

Vogle PEmails

From: Rankin, Jennivine
Sent: Tuesday, June 25, 2019 4:22 PM
To: Vogle PEmails
Subject: Vogle June 27 Pre-Submittal Meeting - Presentation for the Pressurizer Surge Line LAR
Attachments: PSL LAR PSM on June 27 Presentation.pptx

From: Leighty, Steven <sleighty@southernco.COM>
Sent: Tuesday, June 25, 2019 4:11 PM
To: Patel, Chandu <Chandu.Patel@nrc.gov>; Rankin, Jennivine <Jennivine.Rankin@nrc.gov>
Subject: [External_Sender] Presentation for the Pressurizer Surge Line LAR PSM Thursday

Chandu/Jennivine,

Attached are a set of slides we plan to use during the presubmittal meeting for the pressurizer surge line LAR on Thursday. The slides are a high level summary of the draft LAR to lead the discussion.

Please let me know if you have any questions.

Thanks,

Steve Leighty

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Line LAR
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LAR for Pressurizer Surge Line Monitoring



Pressurizer Surge Line Stratification Evaluation

Proposed Change

The Vogtle 3&4 Licensing Basis requires monitoring of the pressurizer surge line during preoperational testing through the first fuel cycle

- Combined License (COL) condition 2.D.(2)(a)1 and UFSAR Sections 14.2.5 and 14.2.9.1.7 describe a pre-operational first plant Pressurizer Surge Line Stratification Evaluation
- UFSAR Section 3.9.3.1.2 discusses AP1000 conformance to NRC Bulletin 88-11 and requirements for surge line monitoring and evaluation

The LAR proposes removal of the requirements related to installing temporary instrumentation to monitor the surge line during preoperational testing through the first fuel cycle



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Pressurizer Surge Line Stratification Evaluation

Technical Justification

1. The AP1000 was designed considering thermal cycling and stratification
2. The surge line is designed to ASME Section III requirements and verified through completion of ITAAC
3. Surge line has permanent plant temperature instrumentation to detect stratification
4. Monitoring of the first AP1000 plant using temporary instrumentation



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Pressurizer Surge Line Stratification Evaluation

AP1000 Surge line Design

- Surge line designed with consideration of NRC Bulletins 79-13, 88-08, and 88-11
- Surge line designed to accommodate thermal expansion and equipment movement
- Surge line designed to minimize thermal stratification

ITAAC & ASME Code Compliance

- ITAAC confirm that the as-built pressurizer surge line is correctly built
- Surge line three-dimensional computational fluid dynamics model used to determine stratification profiles
- Stress and fatigue analysis evaluated according to the Class 1 design analysis requirements of the Section III ASME B&PV Code



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Pressurizer Surge Line Stratification Evaluation

Pressurizer Surge Line Instrumentation

- RTDs monitor pressurizer surge line fluid temperature to detect stratification
- RTDs temperature indication is provided in the main control room

First Plant Surge Line Monitoring

- Sanmen Unit 1 monitored the surge line during hot functional testing and during the first fuel cycle
 - Monitoring program was consistent with the Vogtle 3&4 UFSAR description of the surge line monitoring
- Data collected at Sanmen Unit 1 is representative of the standard AP1000 design
 - Data has been evaluated by Westinghouse in a technical report
- Vogtle 3&4 and Sanmen Unit 1 use the standard AP1000 surge line design
 - Unlikely that additional insight into the temperature stratification phenomena will be gained by collecting Vogtle data



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Pressurizer Surge Line Stratification Evaluation

Summary

1. The AP1000 plant was designed to account for thermal cycling and stratification and includes extensive industry operating experience;
2. Surge line piping is designed to ASME III and confirmed through ITAAC;
3. Permanently installed RTDs located on the surge line monitor for stratification; and,
4. Data collected at Sanmen Unit 1 is representative of the AP1000 standard design and it is unlikely that additional insight into the temperature stratification phenomena will be gained by collecting additional data at Vogtle Units 3 or 4.



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Questions



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