluation model.

[Reference: Letter from J. A. Benjamin (ComEd) to U.S. NRC, "Plant Specific ECCS Evaluation Changes – 10CFR 50.46 Report," dated February 9, 2000.]

#### **4. Prior LOCA Model Assessment for FANP fuel**

The June 2000 10 CFR 50.46 report does not have any PCT assessment for ATRIUM-9B fuel.

[Reference: Letter from C. G. Pardee (ComEd) to U.S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated June 12, 2000.]

#### **5. Prior LOCA model assessment for FANP fuel**

The reference letter assessed impact of Unit 2 LPCS riser leakage, errors in FANP LOCA analysis model and Unit 2 Cycle 9 reload fuel.

[Reference: Letter from M. A. Schiavoni (Exelon) to U.S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated June 8, 2001.]

### **Attachment 3**

#### **LaSalle Units 1 and 2 10 CFR 50.46 Report Assessment Notes**

**6. Prior LOCA model assessment for FANP fuel**

The referenced letter assessed impact of errors in FANP LOCA analysis model, Unit 1 Cycle 10 reload fuel and ATRIUM-9B exposure extension.

[Reference: Letter from M. A Schiavoni (Exelon) to U.S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated June 8, 2002.]

**7. Prior LOCA model assessment for FANP fuel**

The June 2003 50.46 report assessed the impact of errors in the LOCA evaluation, Unit 2 jet pump leakage, Unit 2 Cycle 10 reload Fuel and the Unit 1 mid-cycle reload.

[Reference: Letter from Susan R Landahl (Exelon) to U.S. NRC, "Plant Specific ECCS Evaluation Changes – 10 CFR 50.46 Report," dated June 9, 2003.]

**8. PREHUXY to HUXY data Error**

FANP reported that a problem may occur in the transfer of RELAX coolant temperature data from PREHUXY to HUXY at the time of core spray. This can cause an error in the application of the HUXY quenching model. FANP determined that the impact on the limiting break spectrums results is zero degree.

[Reference: 10 CFR 50.46 PCT Reporting for LaSalle Units and Transmittal of CR 11130, Letter AWW:04:003, Issued by A. W. Will, January 9, 2004.]