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**Tier 1 Subsection 2.1.2; Tables 2.1.2-1 through 2.1.2-4; and Figures 2.1.2-1 and 2.1.2-2**  
**Reactor Coolant System**

**Description of Change**

Correct several items in Tier 1 Tables 2.1.2-1 through 2.1.2-3.

For Tier 1 Table 2.1.2-4, correct the editorial error for item 3.a), provide a precise reference for ITAAC item 7.c), modify ITAAC item 8.b) to verify the pump coastdown curve rather than the calculated pump inertia, and correct the pressurizer heater backup rated capacity in item 9.b).

**Technical Justification**

The change of item 7.c. provides a direct reference to the relevant material.

A pump coastdown curve is added since the specified inertia does not guarantee that the pump coastdown will be achieved sufficient to satisfy the safety analyses without knowing the pump resistances.

Items were added and corrected in Table 2.1.2-1, Table 2.1.2-2, and Table 2.1.2-3 to accurately reflect the design.

**Regulatory Consequence**

These changes have no effect on design functions. These changes do not require a change in analysis or analysis methodology for safety analyses. The change provides better assurance that the required pump coastdown curve is met. The conclusion of the FSER is not affected. This change alters Tier 1 information as noted.

**Change Markup**

Revise item 12.a) of “Design Description” in Tier 1 subsection 2.1.2 as follows:

**2.1.2 Reactor Coolant System**

- | 12. a) The ~~automatic depressurization~~ valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.

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**Tier 1 Table 2.1.2-1** Revise the seventh entry of Tier 1 Table 2.1.2-1 as follows:

Table 2.1.2-1									
Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety-Related Display	Control PMS/ DAS	Active Function	Loss of Motive Power Position
Pressurizer	RCS-MV-02	Yes	Yes	-	No/No (heaters) -/-	-	Yes/No (heater trip) -/-	<del>No</del>	-

Revise the “Safety-Related Display” column for the RCP bearing water temperature sensors (beginning on the 11th page of the table) in Tier 1 Table 2.1.2-1 as follows:

Table 2.1.2-1 (cont.)									
Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety-Related Display	Control PMS/ DAS	Active Function	Loss of Motive Power Position
RCP 1A Bearing Water Temperature Sensor	RCS-211A	-	Yes	-	Yes/Yes	<del>Yes</del> No	-/-	-	-
RCP 1A Bearing Water Temperature Sensor	RCS-211B	-	Yes	-	Yes/Yes	No <del>Yes</del>	-/-	-	-
RCP 1A Bearing Water Temperature Sensor	RCS-211C	-	Yes	-	Yes/Yes	No <del>Yes</del>	-/-	-	-
RCP 1A Bearing Water Temperature Sensor	RCS-211D	-	Yes	-	Yes/Yes	No <del>Yes</del>	-/-	-	-
RCP 1B Bearing Water	RCS-212A	-	Yes	-	Yes/Yes	No <del>Yes</del>	-/-	-	-

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Temperature Sensor									
RCP 1B Bearing Water Temperature Sensor	RCS-212B	-	Yes	-	Yes/Yes	<del>Yes</del> No	-/-	-	-
RCP 1B Bearing Water Temperature Sensor	RCS-212C	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 1B Bearing Water Temperature Sensor	RCS-212D	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 2A Bearing Water Temperature Sensor	RCS-213A	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-

Note: Dash (-) indicates not applicable.

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Table 2.1.2-1 (cont.)									
Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety- Related Display	Control PMS/ DAS	Active Function	Loss of Motive Power Position
RCP 2A Bearing Water Temperature Sensor	RCS-213B	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 2A Bearing Water Temperature Sensor	RCS-213C	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 2A Bearing Water Temperature Sensor	RCS-213D	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 2B Bearing Water Temperature Sensor	RCS-214A	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 2B Bearing Water Temperature Sensor	RCS-214B	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 2B Bearing Water Temperature Sensor	RCS-214C	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-
RCP 2B Bearing Water Temperature Sensor	RCS-214D	-	Yes	-	Yes/Yes	<del>No</del> Yes	-/-	-	-

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**Tier 1 Table 2.1.2-2** Revise entries for the ADS piping, add a line in the pressurizer spray piping entry, and add entries for RNS suction piping and CVS purification piping in Tier 1 Table 2.1.2-2 as follows:

Table 2.1.2-2				
Line Name	Line Number	ASME Code Section III	Leak Before Break	Functional Capability Required
ADS First-stage Valve Inlet Piping	RCS-L010A/B RCS-L011A/B	Yes	No	Yes
ADS Second-stage Valve Inlet Piping	RCS-L021A/B RCS-L022A/B	Yes	Yes <a href="#">No</a>	Yes
ADS Third-stage Valve Inlet Piping	<a href="#">RCS-L131</a> RCS-L031A/B RCS-L032A/B	Yes	<a href="#">Yes</a> Yes <a href="#">No</a>	Yes
ADS Outlet Piping	RCS-L012A/B RCS-L023A/B RCS-L033A/B RCS-L061A/B RCS-L063A/B RCS-L064A/B RCS-L200A/B <a href="#">RCS-L069A/B</a> <a href="#">RCS-L240A/B</a> PXS-L130A/B	Yes	No	Yes
ADS Fourth-stage Inlet Piping	RCS-L133A/B RCS-L135A/B RCS-L136A/B RCS-L137A/B	Yes	Yes	Yes
Pressurizer Spray Piping	<a href="#">RCS-L106</a> RCS-L110A/B RCS-L212A/B RCS-L213 RCS-L215	Yes	No	No
<a href="#">RNS Suction Piping</a>	<a href="#">RCS-L139</a> <a href="#">RCS-L140</a>	<a href="#">Yes</a>	<a href="#">Yes</a>	<a href="#">No</a>
<a href="#">CVS Purification Piping</a>	<a href="#">RCS-L111</a> <a href="#">RCS-L112</a>	<a href="#">Yes</a>	<a href="#">No</a>	<a href="#">No</a>

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**Tier 1 Table 2.1.2-3** Revise the RCP breaker status and pressurizer heater tag numbers in Tier 1 Table 2.1.2-3 as follows:

<b>Table 2.1.2-3</b>			
<b>Equipment</b>	<b>Tag No.</b>	<b>Display</b>	<b>Control Function</b>
RCP 1A Breaker (Status)	ECS-ES- <del>51</del> 31	Yes	-
RCP 1A Breaker (Status)	ECS-ES- <del>52</del> 32	Yes	-
RCP 1B Breaker (Status)	ECS-ES- <del>61</del> 41	Yes	-
RCP 1B Breaker (Status)	ECS-ES- <del>62</del> 42	Yes	-
RCP 2A Breaker (Status)	ECS-ES- <del>53</del> 51	Yes	-
RCP 2A Breaker (Status)	ECS-ES- <del>54</del> 52	Yes	-
RCP 2B Breaker (Status)	ECS-ES- <del>63</del> 61	Yes	-
RCP 2B Breaker (Status)	ECS-ES- <del>64</del> 62	Yes	-
Pressurizer Heaters	RCS-EH-03	Yes	On/Off
Pressurizer Heaters	RCS-EH-04A	Yes	On/Off
Pressurizer Heaters	RCS-EH-04B	Yes	On/Off
Pressurizer Heaters	RCS- <del>BHEH</del> -04C	Yes	On/Off
Pressurizer Heaters	RCS-EH-04D	Yes	On/Off

<b>Table 2.1.2-3 (cont.)</b>			
<b>Equipment</b>	<b>Tag No.</b>	<b>Display</b>	<b>Control Function</b>
Pressurizer Spray Valve (Position Indication)	RCS-PL-V110B	Yes	-
Reactor Vessel Head Vent Valve (Position Indication)	RCS-PL- <del>V</del> 150A	Yes	-
Reactor Vessel Head Vent Valve (Position Indication)	RCS-PL- <del>V</del> 150B	Yes	-
Reactor Vessel Head Vent Valve (Position Indication)	RCS-PL- <del>V</del> 150C	Yes	-
Reactor Vessel Head Vent Valve (Position Indication)	RCS-PL- <del>V</del> 150D	Yes	-

Note: Dash (-) indicates not applicable.

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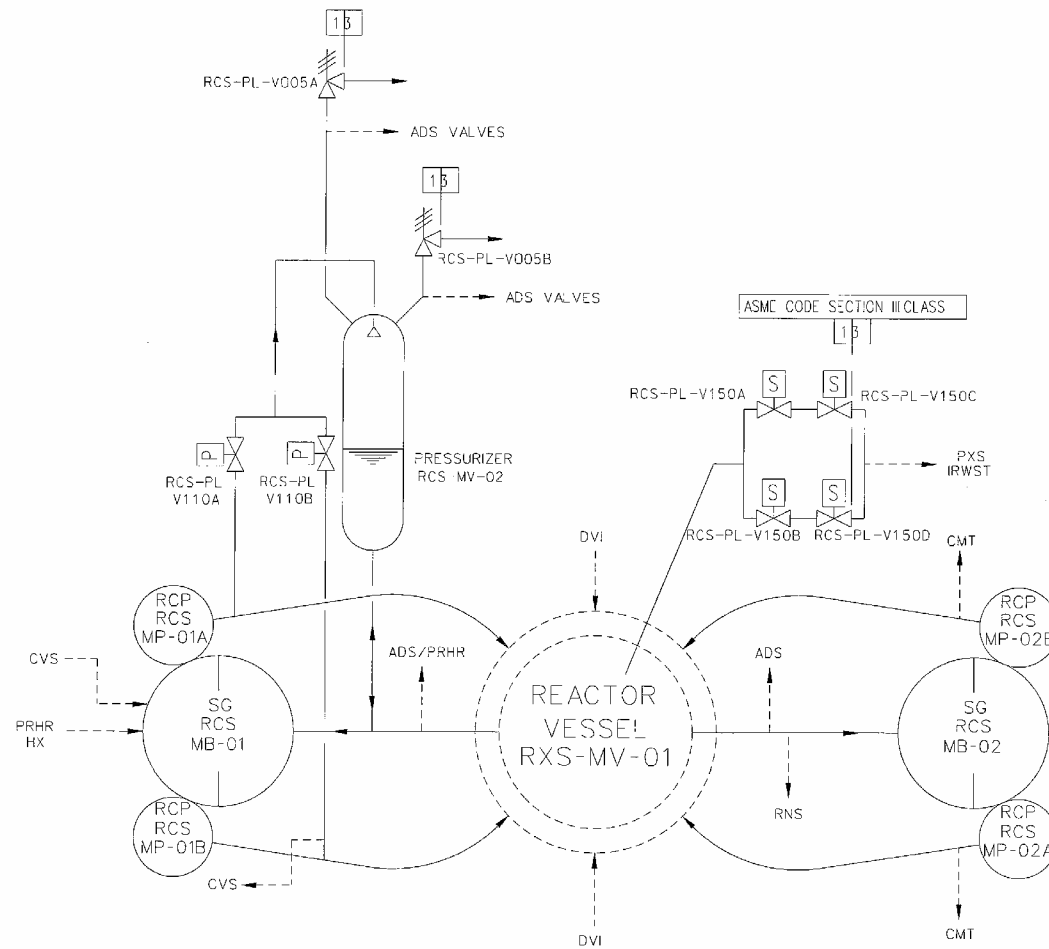
**Tier 1 Table 2.1.2-4** Revise items 3.a), 7.c), 8.b), and 9.b) in Tier 1 Table 2.1.2-4 as follows:

<b>Table 2.1.2-4 (cont.)</b> <b>Inspections, Tests, Analyses, and Acceptance Criteria</b>		
<b>Design Commitment</b>	<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
3.a) Pressure boundary welds in components identified in Table 2.1.2-1 as ASME Code Section III meet ASME Code Section III requirements.	<u>Inspection of the as-built 3.a) Pressure boundary welds will be performed in accordance with the in components identified in Table 2.1.2-1 as ASME Code Section III meet ASME Code Section III requirements.</u>	A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.
7.c) Separation is provided between RCS Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.	See Tier 1 Material, <u>Table 3.3-6, item 7.d, Section 3.3, Nuclear Island Buildings.</u>	See Tier 1 Material, <u>Table 3.3-6, item 7.d, Section 3.3, Nuclear Island Buildings.</u>
8.b) The RCPs have a rotating inertia to provide RCS flow coastdown on loss of power to the pumps.	<u>Inspection of as-built RCP vendor data will be performed. A test will be performed to determine the pump flow coastdown curve.</u>	<u>The calculated rotating inertia of each RCP is no less than 46,500 lb-ft<sup>2</sup>. The pump flow coastdown will provide RCS flows greater than or equal to the flow shown in Figure 2.1.2-2, "Flow Transient for Four Cold Legs in Operation, Four Pumps Coasting Down."</u>
9.b) The RCS provides the means to control system pressure.	i) Inspections will be performed to verify the rated capacity of pressurizer heater backup groups A and B.  ii) Tests will be performed to verify that the pressurizer spray valves can open and close when operated from the MCR.	i) Pressurizer heater backup groups A and B each has a rated capacity of at least <u>166-168</u> kW.  ii) Controls in the MCR operate to cause the pressurizer spray valves to open and close.

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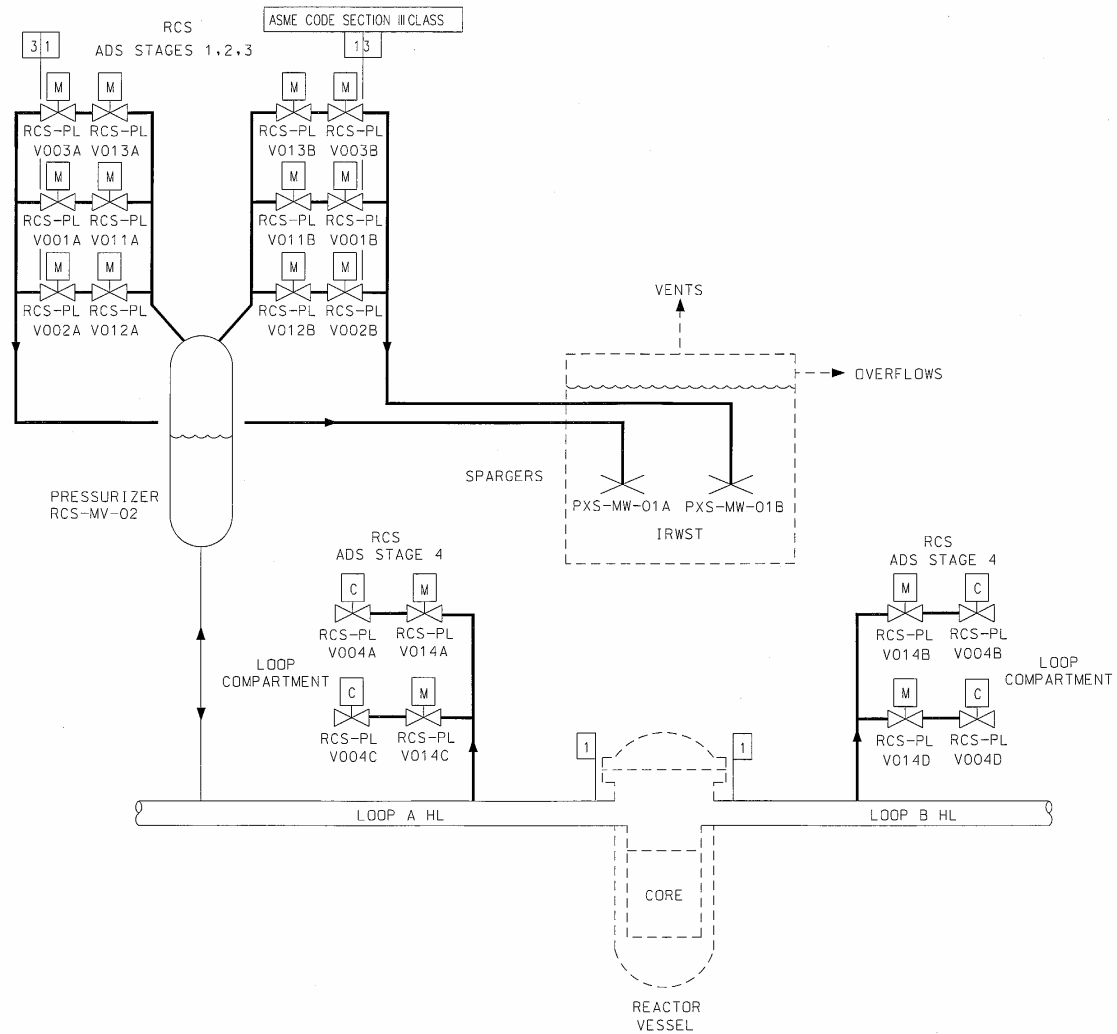
**Tier 1 Figure 2.1.2-1** Revise Figure 2.1.2-1 as follows:



**Figure 2.1.2-1 (Sheet 1 of 2)**  
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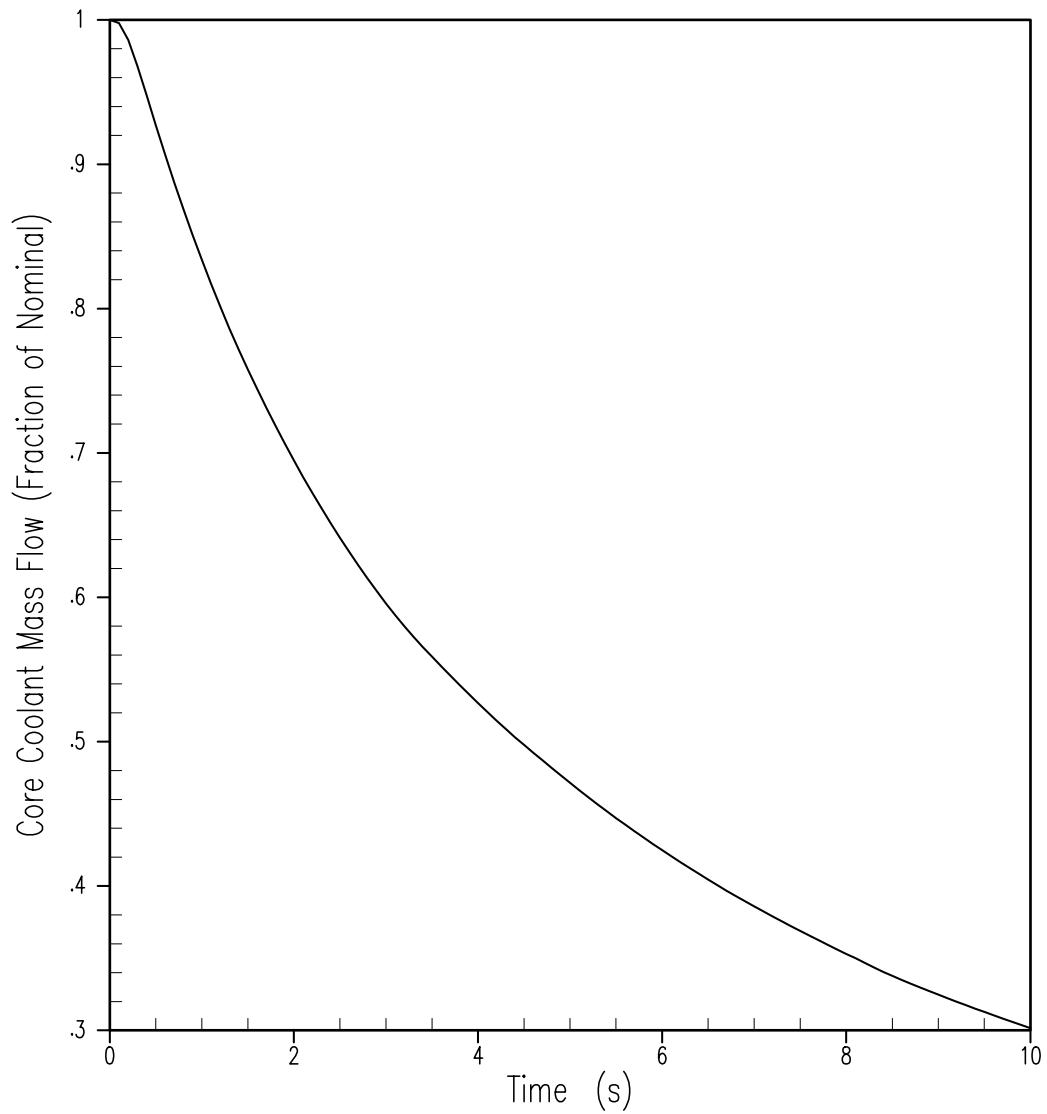


**Figure 2.1.2-1 (Sheet 2 of 2)**  
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**Tier 1 Figure 2.1.2-2** Add Figure 2.1.2-2 as follows:



**Figure 2.1.2-2**  
**Flow Transient for Four Cold Legs**  
**in Operation, Four Pumps Coasting Down**