

3MA System Evaluation for ISLOCA

The information in this appendix of the reference ABWR DCD, including all subsections, is incorporated by reference with the following standard departures.

STD DEP T1 2.4-1

STD DEP T1 2.4-3

STD DEP T1 2.14-1

STD DEP 3MA-1

STD DEP Admin

Some of the tables in the following sections contain “xx” and “xxx” designation, indicating that the information will be determined later as a result of detailed design. This is the same convention as was used in the reference ABWR DCD.

3MA.2.2 Downstream Interfaces

The 6th bullet of this subsection is deleted to reflect the removal of the Flammability Control System.

STD DEP T1 2.14-1

- ~~Flammability Control System branches off the main discharge line downstream of the branch that returns to the suppression pool. The FCS design pressure exceeds the URS design without upgrade.~~

3MA.2.3 Upgraded Components - RHR System

The following information is added to the **RHR Subsystem A suction piping from the reactor pressure vessel** grouping.

STD DEP T1 2.4-1

Reference	Components	Press./Temp./Design/Seismic Class	Remarks
Sheet 2	***300A-RHR-F016A Valve LC	2.82 MPaG, 182°C, 3B, As	Was 1.37 MPaG
	***300A-RHR-098 Pipe	2.82 MPaG, 182°C, 3B, As	Was 1.37 MPaG

*** To FPC System interface

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RHR Subsystem A suction piping from the suppression pool.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	<u>20A-RHR-042 Pipe</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>20A-RHR-F061A Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem A suction piping from the reactor pressure vessel.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	<u>50A-20A-RHR-F712A Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem A discharge fill pump suction piping from the suppression pool.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	<u>25A-RHR-709 Pipe</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-F718A Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-F719A Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-PX013A Press.Pt.</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem A discharge from relief valves and test line valve directly to the suppression pool without restriction.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	<u>20A-RHR-041 Pipe</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-060A Valve</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No Change</u>
Sheet 2	<u>250A-RHR-055A Valve</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No Change</u>

RHR Subsystem B suction piping from the suppression pool.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 4	<u>20A-RHR-152 Pipe</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>20A-RHR-061B Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem B discharge fill pump suction piping from the suppression pool.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 4	<u>25A-RHR-123 Pipe</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-741 Pipe</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-F718B Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-F719B Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-PX013B Press.Pt.</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem C suction piping from the suppression pool.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 6	<u>20A-RHR-255 Pipe</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>20A-RHR-F061C Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem B discharge from relief valves and test line valve directly to the suppression pool without restriction.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 4	<u>20A-RHR-151 Pipe</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-060B Valve</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No Change</u>
Sheet 2	<u>250A-RHR-055B Valve</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No Change</u>

RHR Subsystem B interface with Radwaste System.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 4	<u>150A-RHR-023 Pipe</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>150A-RHR-230 Pipe</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>150A-RHR-129 Pipe</u>	<u>3.43 MPaG, 182°C, 3B, As</u>	<u>No Change</u>
	<u>150A-RHR-FE012B Flow El.</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-739 Pipe</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-740 Pipe</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-714B Valve</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-715B Valve</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-716B Valve</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-717B Valve</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>20A-RHR-FT012B Press.Trans.</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>100A-RHR-146 Pipe</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>100A-RHR-F052B Valve</u>	<u>3.43 MPaG, 66°C, 3B, As</u>	<u>No Change</u>
	<u>200A-LCW-GSSS Pipe</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-GSSS Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-GSSS AO Valve</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-GSSS Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-GSSS AO Valve</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-SS Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-SS AO Valve</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>* LCW Collector Tank C</u>	<u>0 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-SS Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>200A-LCW-SS AO Valve</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No Change</u>
	<u>* LCW Collector Tank D</u>	<u>0 MPaG, 66°C, 4D, B</u>	<u>No Change</u>

RHR Subsystem C discharge fill pump suction piping from the suppression pool.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 6	<u>25A-RHR-770 Pipe</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-F718C Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-F719C Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>25A-RHR-PX013C Press.Pt.</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem C discharge from relief valves and test line valve direct to the suppression pool without restriction.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 6	<u>20A-RHR-254 Pipe</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No change</u>
	<u>20A-RHR-060C Valve</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No change</u>
Sheet 2	<u>250A-RHR-F055C Valve</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No change</u>

RHR Subsystem C flushing line interface at branch discharge to RPV.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
<u>Sheet 7</u>	<u>100A-RHR -F032C Valve</u>	<u>3.43 MPaG, 182°C, 3B, As</u>	<u>No change</u>

RHR Subsystem C flushing line interface at suction of shutdown branch from RPV.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 21	<u>100A-MUWC-440139 Pipe</u>	<u>1.37 MPaG, 66°C, 4D, B</u>	<u>No change</u>
<u>Sheet 2</u>	<u>100A-RHR -F040C Valve</u>	<u>2.82 MPaG, 182°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RHR Subsystem C outdoor fire truck connection in RHR pump discharge pipe to RPV.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
<u>Sheet 7</u>	<u>20100A-RHR-FE-100 Flow El.</u>	<u>3.43 MPaG, 182°C, 3B, As</u>	<u>No change</u>

3MA.3.3 Upgraded Components - HPCF System

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HPCF Subsystem B suction piping from the suppression pool.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 2	<u>xxA-HPCF-030B Valve</u>	<u>2.82 MPaG, 104°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-HPCF-xxx Pipe</u>	<u>2.82 MPaG, 104°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

HPCF Subsystem B keep fill line interface.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	<u>20A-HPCF-707 Pipe</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>
	<u>20A-HPCF-716B Valve</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>
	<u>20A-HPCF-717B Valve</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>
	<u>20A-HPCF-PX010B Press.Pt.</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>

HPCF Subsystem C suction piping from the suppression pool and condensate storage tank.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 2	<u>20A-HPCF-PX004C Press. Pt</u>	<u>2.82 MPaG, 100°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>400A-HPCF-106110 Pipe</u>	<u>2.82 MPaG, 100°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>20A-HPCF-F030C Valve</u>	<u>2.82 MPaG, 100°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>20A-HPCF-xxx- Pipe</u>	<u>2.82 MPaG, 100°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>400A-HPCF-110 Pipe</u>	<u>0.310 MPaG, 104°C, 3B, As</u>	<u>No change</u>
	<u>400A-HPCF-105 Pipe</u>	<u>1.37 MPaG, 66°C, 3B, B(S1,S2)</u>	<u>No change</u>

HPCF Subsystem C keep fill line interface.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	<u>20A-HPCF-807 Pipe</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>
	<u>20A-HPCF-716C Valve</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>
	<u>20A-HPCF-717C Valve</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>
	<u>20A-HPCF-PX010C Press.Pt.</u>	<u>10.79 MPaG, 100°C, 3B, As</u>	<u>No change</u>

3MA.4.1 Upgrade Description

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The URS boundary was terminated at the last valve before the suppression pool, which is valve ~~E510-F006~~E51-F006 and is normally closed. The suppression pool is a large structure, impractical to upgrade to the URS design pressure. The only portions of the RCIC System that are not upgraded to the URS design pressure is unobstructed piping to the suppression pool.

3MA.4.3 Upgraded Components - RCIC System

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RCIC turbine condensate piping to the suppression pool

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	<u>20A-RCIC-723-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-724-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-725-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-726-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-F724 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-F725 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-PT014A Press.Trans.</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-PT014B Press.Trans.</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-PT014E Press.Trans.</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>20A-RCIC-PT014F Press.Trans.</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
_____	** 25A-RCIC-051-S Pipe	8.62 MPaG, 302°C, 3B, As	Was 0.981 MPaG
	** 25A-RCIC-F051 Valve	8.62 MPaG, 302°C, 3B, As	Was 0.981 MPaG
	** 25A-RCIC-D012 Strainer	8.62 MPaG, 302°C, 3B, As	Was 0.981 MPaG
	** 25A-RCIC-D013 S-Trap	8.62 MPaG, 302°C, 3B, As	Was 0.981 MPaG
	** 25A-RCIC-F052 Valve	8.62 MPaG, 302°C, 3B, As	Was 0.981 MPaG
Sheet 3	** 25A-RCIC-052-S Pipe	2.82 MPaG, 184°C, 4D, As	Was 0.981 MPaG
	<u>xxA-RCIC-xxx Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Was 0.981 MPaG</u>
	<u>80A-RCIC-054-S Pipe</u>	<u>0.981 MPaG, 184°C, 3B, As</u>	<u>No change</u>
	<u>80A-RCIC-F054-S Check V.</u>	<u>0.981 MPaG, 184°C, 3B, As</u>	<u>No change</u>
Sheet 1	<u>80A-RCIC-F055-S Check V.</u>	<u>0.981 MPaG, 184°C, 3B, As</u>	<u>No change</u>
	<u>A-RCIC-F069 T.Valve</u>	<u>2.828.62 MPaG, 184°C, 302°C, 3B, As</u>	<u>Was 10.981 MPaG</u>

* Vent via Rupture Disks.

** RCIC Turbine Condensate Piping to the Barometric Condenser.

RCIC pump suction piping

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	<u>20A-RCIC-F060 Valve</u>	<u>2.82 MPaG, 77°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>20A-RCIC-xxx Pipe</u>	<u>2.82 MPaG, 77°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-RCIC-F062 Valve</u>	<u>2.82 MPaG, 104°C, 3B, As</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-RCIC-xxx- Pipe</u>	<u>2.82 MPaG, 104°C, 3B, As</u>	<u>Was 1.37 MPaG</u>

RCIC discharge from relief valves and test line valve direct to the suppression pool without restriction.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 2	250A-RHR- 008 Pipe	0.310 MPaG, 104°C,3B,As	No change

~~RCIC vacuum tank condensate piping to the suppression pool.~~

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	50A-RCIC Vacuum Pump	2.82 MPaG, 121°C,4D,As	Was 0.755 MPaG
_____	50A-RCIC-044 S Pipe	2.82 MPaG, 88°C,4D,As	Was 0.310 MPaG
_____	50A-RCIC-067 S Pipe	2.82 MPaG, 88°C,4D,As	Was 0.310 MPaG
_____	50A-RCIC-PCV Valve	2.82 MPaG, 121°C,4D,As	Was 0.755 MPaG
Sheet 3	20A-RCIC-068 S Pipe	2.82 MPaG, 121°C,4D,As	Was 0.981 MPaG
Sheet 1	50A-RCIC-F046 Check V.	2.82 MPaG, 104°C,3B,As	Was 0.310 MPaG
_____	20A-RCIC-057 S Pipe	2.82 MPaG, 104°C,3B,As	Was 0.310 MPaG
_____	20A-RCIC-F059 T.Valve	2.82 MPaG, 104°C,3B,As	Was 0.310 MPaG
_____	50A-RCIC-F047 MO Valve	2.82 MPaG, 104°C,3B,As	Was 0.310 MPaG
_____	50A-RCIC-045 S Pipe	0.981 MPaG, 104°C,3B,As	No change
Sheet 1	Suppression Pool		

~~RCIC steam drains from trip and throttle valve piping and turbine to condensate chamber~~

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	* 20A-RCIC-063 S Pipe	8.62 MPaG, 302°C,3B,As	Was 0.981 MPaG
_____	* 20A-RCIC-061 S Pipe	8.62 MPaG, 302°C,3B,As	Was 0.981 MPaG
_____	** 20A-RCIC-064 S Pipe	8.62 MPaG, 302°C,3B,As	Was 0.981 MPaG

* RCIC Trip and Throttle Valve leakoffs are piped to Condensing Chamber.

** RCIC Turbine Condensate Drain connects to the Condensing Chamber

~~RCIC turbine valve leakoffs are piped to the barometric condenser~~

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	* 25A-RCIC-058 S Pipe	2.82 MPaG, 184°C,4D,As	Was 0.981 MPaG
_____	** 25A-RCIC-059 S Pipe	2.82 MPaG, 184°C,4D,As	Was 0.981 MPaG
_____	Barometric Condenser	2.82 MPaG, 184°C,4D,As	Was 0.755 MPaG
_____	*** 25A-RCIC-065 S Pipe	2.82 MPaG, 184°C,4D,As	Was 0.755 MPaG
_____	25A-RCIC-Relief Valve	2.82 MPaG, 121°C,4D,As	Was 0.755 MPaG
_____	25A-RCIC-066 S Pipe	0 MPaG, 121°C,4D,As	No change

* RCIC Trip and Throttle Valve Stem leakoff is piped to the Barometric

** RCIC Turbine Governor Valve Stem is piped to the to Barometric Condenser.

*** Barometric Condenser Press. relief and piping.

RCIC pump cooling water piping for pump and turbine lube oil coolers

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	50A-RCIC-011-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	50A-RCIC-028-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	50A-RCIC-F030-Relief V.	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	50A-RCIC-029-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	20A-RCIC-713-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	20A-RCIC-PX018-Press	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	50A-RCIC-Turb.LO-Cooler	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	50A-RCIC-Pump LO-Cooler	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	15A-RCIC-TX019-Temp.Pt.	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	20A-RCIC-714-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	20A-RCIC-F714-Valve	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	20A-RCIC-PX020-Press.Pt.	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	15A-RCIC-012-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	15A-RCIC-013-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	15A-RCIC-014-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
_____	15A-RCIC-015-W-Pipe	2.82 MPaG, 77°C, 3B, As	Was 0.863 MPaG
Sheet 3	Barometric Condenser	2.82 MPaG, 121°C, 4D, As	Was 0.755 MPaG

