

ENVIRONMENTAL QUALIFICATION SUMMARY REPORT
ADDENDUM NO. 3 TO REVISION 4

<u>ITEM</u>	<u>REASON</u>
1. EESS #29 Rev. 5	Deleted. Fortysix (46) Tobar Transmitters replaced with Rosemount 1153's per EESS # 155A Rev. 4.
2. EESS #155A Rev. 4	Added. Fortysix (46) Transmitters (deleted Tobar Transmitters from EESS #29)
3. FSAR TABLE 3.11-5 Amendment 16	Change purchase order and EESS# for fortysix (46) transmitters.

I. Nag 5/23/86
Prepared

J. Lin 5/23/86
Reviewed

J.F. Duffy 5/23/86
Approved

HOPE CREEK GENERATING STATION
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REF. NO.	EESS NO.	DESCRIPTION	NO. OF COMP- ONENTS	STATUS
16	F37917-TFB-001	Buchanan Terminal and Fuse Block	G(17)	Complete
17	RESERVED			
18	RESERVED			
19	F43620-HVT-001	RayChem High Voltage Terminal Kit	G(1)	Complete
20	F47888-MCON-001	RayChem N-MCK Motor Connection Kit	G(1)	Complete
21	F48479-SEAL-001	RayChem Cable End Sealing Kit	G(2)	Complete
22	F48561-TINS-001	RayChem Thermofit Insulation	G(1)	Complete
23	F48561-SPL-002	RayChem WCSF-N Splice	G(1)	Complete
24	F51216-SEAL-001	Conax Electrical Conductor Seal Assembly	G(1)	Complete
25	J201-HS-001	Micro Switch Selector Switch	14	Complete
26	J201-AMP-002	AMP Wire Lug	G	Complete
27	J201-TFB-003	Buchanan Terminal and Fuse Block	G(4)	Complete
28	J301-T-001	Tobar Instrument Transmitter (32 Series #1)	18	Complete
29	RESERVED			
30	J359-VAR-001	Comsip Hydrogen & Oxygen Analyzer	50	Complete
31	J359-VAR-002	H ₂ /O ₂ Heat Tracing Panel	12	Complete
32	RESERVED			
33	F61553-PG-001	Modified Conax PG Gland Assembly	G	Complete
34	F68159-TE-001	Weed Temperature Element	2	Complete
35	J373-RE-001	DAPA-GA Ion Chamber Detector (RD-23)	2	Complete
36	J373-RE-002	RBE/RFE Inline Beta Detector - RD25A	6	Complete

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REF. NO.	EESS NO.	DESCRIPTION	NO. OF COMP-ONENTS	STATUS
144	P305-HV-002(+2S)	Limatorque A.C. Motor Operator	74	Complete
145	P305-SV-003	ASCO Solenoid Valves	13	Complete
146	P305-ZS-005	NAMCO Limit Switch	17	Complete
147	P305-HV-004(+2S)	BIF/Paul Monroe Hydraulic Actuator Assembly	8	Complete
148	RESERVED			
149	M001-LT-036	Gould Level Transmitter	1	Complete
150	M001-LS-023	Magnetrol Level Switches - C11	2	Complete
151	M001-LS-024	Magnetrol Level Switches - C11	4	Complete
152	M001-SW-025	G.E. Selector Switch, CR2940 - C12	2	Complete
153	M001-CONN-026	PRM Connectors - C23A/24A	1	Complete
153A	M001-CONN-026	IRM Connectors - C23A/24A	1	Complete
154	M001-EAM-027	G.E. Voltage Pre-amplifier - C25	8	Complete
155	M001-XMIT-028	Rosemount Pressure Transmitter 1153B-C59	131	Complete
155A	119812-XMIT-001	Rosemount 1153B Transmitters Utilizing Output Code "R" Electronic Circuit Board	90	Complete
156	P1-113281/945872-XMIT-001	Rosemount 1153B Transmitters	2	Complete
157	M001-ST-030	Terry RCIC Steam Turbine Assembly-S08/S09	9	Complete
158	M001-LS-031	NAMCO MSIV Limit Switch - S05B	8	Complete
159	M001-SRV-032	Safety Relief Valve - S20	19	Complete
160	M001-HV-033	MSIV Actuator - S21	24	Complete
161	M001-PS-034	Barksdale Pressure Switch - C09	4	Complete
162	RESERVED			
163	M786-FUSE-003	Bussman Fuse	6	Complete

Prepared By I. Nag Date 5/23/86

Reviewed By C.W. Johnson Date 5/22/86

155A

DRP. NO: 119812-XMIT- 001
REV. NO: 4
DATE: 5/22/86

HOPE CREEK GENERATING STATION

EQUIPMENT EVALUATION SUMMARY SHEET
ROSEMOUNT 1153B TRANSMITTERS UTILIZING OUTPUT
CODE "R" ELECTRONIC CIRCUIT BOARDS

EQUIPMENT DESCRIPTION	PARAMETERS	ENVIRONMENT		DOCUMENTATION REFERENCE		QUALIF. METHOD	OPEN ITEMS	MARGIN	REMARKS
		SPECIFIED	QUALIFIED	SPECIFIED	QUALIFIED				
(1) SYSTEM See EESS#155 (2) TAG NO. See Notes 4 and 5 (3) COMPONENT Electronic circuit boards (output Code R) (4) MANUFACTURER Rosemount (5) MODEL NO. AMP.-P/N1153-0125-0002 Calib.-P/N1153-0231-0001 (6) FUNCTION Improved electronics for the 1153B series (Notes 4 and 5) (7) ACCURACY a) SPECIFIED $\pm 0.25\%$ b) ACTUAL $< \pm 0.25\%$ (See Note #3) (8) LOCATION See Notes 4 & 5 (9) ABOVE FLOOD LEVEL YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> (10) SEISMICALLY TESTED YES <input checked="" type="checkbox"/> REF. A NO <input type="checkbox"/> (Ref. C pg. 8) (11) SURVEILLANCE REQD. YES <input checked="" type="checkbox"/> REF. A NO <input type="checkbox"/> (See EESS #155, 110 and 114)	OPERATING TIME	100 days	111 days	Ref. A Appendix H # Pg. 42	Ref. C Fig. 1 Ref. E	Test and Analysis	None	11 days	Arrhenius calculation used to extend DBE Test data to envelope post DBE period (Ref. E)
	TEMP. (°F)	148°F	265°F(max)	Ref. A Pg. 42	Ref. C Fig. 1	Test	None	Adequate	Margin provided in operating time.
	PRESSURE (PSIG)	3 (30 min) 0 (180days)	24psig	Ref. A Pg. 42	Ref. C Fig. 1	Test	None	21psig	Ref. D identifies more conservative (Atmos.) DBE specified conditions.
	RELATIVE HUMIDITY (%)	100%	100% (Spray)	Ref. A Appendix J Ref. D Table 6	Ref. C, Fig. 1 Ref. B, Pg. 26	Test	None	Not Required	Saturated steam used in DBE chamber.
	FLOODING/FROTH	N/A	N/A	N/A	N/A	N/A	None	Not Required	
	RADIATION (RADS)	6.1E6RG 1.1E6RB	2.44E7RG Note #2	Ref. A Pg. 42, Ref. D Table 6	Ref. B, Table 8 (Pg. 16)	Test	None	1.8E7RG	
	AGING	40 years @ 101°F	17.8-20years @ 104°F	Ref. D Table 6 A & B	Ref. A Pg. 66 A & B	Test and Analysis	None	Not Required	Complete replacement of transmitter required at end of qualified life see (EES #155)
	SPRAY	N/A	Water Spray (24 hours)	N/A	Ref. C Fig. 1	Test	None	Not Required	

DOCUMENTATION REFERENCE:

- GE Co. Equipment Qualification Report NEDC-30446, Rev. 3 dtd 11/21/85 (NSSS Book No. C59 See EESS#155).
- Rosemount Environmental Qualification type test report (DB300131 Rev. A dtd 12/13/83).
- Rosemount Environmental Qualification type test procedure (3825, Rev. D, dtd 4/8/82).
- Environmental Design Criteria 10855-D7.5 Rev. 4 dtd 12/85.
- Arrhenius calculation, 119812-ARRH-001 dtd 12/85.

NOTES

- Improved electronics used in the 1154 series transmitters were designed by Rosemount to be fully interchangeable with the 1153B transmitter. These new circuit boards designated as output Code "R", have been qualified by similarity and supplemental DBE testing for use in the 1153 transmitter as reported in Ref. B&C. This document summarizes qualification data for the new electronic circuit boards presented in Ref. B&C and compliments the basic Rosemount 1153B series transmitter qualification of Ref. A (NSSS Book #C59).
- Qualified/test radiation dose envelopes both specified gamma and beta equivalent levels.
- A separate setpoint methodology program has evaluated post DBE changes in accuracy.

NOTES (Cont'd)

4. The following Rosemount 1153B transmitters with output code "R" electronic circuit boards were purchased by PSE&G as replacements for the original 1153B transmitters supplied by and qualified by GE Co. under NSSS Phase III and ATWS Program. See EESS No. 155,110, and 114 for location, function, NUREG 0588 Appendix E Category, P&ID Reference, and further information regarding specified and qualified parameters.

<u>Tag No.</u>	<u>MPL</u>	<u>Tag No.</u>	<u>MPL</u>
1 BB FT N014A	B31	1 BJ LT 4805-2	BOP
1 BB FT N014D	B31	1 EG PDT 2485A	BOP
1 BB LT N080A	B21	1 EG PDT 2485B	BOP
1 BB LT N091A	B21	1 EG PDT 2485C	BOP
1 BB PT N078A	B21	1 FC PT N058D	E51
1 BB PT N090A	B21	1 FD PT N055A	E41
1 BB PT N090F	B21	1 FD PT N055C	E41
1 BC FT N052A	E11	1 FD PT N055G	E41
1 BC PT N058B	E11	1 FD PT N058G	E41
1 BC PT N058D	E11	1 SB LT N091C	B21
1 BC PT N055D	E11	1 SB LT N091H	B21
1 BD PT N053	E51	1 SM LT N081A	B21
1 BE PDTN056	E21	1 SM LT N081B	B21
1 BE PT N054A	E21	1 BB PT N403A	B21
1 BE PT N054B	E21	1 BB PT N403E	B21
1 BE PT N090N	B21	1 BB LT N402A	B21
1 BE PT N090P	B21	1 BB LT N402E	B21
1 BG FT N036D	G33	1 AB PDT N086A	B21

5. The following Rosemount 1153B transmitters with output code "R" electroinc circuit board was purchased by PSE&G for replacement of the original Tobar transmitter. The specific environmental parameters encompass the required environmental parameters of the following transmitters as delineated in Ref. D.

TAG NO. (Item 2)	LOCATION (Item 8)	FUNCTION (Item 6)	NUREG-0588 APPENDIX-E CATEGORY	REMARKS
1-BJ-PT-4771	RB 54' RM 4112	Senses pump discharge header pressure and provides signal for indication and alarm.	Additional info to operator and power supplied from Class 1E bus.	M55-1 PO Item 1 P.O. 16701-004-1076
1-EG-LT-2508 A&B	RB 201' RM4706	Located on expansion tank, indicates excessive loss of water in one SACS loop, starts the alternate cooling loop.	2a	M11-1 P.O. 132016
1-EG-FT-2544 A&B C&D	RB 102' RM 4309	Measures flow in SACS loop and starts back up pump in alternate loop on low flow.	2a	M11-1 P.O. 132016
1-BC-PT-4462A	RB 102' RM4328	Provides signal for flow indication in control room based on RHR flow to drywell spray headers. R.G. 1.97 Parameter.	2a	M51-1 P.O. 132016

TAG NO. (Item 2)	LOCATION (Item 8)	FUNCTION (Item 6)	NUREG-0588 APPENDIX-E CATEGORY	REMARKS
1-EG-FT-2549A1	RB 102', Rm.4309	Measures SACS pump discharge flow. Provides signal to main control board for indication. R.G. 1.97 requirement	2a	M11-1 PO 132017
1-EG-FT-2549B1	RB 102', Rm.4307	"	"	
1-BC-FT-4435	RB 77', Rm.4205	Provides signal for flow indication of remote shutdown. Panel based on RHR flow to reactor vessel	Additional operator information and power supplied from Class 1E bus	M51-1 PO 132017
1-EC-FT-4649A&B	RB 162', Rm.4608	Provides low pump discharge alarm signal and control signal to shutdown fuel cooling pump on low discharge flow	2a	M53-1 PO 132017
1-FC-FT-415B	RB 54', Rm.4108	Senses RCIC pump discharge flow and provides control signal for RCIC pump turbine	2a	M49-1 PO 132017
1-KP-FT-5053A&B	RB 102', Rm.4315	Provides a signal for alarm and indication and control of MSIV inlet seal gas line flow.	2a	M72-1 PO 132017
1-EG-FT-2511A&B	RB 77', Rm.4211	Measures RHR heat exchanger discharge flow. Provides signal to main control room for indication.	Additional operator info & power supplied from Class 1E bus	M11-1 PO 132017
1-BC-FT-4461A	RB 77', Rm.4216	Provides signal for flow indication to control room based on flow to suppression pool spray header. R.G. 1.97 requirement	2a	M51-1 PO 132017
1-BC-FT-4461B	RB 77', Rm.4203	"	"	
1-BC-FT-4462B	RB 77', Rm.4203	Provides signal for flow indication in control room based on RHR flow to drywell spray headers	"	M51-1 PO 132017

TAG NO. (Item 2)	LOCATION (Item 8)	FUNCTION (Item 6)	NUREG-0588 APPENDIX-E CATEGORY	REMARKS
1-GU-FT-9394A -9394B -9394C -9394D -9394E -9394F	RB 132', Rm. 4410 RB 178', Rm. 4617 RB 132', Rm. 4411 RB 162', Rm. 4615 RB 162', Rm. 4614 RB 178', Rm. 4616	Provides control signal to FRV's recirculation fan on deluge activation	2a	M83-1 PO 132017
1-GU-FT-9425A&B	RB 145', Rm. 4511	Upon detection of deluge actuation, shuts down its corresponding FRVS vent system fan	2a	M84-1 PO 132017
1-EG-LT-2508 C&D	RB 201', Rm. 4706	Located on expansion tank, indicates excessive loss of water in one SACS loop starts the alternate cooling loop	2a	M11-1 PO 132017
1-EC-LT-4661A 1-EC-LT-4661B	RB 162', Rm. 4605	Provides low-low level alarm signal for skimmer surge tank and control signal to shutdown fuel pool cooling pump and close filter demineralizing system isolation valves	2a	M53-1 PO 132017
1-EA-PT-2356A1, A2 & A3	RB 77', Rm. 4211	Senses high pressure in SACS heat exchanger cooling water discharge line to cooling tower. Provides signal (two out of three required) to open dump valve to discharge to year if normal discharge line is restricted	2a	M10-1 PO 132017
1-EA-PT-2356B1, B2 & B3	RB 77', Rm. 4209	"	"	M10-1 PO 132017
1-BD-PT-4303	RB 54' Rm. 4108	Measure jockey pump discharge pressure for alarm and indication	Additional info to operator and power supplied from Class 1E bus	M49-1 PO 132017
1-EC-PT-4669A 1-EC-PT-4669B	RB 162', Rm. 4608	Provides low pump suction signal to shutdown fuel pool cooling pump	2a	M53-1 PO 132017

TAG NO. (Item 2)	LOCATION (Item 8)	FUNCTION (Item 6)	MUREG-0588 APPENDIX-E CATEGORY	REMARKS
1-BJ-PT-4891	RB 77', Rm. 4219	Measures jockey pump discharge pressure and provides signal for alarm and indication.	Additional info to operator and power supplied from Class 1E bus	M56-1 PO 132017
1-KP-PT-5827A&B	RB 102', Rm. 4315	Senses MSIV seal gas line pressure and provides signal for indication and control of MSIV system pressure differential control valve	2a	M72-1 PO 132017
1-EA-PDT-2373A 1-EA-PDT-2373B	RB102', Rm. 4309	Senses low cooling water differential pressure across SACS heat exchanger. Provides signal for alarm on low service water cooling flow through heat exchanger	Additional info to operator and power supplied from Class 1E bus	M10-1 PO 132017
1-EA-PDT-2354A 1-EA-PDT-2354B	RB 102', Rm. 4309 RB 102', Rm. 4307	"	"	M10-1 PO 132017
1-EG-PDT-2529A&B	RB 162', Rm. 4608	Measure flow through fuel pool heat exchanger and initiates alarm in control room	"	M11-1 PO 132017
1-EG-PT-2549B3	RB 102' Rm. 4307	Measures SACS Pump Discharge Flow. Provides signal to Remote Shutdown Panel for indication.	"	M11-1 PO 132017

TAG NO. (Item 2)	LOCATION (Item 8)	FUNCTION (Item 6)	NUREG-0588 APPENDIX-Z CATEGORY	REMARKS
1-GS-PT-4960A3	RB 162' Rm 4605	Senses drywell pressure and provides signal to recorder in control room. R.G. 1.97 parameters	2a	M42-1, PO 132017
1-GS-PF-4960B3	RB 102' Rm 4323	Senses suppression chamber pressure and provides signal to recorder in control room. R.G. 1.97 parameters.	2a	M57-1, PO 132017

