From: Rankin, Jennivine
Sent: Monday, March 16, 2020 8:01 AM
To: Vogtle PEmails
Subject: Slide deck for Vogtle 3 and 4 public meeting on Tier 1 exemption request
Attachments: Tier 1 Exemption Request_PSM (002).pdf

For use at 3/19 Vogtle 3 and 4 public meeting.

From: Agee, Stephanie Y. <SYAGEE@southernco.com>
Sent: Friday, March 13, 2020 12:16 PM
To: Rankin, Jennivine <Jennivine.Rankin@nrc.gov>; Humphrey, Mark Phillips <MPHUMPHR@southernco.com>; Santos, Cayetano <Cayetano.Santos@nrc.gov>; Habib, Donald <Donald.Habib@nrc.gov>
Cc: Chamberlain, Amy Christine <ACCHAMBE@southernco.com>; Arafeh, Yasmeen N. <YNARAFEH@southernco.com>; Amundson, Theodore Edwin <X2TAMUNS@southernco.com>
Subject: [External_Sender] RE: RE: RE: Request for PSM on Thurs. March 19, 2020 - LAR to Address ITAAC 195 Non-Material Issue

Hi Jennie – Attached is the presentation we are planning on using to assist with the Tier 1 discussion (2nd topic) on 3/19. Let me know if you have any questions before the meeting.

Thanks
Stephanie

Hearing Identifier: Vogtle_COL_Docs_Public
Email Number: 548

Mail Envelope Properties (MN2PR09MB48919E34D34BF36DBAE1F58E98F90)

Subject: Slide deck for Vogtle 3 and 4 public meeting on Tier 1 exemption request
Sent Date: 3/16/2020 8:01:24 AM
Received Date: 3/16/2020 8:01:28 AM
From: Rankin, Jennivine

Created By: Jennivine.Rankin@nrc.gov

Recipients:
"Vogtle PEmails" <Vogtle.PEmails@nrc.gov>
Tracking Status: None

Post Office: MN2PR09MB4891.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	837	3/16/2020 8:01:28 AM
Tier 1 Exemption Request_PSM (002).pdf	616732	

Options
Priority: Normal
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:

ONE TEAM. ONE VISION. ONE GOAL.

Building the future of nuclear power in America

Request for Exemption
10 CFR Part 52, Appendix D, Tier 1 Plant-Specific DCD Requirements

Pre-submittal Meeting

March 19, 2020

Southern Nuclear

Georgia Power

Agenda

- Exemption Request Overview
- Reason for Exemption Request
- Two Tier Design Control Document (DCD) Background
- Specific Exemption Request
- Basis for Technical Justification
- Treatment of Associated Licensing Documents
- Proposed Implementation Approach
- Close and Review

Exemption Request Overview

- Exemption request involves removing requirement to maintain and comply with the Tier 1 plant-specific DCD. Also involves removing requirement to seek prior NRC approval for Tier 2 departures involving Tier 1 information
- Does not involve generic Tier 1 DCD
- Does not involve Tier 2 plant-specific DCD other than paragraph VIII.B.5.a
- Implemented after power ascension testing completed on each unit

Reason for Exemption Request

- **Underlying purpose of Tier 1 plant-specific DCD no longer met after completion of construction and power ascension testing**
  - Resolution of design issues to support certification
  - Completion of ITAAC
  - Completion of power ascension testing completes initial testing phase
- **Standardization not used**
  - VEGP 3 and 4 only AP1000 nuclear plants in US
- **Unnecessary burden for departing from Tier 2 plant-specific DCD**

Two Tier Design Control Document (DCD) Background

- **Initial issuance of Part 52 did not address level of design detail needed for staff review and approval of a certified design**
- **Industry proposed a two phase approach**
- **SECY-90-377 approved two phase approach**
  - Tier 1 – certified
  - Tier 2 – approved
- **Terms further clarified in AP1000 Design Certification Rule (10 CFR Part 52, Appendix D)**

