From: Rankin, Jennivine
Sent: Monday, February 10, 2020 12:21 PM
To: Vogtle PEmails
Subject: FW: FW: Presentation Slides to Support Feb. 13, 2020 Technical Exchange (2 Topics)
Attachments: ITAAC 178 NMI LAR Enclosures format 20200130.pdf

For Vogtle Public Meeting on 2/13/20.

From: Humphrey, Mark Phillips <MPHUMPHR@southernco.com>
Sent: Monday, February 10, 2020 12:11 PM
To: Rankin, Jennivine <Jennivine.Rankin@nrc.gov>
Cc: Santos, Cayetano <Cayetano.Santos@nrc.gov>; Grant, Eddie <X2EDGRAN@SOUTHERNCO.COM>; Chamberlain, Amy Christine <ACCHAMBE@southernco.com>; Haggerty, Neil <X2NHAGGE@SOUTHERNCO.COM>
Subject: [External_Sender] FW: Presentation Slides to Support Feb. 13, 2020 Technical Exchange (2 Topics)

Hi Jennie-
Per your request, attached are enclosures for a draft 'sample' LAR that is representative of the LAR framework proposed in the presentation we provided on Feb. 6, 2020. Eddie and Amy will discuss this sample LAR draft in conjunction with their presentation on Feb. 13, 2020.

Please contact me if you have questions or if additional information is needed. We look forward to having these discussions with the Staff during Thursday morning's Technical Exchange.

Regards,

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ND-20-####

Enclosure 1

Vogtle Electric Generating Plant (VEGP) Unit 3

License Amendment Request:

Non-Material Issue ITAAC 178 – Accumulator Pressurization

(LAR-20-###)

(This Enclosure consists of 6 pages, including this cover page.)

Pursuant to 10 CFR 52.98(c) and in accordance with 10 CFR 50.90, Southern Nuclear Operating Company (SNC) hereby requests an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively. SNC requests an expedited review of this non-material issue by MONTH DD (+30-45 days), 2020, in order to allow SNC to proceed with construction and completion of the identified Inspection, Test, Analysis and Acceptance Criteria (ITAAC). Delay review of this LAR will result in delay in the completion of the VEGP units as discussed below.

1. SUMMARY DESCRIPTION

The proposed changes would revise the ITAAC for confirming the calculated flow resistance for each in-containment refueling water storage tank (IRWST) injection line between the IRWST and the reactor vessel.

The requested amendment requires a departure from the plant-specific Tier 1 (and associated COL Appendix C) information in Table 2.2.3-4 to remove the requirement that the accumulators be pressurized "with nitrogen" during the verification of the flow resistance.

This enclosure requests approval of the license amendment necessary to implement these changes as shown in Enclosure 3. The discussions of changes to the plant-specific Tier 1 information are also understood to impact the corresponding COL Appendix C information.

2. DETAILED DESCRIPTION and TECHNICAL JUSTIFICATION

The Design Commitment for ITAAC 2.2.3.8.c states "The PXS provides RCS makeup, boration, and safety injection during design basis events." The Test identified to support confirmation of the pertinent accumulators' capability is identified as "Each accumulator will be partially filled with water and pressurized with nitrogen. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves." This test is to confirm the accumulators can meet the Acceptance Criteria of "The calculated flow resistance between each accumulator and the reactor vessel is $\geq 1.47 \times 10^{-5}$ ft/gpm^2 and $\leq 1.83 \times 10^{-5}$ ft/gpm^2."

The gas used for the pressurization of the accumulators is not relevant to test. The accumulator could be pressurized with nitrogen (as identified in the ITAAC), or air, or any of several other gases, without impacting the results of the test to verify the flow resistance. As such, it is requested to remove the designation of "with nitrogen" from the test description.

[Add technical discussion of why any gas will provide the appropriate pressurization.]

Therefore, the intent of the AC continues to be met and there is no impact to the design or operation of the plant.

