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February 9, 2000

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

- References: (1) ComEd Letter from J. A. Benjamin (LaSalle) to U.S. NRC, "Report of Significant Change in Calculated Peak Cladding Temperature (PCT) – 10 CFR 50.46 Report, LaSalle County Station, Units 1 and 2, Facility Operating Licenses NPF-11 and NPF-18, NRC Dockets Nos. 50-373 and 50-374", dated May 7, 1999.
- (2) "LaSalle County Station Units 1 and 2 SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis", NEDC-32258P, October 1993.
- (3) LaSalle LOCA-ECCS Analysis MAPLHGR Limits for ATRIUM™-9B Fuel," Siemens document EMF-2175(P), March, 1999.

This letter is intended to fulfill the thirty day reporting requirement of 10 CFR 50.46(a)(3) for LaSalle County Station Unit 1. A significant change to the calculated Peak Cladding Temperature (PCT) has resulted due to the introduction of Siemens Power Corporation (SPC) ATRIUM™-9B fuel into Unit 1 for Cycle 9, and the application of the approved SPC Loss of Coolant Accident (LOCA) analysis methodology. Since Unit 1 Cycle 9 began power operation on November 20, 1999, Commonwealth Edison (ComEd) Company failed to submit this letter in the requisite thirty days as required by 10 CFR 50.46(a)(3).

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In addition to reporting this significant change, we are including in our submittal all other changes to PCT since the submittal of previous annual report (Reference 1). This submittal will also fulfill the annual reporting requirement of 10 CFR 50.46(a)(3).

The Loss of Coolant Accident analyses of record for both General Electric (GE) fuel and SPC fuel are within all of the acceptance criteria set forth in 10 CFR 50.46.

Both Units now employ a mixed core design containing co-resident GE and SPC fuel. The GE fuel in both units is bounded by the current General Electric LOCA analysis (Reference 2), which is summarized in Attachment 1. The GE LOCA analysis was approved in 1993 and utilizes approved methodology. There have been no changes to the Unit 1 1301°F PCT assessments for GE fuel since the Reference 1 10 CFR 50.46 transmittal. The SPC fuel in both units is bounded by the current SPC LOCA analysis identified in Reference 3 and the +18°F increase due to Siemens identified code errors (See Attachment 2, Margin Allocation). This results in an increase in the Unit 1 PCT of +524°F above the previous cycle PCT of 1301°F with all GE fuel. The calculated PCT is now 1825°F for both Units 1 and 2 SPC ATRIUM™-9B fuel.

The following attachments provide updated information regarding the PCTs for the Loss of Coolant Accident (LOCA) analyses of record.

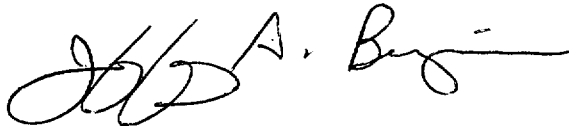
Attachment 1: LaSalle Units 1 and 2 10 CFR 50.46 Report (GE Fuel)
Attachment 2: LaSalle Units 1 and 2 10 CFR 50.46 Report (SPC Fuel)
Attachment 3: LaSalle Units 1 and 2 PCT Assessment Notes

Attachments 1 and 2 provide PCT information for the limiting Loss of Coolant Accident evaluations for LaSalle County Station, including all assessments as of January 31, 2000. The assessment notes (Attachment 3) provide a detailed description for each change or error reported.

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Should you have any questions concerning this letter, please contact
Mr. Frank A. Spangenberg, III, Regulatory Assurance Manager, at
(815) 357-6761, extension 2383.

Respectfully,

A handwritten signature in black ink, appearing to read "J.A. Benjamin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jeffrey A. Benjamin
Site Vice President
LaSalle County Station

Attachment

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

Attachment 1

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

PLANT NAME: LaSalle Units 1 and 2
ECCS EVALUATION MODEL: SAFER/GESTR LOCA
REPORT REVISION DATE: 1/27/2000
CURRENT OPERATING CYCLES: L1C9 and L2C8

ANALYSIS OF RECORD

Evaluation Model Methodology: "GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident", Volumes I, II and III, NEDE-23785-1-P-A, February, 1985.