Exemption Request Specifics

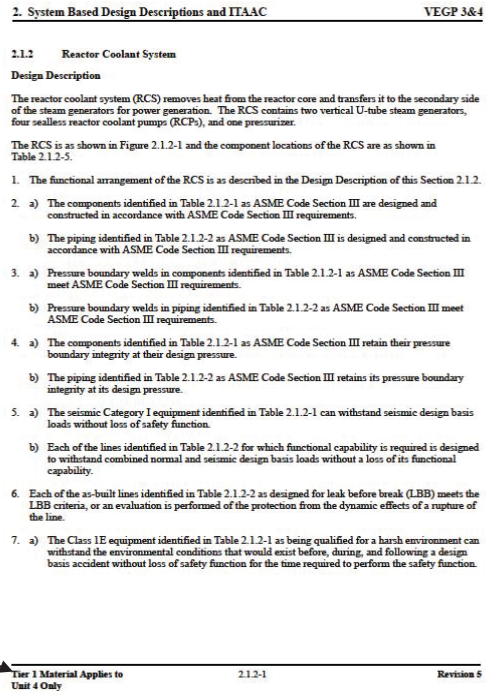
- **10 CFR Part 52, Appendix D, paragraph III.B**
  - Compliance with Tier 1
- **10 CFR Part 52, Appendix D, paragraph VIII.B.5.a**
  - Departures from Tier 2 involving Tier 1 to require a license amendment
- **10 CFR Part 52, Appendix D, paragraph X.A.2**
  - Maintain the Tier 1 plant specific DCD

Basis for Technical Justification

- **Underlying purpose of Tier 1 plant-specific DCD no longer met**
  - Design and safety issues resolved and construction verified by completion of ITAAC and power ascension testing
  - Standardization no longer of benefit
    - Lack of AP1000 plants in US
  - Change to design (Tier 2) and programmatic elements of Tier 1 still subject to NRC prior approval for matters of regulatory importance

Treatment of Associated Licensing Documents

Tier 1 DCD Example
Post Unit 3 Testing:



2. System Based Design Descriptions and ITAAC VEGP 3&4

2.1.2 Reactor Coolant System

Design Description

The reactor coolant system (RCS) removes heat from the reactor core and transfers it to the secondary side of the steam generators for power generation. The RCS contains two vertical U-tube steam generators, four sealless reactor coolant pumps (RCPs), and one pressurizer.

The RCS is as shown in Figure 2.1.2-1 and the component locations of the RCS are as shown in Table 2.1.2-5.

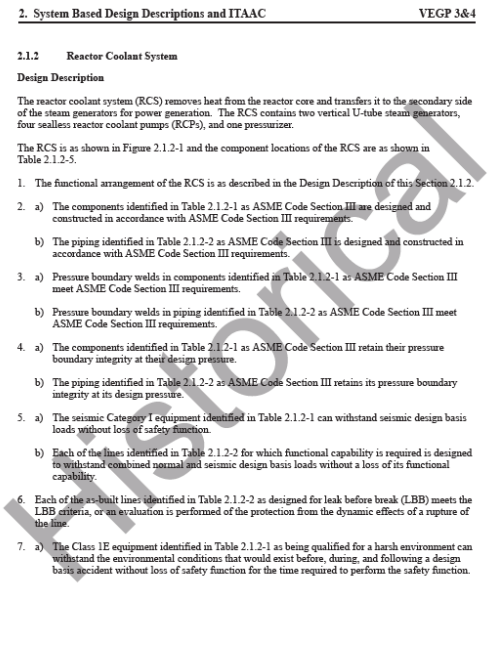
1. The functional arrangement of the RCS is as described in the Design Description of this Section 2.1.2.
2. a) The components identified in Table 2.1.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.
   b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.
3. a) Pressure boundary welds in components identified in Table 2.1.2-1 as ASME Code Section III meet ASME Code Section III requirements.
   b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements.
4. a) The components identified in Table 2.1.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.
   b) The piping identified in Table 2.1.2-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.
5. a) The seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic design basis loads without loss of safety function.
   b) Each of the lines identified in Table 2.1.2-2 for which functional capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.
6. Each of the as-built lines identified in Table 2.1.2-2 as designed for leak before break (LBB) meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.
7. a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

Tier 1 Material Applies to Unit 4 Only 2.1.2-1 Revision 5

Modify Footer:
Tier 1 Material Applies to
Unit 4 Only

Treatment of Associated Licensing Documents Continued

Tier 1 DCD Example Post Unit 4 Testing:



2. System Based Design Descriptions and ITAAC VEGP 3&4

2.1.2 Reactor Coolant System

Design Description

The reactor coolant system (RCS) removes heat from the reactor core and transfers it to the secondary side of the steam generators for power generation. The RCS contains two vertical U-tube steam generators, four sealless reactor coolant pumps (RCPs), and one pressurizer.

The RCS is as shown in Figure 2.1.2-1 and the component locations of the RCS are as shown in Table 2.1.2-5.