Basis for Expedited Review

This test is included in the critical path related activities leading to fuel load for Vogtle Unit 3. The test is currently scheduled for MONTH DD, 2020. SNC recently determined that establishing a nitrogen cover for the accumulators is an issue because…[finish this thought]

[Provide a basis why this could not have been or at least why it was not previously identified. Provide a basis why this test must occur on or near its identified schedule.]

Therefore, SNC requests expedited NRC staff approval of the license amendment to support completion of the ITAAC and final construction of VEGP Unit 3. Delayed approval of this license amendment could result in a delay in completion of the associated ITAAC and subsequent construction completion activities. SNC similarly expects to expedite implementation of this proposed amendment within a few days of approval of the requested changes.

Additionally, while the schedule information is applicable only for VEGP Unit 3, the requested change is applicable to both units and is also requested for VEGP Unit 4 concurrent with the Unit 3 change.

3. LICENSING BASIS CHANGE DESCRIPTIONS

COL Appendix C Table 2.2.3-4:

- Revise ITAAC No. 178 to remove "with nitrogen" from the description of the test in the Inspection, Tests, Analyses column.

Plant-specific Tier 1 Table 2.2.3-4:

- Revise ITAAC No. 8.c)i) to remove "with nitrogen" from the description of the test in the Inspection, Tests, Analyses column.

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52.98 requires NRC approval for any modification to, addition to, or deletion from the terms and conditions of a Combined License (COL). This activity involves a departure from COL Appendix A Technical Specifications and COL Appendix C ITAAC; therefore, this activity requires a proposed amendment to the COL.

The proposed changes have been evaluated to determine whether applicable requirements of 10 CFR, including 10 CFR 50 Appendix A General Design Criteria (GDC) continue to be met. It was determined that the proposed changes do not affect conformance with the GDC differently than described in the plant-specific DCD or UFSAR.

4.2 Significant Hazards Consideration

Southern Nuclear Operating Company (SNC) submitted License Amendment Request (LAR) 20-### to revise Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively. The proposed changes would revise the ITAAC for confirming the calculated flow resistance for each in-containment refueling water storage tank (IRWST) injection line between the IRWST and the reactor vessel. The requested amendment requires a departure from the plant-specific Tier 1 (and associated COL Appendix C) information in Table 2.2.3-4 to remove the requirement that the accumulators be pressurized "with nitrogen" during the verification of the flow resistance.

An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92(c), "Issuance of amendment," as discussed below.

4.2.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed revisions have been found to continue to provide the required functional capability of the safety systems for previously evaluated accidents and anticipated operational occurrences. The affected system is not an initiator of any accident analyzed in the Updated Final Safety Analysis Report (UFSAR), nor do the changes involve an interface with any structure, system or component (SSC) accident initiator or initiating sequence of events, and thus, the probabilities of the accidents evaluated in the UFSAR are not affected. The proposed changes do not involve a change to any mitigation sequence or the predicted radiological releases due to postulated accident conditions, thus, the consequences of the accidents evaluated in the UFSAR are not affected.

The UFSAR describes the analyses of various design basis transients and accidents to demonstrate compliance of the design with the acceptance criteria for these events. The acceptance criteria for the various events are based on meeting the relevant regulations, general design criteria, and the Standard Review Plan, and are a function of the anticipated frequency of occurrence of the event and potential radiological consequences to the public. The revised ITAAC maintains the plant conditions, and thus maintains the frequency designation and consequence level as previously evaluated.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

4.2.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed revisions have been found to continue to confirm the required functional capability of the safety systems for previously evaluated accidents and anticipated operational occurrences. The proposed revisions do not change the function of the related systems, and thus, the changes do not introduce a new failure mode, malfunction or sequence of events that could adversely affect safety or safety-related equipment.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.2.3 Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed revisions have been found to continue to provide the required functional capability of the safety systems for previously evaluated accidents and anticipated operational occurrences. The proposed revisions do not change the function of the related systems nor significantly affect the margins provided by the systems. No safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the requested changes.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed

manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. Therefore, it is concluded that the requested amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5. ENVIRONMENTAL CONSIDERATIONS

The proposed changes would revise the ITAAC as discussed above and thus, requires a departure from the plant-specific Tier 1 (and associated COL Appendix C) information.

