Response to Action Item 3-53 Section 3.2.2

DCD TIER 2, SECTION 3.2.2

Issue # 7-a (AI 3-53.4)

SRP Section 3.2.2, Table A-1 provides guidance for the classification of several systems. The applicant's classification differs from several of these classifications. Please provide justification for these differences. Examples include:

a. SRP Section 3.2.2 indicates that Combustible Gas Control Systems should be Quality Group

B, but DCD Table 3.2-1 lists the containment hydrogen control system as Quality Group E (passive autocatalytic recombiners) and N/A (hydrogen ignitors)

Response

The combustible gas control system is Quality Group B in accordance with SRP Section 3.2.2. However, the passive autocatalytic recombiners (PARs) are not included in the components that are water- and steam-containing pressure vessels, heat exchangers (other than turbines and condensers), storage tanks, piping, pumps, and valves for combustible gas control defined in Quality Group B of RG 1.26 and the PARs are for severe accident and therefore not considered safety related. Therefore the PARs are Quality Group E. The definition of Quality Group E is described in DCD Section 3.2.2.

Even though the hydrogen ignitors also perform the function of combustible gas control, they are not Quality Group B in accordance with RG 1.26 and they are not the fluid components. Therefore the hydrogen ignitors are N/A.

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 and Environmental Reports.

Response to Action Item 3-53 Section 3.2.2

DCD TIER 2, SECTION 3.2.2

Issue # 7-b (AI 3-53.4)

b. SRP Section 3.2.2 indicates that Emergency Diesel Systems should be Quality Group C, but DCD Tier 2, page. 3.2-39 lists the starting air compressors, air dryer package, lube oil separator, lube oil/preheating water heat exchanger, HT water electric heater, preheating HT water pump, prelube oil pump and other non-safety-related equipment as Quality Group D

Response

The diesel generator unit and related components to perform the safety-related function are Quality Group C. The related components which are not required to perform a safety-related function are Quality Group D.

The starting air compressors, air dryer package, lube oil separator, lube oil/preheating water heat exchanger, HT water electric heater, preheating HT water pump, and prelube oil pump are not required for the EDGs to perform their safety-related function.

The starting air compressors and air dryer package supply the dry compressed air to the starting air receiver which has the sufficient size to crank the engine five times without recharging the receiver. Therefore, the starting air compressors and air dryer package are not required to perform a safety-related function.

The lube oil separator separates the oil and oil vapor from oil vapor which is removed from engine. Therefore, the lube oil separator is not required to perform a safety-related function.

In the standby mode, the prelube oil pump draws oil from the engine sump tank and delivers it through lube oil/preheating water heat exchanger. Prelubrication of the engine with warm lubricating oil provides reasonable assurance of rapid, reliable starting and load capability. During engine operation, the prelube oil pump is shutdown. Therefore, lube oil/preheating water heat exchanger, HT water electric heater, preheating HT water pump, and prelube oil pump are not required to perform a safety-related function.

Impact on DCD
There is no impact on the DCD.

Impact on PRA
There is no impact on the PRA.

Impact on Technical Specification
There is no impact on the Technical Specification.

Impact on Technical/Topical/Environmental Report
There is no impact on any Technical, Topical and Environmental Reports.

Response to Action Item 3-53 Section 3.2.2

DCD TIER 2, SECTION 3.2.2

Issue # 7-c (AI 3-53.4)

c. SRP Section 3.2.2 indicates that plant ventilation systems for areas such as the control room and ESF rooms should be Quality Group C, but DCD Tier 2, Table 3.2-1 cites Quality Groups G/E for control room HVAC (ASME AG-1-2009)

Response

DCD Tier 2, Section 3.2.2 provides definition of system Quality Group. DCD Tier 2, Section 3.2.2 describes that Quality Group C applies to ASME Section III components that are not in Quality Group A or B, and Quality Group G pertains to safety-related fluid systems and components that are designed to codes other than ASME Section III. And DCD Tier 2, Section 3.2.2 describes that Quality Group E pertains to non-safety-related fluid systems and components that are designed to codes other than ASME B31.1 code criteria and codes and standards listed in NRC RG 1.26.

As stated in DCD Tier 2 Table 3.2-1, control room HVAC system AHU cooling coils are safety class 3 and ASME Section III components. According to the definition of system Quality Group, the AHU cooling coils are classified to Quality Group C.

Other control room HVAC system components except the AHU cooling coils are safety class 3 components that are designed to codes other than ASME Section III or non-safety-related components that are designed to codes other ASME B31.1 code criteria and codes and standards listed in NRC RG 1.26. According to the definition of system Quality Group, the safety class 3 components that are designed to codes other than ASME Section III are classified to Quality Group G and the non-safety-related components that are designed to codes other ASME B31.1 code criteria and codes and standards listed in NRC RG 1.26 are classified to Quality Group E.

Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specification

There is no impact on the Technical Specification.

Impact on Technical/Topical/Environmental Report

There is no impact on any Technical, Topical and Environmental Reports.

Response to Action Item 3-53 Section 3.2.2

DCD TIER 2, SECTION 3.2.2

Issue # 9-a (AI 3-53.6)

The following list summarizes some inconsistencies or errors found in the review of DCD Tier 2, Section 14.3.3 and associated sections. These should be addressed, and the document should be checked for additional related issues.

a. Reactor Coolant Gas Vent Valves V412, 413, 416, and 417 are identified as both Quality Group A and B on DCD Tier 2, page 3.2-71. These valves are also inconsistent with Tier 1 material (412 and 413 are listed instead of 410-413, and 416 and 417 are listed instead of 414-417.

Response

Vent isolation valves V412, 413, 416, and 417 are Quality Group A. DCD Table 3.2-1 will be updated to correct this error.

Impact on DCD

The DCD will be revised as shown in Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specification

There is no impact on the Technical Specification.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical and Environmental Reports.

Table 3.2-1 (56 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
j. Core support structures	RCB	SC-3	C	ASME III- NG -2007 with 2008 addenda	Yes	I	(N-2)
k. Valves							
1) Pressurizer spray control valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
2) Pressurizer spray isolation valves	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
3) Downstream of flow restricting devices	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
l. Discharge piping vacuum breaker	RCB	SC-3	C	ASME Sec. III ND-2007 with 2008 addenda	Yes	I	
m. RCP lube oil collection tank	RCB	NNS	D	ASME Sec. VIII-2007 with 2008 addenda	N/A	II	
80. RG – Reactor Coolant Gas Vent							
a. Pressurizer gas vent piping upstream of and including the vent isolation valves ~~V410 through 413~~ V412 and 413	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
b. Reactor vessel upper head gas vent piping upstream of and including the vent isolation valves ~~V414 through 417~~ V416 and 417	RCB	SC-1	A	ASME Sec. III NB-2007 with 2008 addenda	Yes	I	
c. RCGVS gas vent piping ~~to and including the vent isolation valves V412, 413, 416, 417 from downstream of the vent isolation valves V418, 419, 420~~ from downstream of the vent isolation valves V412,413,416, and 417 to and including the vent isolation valves V418,419, and 420	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	

Response to Action Item 3-53 Section 3.2.2

DCD TIER 2, SECTION 3.2.2

Issue # 9-b (AI 3-53.6)

b. DCD Tier 2, page 6.3-63 shows that SI-653 is Quality Group B, while page 3.2-74 shows it as Quality Group A.

Response

SI-653 is Quality Group A. DCD Figure 6.3.2-1 will be updated to correct this error.

Impact on DCD

The DCD will be revised as shown in Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specification

There is no impact on the Technical Specification.

Impact on Technical/Topical/Environmental Report

There is no impact on any Technical, Topical and Environmental Reports.

