
REVISED 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.: 175-8034
SRP Section: 05.04.12 – Reactor Coolant System High Point Vents
Application Section: 5.4.12
Date of RAI Issue: 08/20/2015

Question No. 05.04.12-4

The quality assurance criteria in 10 CFR Part 50, Appendix B require measures to assure that applicable regulatory requirements and the design basis are correctly translated into specifications and drawings, including provisions to assure that appropriate quality standards are specified and included in design documents.

- a. In DCD Tier 2, Table 5.4.12-1, "Reactor Coolant Gas Vent System - Active Valve List," the Safety Class column appears to be inconsistent with the information in DCD Tier 2, Table 3.9-4, "Seismic Category I Active Valves," and DCD Tier 2, Table 3.9-13, "Inservice Testing of Safety-Related Pumps and Valves." In particular, the safety class for each valve in Table 5.4.12-1 is listed as the Roman numeral "I". Both Table 3.9-4 and Table 3.9-13 list RG-0410 through RG-0417 as Quality Group A and RG-0419 and RG-0420 as Quality Group B.
- b. Staff identified an omission in DCD Tier 2, Figure 5.4.12-1, as well as a typographical error:
 - (1) Markings that should indicate a transition from Seismic Category I and Quality Group B to Seismic Category II and Quality Group D after isolation valves V419 and V420 are missing.
 - (2) The size of the line downstream of isolation valves V416 and V417 in the RCVH portion of the RCGVS appears to jump from 1" to 3" without passing through a flow enlarger.

Please address these inconsistencies and errors and make updates as appropriate in the DCD to ensure consistency and accuracy of the design information. This is necessary to demonstrate compliance with 10 CFR Part 50, Appendix B.

Response - (Rev. 1)

The safety class of valves RG-419 and RG-420, [and line size of RG-414](#) in DCD Tier 2, Table 5.4.12-1 will be corrected as shown in Attachment 1. Table 5.4.12-1 will also change safety class Roman numeral I to the number 1 for consistency.

The downstream line size of isolation valves V416 and V417 will be changed from 3 inches to 1 inch, and Qualify Group and Seismic Category will be added after V419 and V420 in DCD Tier 2, Figure 5.4.12-1 as shown in Attachment 2.

Impact on DCD

In DCD Tier 2, Table 5.4.12-1 and Figure 5.4.12-1 will be corrected as indicated in the Attachments.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

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

APR1400 DCD TIER 2

Table 5.4.12-1

Reactor Coolant Gas Vent System – Active Valve List

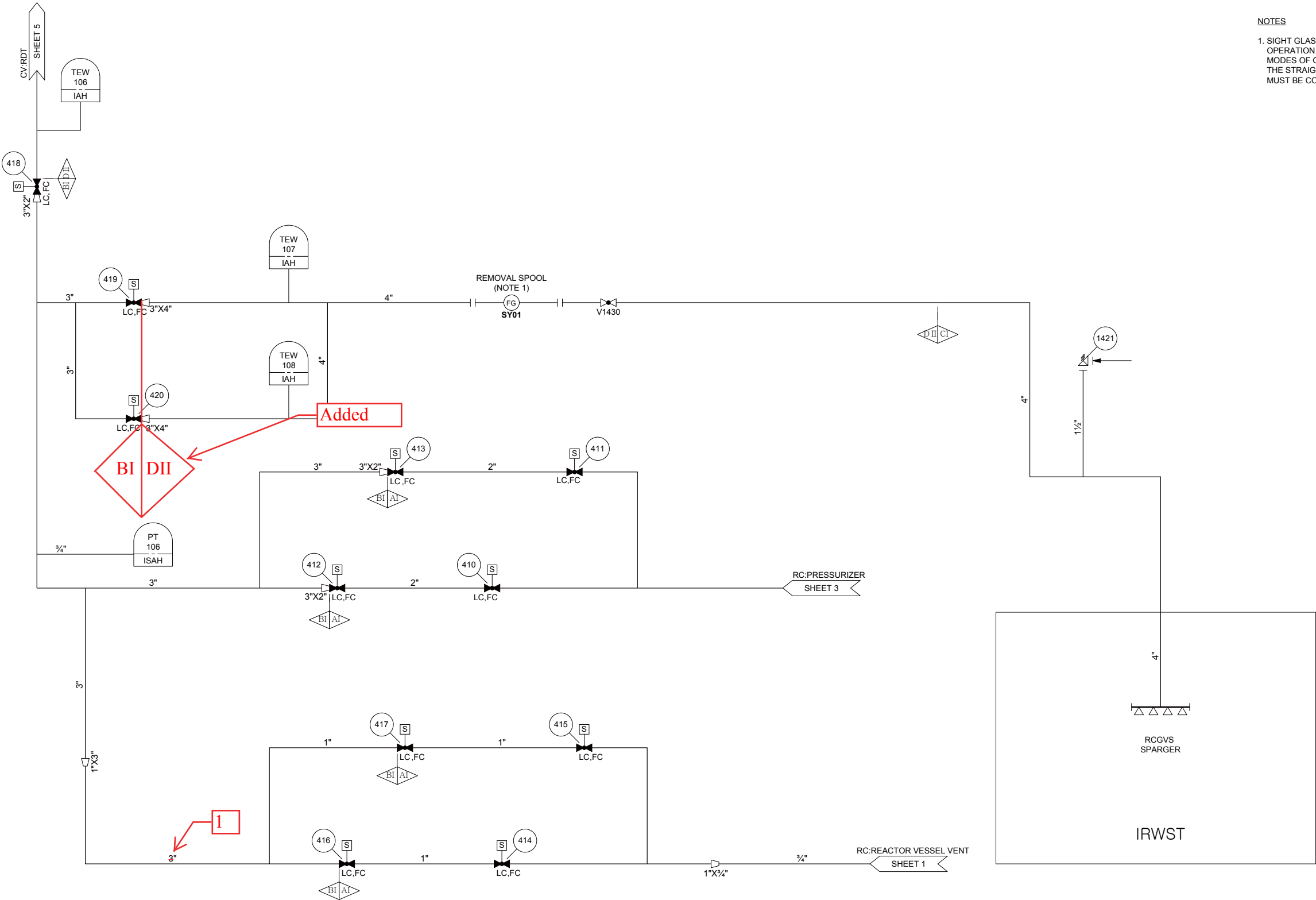
Valve Number	Type	Line Size – Schedule	Power Source 125V DC Bus	Actuator	Safety Class
RG-410	Globe	50 mm (2 in) - 160	A	Solenoid	1
RG-411	Globe	50 mm (2 in) - 160	B	Solenoid	I
RG-412	Globe	50 mm (2 in) - 160	C	Solenoid	I
RG-413	Globe	50 mm (2 in) - 160	D	Solenoid	I
RG-414	Globe	50 mm (2 in) - 160	A	Solenoid	I
RG-415	Globe	25 mm (1 in) - 160	B	Solenoid	I
RG-416	Globe	25 mm (1 in) - 160	C	Solenoid	I
RG-417	Globe	25 mm (1 in) - 160	D	Solenoid	I
RG-419	Globe	80 mm (3 in) - 160	B	Solenoid	I
RG-420	Globe	80 mm (3 in) - 160	A	Solenoid	I

