

KHNPDCDRAIsPEm Resource

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Sent: Tuesday, November 03, 2015 6:30 AM
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Cc: Le, Hien; Dias, Antonio; Umana, Jessica; Ward, William; Lee, Samuel
Subject: APR1400 Design Certification Application RAI 289-8215 (16 - Technical Specifications)
Attachments: APR1400 DC RAI 289 SPSB 8215.pdf

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, 45 days to respond to this RAI. We may adjust the schedule accordingly.

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

Thank you,

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REQUEST FOR ADDITIONAL INFORMATION 289-8215

Issue Date: 11/03/2015

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: TS Sections 3.4 and 3.7

QUESTIONS

16-108

10 CFR 50.36, "Technical Specifications" and 10 CFR 52.47(a)(11) provides 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 52.47(a)(11) requires that technical specifications be provided in the application for a design certification.

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

SRP 16, 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."

1. On Page B 3.4.10-1, in the "Background" section of the TS Bases, the first paragraph states, in part, "Pressurizer POSRVs are designed to provide overpressure protection function and rapid depressurization function for reactor coolant system (RCS)." The applicant is requested to provide clarification on how the design feature for rapid depressurization is used to support the plant response to postulated design basis events described in DCD Chapter 15, or a reference to the applicable DCD section where this design feature is described and/or used.
2. In the TS Bases for LCO 3.4.11, discussions of design requirements for both the SCS suction line relief valves and the RCS vent opening in the "Background" and "Applicable Safety Analyses" sections are not provided similar to the equivalent STS Bases for LCO 3.4.10. The applicant is requested to provide these supporting information to be consistent with guidance in the STS.
3. On Page B 3.4.11-1, in the "Background" section of the TS Bases, the third paragraph states, in part, "The open RCS vent or the SCS suction line relief valves are the overpressure protection devices which provide backup to the operator in terminating increasing pressure events." The staff could not find the role of an operator in terminating increasing pressure events described in DCD Chapter 5. The applicant is requested to provide clarification on the above statement.
4. On Page B 3.4.11-1, in the "Applicable Safety Analyses" section of the TS Bases, the first paragraph states, in part, "Safety analyses (Reference 3) demonstrate that the reactor vessel is adequately protected against exceeding the P/T limits during shutdown." DCD Chapter 15 is listed as Reference 3. The staff could not identify any design basis events described in DCD Chapter 15 where low temperature overpressure protection is needed. The applicant is requested to revise the TS Bases to reference the applicable DCD section.
5. On Page B 3.4.11-2, in the "Applicability" section of the TS Bases, the first paragraph states, in part, "This LCO is applicable in MODE 4 with the temperature of any RCS cold leg less than or equal to the LTOP enable temperature specified in the PTLR during heatup, in MODE 5, and in MODE 6 with the reactor vessel head on." The applicant is requested to replace the term "heatup" with "cooldown" to reflect the actual plant evolution described in DCD Chapter 5.
6. On Page B 3.4.11-2, in the Bases discussion of Actions A.1 and B.1, the applicant states "With one SCS suction line relief valve inoperable, overpressure relieving capability is reduced. The other SCS suction line relief valve remains OPERABLE or the RCS must be depressurized through an open vent. Either of these paths provides adequate overpressure protection. However, redundancy has been lost." Action A.1 or Action B.1 specifically states "Restore required SCS suction line relief valve to OPERABLE status." The option to have "RCS depressurized through an open vent" is not a part of the Action requirements. The applicant is requested to revise the TS Base to be consistent with the specified TS requirements.
7. In TS 3.4.16, Condition B states "Two required RCGV paths from the same location inoperable," and Action B.1 states "Restore one RCGV path to OPERABLE status" within 6 hours. Condition B appears to indicate a potential loss of function for the RCGV system, and a completion time (CT) of 1 hours should be applied. The applicant is requested to provide a justification for the proposed CT of 6 hours.
8. SR 3.4.16.3 states "Verify the locally operated manual isolation valve from the reactor vessel closure head and the locally operated manual isolation valve from the pressurizer are locked in the open position" with Frequency of 18 months. The position of manual valves that are shown as "locked open (LO)" in the system P&I diagram are not normally controlled under a TS provision. However, an SR is required for verification that all of system valves are in their correct positions with Frequency of 31 days, except valves that are locked or otherwise secured in the required positions that support a design basis event. The applicant is requested to revise SR 3.4.16.3 to be consistent with guidance in the STS.
9. In TS 3.7.4, Condition A states "One required MSADV line inoperable." In the APR1400 design, there are total of two MSADV lines available to support the applicable plant Modes 1 through 4. The applicant is requested to revise Condition A to state "One MSADV line inoperable" to be consistent with guidance in the STS.

REQUEST FOR ADDITIONAL INFORMATION 289-8215

10. In TS 3.7.4, Condition B states “Two or more MSADV lines inoperable,” and Action B.1 states “Restore all but one MSADV line to OPERABLE status.” In the APR1400 design, there are total of two MSADV lines available to support the applicable plant Modes 1 through 4. The applicant is requested to revise Condition B to state “Two MSADV lines inoperable” and Action B.1 to state “Restore one MSADV line to OPERABLE status” to be consistent with guidance in the STS.
11. In TS 3.7.12, “Auxiliary Building Controlled Area Emergency Exhaust System,” a Condition for the mechanical penetration room and safety-related mechanical equipment room boundary inoperable similar to Condition B of the STS 3.7.13, ECCS Pump Room Exhaust Air Cleanup System,” is not provided. The applicant is requested to address this TS requirement omission in the APR1400 TS.



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