Calculation: "LaSalle County Station Units 1 and 2 SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis", NEDC-32258P, October, 1993.

and

"LaSalle County Station Units 1 and 2 SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis", NEDC-31510P, December, 1987.

Fuel: P8x8R, GE8x8EB and GE8x8NB (**Note 1**)

Limiting Single Failure: HPCS Diesel Generator

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

Reference PCT:

PCT = 1260°F

MARGIN ALLOCATION

A. PRIOR LOCA MODEL ASSESSMENTS

Bottom Head Drain Issue (Note 2)	Δ PCT = +10°F
SAFER/GESTR Automation Error (Note 3)	Δ PCT = +30°F
Jet Pump Riser Flaw Evaluation (Note 5)	Δ PCT = +1°F

B. CURRENT LOCA MODEL ASSESSMENTS (Since 5/7/99 submittal)

None

NET PCT:

PCT = 1301°F

Attachment 2

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

PLANT NAME: LaSalle Units 1 and 2
ECCS EVALUATION MODEL: EXEM BWR Evaluation Model
REPORT REVISION DATE: 1/27/2000
CURRENT OPERATING CYCLE: L1C9 and L2C8

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: LaSalle LOCA-ECCS Analysis MAPLHGR Limits for ATRIUM™-9B Fuel, EMF-2175(P), March, 1999. **(Notes 2, 4 and 5)**

and

LOCA Break Spectrum Analysis for LaSalle Units 1 and 2, EMF-2174(P), March 1999. **(Notes 2, 4 and 5)**

Fuel: ATRIUM™-9B

Limiting Single Failure: HPCS Diesel Generator

Limiting Break Size and Location: Discharge side 1.1 ft² Recirculation Line Break

Reference PCT: PCT = 1807°F

MARGIN ALLOCATION

A. PRIOR LOCA MODEL ASSESSMENTS

None

B. CURRENT LOCA MODEL ASSESSMENTS (Since 5/7/99 submittal)

SPC Incorrect RELAX Decay Heat Model **(Note 6)** Δ PCT = +8°F
SPC Incorrect RELAX Fuel Avg. Temperature **(Note 7)** Δ PCT = +10°F

NET PCT: PCT = 1825°F

Attachment 3

LaSalle Units 1 and 2 PCT Assessment Notes

1. GE Fuel Types

The GE SAFER/GESTR LOCA analysis calculated the PCT for the P8x8R, GE8x8EB and GE8x8NB fuel types. The PCT reported is the highest PCT of the three fuel types (P8x8R). Although only the GE8x8NB fuel will be used for the current operating cycle (the P8x8R and GE8x8EB fuel types have been discharged to the fuel pool), the bounding PCT is used as the reference PCT for all GE fuel types available.

2. Bottom Head Drain (BHD) flow path (PCT increase)

In March of 1995, ComEd asked GE to evaluate the impact of additional reactor coolant loss during a LOCA due to the cross tie of the bottom head drain (BHD) to the recirculation piping. General Electric reported this issue via a 50.46 report to the USNRC in a December 15, 1995 submittal. Reactor Water Cleanup (RWCU) system operation takes suction from the BHD and from the recirculation suction piping, which are connected at a common point. A design basis LOCA where the break is on the recirculation suction piping would allow water in the lower plenum of the reactor vessel to be lost through the RWCU piping where it connects to the recirculation suction piping.

The GE evaluation concluded that while no analysis had been performed to precisely evaluate the PCT impact of the recirculation line break LOCA including the BHD, it is believed that the impact is less than 10°F. ComEd determined that this error applied to LaSalle and the 10°F penalty has been included in the current LOCA model PCT assessments. The impact of the BHD exiting flow on maintaining level inside the shroud was also evaluated to be insignificant since the increased minimum makeup flow is well within the margins available in the ECCS systems. The minimum makeup flow corresponds to that necessary to makeup for decay heat and for system leakages such as the BHD flow path.

SPC has conservatively incorporated the effects of the BHD into the LaSalle LOCA analysis for ATRIUM™-9B fuel. The PCT impact of the BHD is reflected in the reference PCT for the SPC analysis, which is being applied at this time to Units 1 and 2.

3. SAFER/GESTR Automation Error (PCT increase)

In June of 1996, GE reported an error to the USNRC for some applications of the GE LOCA Evaluation Model SAFER/GESTR. It was determined that in some analyses an algorithm used to compute the number of fuel rods in a BWR lattice was incorrectly specified. As a result, LOCA input prepared with the automation process may have included incorrect data. This error had impact on fuel designs containing a large water rod and analyses where the input generation was automated. Calculations performed to assess the significance of this error indicate that the impact on the calculated peak cladding temperature is less than 30°F.

Attachment 3

LaSalle Units 1 and 2 PCT Assessment Notes

4. Application of the EXEM BWR Evaluation Model

To justify use of the ATRIUM™-9B fuel starting with L2C8 and L1C9, the LaSalle LOCA analysis has utilized the NRC approved SPC methodology. As a result of using this methodology, SPC calculated a different limiting break size and location than the previous GE analysis. The change in the limiting break and location is a result of applying the SPC methodology and it is not due to the use of the SPC ATRIUM™-9B fuel. SPC has demonstrated the hydraulic compatibility of the ATRIUM™-9B and GE fuel and concluded that the mixed core effects have a negligible impact on the PCT calculation. Therefore, the GE PCT calculation for the GE fuel remains applicable and the SPC PCT calculation is appropriate for the ATRIUM™-9B fuel.

5. Leakage Determined as a Part of the Jet Pump Riser Flaw Evaluation

During L2R07, flaw indications were identified in jet pump risers 1/2 and 19/20. GE has performed a LOCA evaluation assuming the maximum allowable flaw sizes are combined together and the worst of the units is evaluated. These maximum allowable flaw sizes correspond to a leakage that is documented in "LaSalle County Nuclear Power Station Jet Pump Riser Safety Evaluation, Evaluation of Riser Leakage Impact," GENE-A1300439-00-02P, dated January 1999. This calculation shows a PCT increase of 1°F. GE has confirmed (and ComEd concurs) that the LaSalle daily jet pump Technical Specification surveillance will detect a jet pump riser crack that results in a failed jet pump ("LaSalle County Nuclear Power Station Jet Pump Riser Safety Evaluation, Evaluation of Surveillance Monitoring Parameters," GE-NE-A13-00439-00-01P, Dated February 1999).

The jet pump riser flaw leakage was evaluated in the break spectrum analysis for ATRIUM™-9B fuel. The jet pump riser flaw leakage values identified during L2R07 are listed in "LaSalle Units 1 and 2 Principal LOCA Analysis Parameters," EMF-95-041, Revision 1, Siemens Power Corporation, dated March 1999 for the SPC LOCA Analysis. Siemens evaluated the impact of the jet pump riser flaw leakage and determined that there was no PCT impact on the LOCA analysis. Hence the SPC Break Spectrum and MAPLHGR reports listed in Attachment 2 reflect the PCT including the jet pump riser flaw leakage.

Although the flaw was identified on Unit 2 only, the PCT penalty is being conservatively applied to the GE fuel for Unit 1 as well.

6. SPC Incorrect RELAX Decay Heat Model

In May of 1999, Siemens evaluated the impact of an error in their RELAX code. This error was in the portion that calculated the decay heat of the core after scram had occurred. Siemens determined that there was a +8°F PCT impact on the LOCA analysis. The PCT listed in Attachment 2 reflects the PCT penalty for this correction.

Attachment 3

LaSalle Units 1 and 2 PCT Assessment Notes

7. SPC Incorrect RELAX Fuel Avg. Temperature

In May of 1999, Siemens evaluated the impact of an error in their RELAX code. This error was in the portion that calculated the average fuel temperature. Siemens determined that there was a +10°F PCT impact on the LOCA analysis. The PCT listed in Attachment 2 reflects the PCT penalty for this correction.