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EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-10-1

SYSTEM: SERVICE WATER
FA

P.O.	ID NO. Note (5)	RPL NO.	COMPONENT	LOCATION		P&M EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	FEES REF. NO.
				BLDG.	ELEV.			
P3050	1-EA-HV-F073		Control Valve	Reactor	77	No	No	144
P3050	1-EA-ZS-F073		Limit Switch	Reactor	77	No	No	144
J6030	1-BA-SV-F074		Solenoid Valve	Reactor	77	No	No	46
P3050	1-EA-HV-2203		Control Valve	Reactor	102	No	No	144
P3050	1-EA-ZS-2203		Limit Switch	Reactor	102	No	No	144
P3050	1-EA-HV-2204		Control Valve	Reactor	102	No	No	144
P3050	1-EA-ZS-2204		Limit Switch	Reactor	102	No	No	144
P3050	1-EA-HV-2207		Control Valve	Reactor	102	No	No	144
P3050	1-EA-ZS-2207		Limit Switch	Reactor	102	No	No	144
P3050	1-EA-HV-2234		Control Valve	Reactor	77	No	No	144
P3050	1-EA-ZS-2234		Limit Switch	Reactor	77	No	No	144
J6030	1-EA-SV-2235		Solenoid Valve	Reactor	77	No	No	47
P3050	1-EA-HV-2236		Control Valve	Reactor	77	No	No	144
P3050	1-EA-ZS-2236		Limit Switch	Reactor	77	No	No	144
J6030	1-EA-SV-2237		Solenoid Valve	Reactor	77	No	No	46
P3050	1-EA-HV-2238		Control Valve	Reactor	77	No	No	144
P3050	1-EA-ZS-2238		Limit Switch	Reactor	77	No	No	144
J6030	1-EA-SV-2239		Solenoid Valve	Reactor	77	No	No	47
P3050	1-EA-HV-2346		Control Valve	Reactor	77	No	No	144
P3050	1-EA-ZS-2346		Limit Switch	Reactor	77	No	No	144
132017	1-EA-PDT-2354A		Press. Diff. Trans.	Reactor	102	No	No	155A
132017	1-EA-PDT-2354B		Press. Diff. Trans.	Reactor	102	No	No	155A

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TABLE 3.11-5

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EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-10-1

SYSTEM: SERVICE WATER
EA

P.O.	ID NO. Note (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EES REF. NO.
				BLDG.	ELEV.			
P305Q	1-EA-HV-2355A		Control Valve	Reactor	102	No	No	144
P305Q	1-EA-ZS-2355A		Limit Switch	Reactor	102	No	No	144
P305Q	1-EA-HV-2355B		Control Valve	Reactor	102	No	No	144
P305Q	1-EA-ZS-2355B		Limit Switch	Reactor	102	No	No	144
P305Q	1-EA-HV-2356A		Control Valve	Reactor	102	No	No	144
P305Q	1-EA-ZS-2356A		Limit Switch	Reactor	102	No	No	144
132017	1-EA-PT-2356A1		Press Trans.	Reactor	77	No	No	155A
132017	1-EA-PT-2356A2		Press Trans.	Reactor	77	No	No	155A
132017	1-EA-PT-2356A3		Press Trans.	Reactor	77	No	No	155A
P305Q	1-EA-HV-2356B		Control Valve	Reactor	102	No	No	144
P305Q	1-EA-ZS-2356B		Limit Switch	Reactor	102	No	No	144
132017	1-EA-PT-2356B1		Press Trans.	Reactor	77	No	No	155A
132017	1-EA-PT-2356B2		Press Trans.	Reactor	77	No	No	155A
132017	1-EA-PT-2356B3		Press Trans.	Reactor	77	No	No	155A
P305Q	1-EA-HV-2357A		Control Valve	Reactor	77	No	No	144
P305Q	1-EA-ZS-2357A		Limit Switch	Reactor	77	No	No	144
P305Q	1-EA-HV-2357B		Control Valve	Reactor	77	No	No	144
P305Q	1-EA-ZS-2357B		Limit Switch	Reactor	77	No	No	144

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TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

PSID
M-10-1

SYSTEM: SERVICE WATER
FA

P.O.	ID NO. Note (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)		EISS REF. NO.
				BLDG.	ELEV.				
P 1050	1-EA-ZS-2360A		Position Switch	Reactor	102	No	No	146	
P 1050	1-EA-ZS-2360B		Position Switch	Reactor	102	No	No	146	
P 1050	1-EA-ZS-2363A		Position Switch	Reactor	102	No	No	146	
P 1050	1-EA-ZS-2363B		Position Switch	Reactor	102	No	No	146	
P 2010	1-EA-HS-2367A		Hand Switch	Reactor	102	No	No	25	
P 6030	1-EA-SV-2367A		Solenoid Valve	Reactor	102	No	No	47	
P 2010	1-EA-HS-2367B		Hand Switch	Reactor	102	No	No	25	
P 6030	1-EA-SV-2367B		Solenoid Valve	Reactor	102	No	No	47	
P 2010	1-EA-HS-2367C		Hand Switch	Reactor	102	No	No	25	
P 6030	1-EA-SV-2367C		Solenoid Valve	Reactor	102	No	No	47	
P 2010	1-EA-HS-2367D		Hand Switch	Reactor	102	No	No	25	
P 6030	1-EA-SV-2367D		Solenoid Valve	Reactor	102	No	No	47	
P 1050	1-EA-HV-2371A		Control Valve	Reactor	102	No	No	144	
P 1050	1-EA-ZS-2371A		Limit Switch	Reactor	102	No	No	144	
P 1050	1-EA-HV-2371B		Control Valve	Reactor	102	No	No	144	
P 1050	1-EA-ZS-2371B		Limit Switch	Reactor	102	No	No	144	
P 12017	1-EA-PDT-2373A		Press Diff. Trans.	Reactor	102	No	No	155A	
P 12017	1-EA-PDT-2373B		Press Diff. Trans.	Reactor	102	No	No	155A	
P 103A0	1-EG-HV-2446		Control Valve	Reactor	102	No	No	139	
P 103A0	1-EG-ZS-2446		Limit Switch	Reactor	102	No	No	139	
P 103A0	1-EG-HV-2447		Control Valve	Reactor	102	No	No	139	
P 103A0	1-EG-ZS-2447		Limit Switch	Reactor	102	No	No	139	
P 103A0	1-EC-HV-4647		Control Valve	Reactor	162	No	No	139	
P 103A0	1-EC-ZS-4647		Limit Switch	Reactor	162	No	No	139	
P 103A0	1-EC-HV-4648		Control Valve	Reactor	162	No	No	139	
P 103A0	1-EC-ZS-4648		Limit Switch	Reactor	162	No	No	139	

