RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.:	**83-7962**
SRP Section:	**14.03.04 - Reactor Systems - ITAAC**
Application Section:	**DCD 14.3.2.4**
Date of RAI Issue:	**07/16/2015**

Question No. 14.03.04-1

REQUIREMENT

NRC RG 1.206, SRP 14.3, SRP 14.3.4

ISSUE

In the FSAR Tier 2 Section 14.3.2.4, the applicant states "Section 2.4 of Tier 1 includes reactor systems, fuel, control rods, loose parts monitoring system, and core cooling systems in accordance with the guidance in NRC RG 1.206 (Reference 1), SRP 14.3 (Reference 2), SRP 14.3.4 (Reference 6) and the ITAAC for reactor systems that have been developed to verify the following..."

Contrary to the above, Tier 1 Section 2.4 of the DCD was reviewed by the staff and found to not have any information regarding fuel or loose parts monitoring systems, and very little information regarding control rods.

INFORMATION NEEDED

The staff needs the applicant to ensure the Tier 2 information is correct and update the Tier 1 sections of the DCD as necessary. The guidance referred to by the applicant in Tier 2 (e.g. RG 1.206, SRP 14.3, and SRP 14.3.4) is acceptable.

The staff also requests that the applicant, in general, verify consistency between Tier 1 and Tier 2 information and make any necessary corrections before submission of the next DCD revision.

Response

The APR1400 ITAAC for reactor system includes the RCS, In-containment Water Storage System, SIS, SCS, RCGVS, CVCS and leak detection system. The fuel, control rods, and loose part monitoring system are not included and are not required to be included as ITAAC items.

As for the fuel and control rods, SRP Section 14.3.4 states that no ITAAC are required for Tier 1 information in the fuel, control rod, and core design areas because the design for those areas is reviewed and approved prior to issuance of the plant design certification and any proposed changes to that approved design must also be approved by the NRC. The loose part monitoring system is designed as a non-safety system and does not perform any safety function, only monitoring. Therefore, the system does not require any ITAAC.

To resolve the discrepancy between DCD Tier 2 Section 14.3.2.4 and DCD Tier 1 Section 2.4, Section 14.3.2.4 will be revised to delete the reference to systems that are not included in Tier 1 and add those systems that do have ITAAC. KHNP will verify consistency between Tier 1 and Tier 2 Section 14 information and make any necessary corrections in the submission of the next DCD revision.

Impact on DCD

DCD Section 14.3.2.4 will be revised as indicated in the attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specification.

Impact on Technical/Topical/Environmental Report

There is no impact on any Technical, Topical, or Environment Reports.

f. In-situ testing and functional design and qualification records that installed pumps, valves, and dynamic restraints have the capability to perform their intended functions under expected ranges of fluid flow, differential pressure, electrical conditions, and temperature conditions up to and including design basis conditions

g. An LBB evaluation report that demonstrates that the as-built piping and piping materials comply with the LBB acceptance criteria

These as-built ITAAC are covered in each system ITAAC such as Sections 2.4, 2.6, 2.7, and 2.11 of Tier 1.

A "design ITAAC" is applied to ASME Class 1 piping systems and components design for APR1400. The COL applicant is to provide a design ITAAC closure schedule for completing the design ITACC (COL 14.3(4)). The piping design ITAAC will be closed in accordance with the guidance in NRC RG 1.215 (Reference 31) and Section 8.3.1 of NEI 08-01(Reference 32), "Closure through the COLA Review Process", as described in Subsection 14.3.5.

14.3.2.4 ITAAC for Reactor Systems

RCS, In-containment Water Storage System, SIS, SCS, RCGVS, CVCS and leak detection system

Section 2.4 of Tier 1 includes ~~reactor systems, fuel, control rods, loose parts monitoring system, and core cooling systems~~ in accordance with the guidance in NRC RG 1.206 (Reference 1), SRP 14.3 (Reference 2), SRP 14.3.4 (Reference 6), and the ITAAC for reactor systems that have been developed to verify the following:

a. Important input parameters used in the transient and accident analyses for the facility design

b. Net positive suction head for key pumps

c. Design pressures of the piping systems that interface with the reactor coolant boundary to validate intersystem LOCA analyses

d. The following top-level design aspects of the reactor systems: