KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Thursday, July 23, 2015 9:01 AM
To: apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Harry (Hyun Seung) Chang; Yunho Kim; Steven Mannon
Cc: Tjader, Theodore; Dias, Antonio; Umana, Jessica; Ward, William; Lee, Samuel
Subject: APR1400 Design Certification Application RAI 106-8069 (16 - Technical Specifications)
Attachments: APR1400 DC RAI 106 SPSB 8069.pdf; image001.jpg

KHNP

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs. However, KHNP requests, and we grant, the following days to respond to the RAI's questions. We may adjust the schedule accordingly.

16-16: 30 days
16-17: 30 days
16-18: 30 days
16-19: 30 days
16-20: 30 days
16-21: 30 days
16-22: 45 days

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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Protecting People and the Environment

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REQUEST FOR ADDITIONAL INFORMATION 106-8069

Issue Date: 07/23/2015
Application Title: APR1400 Design Certification Review – 52-046
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.
Docket No. 52-046
Review Section: 16 - Technical Specifications
Application Section:

QUESTIONS

16-16

Paragraph (a)(11) of 10 CFR 52.47 and paragraph (a)(30) of 10 CFR 52.79 states that a design certification (DC) applicant and a combined license (COL) applicant, respectively, are to propose TS prepared in accordance with 10 CFR 50.36 and 50.36a. 10 CFR 50.36 sets forth requirements for technical specifications to be included as part of the operating license for a nuclear power facility.

NUREG-1432, “Standard Technical Specifications-Combustion Engineering Plants,” Rev. 4, provides NRC guidance on format and content of technical specifications as one acceptable means to meet 10 CFR 50.36 requirements.

SRP Section 16.0, Part III.2.A states, in part, “when reviewing a difference between the proposed TS provision and the reference TS provision, verify that the applicant’s written technical or administrative reasoning in support of the difference is logical, complete, and clearly written."

STS 3.5.1 Condition A has two condition statements, “One SIT [Safety Injection Tank] inoperable due to boron concentration not within limits. OR One SIT inoperable due to the inability to verify level or pressure.” Required Action A.1, “Restore SIT to OPERABLE status” with a 72 hour Completion Time applies to both condition statements independently because of the logical connector. Proposed generic TS 3.5.1 places the second condition statement into a new separate Condition B and retains STS Required Action A.1 as Required Action B.1. The first condition statement remains in Condition A; however, Required Action A.1 is changed to say “Restore boron concentration to within limits.” Both required actions retain the same 72 hour Completion Time.

When in either condition statement, the SIT is considered inoperable; therefore the two presentations do not alter the operating constraints specified for when one SIT is inoperable for the stated conditions. Therefore, splitting the STS Condition A into two Conditions is not necessary. Since the proposed presentation is not consistent with either the STS or other APR1400 Specifications, such as generic TS 3.5.4 Condition A, it is contrary to the Commission policy on TS standardization, not to mention achieving internal consistency within the generic TS.

The applicant is requested to either justify this deviation from STS 3.5.1, or conform to the STS presentation.

16-17

The Frequency for generic TS SR 3.5.1.4 for when borated water has been added to a SIT states, “Whenever a SIT volume change not from the IRWST exceeds the limits of SR 3.5.1.2, immediately after a boron concentration measurement is ready.” The wording in the STS for the same SR is “Once within 6 hours after each solution volume increase of ≥ [1%] of tank volume that is not the result of addition from the refueling tank.”

The proposed generic TS SR Frequency phrasing is very confusing and needs to be rewritten. The applicant is requested to justify not using the STS wording and revise the proposed Frequency for clarity.

16-18

Condition A of proposed generic TS 3.5.2, “Safety Injection System (SIS) – Operating,” has two condition statements, which should be written as “One train inoperable OR Two trains inoperable and diagonally oriented with respect to reactor vessel.” Required Action A.1, “Restore train to OPERABLE status” with a 72 hour Completion Time apparently intended to apply to both condition statements independently because of the logical connector.

However, Required Action A.1 needs to be rewritten, because when in the second condition statement both inoperable trains need to be restored to operable status within the 72 hour Completion Time. The applicant is requested to propose new wording for Required Action A.1.

16-19

Proposed generic TS SR 3.5.2.1 includes a table listing four valves with all having the same position of “CLOSED” and the same function of “Hot Leg Injection.” Therefore, the table is not needed and only the valve numbers need be listed with the same requirement to be “locked in the closed position.”

Justify the table or revise SR 3.5.2.1 to state something similar to: "Verify the following hot leg injection valves are locked in the closed position: SI-321, SI-331, SI-604, and SI-609."

16-20

Proposed generic TS 3.5.3 Condition B states “Required Action and associated Completion Time of Condition A not met.” Required Action B.1.1 is to “Verify RCS level >39.7 m (130 ft 0 in),” which is unnecessary because Required Action B.1.2 is to ‘Initiate actions to restore “RCS level > 39.7 m (130 ft 0 in),” and the TS Applicability is “… MODE 6 with RCS level < 39.7 m (130 ft 0 in).”

The applicant is requested to justify the need for Required Action B.1.1, or remove it and renumber Required Action B.1.2 as B.1.

16-21

Proposed generic TS 3.5.3 Required Action B.2 is to “Reduce RCS cold leg temperature to < 57.2 °C (135 °F)” within 24 hours. Required Action B.2 and the associated Completion Time are not adequately justified or explained in the Bases or elsewhere.

Justify and explain in Bases TS 3.5.3 Required Action B.2 and the associated 24 hour Completion Time. Staff notes that in the Bases for ACTION B, the last sentence says “The 24-hour Completion Time

limits the time the plant is subject to conditions where the LCO is applicable." This statement makes no sense because the TS Applicability is MODE 6 which has no lower temperature range limit in its definition.

16-22

Proposed wording referring to IRWST water temperature and water volume uses "borated water temperature," and "borated water volume" in generic TS 3.5.4 (Conditions A and B; SR 3.5.4.1 and SR 3.5.4.2; and associated Bases). Since there is a Condition addressing boron concentration, the need to use the adjective "borated" prior to the word water is questioned.

Justify using the term "borated" before "water temperature," and "water volume" or revise the wording appropriately.


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