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TABLE 1.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-11-1

SYSTEM: SAFETY AUX COOL SYSTEM
EG

P.O.	ID NO. Note (5)	MPL NO.	COMPONENT	LOCATION		P&ID EQHIP. NOTE (1)	TMI ACTION PLAN EQHIP. NOTE (2)	FEES REF. NO.
				BLDG.	ELEV.			
M001	1-EG-PDT-2485A		Diff. Press Trans.	Reactor	102	No	No	155,155A
M001	1-EG-PDT-2485B		Diff. Press Trans.	Reactor	102	No	No	155,155A
M001	1-EG-PDT-2485C		Diff. Press Trans.	Reactor	102	No	No	155,155A
M001	1-EG-PDT-2485D		Diff. Press Trans.	Reactor	102	No	No	155
J2010	1-EG-HS-2485A2		Hand Switch	Reactor	102	No	No	25
J2010	1-EG-HS-2485B2		Hand Switch	Reactor	102	No	No	25
J2010	1-EG-HS-2485C2		Hand Switch	Reactor	102	No	No	25
J2010	1-EG-HS-2485D2		Hand Switch	Reactor	102	No	No	25
P3050	1-EG-HV-2491A		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2491A		Limit Switch	Reactor	102	No	No	144
P3050	1-EG-HV-2491B		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2491B		Limit Switch	Reactor	102	No	No	144
P3050	1-EG-HV-2494A		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2494A		Limit Switch	Reactor	102	No	No	144
P3050	1-EG-HV-2494B		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2494B		Limit Switch	Reactor	102	No	No	144
P3050	1-EG-HV-2496A		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2496A		Limit Switch	Reactor	102	No	No	144
P3050	1-EG-HV-2496B		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2496B		Limit Switch	Reactor	102	No	No	144
P3050	1-EG-HV-2496C		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2496C		Limit Switch	Reactor	102	No	No	144
P3050	1-EG-HV-2496D		Contr. Valve	Reactor	102	No	No	144
P3050	1-EG-ZS-2496D		Limit Switch	Reactor	102	No	No	144
I12016	1-EG-LT-2508A		Level Trans.	Reactor	201	No	No	155A
I12016	1-EG-LT-2508B		Level Trans.	Reactor	201	No	No	155A
I12017	1-EG-LT-2508C		Level Trans.	Reactor	201	No	No	155A
I12017	1-EG-LT-2508D		Level Trans.	Reactor	201	No	No	155A

HCCS FSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-11-1

SYSTEM: SAFETY AUX COOL SYSTEM
EG

P.O.	ID NO. Note (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)		EISS REF. NO.
				BLDG.	ELEV.				
112017	1-EG-FT-2511A		Flow Trans.	Reactor	77	Yes	No	155A	
112017	1-EG-FT-2511B		Flow Trans.	Reactor	77	Yes	No	155A	
P3050	1-EG-HV-2512A		Contr. Valve	Reactor	77	No	No	144	
P3050	1-EG-ZS-2512A		Limit Switch	Reactor	77	No	No	144	
P3050	1-EG-HV-2512B		Contr. Valve	Reactor	77	No	No	144	
P3050	1-EG-ZS-2512B		Limit Switch	Reactor	77	No	No	144	
12010	1-EG-HS-2517A		Hand Switch	Reactor	102	No	No	25	
16050	1-EG-SV-2517A		Solenoid Valve	Reactor	102	No	No	48	
16050	1-EG-ZS-2517A		Position Switch	Reactor	102	No	No	48A	
12010	1-EG-HS-2517B		Hand Switch	Reactor	102	No	No	25	
16050	1-EG-SV-2517B		Solenoid Valve	Reactor	102	No	No	48	
16050	1-EG-ZS-2517B		Position Switch	Reactor	102	No	No	48A	
P303AO	1-EG-SV-2520A		Solenoid Valve	Reactor	54	No	No	140	
P303AO	1-EG-ZS-2520A		Position Switch	Reactor	54	No	No	141	
P303AO	1-EG-SV-2520B		Solenoid Valve	Reactor	54	No	No	140	
P303AO	1-EG-ZS-2520B		Position Switch	Reactor	54	No	No	141	
P303AO	1-EG-SV-2520C		Solenoid Valve	Reactor	54	No	No	140	
P303AO	1-EG-ZS-2520C		Position Switch	Reactor	54	No	No	141	
P303AO	1-EG-SV-2520D		Solenoid Valve	Reactor	54	No	No	140	
P303AO	1-EG-ZS-2520D		Position Switch	Reactor	54	No	No	141	
P3050	1-EG-HV-2522A		Control Valve	Reactor	102	No	No	147	
P3050	1-EG-ZS-2522A		Limit Switch	Reactor	102	No	No	147	
P3050	1-EG-HV-2522B		Control Valve	Reactor	102	No	No	147	
P3050	1-EG-ZS-2522B		Limit Switch	Reactor	102	No	No	147	
12010	1-EG-HS-2522B3		Hand Switch	Reactor	102	No	No	25	