RCIC vacuum tank and condensate pump piped to RCIC pump suction pipe

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 3	RCIC Vacuum Tank	2.82 MPaG, 77°C, 4D, As	Was 0.755 MPaG
_____	RCIC Press. Switch H	2.82 MPaG, 121°C, 4D, As	Was 0.755 MPaG
_____	RCIC Level Switch H	2.82 MPaG, 121°C, 4D, As	Was 0.755 MPaG
_____	RCIC Level Switch L	2.82 MPaG, 121°C, 4D, As	Was 0.755 MPaG
_____	RCIC Cond. Pump	2.82 MPaG, 88°C, 4D, As	Was 1.37 MPaG
_____	50A-RCIC-F014-Check V.	2.82 MPaG, 88°C, 4D, As	Was 1.37 MPaG
_____	50A-RCIC-016-W-Pipe	2.82 MPaG, 88°C, 4D, As	Was 1.37 MPaG
_____	20A-RCIC-715-W-Pipe	2.82 MPaG, 88°C, 4D, As	Was 1.37 MPaG
_____	20A-RCIC-F715-Valve	2.82 MPaG, 88°C, 4D, As	Was 1.37 MPaG
_____	20A-RCIC-PX021-Press.Pt.	2.82 MPaG, 88°C, 4D, As	Was 1.37 MPaG
_____	50A-RCIC-F015-Valve	2.82 MPaG, 88°C, 3B, As	Was 1.37 MPaG
_____	50A-RCIC-017-W-Pipe	2.82 MPaG, 88°C, 3B, As	Was 1.37 MPaG
_____	50A-RCIC-030-W-Pipe	2.82 MPaG, 88°C, 3B, As	Was 1.37 MPaG
_____	50A-RCIC-F031-MO-Valve	2.82 MPaG, 88°C, 3B, As	Was 1.37 MPaG

—————	50A-RCIC-F032 AO Valve	2.82 MPaG, 88°C, 3B, As	Was 1.37 MPaG
—————	20A-RCIC-032 W Pipe	2.82 MPaG, 88°C, 3B, As	Was 1.37 MPaG
—————	20A-RCIC-F034 T Valve	2.82 MPaG, 88°C, 3B, As	Was 1.37 MPaG
—————	* 50A-RCIC-F016 Check	2.82 MPaG, 77°C, 3B, As	Was 1.37 MPaG

~~* 50A-RCIC-017 Pipe connects with RCIC pump suction 200A-RCIC-001 W Pipe on sheet 1 upgraded to 2.82 MPaG.~~

Sheet 2: Valve gland leak off piping

Branch piping from RCIC steam supply isolation valves FO-035, inside primary containment and FO-036 outside primary containment to VGL Radwaste Treatment System.

Reference	Components	Press./Temp./Design/Seismic Class	Remarks
Sh 2, I-11	25A-RCIC-506 S Pipe	8.62 MPaG, 302°C, 1A, As	Reactor Press
I-7	25A-RCIC-507 S Pipe	8.62 MPaG, 302°C, 1A, As	Reactor Press

Sheet 2: Instrument piping from RCIC steam supply piping to PT-009, PI-010 and level switch LS-011.

Reference	Components	Press./Temp./Design/Seismic Class	Remarks
Sh 2, H-6	<u>20A-RCIC-716-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
	<u>20A-RCIC-F716 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
	<u>20A-RCIC-F717 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
H-7	<u>20A-RCIC-717-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
G-5	<u>20A-RCIC-718-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
	<u>20A-RCIC-F718 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
	<u>20A-RCIC-F719 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
F-5	<u>20A-RCIC-719-S Pipe</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
	<u>20A-RCIC-F720 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>
	<u>20A-RCIC-F721 Valve</u>	<u>8.62 MPaG, 302°C, 3B, As</u>	<u>Reactor Press</u>

3MA.5.3 Upgraded Components - CRD System

STD DEP 3MA-1

CRD pump suction piping Condensate, Feedwater and Condensate Air Extraction System or Condensate Storage Tank of the Makeup Water System (Condensate).

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	100A-CRD-001 Pipe-S	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	150A-MUWC-F-403xxxValve LO	1.37 MPaG, 66°C, B4D, (S1,S2)As	No change
	150A-CRD-002-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	50A-MUWC- F103Valve	1.37 MPaG, 66°C, 64D, C	Lock Open
	50A-MUWC-103 Pipe	Static Hd, 66°C, 64D, C	No change
	50A-CRD-033-S Pipe	2.82 MPaG, 20°C, 6D, C	Was 1.37 MPaG
	50A-CRD-032-S Pipe	2.82 MPaG, 20°C, 6D, C	Was 1.37 MPaG
	100A-CRD-F001A Gate V	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-003-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
Reference	Components	Press./Temp./Design/Seismic Class	Remarks
Sheet 1	CRD-D001A Filter	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-500-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-F500A Valve NC	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-501-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-F501A Globe V	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-004-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-F002A Gate V	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-F001B Gate V	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-005-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	CRD-D001B Filter	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-502-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-F500B Globe V	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-503-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-F501B Globe V	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-006-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-F002B Gate V	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	100A-CRD-007-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG
	20A-CRD-700-S Pipe	2.82 MPaG, 2066°C, 6D, C	Was 1.37 MPaG

CRD pump suction piping Condensate, Feedwater and Condensate Air Extraction System or Condensate Storage Tank of the Makeup Water System (Condensate). (Continued)

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	20A-CRD-F700 Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	CRD-DPT001 Diff PT	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	20A-CRD-F701 Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	20A-CRD-701-S Pipe	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	100A-CRD-F003A Gate V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	100A-CRD-008-S Pipe	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	25A-CRD-504-S Pipe	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	25A-CRD-F004A Safe.RV	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	20A-CRD-702-S Pipe	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	20A-CRD-F702A Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	CRD-PI002A Press I	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	CRD-PT003A Press T	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	CRD-C001A Pump	3.4318.63 MPaG, 66°C, 6D, C	No change
	* A-CRD-F502A Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	* A-CRD-505-S Pipe	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	* A-CRD-F503A Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	* A-CRD-F504A Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG

CRD pump suction piping Condensate, Feedwater and Condensate Air Extraction System or Condensate Storage Tank of the Makeup Water System (Condensate). (Continued)

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	* A-CRD-506-S Pipe	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	* A-CRD-507-S Pipe	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	* A-CRD-F505A Globe V	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	* A-CRD-F506A Globe V	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	100A-CRD-F003B Gate V	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	100A-CRD-010-S Pipe	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	25A-CRD-508-S Pipe	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	25A-CRD-F004B Safe.RV	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	20A-CRD-703-S Pipe	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	20A-CRD-F702B Globe V	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	CRD-PI002B Press I	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	CRD-PT003B Press T	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	CRD-C001B Pump	3.43 18.63 MPaG, 66°C, 6D, C	No change
	* A-CRD-509-S Pipe	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	* A-CRD-F502B Globe V	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	* A-CRD-F503B Globe V	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG
	* A-CRD-510-S Pipe	2.82 MPaG, 206.6°C, 6D, C	Was 1.37 MPaG

CRD pump suction piping Condensate, Feedwater and Condensate Air Extraction System or Condensate Storage Tank of the Makeup Water System (Condensate). (Continued)

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet1	* A-CRD-F504B Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	* A-CRD-F505B Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	* A-CRD-511-S Pipe	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
	* A-CRD-F506B Globe V	2.82 MPaG, 2066 °C, 6D, C	Was 1.37 MPaG
Sheet 3	<u>25A-CRD-075 Pipe</u>	<u>2.82 MPaG, 66°C, 6D, C</u>	<u>Was 1.37 MPaG</u>
	<u>25A-CRD-076 Pipe</u>	<u>2.82 MPaG, 66°C, 6D, C</u>	<u>Was 1.37 MPaG</u>
	<u>25A-CRD-077 Pipe</u>	<u>2.82 MPaG, 66°C, 6D, C</u>	<u>Was 1.37 MPaG</u>
	<u>25A-CRD-F062A Valve</u>	<u>2.82 MPaG, 66°C, 6D, C</u>	<u>Was 1.37 MPaG</u>
	<u>25A-CRD-F062B Valve</u>	<u>2.82 MPaG, 66°C, 6D, C</u>	<u>Was 1.37 MPaG</u>

CRD interface from pump discharge to the MUWC System condensate storage tank

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	50A-CRD-034-S Pipe	18.63 MPaG, 66°C, 6D, C	No change
	50 20A-CRD-035-S Pipe	18.63 MPaG, 66°C, 6D, C	No change
	50 20A-CRD-F023 Globe V	18.63 MPaG, 66°C, 6D, C	No change
	50A-MUWC-xxx-S Pipe	1.37 MPaG, 66°C, 6D, C	No change

CRD interface from pump discharge to the RRS System

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	20A-CRD-036-S Pipe	18.63 MPaG, 66°C, 4C 6D, BC	No change
	20A-CRD-F024 Globe V	18.63 MPaG, 66°C, 4C 6D, BC	No change
	20A-CRD-F025 Globe V	18.63 MPaG, 66°C, 4C 6D, BC	No change

CRD interface from pump discharge to the CUW System

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	20A-CRD-037-S Pipe	18.63 MPaG, 66°C, 4C6D , BC	No change
	20A-CRD-F026 Globe V	18.63 MPaG, 66°C, 4C6D , BC	No change
	20A-CRD-F027 Globe V	18.63 MPaG, 66°C, 4C6D , BC	No change

3MA.6.3 Upgraded Components - SLC System

STD DEP 3MA-1

SLC Injection Pump A suction piping from the SLC storage tank.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	SLC-C001A Pump	10.79 MPaG, 66°C, 23B , A	No change
	SLC-F003A Relief V.	10.79 MPaG, 66°C, 23B , A	No change
	50A-SLC Pipe	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	100A-SLC-F002A Valve LO	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	100A-SLC-SS Pipe	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	100A-SLC-F001A Valve MO	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	* SLC-A001 Storage Tk.	Static Hd., 66°C, 23B , A	No Change

