

PMLevyCOLPEm Resource

From: Habib, Donald
Sent: Tuesday, November 10, 2015 3:59 PM
To: Kitchen, Robert (Robert.Kitchen@duke-energy.com); Jennifer Meneely (meneelje@westinghouse.com)
Subject: Staff Questions Related to Levy 9-1-15 Departure/Exemption Request on IEEE 603 Compliance

Bob and Jen –

Following are staff questions for this Thursday's public meeting.

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- General-1. Walk us through the five proposed changes in the "Summary Description" and describe how those changes are reflected in the proposed Figure 7.2-1. Recommend having an I&C SME do this.
- SRSB-1. Walk us through the new logic and explain how it does or does not impact the 15.4.6 analysis for boron dilution. Should P-8 be added to the discussion in 15.3.6.2.5?
- ICE-1. Clarify whether the "reset" function in Item 3 on Page 2 of 13 is automatic or not. If yes, where is the condition (CVS valves 136A and 136B are opened) implemented in the revised logic Figure 7.2-1 (Sheet 3 of 21)?
- ICE-2. Figure 7.2-1 (Sheet 3 of 21) shows that there are separate momentary controls for each applicable division for the "FLUX DOUBLING BLOCK CONTROL"; clarify whether the 2 out of 4 voting logic should be used before sending the actuation signal to the new "CLOSE DWS ISOLATION VALVES"?
- ICE-3. There are two "CLOSE DWS ISOLATION VALVES" functional blocks (one is existing, the other is new) shown on the diagram. Clarify the differences between these two functional blocks. The new Note 5 says that the new "CLOSE DWS ISOLATION VALVES" functional block is not part of the ESF actuation function. Clarify what function it is.
- SBPB-1. (Draft RAI)
10 CFR 50.36, "Technical Specifications;" and 10 CFR 52.97, "Issuance of Combined Licenses;" and Section VIII.B.5.a of Appendix D, "Design Certification of AP1000 Design," provide the regulatory basis for the following questions. 10 CFR 50.36 sets forth requirements for technical specifications to be included as part of the operating license for a nuclear power facility. Subsection 52.97(a)(1) applies because the Commission must have sufficient information to find that applicable NRC regulations have been met. Section VIII.B.5.a of Appendix D to 10 CFR Part 52 applies as it relates to controls of changes to the generic technical specifications.

NUREG-1431, "Standard Technical Specifications Westinghouse Plants," provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements.

In its letter dated September 1, 2015, Duke Energy proposed a change to the design of the instrumentation for the Boron Dilution Block Function of the Protection and Monitoring System (PMS) to address a non-conformance to IEEE 603 – 1991 which is an industry standard incorporated by reference in 10 CFR Subsection 50.55a(h). The proposed PMS design change includes adding a new permissive, P-8, to permit blocking of the Source Range Neutron Flux Doubling logic during reactor startup. P-8 is set to 551°F which is the minimum temperature for criticality of the reactor core..

As part of this design change, the applicant proposed to revise TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation" and its associated Bases. The staff needs clarification of the following proposed changes:

1. In TS Subsection 3.3.2, Table 3.3.2-1 (page 10 of 13), the applicant proposed a new input to Function 18, "ESFAS Interlocks," as follows:

18.d. Reactor Coolant Average Temperature, P-8 which is applicable to Modes 2, 3, 4 and 5, and requires 4 operable channels. Condition J which is for "one or two interlock channels inoperable" is listed as applicable to this new input.

The staff noted that the required actions and their completion times specified for Condition J are constructed for a typical instrumentation input with 4 channels on a 2-out-of-4 logic. The staff could not identify which logic is used (e.g., 1-out-of-4 or 2-out-of-4) to provide actuation in the design change description in DCD Chapter 7 (Figure 7.2-1 Sheet 3 of 21), and therefore could not determine if Condition J is the correct assignment for the new P-8 interlock.

The applicant is requested to provide the missing details in DCD Chapter 7, and revise the TS Subsection 3.3.2 and its Bases accordingly.

2. In TS Bases B 3.3.2 (page B 3.3.2-37), the applicant proposed to revise the description for Function 15, "Boron Dilution Block" as follows (added texts shown in bold face):

"The block of boron dilution is accomplished by closing the CVS **makeup line isolation** ~~suction~~ valves **or closing the CVS to demineralized water system isolation storage tanks valves,** and aligning the boric acid tank to the CVS makeup pumps. This Function is actuated by Source Range Neutron Flux Doubling and Reactor Trip."

The discussion for the Reactor Trip (RT) P-4 input is also revised, in part, as follows:

"Demineralized Water Makeup is also isolated (**CVS demineralized water system isolation valves closed and the boric acid tank aligned to the CVS makeup pumps**) by all the Functions that initiate a Reactor Trip."

The staff noted that the above changes to the TS Bases do not reflect the proposed PMS design change. The applicant is requested to update these Bases changes.

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