

Vogle PEmails

From: Hoellman, Jordan
Sent: Friday, January 26, 2018 10:08 AM
To: Vogle PEmails
Subject: Pre-Submittal Presentation for SNC LAR-18-001
Attachments: LAR 187 and 190 Meeting Slides.pdf

Attached are the slides for the public meeting next week (2/1/18). SNC LAR-18-001 includes both WEC LARs 187 “Hydrogen Igniter Location Changes” and WEC LAR-190 “Equipment Survivability Assessment Reconciliation”.

This requested amendment proposes to revise equipment required to for sustained hydrogen combustion survivability. The proposed change requires a change to COL Condition 2.D.12.(g)9, which requires a thermal lag assessment of the as-built equipment listed in Tables 6b and 6c in Attachment A of APP-GW-GLR-069. The proposed change is to revise the referenced tables and replace the reference to APP-GW-GLR-069 with equipment tables included directly into the UFSAR. The requested amendment also proposes to remove Tier 1 Table 2.3.3-6 since it duplicates a portion of the License Condition requirement. This activity involves changes to COL Condition 2.D.12.(g)9, UFSAR Chapter 19, and Tier 1 Table 2.3.3-6.

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Combining LAR 187 and LAR 190

February 1st, 2018



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Meeting Purpose and Agenda

Meeting Purpose

- Pre-submittal meeting to discuss combining LAR 187 and LAR 190
- Receive and Address Staff Feedback

Agenda

- LAR 187 – Hydrogen Igniter Locations
- LAR 190 – Equipment Survivability Assessment
- Combining LAR 187 and LAR 190
 - Overview
 - Schedule



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LAR 187 – Hydrogen Igniter Locations

- Revises locations of Igniters 30, 35, 36, 37, and 38
 - Determined to be inconsistent with igniter location criteria described in UFSAR Table 6.2.4-6
- Revises location of Igniter 27
 - Determined the igniter location is described inconsistently throughout the licensing basis
- Licensing Basis Impacts:
 - Revises UFSAR Subsection 6.2.4 Tables and Figures
 - Revises Tier 1 Subsection 2.3.9, Table 2.3.9-2
 - Revises Technical Requirements Manual Table TR 3.6.2-1



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LAR 187 – Major Licensing Basis Impacts

- Tier 1 Subsection 2.3.9, Table 2.3.9-2 & UFSAR Table 6.2.4-7
- Igniter 30 moved from Loop compartment 01, Room 11401 @120' to Lower compartment area (CMT and valve area), Room 11403 @132'-8"
 - Moved to provide Power Group 2 igniter in the area with Igniter 32 (PG1)
- Igniters 35-38 moved from IRWST, Room 11305 @137' to Upper Compartment Lower Region, Room 11500 @137'-6"
 - Moved from “fitted, within the vents” and “IRWST outlets” to “at the vents,” i.e., from “inside the vents” to “outside the vents”



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LAR 190 - Equipment Survivability Assessment

- Revises list of equipment identified as requiring an assessment
 - Rollup of multiple design changes
- Revises details for equipment identified as requiring an assessment
 - Rollup of multiple design changes
- Licensing Basis Impacts:
 - Revises UFSAR Appendix 19D text and tables
 - Consolidates Tier 1 Subsection 2.2.3, item 9.c, into COL Condition 2.D.12(g)9



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LAR 190 - Major Licensing Basis Impacts

- License Condition 2.D.12(g)9:
 - Perform a **thermal lag** assessment of the **as-built equipment listed** in **Tables 6b and 6c in Attachment A of APP-GW-GLR-069, “Equipment Survivability Assessment,” UFSAR Tables 19D-8 and 19D-9 (as approved in Amendment No. ###)** to provide additional assurance that this equipment can **perform its severe accident functions** during environmental conditions resulting from **hydrogen burns associated with severe accidents**. SNC shall perform this assessment for equipment used for severe accident mitigation that has not been tested at severe accident conditions. SNC shall assess the ability of the **as-built** equipment to perform during accident hydrogen burns using the environment enveloping method or the test based thermal analysis method described in Electric Power Research Institute (EPRI) NP-4354, “Large Scale Hydrogen Burn Equipment Experiments.”
 - Tier 1 Subsection 2.2.3, item 9.c:
 - The **equipment listed** in **Table 2.2.3-6** has sufficient **thermal lag** to **withstand the effects** of identified **hydrogen burns associated with severe accidents**.