HCCS FSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-11-1

SYSTEM: SAFETY AUX COOL SYSTEM
EG

I.D.	ID NO. Note (5)	MPL NO.	COMPONENT	LOCATION		P&I EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EES REF. NO.
				BLDG.	ELEV.			
03050	1-EG-HV-2522C		Control Valve	Reactor	102	No	No	147
03050	1-EG-ZS-2522C		Limit Switch	Reactor	102	No	No	147
03050	1-EG-HV-2522D		Control Valve	Reactor	102	No	No	147
03050	1-EG-ZS-2522D		Limit Switch	Reactor	102	No	No	147
12010	1-EG-HS-252203		Hand Switch	Reactor	102	No	No	25
132017	1-EG-PDT-2529A		Press. Diff. Trans.	Reactor	162	No	No	155A
132017	1-EG-PDT-2529H		Press. Diff. Trans.	Reactor	162	No	No	155A
15560	1-EG-TE-2535A		Temp. Element	Reactor	102	Yes	No	43
15560	1-EG-TE-2535B		Temp. Element	Reactor	102	Yes	No	43
132016	1-EG-FT-2544A		Flow Trans.	Reactor	102	No	No	155A
132016	1-EG-FT-2544B		Flow Trans.	Reactor	102	No	No	155A
132016	1-EG-FT-2544C		Flow Trans.	Reactor	102	No	No	155A
132016	1-EG-FT-2544D		Flow Trans.	Reactor	102	No	No	155A
132017	1-EG-FT-2549A1		Flow Trans.	Reactor	102	Yes	No	155A
132017	1-EG-FT-2549B1		Flow Trans.	Reactor	102	Yes	No	155A
132017	1-EG-FT-2549B3		Flow Trans.	Reactor	102	No	No	155A
03050	1-EG-HV-7921A		Contr. Valve	Reactor	162	No	No	144
03050	1-EG-ZS-7921A		Limit Switch	Reactor	162	No	No	144
03050	1-EG-HV-7921B		Contr. Valve	Reactor	162	No	No	144
03050	1-EG-ZS-7921B		Limit Switch	Reactor	162	No	No	144
03050	1-EG-HV-7922A		Contr. Valve	Reactor	162	No	No	144
03050	1-EG-ZS-7922A		Limit Switch	Reactor	162	No	No	144
03050	1-EG-HV-7922B		Contr. Valve	Reactor	162	No	No	144
03050	1-EG-ZS-7922B		Limit Switch	Reactor	162	No	No	144

HCGS FSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-42-1

SYSTEM: NUCLEAR BOILER VESSEL INSTRUMENTATION

P.O.	ID NO. Note (5)	MPL NO.	COMPONENT	LOCATION		P&ID EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EES REF. NO.
				BLDG.	ELEV.			
M001	1-BB-RE-66D193	B11	Radiation Elemt.	Reactor	120	Yes	No	107
M001	1-BB-RE-72D193	B11	Radiation Elemt.	Reactor	120	Yes	No	107
M001	1-BB-RE-73D193	B11	Radiation Elemt.	Reactor	120	Yes	No	107
M001	1-BB-RE-74D193	B11	Radiation Elemt.	Reactor	120	Yes	No	107
M001	1-BB-RE-75D193	B11	Radiation Elemt.	Reactor	120	Yes	No	107
J301Q	1-BB-LT-3622A		Level Transmitter	Reactor	77	Yes	No	28
J301Q	1-BB-LT-3622B		Level Transmitter	Reactor	77	Yes	No	28
J301Q	1-BB-LT-3682A		Level Transmitter	Reactor	77	No	Yes	28
J301Q	1-BB-LT-3682B		Level Transmitter	Reactor	77	No	Yes	28
J301Q	1-BB-LT-3683A		Level Transmitter	Reactor	77	No	Yes	28
J301Q	1-BB-LT-3683B		Level Transmitter	Reactor	77	No	Yes	28
J301Q	1-BB-PT-3684A		Pressure Transmitter	Reactor	77	Yes	No	28
J301Q	1-BB-PT-3684B		Pressure Transmitter	Reactor	77	Yes	No	28
J301Q	1-GS-PT-4960A2		Pressure Transmitter	Reactor	162	Yes	Yes	28
J3017	1-GS-PT-4960A3		Pressure Transmitter	Reactor	162	Yes	No	155A
J301Q	1-GS-PT-4960R2		Pressure Transmitter	Reactor	162	Yes	Yes	28
J301Q	1-BB-PT-7853A		Pressure Transmitter	Reactor	77	No	No	28
J301Q	1-BB-PT-7853D		Pressure Transmitter	Reactor	77	No	No	28
J301Q	1-BB-LT-7854		Level Transmitter	Reactor	77	No	Yes	28
M001	No Tag No.	B11-D192	Connector - SRM/IRM	Reactor	120	No	No	153A
M001	No Tag No.	B11-D194	Connector- PRD DET	Reactor	121	No	No	153

HCCS PSAR
TABLE 3.11-5

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EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-49-1

SYSTEM: REACTOR CORE ISOL COOL.
BD

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)		EES REF. NO.
				BLDG.	ELEV.				
4001	1-FC-PT-N058B	E51	Press. Trans	Reactor	77	No	No	155	
4001	1-FC-PT-N058D	E51	Press. Trans	Reactor	77	No	No	155,155A	
4001	1-FC-PT-N058F	E51	Press. Trans	Reactor	77	No	No	155	
4001	1-FC-PT-N058H	E51	Press. Trans	Reactor	77	No	No	155	
1301Q	1-BD-PT-4157		Press. Trans.	Reactor	54	No	No	156	
132017	1-FC-FT-4158		Flow Trans.	Reactor	54	No	No	155A	