APR1400 DCD TIER 2

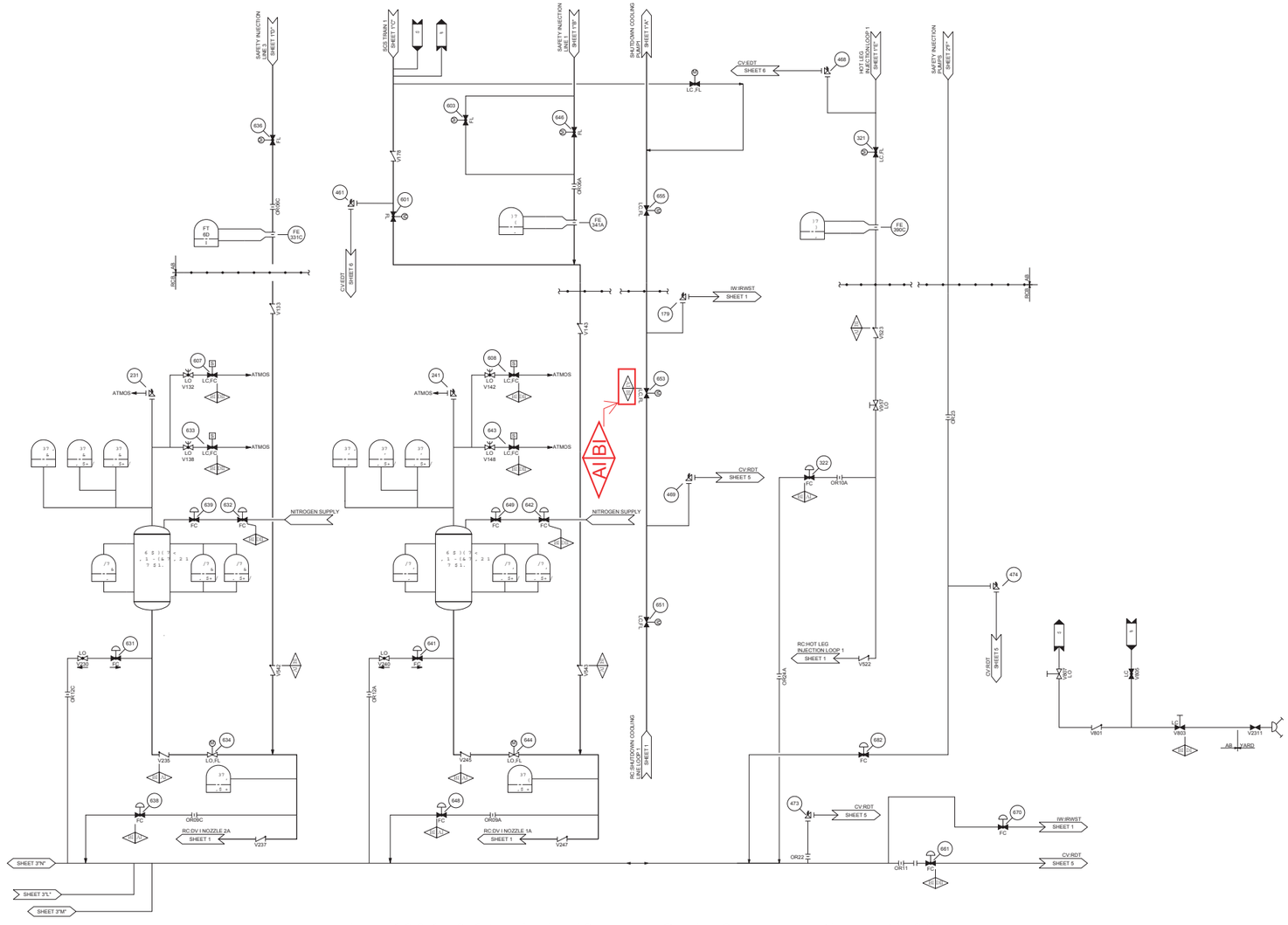

Figure 6.3.2-1 Safety Injection / Shutdown Cooling System Flow Diagram (4 of 4)

Response to Action Item 3-53 Section 3.2.2

DCD TIER 2, SECTION 3.2.2

Issue # 9-c (AI 3-53.6)

c. DCD Tier 2, page 3.2-23 indicates “v) through vii) below” but has nothing below it.

Response

"v) through vii)" should be "5) through 7)". DCD Table 3.2-1 will be updated to correct this error.

Impact on DCD

The DCD will be revised as shown in Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specification

There is no impact on the Technical Specification.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical and Environmental Reports.

Table 3.2-1 (8 of 86)

Item No. / Principal SSCs	Location[2]	Safety Class	Quality Group	Codes and Standards	10 CFR 50, App. B[3]	Seismic Category	Remarks
4) Non-essential supply and return piping between the valve CC-145 and CC-147 in the division I excluding the following ~~v) through vii)~~ below:	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
5) Containment penetration piping of letdown heat exchanger supply line between and including the valves CC-296, CC-297, and CC-1685 in the division I	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
6) Containment penetration piping of letdown heat exchanger return line between and including the valve CC-301, CC-302, and CC-1686 in the division I	RCB	SC-2	B	ASME Sec. III NC-2007 with 2008 addenda	Yes	I	
7) Letdown heat exchanger supply and return piping between the valves, CC-297, CC-301, CC-1685, and CC-1686 in the division I	RCB	NNS	D	ASME B31.1-2010	A	II	(3)(d)
8) Non-essential supply and return piping between the valve CC-146 and CC-148 in the auxiliary building of the division II	AB	NNS	D	ASME B31.1-2010	A	II	(3)(d)

5) through 7)