SLC Injection Pump B suction piping from the SLC storage tank.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	SLC-C001B Pump	10.79 MPaG, 66°C, 23B , A	No change
	SLC-F003B Relief V.	10.79 MPaG, 66°C, 23B , A	No change
	50A-SLC SS Pipe	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	100A-SLC-F002B Valve LO	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	100A-SLC-SS Pipe	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	20A-SLC-SS Pipe	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	20A-SLC-F500 Valve	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	100A-SLC-F001B Valve MO	2.82 MPaG, 66°C, 23B , A	Was 1.37 MPaG
	* SLC-A001 Storage Tk.	Static Hd., 66°C, 23B , A	No Change

SLC test tank piping.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	** 40A-SLC-F011 Valve LC	10.79 MPaG, 66°C, <u>23B</u> , A	Was ATP
	40A-SLC-SS Pipe	10.79 2.82 MPaG, 66°C, <u>23B</u> , AC	Was 1.37 MPaG
	SLC-A002 Test Tank	2.82 MPaG, 66°C, <u>23B</u> , AC	Was STH
	100A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , AC	Was 1.37 MPaG
	100A-SLC-F012 Valve LC	2.82 MPaG, 66°C, <u>23B</u> , A	Was 1.37 MPaG
	25A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , AC	Was 1.37 MPaG
	SLC-F026 Relief V.	2.82 MPaG, 66°C, <u>23B</u> , A	Was 1.37 MPaG
	20A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , A	Was 1.37 MPaG
	100A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , A	Was 1.37 MPaG

SLC interface with MUWP for makeup and pressurization of suction piping from tank.
(Pressure higher than static head of SLC storage tank.)

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	80A-SLC-SS Pipe	2.82 1.37 MPaG, 66°C, <u>23B</u> , C	Was 1.37 MPaG
	SLC-F013 Check V.	2.82 MPaG, 66°C, <u>23B</u> , C	Was 1.37 MPaG
	80A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , C	Was 1.37 MPaG
	80A-SLC-F014 Valve LC	2.82 MPaG, 66°C, <u>23B</u> , A	Was 1.37 MPaG
	80A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , C	Was 1.37 MPaG
	20A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , C	Was 1.37 MPaG
	20A-SLC-F020 Valve LO	2.82 MPaG, 66°C, <u>23B</u> , A	Was 1.37 MPaG
	20A-SLC-D002 RO	2.82 MPaG, 66°C, <u>23B</u> , A	Was 1.37 MPaG
	20A-SLC-SS Pipe	2.82 MPaG, 66°C, <u>23B</u> , C	Was 1.37 MPaG

SLC storage tank interface with MUWP for purified makeup water.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	80A-SLC-SS Pipe	2.82 <u>1.37</u> MPaG, 66°C, 23 <u>B</u> , C	Was 1.37 MPaG
	SLC-F013 Check V.	2.82 MPaG, 66°C, 23 <u>B</u> , C	Was 1.37 MPaG
	80A-SLC-SS Pipe	2.82 MPaG, 66°C, 23 <u>B</u> , C	Was 1.37 MPaG
Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	25A-SLC-SS Pipe	2.82 MPaG, 66°C, 23 <u>B</u> , C	Was 1.37 MPaG
	25A-SLC-F015 Valve LC	2.82 MPaG, 66°C, 23 <u>B</u> , AC	Was 1.37 MPaG
	20A-SLC-SS Pipe	2.82 MPaG, 66°C, 2B4 <u>D</u> , C	Was 1.37 MPaG
	20A-SLC-F505 Valve NO	2.82 MPaG, 66°C, 2B4 <u>D</u> , AC	Was 1.37 MPaG
	25A-SLC-SS Pipe	2.82 MPaG, 66°C, 2B4 <u>D</u> , C	Was 1.37 MPaG
	25A-SLC-F023 Valve LC	2.82 MPaG, 66°C, 2B4 <u>D</u> , AC	Was 1.37 MPaG
	25A-SLC-SS Pipe	2.82 <u>0.863</u> MPaG, 66°C, 2B4 <u>D</u> , C	No Change
	*SLC-A001 Storage TK.	Static Head, 66°C, 23 <u>B</u> , A	No Change

3MA.7.3 Upgraded Component - CUW System

STD DEP 3MA-1

CUW system interface with Radwaste System

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>xxA-CUW-xxx Pipe(Sam)</u>	<u>2.82 MPaG, 66°C, 6D, C</u>	<u>Was 0.981 MPaG</u>
	<u>xxA-CUW-xxx Pipe(RV)</u>	<u>2.82 MPaG, 66°C, 6D, C</u>	<u>Was 0.981 MPaG</u>

3MA.8.1 Upgrade Description

STD DEP T1 2.4-1

This new line has the gate valve locked open with the check valve's flow direction into the skimmer surge tank and provides an open path into the skimmer surge tank from valves RHR F016A, RHR-F016B and RHR-F016C.