No.	ITTAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
205	2-2-03-09c	The equipment listed in Table 2.2.3-6 has sufficient thermal lag to withstand the effects of identified hydrogen burns associated with severe accidents.	Type tests, analyses, or a combination of type tests and analyses will be performed to determine the thermal lag of this equipment.	A report exists and concludes that the thermal lag of this equipment is greater than the value required.



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LAR 190 - Major Licensing Basis Impacts

- Comparison of Equipment Lists

APP-GW-GLR-069, Attachment A, Tables 6b and 6c	Proposed UFSAR Tables 19D-8 and 19D-9	Passive Core Cooling System (PXS) ITAAC Table 2.2.3-6
Differential Pressure and Pressure Transmitters (19) Core Exit Temperature (41) Resistance Temperature Detectors (12) Hydrogen Monitors (3) PXS Radiation Monitors (4) Solenoid Operated Valves and Air Operated Valves (19) Motor Operated Valves (32) Squib Valves (12) Valve Position Sensors (17) Hydrogen Igniters (64) Electrical Containment Penetration Assemblies (24) Cables (associated) PXS Containment Water Level (3)	Differential Pressure and Pressure Transmitters (-1) Core Exit Temperature Resistance Temperature Detectors Hydrogen Monitors PXS Radiation Monitors SOVs and AOVs (+11) Motor Operated Valves (+4) Squib Valves Valve Position Sensors Hydrogen Igniters (+2) Electrical Containment Penetration Assemblies (+5) Cables PXS Containment Water Level Containment Equipment Hatches (Gasket Mat'l) (+4) {adds Required Channels/Divisions column} {adds Function column}	Differential Pressure and Pressure Transmitters (15) - - Hydrogen Monitors (3) - SOVs and AOVs (4) - - - Hydrogen Igniters (66) Electrical Containment Penetration Assemblies (29) - - - {includes Function column}



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Combining LAR 187 and LAR 190 - Overview

- Inseparably linked:
 - Hydrogen Igniters are relocated in both LAR's
 - Schedules overlap
- Proposed Consolidation of Duplicated Requirements
 - COL Condition 2.D.12(g)9 requires equipment survivability assessment
 - Tier 1 Section 2.2.3, item 9, requires equipment survivability assessment

Tier 1 equipment list is subset of LC equipment list
Same assessment completes both LC and Tier 1 ITAAC



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Combining LAR 187 and LAR 190 - Highlight

- Current wording of License Condition:

- (g) Before initial fuel load, SNC shall: 9. Perform a thermal lag assessment of **the as-built equipment** listed in **Tables 6b and 6c in Attachment A of APP-GW-GLR-069, "Equipment Survivability Assessment,"** to provide additional assurance that this equipment can perform its severe accident functions during environmental conditions resulting from hydrogen burns associated with severe accidents. SNC shall perform this assessment for equipment used for severe accident mitigation that has not been tested at severe accident conditions. SNC shall assess the ability of **the as-built equipment** to perform during accident hydrogen burns using the environment enveloping method or the test based thermal analysis method described in Electric Power Research Institute (EPRI) NP-4354, "Large Scale Hydrogen Burn Equipment Experiments."

- Proposed Wording of License Condition:

- (g) Before initial fuel load, SNC shall: 9. Perform a thermal lag assessment of **the equipment** listed in [UFSAR Tables 19D-8 and 19D-9 \(as approved in Amendment No. ###\)](#), to provide additional assurance that this equipment can perform its severe accident functions during environmental conditions resulting from hydrogen burns associated with severe accidents. SNC shall perform this assessment for equipment used for severe accident mitigation that has not been tested at severe accident conditions. SNC shall assess the ability of **the equipment** to perform during accident hydrogen burns... [remaining text unchanged]



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Combining LAR 187 and LAR 190 - Schedule

- Submittal scheduled for March 2018
- Approval requested by late December 2018
 - Project need is dependent on removal of Tier 1 Section 2.2.3, item 9, duplicate ITAAC requirement for equipment survivability assessment
 - Without removal, project need is early September 2018
- Feedback?



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