

**From:** Klett, Audrey  
**Sent:** Friday, March 25, 2022 8:04 AM  
**To:** Jurek, Shane  
**Subject:** Susquehanna Atrium-11 LAR Audit Report (EPID L-2019-LLA-0153)  
**Attachments:** Susquehanna A11 Audit Report 01.docx

Shane,  
Attached is the summary report associated with audit the NRC performed in support of Amendment Nos. 279 and 261. The safety evaluation for those amendments references an incorrect record. This email and attachment will be added to ADAMS as an official agency record. Once I obtain the correct ADAMS Accession number, I'll share that with you.

-Audrey

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"Jurek, Shane" <Shane.Jurek@talenergy.com>  
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AUDIT REPORT FOR  
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2  
TO SUPPORT REVIEW OF THE LICENSE AMENDMENT REQUEST  
REGARDING APPLICATION OF FRAMATOME METHODOLOGIES  
FOR TRANSITION TO ATRIUM 11 FUEL

<b>Facility</b>	<b>Docket</b>	<b>EPID</b>
Susquehanna Steam Electric Station, Unit 1	50-387	L-2019-LLA-0153
Susquehanna Steam Electric Station, Unit 2	50-388	

**1.0 INTRODUCTION**

On November 21-December 11, 2019, the NRC staff conducted an audit of Talen Energy's proposed License Amendment Request (LAR) regarding application of Framatome methodologies to support transition to ATRIUM 11 fuel for the Susquehanna Steam Electric Station, Units 1 and 2. The face-to-face portion of the audit was held at the Rockville office of the EXCEL Services Corporation on December 10-11, 2019. The NRC staff reviewed documents related to the submittal through an online portal for the remainder of the audit time.

**2.0 BACKGROUND**

By letter dated July 15, 2019, Talen Energy submitted a license amendment request for Susquehanna Steam Electric Station, Units 1 and 2 (SSES) to allow application of the Framatome analysis methodologies necessary to support a planned transition to ATRIUM 11 fuel under the currently licensed Maximum Extended Load Line Limit Analysis (MELLLA) operating domain (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19196A270).

The NRC staff performed a detailed review of the proposed changes requested by Talen Energy. Due to the complexity of the proposed LAR, supporting calculations, and computer-based modelling, the NRC staff determined that an audit of the methodology would support timely resolution of technical issues more quickly than several rounds of requests for additional information requiring follow-up responses from the licensee.

The NRC staff conducted this audit in accordance with the Office of Nuclear Reactor Regulation Office Instruction LIC-111, "Regulatory Audits." The NRC staff made no regulatory decisions during the audit.

**3.0 AUDIT STAFFING**

The NRC audit team was composed of the following members:

- Ashley Smith, Nuclear Engineer, Office of Nuclear Reactor Regulation (NRR)
- Shie-Jeng Peng, Nuclear Engineer, NRR

- Diana Woodyatt, Nuclear Engineer, NRR
- Sujeta Goetz, Susquehanna Project Manager, Plant Licensing Branch II-2, NRR
- Josh Borromeo, Nuclear Systems Performance Branch Chief, NRR
- Ravi Grover, Safety and Plant Systems Engineer, NRR
- Ganesh Cheruvenki, Materials Engineer, NRR

The following personnel represented or supported Talen Energy during the audit:

Jason Hartzell,	Talen Energy
Michael Stone	Talen Energy
Dan Tinkler,	Framatome
Tim Guidotti,	Framatome
Alan Meginnis,	Framatome

#### **4.0 AUDIT SCOPE**

The audit covered the following topics related to the LAR:

- Containment
- Anticipated Operating Event (AOO) and Anticipated Transient without Scram (ATWS) analyses
- Loss-of-Coolant Accident (LOCA) analyses
- Fuel Mechanical

Audit information discussed for each topic is summarized in the sections that follow.

#### **5.0 CONTAINMENT**

During the audit, the containment discussion focused on the evaluations which were completed by the licensee to confirm that the containment mass and energy release analyses of record remain valid.

#### **6.0 AOO/ATWS ANALYSES**

The NRC staff's audit of the licensee's AOO and ATWS analysis primarily focused on the plant specific implementation of the AURORA-B methodology. The audit discussions clarified many topic areas where questions arose during the NRC staff's initial review of the submittal.

#### **7.0 LOCA ANALYSES**

The NRC staff interviewed with Mr. Tim Guidotti (Framatome) and Jason Hartzell (Talen Energy) about the information documented in the Susquehanna LOCA analysis report (ANP-3784) and the supporting documents uploaded in the electronic reading room. We have drafted and clarified four RAI questions to be responded during this audit.

#### **8.0 FUEL MECHANICAL**

The NRC staff interviewed with Jason Hartzell (Talen Energy) about the information documented in the Susquehanna Fuel assembly and fuel rod analysis reports (ANP-3745 and

ANP-3762)) and the supporting documents uploaded in the electronic reading room. We have drafted and clarified one RAI question to be responded during this audit.

## **9.0 DOCUMENTS REVIEWED**

The following documents provided by the licensee were reviewed by the NRC staff during the audit:

### Framatome documents

ANP-3745, ANP-3762, ANP-3784, FS1-0042715, FS1-0042716, FS1-0042511, FS1-0014720, FS1-0042842, FS1-0042817, FS1-0040782, ANP-3592, ANP-3485, Limiting LOCA Input and Output S-RELAP files

### Talen Energy documents

NONE

## **10.0 NEXT STEPS**

The NRC staff will continue its review of the proposed LAR. The NRC staff intends to have draft RAIs to address any issues where further information is necessary to complete the review.