And to the last sentence of the second paragraph.

All the piping between the FPC valves, FPC-F029, FPC- F031, and FPC-F106 and the RHR valves, RHR-F016A, RHR-F016B and RHR-F016C, were upgraded to the URS design pressure of 2.82 MPaG.

The following information is added to the last sentence of the third paragraph.

Valves FPC-F093 and FPC-F017 are always locked open and provide an open path from the RHR valves, RHR-F015A, RHR-F015B and RHR-F015C, to the spent fuel storage pool and cask pit.

3MA.8.3 Upgraded Components - FPC System

STD DEP T1 2.4-1

STD DEP 3MA-1

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>250A300A-RHR-F015A Valve MO</u>	<u>3.43 MPaG, 182°C,3B,As</u>	<u>No Change</u>
	<u>250A300A-FPC-SS Pipe</u>	<u>1.57 MPaG, 66°C,4C,A(S2)</u>	<u>No Change</u>

The following information is added to the **FPC System interface with makeup from RHR System or SPCU System** grouping.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>300A-RHR-F016A Valve MO</u>	<u>2.82 MPaG, 182°C,3B,As</u>	<u>No Change</u>
	<u>300A-FPC-SS Pipe</u>	<u>2.82 MPaG, 66°C,4C,B(S1,S2)</u>	<u>No Change</u>

* FPC Valve F029 is open only for fuel pool cooling mode B (maximum heat load operation with RHR System A, B or C operating in parallel with FPC System).

** FPC Valve F031 is open only for fuel pool cooling mode B (refueling when Dryer/Separator Pool is drained and pumped to Radwaste LCW collector tank by RHR System A, B or C).

FPC System interface with makeup from RHR System or SPCU System.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	250300 A-RHR-F015C Valve MO	3.43 MPaG, 182°C, 3B, As	No change
	250300 A-FPC-SS Pipe	1.57 MPaG, 66°C, 3B,4C , A(S2)	No change
	250300 A-RHR-F015B Valve MO	3.43 MPaG, 182°C, 3B, As	No change
	250A-FPC-F022 Valve LQ LC	1.57 MPaG, 66°C, 4C, A(S2)	No change
	250A-FPC-SS Pipe	1.57 MPaG, 66°C, 4C, A(S2)B(S1,S2)	No change
	250A-FPC-F023 Check Valve	1.57 MPaG, 66°C, 4C, A(S2)B(S1,S2)	No change
	250A-FPC-SS Pipe	1.57 MPaG, 66°C, 4C, A(S2)B(S1,S2)	No change
	<u>20A-FPC-F097 Valve</u>	<u>1.57 MPaG, 66°C, 4C, A(S2)</u>	<u>No change</u>
	<u>20A-FPC-xxx SS Pipe</u>	<u>1.57 MPaG, 66°C, 4C, A(S2)</u>	<u>No change</u>
	<u>80A-FPC-F096 Valve</u>	<u>1.57 MPaG, 66°C, 4C, A(S2)</u>	<u>No change</u>

3MA.10.3 Upgraded Component - RRS System

STD DEP 3MA-1

RRS interface with MUWP System for Reactor Internal Pump (RIP) casing makeup water.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>xxA-MUWP-xxx Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-MUWP-Fxxx Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>15A-MUWP-188 Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>15A-MUWP-F145 Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-186 Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-F143 Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-187 Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-F144 Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-MUWP-xxx Pipe</u>	<u>2.82 MPaG, 171°C, 3B,As</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-MUWP-Fxxx Valve</u>	<u>2.82 MPaG, 171°C, 3B,As</u>	<u>Was 1.37 MPaG</u>
	<u>150A-RRSMUWP-Fxxx Check Valve</u>	<u>1.37 MPaG, 66°C, 6D, C</u>	<u>No change</u>

3MA.11.3 Upgraded Components - ~~MUCW~~MUWC System

STD DEP 3MA-1

MUWC System interface with MUWP

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	150125A-WUMP MUWP-101 SS Pipe	1.37 MPaG, 66°C, 46 D, C	No change
	150A-WUMP MUWP-Fxxx SS Valve LO	1.37 MPaG, 66°C, 46 D, C	No change
	150A-WUMP MUWP-Fxxx SS Check V	1.37 MPaG, 66°C, 46 D, C	No change

MUWC interface with the CRD System pump discharge piping.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	50A-MUWC-F103 Valve	1.37 MPaG, 66°C, 4D, B	Lock Open

3MA.12.3 Upgraded Components - MUWP System

STD DEP 3MA-1

MUWP System interface with RRS for Reactor Internal Pump (RIP) casing makeup water.