A review has determined that the proposed changes require an amendment to the COL. However, a review of the anticipated construction and operational effects of the requested amendment has determined that the requested amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that the anticipated construction and operational effects of the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment and proposed exemption.

Southern Nuclear Operating Company

ND-19-1142

Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Exemption Request:

Non-Material Issue ITAAC 178 - Accumulator Pressurization

(LAR-20-###)

(This Enclosure consists of 6 pages, including this cover page)

1.0 Purpose

Southern Nuclear Operating Company (the Licensee) requests a permanent exemption from the provisions of 10 CFR Part 52, Appendix D, Section III.B, *Design Certification Rule for the AP1000 Design, Scope and Contents*, to allow a departure from elements of the certification information in Tier 1 of the generic AP1000 Design Control Document (DCD). The regulation, 10 CFR Part 52, Appendix D, Section III.B, requires an applicant or licensee referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in DCD Tier 1.

The Tier 1 information for which a plant-specific departure and exemption is being requested includes changes to reflect revisions for confirming the calculated flow resistance for each in-containment refueling water storage tank (IRWST) injection line between the IRWST and the reactor vessel. The requested amendment requires a departure from the plant-specific Tier 1 (and associated COL Appendix C) information in Table 2.2.3-4 to remove the requirement that the accumulators be pressurized "with nitrogen" during the verification of the flow resistance. [Note – highlighted info is the same as Enclosure 1, Section 1, Summary Description information.]

This request for exemption provides the technical and regulatory basis to demonstrate that 10 CFR 52.63, §52.7, and §50.12 requirements are met and will apply the requirements of 10 CFR Part 52, Appendix D, Section VIII.A.4 to allow departures from generic Tier 1 information due to proposed change to the Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC).

2.0 Background

The Licensee is the holder of Combined License Nos. NPF-91 and NPF-92, which authorize construction and operation of two Westinghouse Electric Company AP1000 nuclear plants, named Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively.

3.0 Technical Justification of Acceptability

The Design Commitment for ITAAC 2.2.3.8.c states "The PXS provides RCS makeup, boration, and safety injection during design basis events." The Test identified to support confirmation of the pertinent accumulators' capability is identified as "Each accumulator will be partially filled with water and pressurized with nitrogen. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves." This test is to confirm the accumulators can meet the Acceptance Criteria of "The calculated flow resistance between each accumulator and the reactor vessel is $\geq$ 1.47 x 10^{-5} ft/gpm^2 and $\leq$ 1.83 x 10^{-5} ft/gpm^2."

The gas used for the pressurization of the accumulators is not relevant to test. The accumulator could be pressurized with nitrogen (as identified in the ITAAC), or air, or any of several other gases, without impacting the results of the test to verify the flow resistance. As such, it is requested to remove the designation of "with nitrogen" from the test description. [Note – highlighted info is the same as first two paragraphs of Enclosure 1, Section 2, Detailed Description and Technical Justification information.]

Additional details and technical justification supporting this request for exemption are provided in the associated License Amendment Request in Enclosure 1 of this letter.

4.0 Justification of Exemption

10 CFR Part 52, Appendix D, Section VIII.A.4 and 10 CFR 52.63(b)(1) govern the issuance of exemptions from elements of the certified design information for AP1000 nuclear power plants. Since SNC has identified changes to the Tier 1 information as discussed in Enclosure 1 of the accompanying License Amendment Request, an exemption from the certified design information in Tier 1 is needed.