HCGS FSAR
 TABLE 3.11-5
 EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

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SYSTEM: RCIC PUMP TURBINE
 FC

P&ID
 M-50-1

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EESS REF. NO.
				BLDG.	ELEV.			
M001	1-FC-PDSH-4279	E51-C002	Press. Diff. Sw. High	Reactor	54	No	No	157
M001	1-FC-SE-4280	E51-C002	Speed Elemt.	Reactor	54	No	No	157
M001	1-FC-HV-4282	E51-C002	Control Valve	Reactor	54	No	No	157
M001	1-FC-FY-4283	E51-C002	Converter	Reactor	54	No	No	157
M001	NO TAG NO.	E51-C002	Position Switch	Reactor	54	No	No	157
132017	1-BD-PT-4303		Press. Trans.	Reactor	54	No	No	155A

HCSG PSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-51-1

SYSTEM: RESIDUAL HEAT REMOVAL SYSTEM
HC

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)		EISS REF. NO.
				BLDG.	ELEV.				
M001	1-RC-PT-N056H	E11	Press. Trans	Reactor	54	No	No	155	
M001	1-RC-PT-N057	E11	Press. Trans.	Reactor	77	No	No	106	
M001	1-RC-PT-N058A	E11	Press. Diff. Trans.	Reactor	77	No	No	155	
M001	1-RC-PT-N058H	E11	Press. Diff. Trans.	Reactor	77	No	No	155,155A	
M001	1-RC-PT-N058C	E11	Press. Diff. Trans.	Reactor	77	No	No	155	
M001	1-RC-PT-N058D	E11	Press. Diff. Trans.	Reactor	77	No	No	155,155A	
M001	1-RC-PDT-N060A	E11	Press. Diff. Trans.	Reactor	77	No	No	106	
M001	1-RC-PDT-N060B	E11	Press. Diff. Trans.	Reactor	77	No	No	106	
F68159	1-RC-TE-N027A		Temp. Elemt.	Reactor	77	Yes	No	34	
F68159	1-RC-TE-N027B		Temp. Elemt.	Reactor	77	Yes	No	34	
J5560	1-RC-TE-4401		Temp. Elemt.	Reactor	77	No	No	43	
I32017	1-RC-FT-4435		Flow Trans.	Reactor	77	No	No	155A	
P301Q	1-RC-HV-4439		Control Valve	Reactor	77	No	No	127	
P301O	1-RC-ZS-4439		Limit Switch	Reactor	77	No	No	127	
I32017	1-RC-FT-4461A		Flow Trans.	Reactor	77	Yes	No	155A	
I32017	1-RC-FT-4461B		Flow Trans.	Reactor	77	Yes	No	155A	
I32016	1-RC-FT-4462A		Flow Trans.	Reactor	102	Yes	No	155A	
I32017	1-RC-FT-4462B		Flow Trans.	Reactor	77	Yes	No	155A	

HCGS FSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-53-1

SYSTEM: FUEL POOL COOLING & TORUS WTR CLEANUP
EC

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EESS REF. NO.
				BLDG.	ELEV.			
M0820	1A-P-211		Pump Motor, Fuel Pool Cooling	Reactor	162	No	No	80
M0820	1B-P-211		Pump Motor, Fuel Pool Cooling	Reactor	162	No	No	80
132017	1-EC-FT-4649A		Flow Transmitter	Reactor	162	No	No	155A
132017	1-EC-FT-4649B		Flow Transmitter	Reactor	162	No	No	155A
P3010	1-EE-HV-4652		Control Valve	Reactor	54	No	No	127
P3010	1-EE-ZS-4652		Limit Switch	Reactor	54	Yes	No	127
P3010	1-EE-SV-4655		Solenoid Valve	Reactor	54	No	No	124
P3010	1-EE-ZS-4655		Position Switch	Reactor	54	No	No	125
P3010	1-EE-SV-4656		Solenoid Valve	Reactor	54	No	No	124
P3010	1-EE-ZS-4656		Position Switch	Reactor	54	No	No	125
132017	1-EC-LT-4661A		Level Transmitter	Reactor	162	No	No	155A
132017	1-EC-LT-4661B		Level Transmitter	Reactor	162	No	No	155A
P3010	1-EE-SV-4663		Solenoid Valve	Reactor	77	No	No	124
P3010	1-EE-ZS-4663		Position Switch	Reactor	77	No	No	125
132017	1-EC-PT-4669A		Pressure Transmitter	Reactor	162	No	No	155A
132017	1-EC-PT-4669B		Pressure Transmitter	Reactor	162	No	No	155A