1

2

25 mm (1 in)

APR1400 DCD TIER 2



NOTES

1. SIGHT GLASS MUST BE CONNECTED ONLY WHEN VENTING OPERATION FOR RCS FILLING IS REQUIRED. DURING ALL MODES OF OPERATION EXCEPT ABOVE OPERATION, THE STRAIGHT REMOVAL SPOOL WITHOUT SIGHT GLASS MUST BE CONNECTED.

Figure 5.4.12-1 Reactor Coolant Gas Vent System Flow Diagram

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10 CFR 52.47(b)(1) requires that a DC application contain “the proposed inspections, tests, and analyses, and acceptance criteria (ITAAC) necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a plant that incorporates the design certification is built and should operate in accordance with the design certification, the provisions of the Atomic Energy Act, and the NRC's regulations.” Standard Review Plan (SRP) Section 14.3, “Inspections, Tests, Analyses, and Acceptance Criteria,” provides ways to comply with 10 CFR 52.47(b)(1) and states that the Tier 1 design description or figure should identify the electrical power source/division for the equipment included in the system. This information is provided in DCD Tier 2, Table 5.4.12-1 but is not provided in DCD Tier 1, Section 2.4.5, “Reactor Coolant Gas Vent System.” As such, please update DCD Tier 1, Section 2.4.5 to provide this information as requested by SRP Section 14.3.

Response - (Rev. 1)

The information of electrical power source/division for the equipment included in the system is described in item 6a/6b/6c of Tier 1, Section 2.4.5.1 and Table 2.4.5-2.

Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

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

APR1400 DCD TIER 1

Table 2.4.5-2

Reactor Coolant Gas Vent System Component List

Deleted

Component Name	Item No. ⁽¹⁾	ASME Section III Class	seismic Category	Class 1E/Harsh Envir. Qual.	Control/ Display at MCR	Control/ Display at RSR	Control Signal	Active Safety Function	Loss of Motive Power Position
Pressurizer Gas Vent Isolation Valves (SOV)	RG-V410, 411, 412, 413	1	I	Yes/Yes	Yes/Yes	Yes/Yes	-	Open/ Closed	Closed
Reactor Vessel Upper Head Gas Vent Isolation Valves (SOV)	RG-V414, 415 416, 417	1	I	Yes/Yes	Yes/Yes	Yes/Yes	-	Open/ Closed	Closed
Gas Vent to RDT Valves (SOV)	RG-V418	2	I	No/No	Yes/Yes	Yes/Yes	-	-	Closed
Gas Vent to IRWST Valves (SOV)	RG-V419, 420	2	I	Yes/Yes	Yes/Yes	Yes/Yes	-	Open	Closed
RCGVS Vacuum Breaker Valve	RG-V1421	3	I	No/No	-	-	-	-	-

(1) The column "Item No." is information only (not part of certified design).

(2) The power source of the reactor coolant gas vent system is described in DCD Tier 2, Table 5.4.12-1.

Deleted