From:	Sebrosky, Joseph
Sent:	Monday, November 16, 2020 1:07 PM
To:	Afzali, Amir
Cc:	Cubbage, Amy; Segala, John; Lauron, Carolyn; Jim C. Kinsey Jr; Khan, Maryam; Jung, Ian; Reckley, William; Oesterle, Eric; Uribe, Juan; Van Wert, Christopher; Wayne L. Moe; Thomas Hicks; Christopher P. Chwasz; NICHOL, Marcus; AUSTGEN, Kati; Munson, Clifford; Thompson, Jenise; Manoly, Kamal; Hayes, Barbara; Cyril Draffin
Subject:	Info: Supporting Information for December 10, 2020, TICAP and ARCAP Stakeholder Meeting Related to Level of Detail Discussion
Attachments:	Level of Detail for Application Content SR SSCs.docx

To: Amir Afzali
Southern Company Services
Licensing and Policy Director – Next Generation Reactors

Mr. Afzali,

The purpose of this email is to provide you with information related to level of detail in an application that uses the licensing modernization project (LMP) process. A discussion regarding the level of detail in an application is part of the agenda for the December 10, 2020, Technology Inclusive Content of Application Project (TICAP) and Advanced Reactor Content of Application Project (ARCAP) public stakeholder meeting. The notice for this meeting can be found at: https://www.nrc.gov/pmns/mtg?do=details&Code=20201305.

The attached document will support an NRC staff presentation during the December 10, 2020, regarding considerations for the expected level of detail in an application that uses the LMP process for a combined license in accordance with 10 CFR Part 52 or an operating license in accordance with 10 CFR Part 50. The attached two page documents provides background for the NRC staff's presentation. The information is being provided before the meeting to allow time for your review prior to the meeting. The NRC staff is targeting providing its slides for the meeting on or around December 4, 2020. As you know the meeting notice includes links to other supporting information that will be discussed during the meeting.
We look forward to discussing the attached document, as well as the other documents that are referenced in the meeting notice, during the upcoming public meeting. In the interim, please let me know if you have any questions.

Sincerely,

Joe Sebrosky
Senior Project Manager
Advanced Reactor Policy Branch
Office of Nuclear Reactor Regulation
301-415-1132

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From: Sebrosky, Joseph

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Level of Detail for Application Content SR SSCs.docx	30984	

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

Topics for Consideration Regarding Level of Detail for Combined License or Operating License Application Content

Application Content Related to Safety-Related SSCs

1. Description of Required Functional Design Criteria (RFDC)
    a. RFDCs and lower-level design criteria should be defined to capture design-specific criteria that may supplement or may not be captured by the principal design criteria (PDC) for a reactor design developed using the guidance in RG 1.232. These criteria are used within the methodology to frame specific design requirements as well as special treatment requirements for SR SSCs.

2. Description of Design Requirements and Relationship to PDCs
    a. Design Requirements: Describe the required safety functions (RSFs) used to define a set of reactor-specific required functional design criteria (RFDC) from which safety-related design criteria (SRDC) are derived. Describe the derivation of SSC performance, special treatment requirements, and SRDC. If a SR SSC serves as a physical or functional barrier to the transport of radionuclides and indirect functions in which performance of an SSC function serves to protect one or more other SSCs that may be classified as barriers then the barrier design requirements should be described.

    b. Principal Design Criteria (PDC): As required by 10 CFR 50.34(a) and 52.47, and described in Regulatory Guide 1.232, *Guidance for Developing Principal Design Criteria for Non-Light-Water Reactors*, a construction permit, design certification, combined license, standard design approval, or manufacturing license must include the principal design criteria (PDC) for the facility. These PDCs should be described in the application. This section should describe how of each of the SR SSCs meets the applicable PDC.

3. Description of Design features
    a. Describe the specific design features that are responsible for meeting the SRDC. This description should include features that demonstrate system capability and reliability for both prevention and mitigation of LBEs, as applicable. This description should include:
        i. Simplified schematic figures and/or functional arrangement drawings
        ii. Narrative design descriptions that address the most safety-significant aspects of each of the systems of the design including:
            a) the system purpose,
            b) significant performance characteristics and safety functions
            c) system location,
            d) key design features,
            e) seismic and ASME code classifications and the codes applicable to the SR SSC,
            f) description of system operation including a description of the important performance modes of operation of the system,
            g) major controls and displays,
            h) logic circuits and interlocks,
            i) Class 1E power sources and divisions,
            j) equipment to be qualified for harsh environments (and other than harsh for certain I&C equipment), and

k) interface requirements for systems that are outside the scope of the design, if applicable.

4. Description of External Hazard Levels
    a. Describe how the SR SSCs that are credited in the fulfillment of RSFs are capable to perform their RSFs with a high degree of confidence in response to any Design Basis External Hazard Levels (DBEHLs).

5. Description of Reliability and Capability Performance Requirements
    a. Describe SR SSC reliability targets and performance requirements used as input to the PRA for SSCs that were used to develop the selection of special treatment requirements (i.e., programmatic actions used to maintain performance within the design reliability targets). This description should include:
        i. numerical targets for SSC reliability and availability,
        ii. design margins for performance of the RSFs, and
        iii. requirements for monitoring of performance against these targets with appropriate corrective actions when targets are not fully realized.
    b. Describe the performance of testing and validation of SSC performance capability. Describe, as applicable, the special treatment requirements from NEI 18-04, Table 4-1, on a case-by-case basis and in the context of the SSC functions in the prevention and mitigation of applicable LBEs. Describe special treatments including the following, as applicable:
        i. Equipment qualification
        ii. Seismic qualification
        iii. Materials qualification
        iv. Pre-service and risk-informed in-service inspections
        v. Pre-op and startup testing requirements
        vi. Surveillance testing requirements including test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met (i.e., demonstrate the ability to perform the safety function).
    c. Operability/Availability Requirements
        i. Provide a basis for developing operability/availability controls including allowable outage times and surveillance testing intervals that will be included in technical specifications.
        ii. (If not provide elsewhere) Provide proposed technical specifications for each SR SSC.

6. Description of Required Supporting Functions
    a. Describe important system interdependencies, including failure modes and effects of nonsafety-related SSCs (e.g., support systems) that could directly affect safety-related functions including the following as applicable:
        i. Instrumentation for control and monitoring
        ii. Structural
        iii. Power