10 CFR Part 52, Appendix D, and 10 CFR 50.12, §52.7, and §52.63 state that the NRC may grant exemptions from the requirements of the regulations provided six conditions are met: 1) the exemption is authorized by law [§50.12(a)(1)]; 2) the exemption will not present an undue risk to the health and safety of the public [§50.12(a)(1)]; 3) the exemption is consistent with the common defense and security [§50.12(a)(1)]; 4) special circumstances are present [§50.12(a)(2)]; 5) the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption [§52.63(b)(1)]; and 6) the design change will not result in a significant decrease in the level of safety [Part 52, App. D, VIII.A.4].

The requested exemption satisfies the criteria for granting specific exemptions, as described below.

1. This exemption is authorized by law

The NRC has authority under 10 CFR 52.63, §52.7, and §50.12 to grant exemptions from the requirements of NRC regulations. Specifically, 10 CFR 50.12 and §52.7 state that the NRC may grant exemptions from the requirements of 10 CFR Part 52 upon a proper showing. No law exists that would preclude the changes covered by this exemption request. Additionally, granting of the proposed exemption does not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

Accordingly, this requested exemption is "authorized by law," as required by 10 CFR 50.12(a)(1).

2. This exemption will not present an undue risk to the health and safety of the public

The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 information to depart from the AP1000 certified (Tier 1) design information. The plant-specific Tier 1 information will continue to reflect the approved licensing basis for VEGP Units 3 and 4 and will maintain a consistent level of detail with that which is currently provided elsewhere in the Tier 1 information. Therefore, the affected plant-specific Tier 1 ITAAC will continue to serve its required purpose.

The proposed changes do not represent any adverse impact to the design function of the systems, structures and components (SSCs) and the SSCs will continue to protect the health and safety of the public in the same manner. The changes do not introduce any new industrial, chemical, or radiological hazards that would represent a public health or safety risk, nor do they modify or remove any design or operational controls or safeguards intended to mitigate any existing on-site hazards. Furthermore, the proposed change would not allow for a new fission product release path, result in a new fission product barrier failure mode, or create a new sequence of events that would result in fuel cladding

failures. Accordingly, this change does not present an undue risk from any existing or proposed equipment or systems.

Therefore, the requested exemption from 10 CFR 52, Appendix D, Section III.B would not present an undue risk to the health and safety of the public.

3. The exemption is consistent with the common defense and security

The requested exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow the licensee to depart from elements of the plant-specific Tier 1 design information. The proposed exemption does not alter the design, function, or operation of any structures or plant equipment that is necessary to maintain a safe and secure status of the plant. The proposed exemption has no impact on plant security or safeguards procedures.

Therefore, the requested exemption is consistent with the common defense and security.

4. Special circumstances are present

10 CFR 50.12(a)(2) lists six "special circumstances" for which an exemption may be granted. Pursuant to the regulation, it is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. The requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(ii). That subsection defines special circumstances as when "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

The rule under consideration in this request for exemption is 10 CFR Part 52, Appendix D, Section III.B, which requires that a licensee referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The VEGP Units 3 and 4 COLs reference the AP1000 Design Certification Rule and incorporate by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D.

The changes continue to show compliance with the requirements in 10 CFR 50.46. The proposed changes do not significantly affect any function or feature used for the prevention or mitigation of accidents or their safety analyses. The proposed changes neither involve nor interface with any SSC accident initiator or initiating sequence of events related to the accidents evaluated, and therefore, do not have an adverse effect on any SSC's design function. Accordingly, this exemption from the certification information will enable the Licensee to safely construct and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR 52, Appendix D.

Therefore, special circumstances are present, because application of the current generic certified design information in Tier 1 as required by 10 CFR Part 52, Appendix D, Section III.B, in the particular circumstances discussed in this request is not necessary to achieve the underlying purpose of the rule.