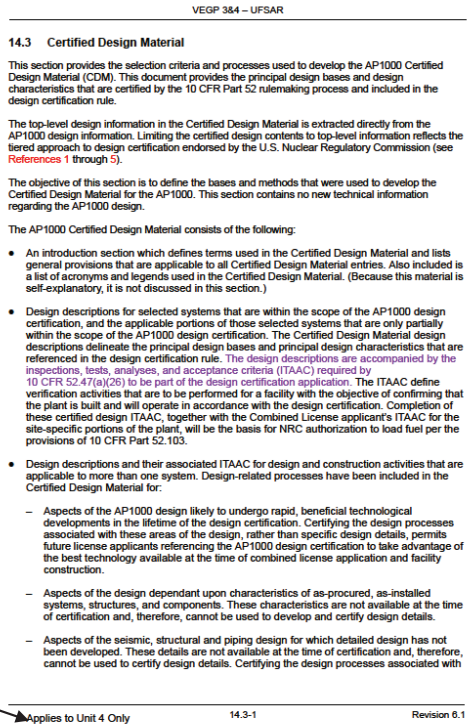
1. The functional arrangement of the RCS is as described in the Design Description of this Section 2.1.2.
2. a) The components identified in Table 2.1.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.
   b) The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.
3. a) Pressure boundary welds in components identified in Table 2.1.2-1 as ASME Code Section III meet ASME Code Section III requirements.
   b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements.
4. a) The components identified in Table 2.1.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.
   b) The piping identified in Table 2.1.2-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.
5. a) The seismic Category I equipment identified in Table 2.1.2-1 can withstand seismic design basis loads without loss of safety function.
   b) Each of the lines identified in Table 2.1.2-2 for which functional capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.
6. Each of the as-built lines identified in Table 2.1.2-2 as designed for leak before break (LBB) meets the LBB criteria, or an evaluation is performed of the protection from the dynamic effects of a rupture of the line.
7. a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

Tier 1 Material 2.1.2-1 Revision 5

Treatment of Associated Licensing Documents Continued

UFSAR Section 14.3 example
Post Unit 3 Testing

Modify Footer:
Applies to Unit 4 Only



VEGP 3&4 – UFSAR

14.3 Certified Design Material

This section provides the selection criteria and processes used to develop the AP1000 Certified Design Material (CDM). This document provides the principal design bases and design characteristics that are certified by the 10 CFR Part 52 rulemaking process and included in the design certification rule.

The top-level design information in the Certified Design Material is extracted directly from the AP1000 design information. Limiting the certified design contents to top-level information reflects the tiered approach to design certification endorsed by the U.S. Nuclear Regulatory Commission (see References 1 through 5).

The objective of this section is to define the bases and methods that were used to develop the Certified Design Material for the AP1000. This section contains no new technical information regarding the AP1000 design.

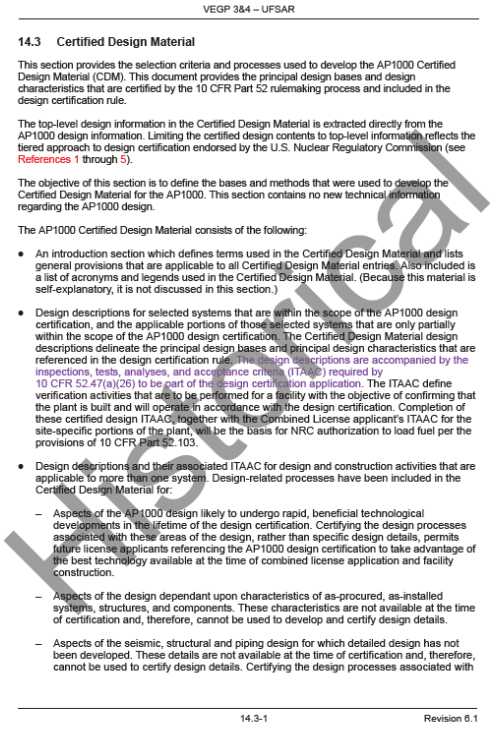
The AP1000 Certified Design Material consists of the following:

- An introduction section which defines terms used in the Certified Design Material and lists general provisions that are applicable to all Certified Design Material entries. Also included is a list of acronyms and legends used in the Certified Design Material. (Because this material is self-explanatory, it is not discussed in this section.)
- Design descriptions for selected systems that are within the scope of the AP1000 design certification, and the applicable portions of those selected systems that are only partially within the scope of the AP1000 design certification. The Certified Design Material design descriptions delineate the principal design bases and principal design characteristics that are referenced in the design certification rule. The design descriptions are accompanied by the inspections, tests, analyses, and acceptance criteria (ITAAC) required by 10 CFR 52.47(a)(26) to be part of the design certification application. The ITAAC define verification activities that are to be performed for a facility with the objective of confirming that the plant is built and will operate in accordance with the design certification. Completion of these certified design ITAAC, together with the Combined License applicant's ITAAC for the site-specific portions of the plant, will be the basis for NRC authorization to load fuel per the provisions of 10 CFR Part 52.103.
- Design descriptions and their associated ITAAC for design and construction activities that are applicable to more than one system. Design-related processes have been included in the Certified Design Material for:
  - Aspects of the AP1000 design likely to undergo rapid, beneficial technological developments in the lifetime of the design certification. Certifying the design processes associated with these areas of the design, rather than specific design details, permits future license applicants referencing the AP1000 design certification to take advantage of the best technology available at the time of combined license application and facility construction.
  - Aspects of the design dependant upon characteristics of as-procured, as-installed systems, structures, and components. These characteristics are not available at the time of certification and, therefore, cannot be used to develop and certify design details.
  - Aspects of the seismic, structural and piping design for which detailed design has not been developed. These details are not available at the time of certification and, therefore, cannot be used to certify design details. Certifying the design processes associated with

Applies to Unit 4 Only 14.3-1 Revision 6.1

Treatment of Associated Licensing Documents Continued

UFSAR Section 14.3 Example Post Unit 4 Testing



VEGP 3&4 – UFSAR

14.3 Certified Design Material

This section provides the selection criteria and processes used to develop the AP1000 Certified Design Material (CDM). This document provides the principal design bases and design characteristics that are certified by the 10 CFR Part 52 rulemaking process and included in the design certification rule.

The top-level design information in the Certified Design Material is extracted directly from the AP1000 design information. Limiting the certified design contents to top-level information reflects the tiered approach to design certification endorsed by the U.S. Nuclear Regulatory Commission (see References 1 through 5).

The objective of this section is to define the bases and methods that were used to develop the Certified Design Material for the AP1000. This section contains no new technical information regarding the AP1000 design.

The AP1000 Certified Design Material consists of the following:

- An introduction section which defines terms used in the Certified Design Material and lists general provisions that are applicable to all Certified Design Material entries. Also included is a list of acronyms and legends used in the Certified Design Material. (Because this material is self-explanatory, it is not discussed in this section.)
- Design descriptions for selected systems that are within the scope of the AP1000 design certification, and the applicable portions of those selected systems that are only partially within the scope of the AP1000 design certification. The Certified Design Material design descriptions delineate the principal design bases and principal design characteristics that are referenced in the design certification rule. The design descriptions are accompanied by the inspections, tests, analyses, and acceptance criteria (ITAAC) required by 10 CFR 52.47(a)(26) to be part of the design certification application. The ITAAC define verification activities that are to be performed for a facility with the objective of confirming that the plant is built and will operate in accordance with the design certification. Completion of these certified design ITAAC, together with the Combined License applicant's ITAAC for the site-specific portions of the plant, will be the basis for NRC authorization to load fuel per the provisions of 10 CFR Part 52.103.
- Design descriptions and their associated ITAAC for design and construction activities that are applicable to more than one system. Design-related processes have been included in the Certified Design Material for:
  - Aspects of the AP1000 design likely to undergo rapid, beneficial technological developments in the lifetime of the design certification. Certifying the design processes associated with these areas of the design, rather than specific design details, permits future license applicants referencing the AP1000 design certification to take advantage of the best technology available at the time of combined license application and facility construction.
  - Aspects of the design dependant upon characteristics of as-procured, as-installed systems, structures, and components. These characteristics are not available at the time of certification and, therefore, cannot be used to develop and certify design details.
  - Aspects of the seismic, structural and piping design for which detailed design has not been developed. These details are not available at the time of certification and, therefore, cannot be used to certify design details. Certifying the design processes associated with

14.3-1 Revision 6.1

Historical

Proposed Implementation Approach

- **Requested Exemption Approved – October 2020**
- **Implemented in Two Stages**
  - Stage 1 – Post Unit 3 Power Ascension Testing
  - Stage 2 – Post Unit 4 Power Ascension Testing

Close and Review

- **Questions/Comments**
- **Follow-up Actions**