
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.: 372-8461
SRP Section: 03.06.01 – Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment.
Application Section: 3.6.1
Date of RAI Issue: 01/22/2016

Question No. 03.06.01-1

On August 26, 2015, KHNP submitted its response to RAI 78-8021, Question 14.03.03-2 (ML 15238B430). The applicant provided proposed changes to DCD Tier 2 in Table 3.6-1 to be consistent with Tier 1. The staff evaluated the proposed changes and determined the proposed changes will eliminate inconsistencies in Tier 1 and Tier 2 sections. Therefore, the changes are acceptable.

However, the staff identified that additional information is required. The applicant has created individual ITAACs for each high and moderate energy system to reconcile the pipe rupture hazards analyses report with the as-built layout of the plant. The staff has identified two system from DCD Tier 1, Table 2.3-3 that do not have a corresponding ITAAC requiring the reconciliation of the pipe rupture hazards analyses report.

The staff requests the applicant to create an ITAAC verifying the pipe rupture hazards analyses for the Auxiliary Steam System and the Compress Air System.

Response

ITAAC Items will be added for the Auxiliary Steam System and the Compressed Air System to reconcile the pipe rupture hazard analyses report with the as-built layout of the plant.

Impact on DCD

DCD Tier 1, Subsection 2.7.1.9 and 2.7.5.1 will be revised and Tables 2.7.1.9-1 and 2.7.5.1-1 will be added as shown in the Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

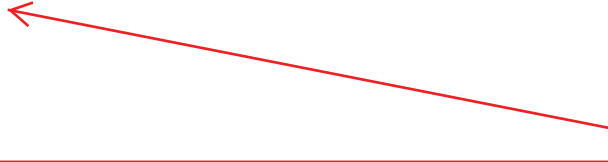
There is no impact on Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environmental Report.

APR1400 DCD TIER 1**2.7.1.9 Auxiliary Steam System**

~~No entry for this system.~~

**2.7.1.9.1 Design Description**

The auxiliary steam system (ASS) is a non safety-related system, with the exception of containment isolation valves (CIVs) and the piping between the CIVs that are safety-related, ASME Section III Class 2 and Seismic Category I as described in Subsection 2.11.3.

The ASS performs the containment isolation function for the ASS line penetrating the containment.

The ASS supplies auxiliary steam to all usage points through an auxiliary steam header interconnecting the main steam system and the auxiliary boiler.

To meet functional requirements, the ASS is designed as follows:

1. The ASS high-energy piping system is reconciled with pipe rupture hazards analyses report to ensure that the safety-related SSCs are protected against or are qualified to withstand the environmental effects associated with postulate failures of these piping systems.

2.7.1.9.2 Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.7.1.9-1 specifies the inspections, tests, analyses, and associated acceptance criteria for the ASS.

The ITAAC related to the CIVs and the piping between the CIVs of the ASS are described in Table 2.11.3-2.


Table 2.7.1.9-1

Auxiliary Steam System ITAAC

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The ASS high-energy piping system is reconciled with pipe rupture hazards analyses report to ensure that the safety-related SSCs are protected against or are qualified to withstand the environmental effects associated with postulate failures of these piping systems.	1. Inspections and analyses of the as-built safety-related ASS high-energy piping and valves and potentially impacted safety-related SSCs will be performed.	1. A report exists and concludes that the as-built safety-related SSCs are protected against or are qualified to withstand the effects of postulated pipe failures of the as-built ASS.

APR1400 DCD TIER 1**2.7.5 Auxiliary System****2.7.5.1 Compressed Air and Gas Systems**

~~No entry for this system.~~

**2.7.5.1.1 Design Description**

The compressed air and gas systems are composed of the compressed air system (CAS), compressed gas system, and breathing air system. The CAS comprises the instrument air system (IAS) and the service air system (SAS). The compressed gas system is composed of nitrogen subsystem, hydrogen subsystem, and carbon dioxide subsystem.

The CAS are non safety-related systems with the exception of the containment isolation valves (CIVs) and the piping between the CIVs that are safety-related, ASME Section III Class 2 and Seismic Category I as described in Subsection 2.11.3. The CAS performs the containment isolation function for the CAS lines penetrating the containment.

To meet functional requirements, the CAS is designed as follows:

1. The CAS moderate-energy piping system is reconciled with pipe rupture hazards analyses report to ensure that the safety-related SSCs are protected against or are qualified to withstand the environment effects associated with postulate failures of these piping systems.

2.7.5.1.2 Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.7.5.1-1 specifies the inspections, tests, analyses, and associated acceptance criteria for the CAS.

The ITAAC related to the CIVs and the piping between the CIVs of the CAS are described in Table 2.11.3-2.

Table 2.7.5.1-1

Compressed Air System ITAAC

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The CAS moderate-energy piping system is reconciled with pipe rupture hazards analyses report to ensure that the safety-related SSCs are protected against or are qualified to withstand the environmental effects associated with postulate failures of these piping systems.	1. Inspections and analyses of the as-built safety-related CAS moderate-energy piping and valves and potentially impacted safety-related SSCs will be performed.	1. A report exists and concludes that the as-built safety-related SSCs are protected against or are qualified to withstand the effects of postulated pipe failures of the as-built CAS.