5. The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

Based on the nature of the changes to the plant-specific Tier 1 information and the understanding that these changes have been determined to not significantly impact the design function of the related SSCs, it is expected that this exemption may be requested by other AP1000 licensees and applicants. However, a review of the reduction in standardization resulting from the departure from the standard DCD determined that even if other AP1000 licensees and applicants do not request this same departure, the special circumstances will continue to outweigh any decrease in safety from the reduction in standardization because the key design functions of the structures associated with this request will continue to be maintained. Furthermore, the justification provided in the license amendment request and this exemption request and the associated mark-ups demonstrate that there is a limited change from the standard information provided in the generic AP1000 DCD, which is offset by the special circumstances identified above.

Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

6. The design change will not result in a significant decrease in the level of safety.

The exemption impacts to the plant-specific Tier 1 information have been evaluated to continue to demonstrate compliance with the requirements in 10 CFR 50.46, and thus do not impact the design requirements of the related SSCs. Because the SSC functions continue to be met, there is no reduction in the level of safety.

5.0 Risk Assessment

A risk assessment was not determined to be applicable to address the acceptability of this proposal.

6.0 Environmental Consideration

The Licensee requests a departure from elements of the certified information in Tier 1 of the generic AP1000 DCD. The Licensee has determined that the proposed departure would require a permanent exemption from the requirements of 10 CFR Part 52, Appendix D, Section III.B, *Design Certification Rule for the AP1000 Design, Scope and Contents,* with respect to installation or use of facility components located within the restricted area, as defined in 10 CFR Part 20, or which changes an inspection or a surveillance requirement; however, the Licensee evaluation of the proposed exemption has determined that the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

Based on the above review of the proposed exemption, the Licensee has determined that the proposed activity does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed exemption is not required.

Specific details of the environmental considerations supporting this request for exemption are provided in Section 5 of the associated License Amendment Request provided in Enclosure 1 of this letter.

7.0 Conclusion

The proposed changes to Tier 1 have been evaluated to continue to show compliance with the requirements in 10 CFR 50.46. The exemption request meets the requirements of 10 CFR 52.63, *Finality of design certifications*, 10 CFR 52.7, *Specific exemptions*, 10 CFR 50.12, *Specific exemptions*, and 10 CFR 52 Appendix D, *Design Certification Rule for the AP1000*. Specifically, the exemption request meets the criteria of 10 CFR 50.12(a)(1) in that the request is authorized by law, presents no undue risk to public health and safety, and is consistent with the common defense and security. Furthermore, approval of this request does not result in a significant decrease in the level of safety, satisfies the underlying purpose of the AP1000 Design Certification Rule, and does not present a significant decrease in safety as a result of a reduction in standardization.

Southern Nuclear Operating Company

ND-20-####

Enclosure 3

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to Licensing Basis Documents

(LAR-20-###)

Additions identified by blue underlined text.
~~Deletions Identified by red strikethrough of text.~~
* * * indicates omitted existing text that is not shown.

(This Enclosure consists of 2 pages, including this cover page)

COL Appendix C Table 2.2.3-4 is revised as follows:

Table 2.2.3-4
Inspections, Tests, Analyses, and Acceptance Criteria

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
* * *				
178	2.2.03.08c.i.02	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	i) * * * 2. Accumulators: Each accumulator will be partially filled with water and pressurized ~~with nitrogen~~. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves.	i) * * * 2. Accumulators: The calculated flow resistance between each accumulator and the reactor vessel is ≥ 1.47 x 10-5 ft/gpm2 and ≤ 1.83 x 10-5 ft/gpm2.
* * *				

Plant-Specific Tier 1 Table 2.2.3-4 is revised as follows:

Table 2.2.3-4
Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
* * *		
8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	i) * * * 2. Accumulators: Each accumulator will be partially filled with water and pressurized ~~with nitrogen~~. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves.	i) * * * 2. Accumulators: The calculated flow resistance between each accumulator and the reactor vessel is ≥ 1.47 x 10-5 ft/gpm2 and ≤ 1.83 x 10-5 ft/gpm2.
* * *		