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	4520A-RRS-502A-K Pipes	8.62 MPaG, 302°C, 4A, As	No change
	4520A-RRS-F504A-K Valves NC	8.62 MPaG, 302°C, 4A, As	No change
	15A-MUWP-189-198 Pipes	2.82 MPaG, 66°C, 46D,C	Was 1.37 MPaG
	50A-MUWP-185 Pipe	2.82 MPaG, 66°C, 46D,C	Was 1.37 MPaG
	<u>xxA-MUWP-xxx Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-MUWP-Fxxx Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>15A-MUWP-188 Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>15A-MUWP-F145 Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-186 Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-F143 Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-187 Pipe</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>50A-MUWP-F144 Valve</u>	<u>2.82 MPaG, 66°C, 6D,C</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-MUWP-xxx Pipe</u>	<u>2.82 MPaG, 171°C, 3B,As</u>	<u>Was 1.37 MPaG</u>
	<u>xxA-MUWP-Fxxx Valve</u>	<u>2.82 MPaG, 171°C, 3B,As</u>	<u>Was 1.37 MPaG</u>
	50A-MUWP-183 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	80A-MUWP-181 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	80A-MUWP-F140 Valve LO	1.37 MPaG, 66°C, 46D, C	No change
	125A-MUWP-101 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	125A-MUWP-F101 Valve LO	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-602 Pipe	1.37 MPaG, 66°C, 46D, C	No change

MUWP System interface with RRS for Reactor Internal Pump (RIP) casing makeup water. (Cont.)

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
Sheet 1	20A-MUWP-F602 Valve NC	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-601 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-F601 Valve NC	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-FQ102 Flow Integr.	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-801 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-F801 Valve NC	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-800 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-F800 Valve NC	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-PX101 Press. Pt.	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-600 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-F600 Valve NC	1.37 MPaG, 66°C, 46D, C	No change
	20A-MUWP-F100 Valve LO	1.37 MPaG, 66°C, 46D, C	No change
	125A-MUWP-102 Pipe	1.37 MPaG, 66°C, 46D, C	No change
	125A-MUWP-F102 Valve NC	1.37 MPaG, 66°C, 46D, C	No change
	150A-MUWP-xxx Pipe	1.37 MPaG, 66°C, 46D, C	No change
	150A-MUWP-xxx Pipe	1.37 MPaG, 66°C, 46D, C	No change
	150A-RRSMUWP-Fxxx Check Valve	1.37 MPaG, 66°C, 46D, C	No change
	150A-MUWP-xxx Pipe	Static Head, 66°C, 46D, C	No change

3MA.13.1 Upgraded Description

STD DEP 3MA-1

The Radwaste System LCW and HCW inlet piping header connects to each interfacing system at a valve. The header is not upgraded because it is an open pathway to the collector tanks. The ~~two~~^{four} LCW tanks rotate the fill mode one at a time through a level controlled AO valve at the inlet of each tank. The maintenance valve is a lock open type. The ~~two~~^{three} HCW tanks operate similarly to the LCW tanks.

3MA.13.3 Upgraded Components - RW System

~~RADWASTE SYSTEM, GE Proprietary Drawing 103E1634, Sheets 1, 3 and 7.~~

RW LCW Subsystem interface with the RHR System

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>200A-LCW-CSSS Pipe</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>200A-LCW Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>200A-LCW-F001C AO Valve</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	* <u>LCW Collector Tank C</u>	<u>0 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>200A-LCW Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>200A-LCW-F001D AO Valve</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	* <u>LCW Collector Tank D</u>	<u>0 MPaG, 66°C, 4D, B</u>	<u>No change</u>

RW HCW interface with the RHR System, Subsystem A

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>150A-HCW-F0032A Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-F002B Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-SS Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-F002C Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	* <u>HCW Collector Tank C</u>	<u>0 MPaG, 66°C, 4D, B</u>	<u>No change</u>

RW HCW interface with the RHR System, Subsystem B

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>150A-HCW-F0032A Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-F002B Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-SS Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-F002C Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	* <u>HCW Collector Tank C</u>	<u>0 MPaG, 66°C, 4D, B</u>	<u>No change</u>

RW HCW interface with the RHR System, Subsystem C

Reference	Components	Press./Temp./Design/ Seismic Class	Remarks
	<u>150A-HCW-F0032A Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-F002B Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-SS Valve LO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	<u>150A-HCW-F002C Valve AO</u>	<u>0.981 MPaG, 66°C, 4D, B</u>	<u>No change</u>
	* <u>HCW Collector Tank C</u>	<u>0 MPaG, 66°C, 4D, B</u>	<u>No change</u>