

JUN 10 2019

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U. S. Nuclear Regulatory Commission
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10 CFR 50.46

SUSQUEHANNA STEAM ELECTRIC STATION
10 CFR 50.46 ANNUAL REPORT
PLA-7770

Docket Nos. 50-387
and 50-388

- References*
1. "Susquehanna Steam Electric Station (SSES) 10 CFR 50.46 – Annual Report PLA-7606," dated June 07, 2017 (ADAMS Accession No. ML17158B382)
 2. "Susquehanna Steam Electric Station 10 CFR 50.46 – Annual Report PLA-7713," dated June 14, 2018 (ADAMS Accession No. ML18165A460)
 3. Framatome Record FS1-0039922, Revision 1.0, "10 CFR 50.46 PCT Error Reporting for the Susquehanna Units," dated September 17, 2018
 4. Framatome Record FS1-0043512, Revision 1.0, "10 CFR 50.46 PCT Error Reporting for the Susquehanna Units," dated April 22, 2019

Pursuant to the reporting requirements of 10 CFR 50.46(a)(3)(ii), Susquehanna Nuclear, LLC is submitting the Emergency Core Cooling System (ECCS) evaluation model annual report for Susquehanna Steam Electric Station (SSES) Units 1 and 2. The attached report summarizes the nature of and estimated effect of any modeling changes or error corrections in the ECCS model for the period April 25, 2018 through April 22, 2019 for SSES Units 1 and 2.

Since the last 10 CFR 50.46 annual report dated June 14, 2018 (Reference 2), there has been a Peak Cladding Temperature (PCT) change reported to SSES resulting from a modeling change or error correction to the ECCS evaluation method. The current licensing basis PCT remains in compliance with 10 CFR 50.46 requirements.

There are no new regulatory commitments contained in this submittal.

If you have any questions regarding this letter, please contact Ms. Melisa Krick, Manager - Nuclear Regulatory Affairs, at (570) 542-1818.

A handwritten signature in black ink, appearing to read "K. Cimorelli", written over a horizontal line.

K. Cimorelli

Attachment – 10 CFR 50.46 ECCS Evaluation Model Annual Report

Copy: NRC Region I
Ms. T. E. Hood, NRC Project Manager
Ms. J. Tobin, NRC Project Manager
Ms. L. Micewski, NRC Sr. Resident Inspector
Mr. M. Shields, PA DEP/BRP

Attachment to PLA- 7770

**10 CFR 50.46 ECCS Evaluation Model
Annual Report**

BACKGROUND

In accordance with 10 CFR 50.46(a)(3)(ii), this annual report summarizes the nature of and estimated effect of any modeling changes or errors corrections in the ECCS model for the period April 25, 2018 through April 22, 2019 for SSES Units 1 and 2.

DISCUSSION

The ECCS performance evaluation method applicable to both SSES Units 1 and 2 is the Framatome EXEM BWR-2000 LOCA Methodology.

For the reporting period of April 25, 2018 to April 22, 2019, there has been one reportable 10 CFR 50.46 modeling change or error correction to the ECCS evaluation method since the previous 10 CFR 50.46 report (Reference 2). A review of the Susquehanna RELAX steam dryer related inputs identified a need to update the volume input of the steam dryer assembly as well as the free volume input for the dryer region (Reference 3). The impact of this change is summarized in Table 1.

The total change listed in the last column of Table 1 does not meet the significance threshold for change (50°F) identified in 10 CFR 50.46(a)(3)(i) for which a 30-day report is required.

IMPACT

Table 1
Non-Zero PCT Changes Resulting from Modeling Changes / Error Corrections in
Calculated ECCS Performance
Evaluation Model: Framatome EXEM BWR-2000 LOCA Methodology

Description of Change/Error	Estimated Δ PCT (°F)	Absolute Value of Δ PCT (°F)
HUXY capability enhancement to model each fuel rod individually (Reference 1)	-1	1
Updated steam dryer information (Reference 3)	+5	5
Total Since Initial PCT (Reference 4)	+4	6

CONCLUSION

As documented in Table 1, the SSES Units 1 and 2 Loss of Coolant Accident Analysis PCT remains in compliance with 10 CFR 50.46(b)(1), which requires that the PCT not exceed 2200°F.