HCGS FSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-56-1

SYSTEM: HPCI PUMP TURBINE
FD

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EISS REF. NO.
				BLDG.	ELEV.			
M001	1-FD-PT-N055C	E41	Press. Trans.	Reactor	77	No	No	155,155A
M001	1-FD-PT-N055E	E41	Press. Trans.	Reactor	77	No	No	155
M001	1-FD-PT-N055G	E41	Press. Trans.	Reactor	77	No	No	155,155A
M001	1-FD-PT-N056A	E41	Press. Trans.	Reactor	54	No	No	155
M001	1-FD-PT-N056E	E41	Press. Trans.	Reactor	54	No	No	155
M001	1-FD-FV-4879	E41	Flow Control Valve Actuator	Reactor	54	No	No	123
M001	1-FD-FV-4880	E41	Flow Control Valve Actuator	Reactor	54	No	No	123
M001	1-FD-LSH-4890	E41	Level Switch High	Reactor	54	No	No	123
132017	1-BJ-PT-4891		Press Trans.	Reactor	77	No	No	155A
M001	1-FD-LSL-4903	E41-C002	Level Switch Low	Reactor	54	No	No	123
M001	1-FD-PSH-4905	E41-C002	Press Switch High	Reactor	54	No	No	123
M001	1-FD-2S-4907	E41-C002	Limit Switch	Reactor	54	No	No	123
M001	1-FD-PSL-4908	E41-C002	Press. Switch Low	Reactor	54	No	No	123
M001	1-FD-TS-4909	E41-C002	Temp Switch	Reactor	54	No	No	123
M001	1-FD-PDSH-4910	E41-C002	Press Diff. Switch High	Reactor	54	No	No	123
M001	1-FD-LSHL-4912	E41-C002	Level Switch High Low	Reactor	54	No	No	123
M001	1-FD-PS-4913	E41-C002	Press. Switch	Reactor	54	No	No	123
M001	1-FD-SE-4919	E41-C002	Speed Elemt.	Reactor	54	No	No	123
P303A	1-FD-HV-4922		Contr. Valve	Reactor	54	No	No	139

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-57-1

SYSTEM: CONTAINMENT ATMOS. CONTRL.
GS

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EES REF. NO.
				BLDG.	ELEV.			
P 10 3A0	1-GS-ZS-4959A		Limit Switch	Reactor	77	Yes	No	139
P 10 3A0	1-GS-HV-4959B		Control Valve	Reactor	77	No	No	139
P 10 3A0	1-GS-ZS-4959B		Limit Switch	Reactor	77	Yes	No	139
P 10 10	1-GS-PT-4960A1		Press. Trans.	Reactor	102	Yes	No	28
P 10 10	1-GS-PT-4960B1		Press. Trans.	Reactor	102	Yes	No	28
P 120 17	1-GS-PT-4960B3		Press. Trans.	Reactor	102	Yes	No	155A
P 10 50	1-GS-SV-4962		Solenoid Valve	Reactor	77	No	No	145
P 10 50	1-GS-ZS-4962		Position Switch	Reactor	77	Yes	No	146
P 10 3A0	1-GS-HV-4963		Control Valve	Reactor	77	No	No	139
P 10 3A0	1-GS-ZS-4963		Position Switch	Reactor	77	Yes	No	139
P 10 50	1-GS-SV-4964		Solenoid Valve	Reactor	77	No	No	145
P 10 50	1-GS-ZS-4964		Limit Switch	Reactor	77	Yes	No	146
P 10 3A0	1-GS-HV-4965A		Control Valve	Reactor	77	No	No	139
P 10 3A0	1-GS-ZS-4965A		Limit Switch	Reactor	77	Yes	No	139
P 10 3A0	1-GS-HV-4965B		Control Valve	Reactor	77	No	No	139
P 10 3A0	1-GS-ZS-4965B		Limit Switch	Reactor	77	Yes	No	139
P 10 3A0	1-GS-HV-4966A		Control Valve	Reactor	77	No	No	139
P 10 3A0	1-GS-ZS-4966A		Limit Switch	Reactor	77	Yes	No	139
P 10 3A0	1-GS-HV-4966B		Control Valve	Reactor	102	Yes	No	139
P 10 3A0	1-GS-ZS-4966B		Limit Switch	Reactor	102	Yes	No	139
P 55 80	1-GS-TE-4967A1		Temp. Elemt.	Reactor	77	No	No	43
P 55 60	1-GS-TE-4967A2		Temp. Elemt.	Reactor	121	Yes	No	43
P 55 60	1-GS-TE-4967A3		Temp. Elemt.	Reactor	121	No	No	43
P 55 60	1-GS-TE-4967B1		Temp. Elemt.	Reactor	77	No	No	43
P 55 60	1-GS-TE-4967B2		Temp. Elemt.	Reactor	121	Yes	No	43
P 55 60	1-GS-TE-4967B3		Temp. Elemt.	Reactor	121	No	No	43

HCGS FSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-72-1

SYSTEM: MAIN STEAM ISO VLV SEAL SYS
KP

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP.		EESS REF. NO.
				BLDG.	ELEV.		NOTE (2)		
M001	1-RB-PT-5824A		Press Trans.	Reactor	77	Yes	No	155	
M001	1-RB-PT-5824B		Press Trans.	Reactor	77	Yes	No	155	
J6030	1-KL-PDV-5825A		Press. Diff. Contr. Valve	Reactor	102	No	No	46	
J6030	1-KL-PDV-5825B		Press. Diff. Contr. Valve	Reactor	102	No	No	46	
I32017	1-KP-PT-5827A		Press Trans.	Reactor	102	Yes	No	155A	
I32017	1-KP-PT-5827B		Press Trans.	Reactor	102	Yes	No	155A	
P303AO	1-KP-HV-5829A		Control Valve	Reactor	102	No	No	139	
P303AO	1-KP-ZS-5829A		Limit Switch	Reactor	102	No	No	139	
P303AO	1-KP-HV-5829B		Control Valve	Reactor	102	No	No	139	
P303AO	1-KP-ZS-5829B		Limit Switch	Reactor	102	No	No	139	
P303AO	1-KP-HV-5834A		Control Valve	Reactor	102	No	No	139	
M001	1-AB-PT-5834A		Press Trans.	Reactor	102	No	No	155	
P303AO	1-KP-ZS-5834A		Limit Switch	Reactor	102	Yes	No	139	
P303AO	1-KP-HV-5834B		Control Valve	Reactor	102	No	No	139	
M001	1-AB-PT-5834B		Press Trans.	Reactor	102	No	No	155	
P303AO	1-KP-ZS-5834B		Limit Switch	Reactor	102	No	No	139	

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

SYSTEM: MAIN STEAM ISO VLV SEAL SYS
KP

PAID
M-72-1

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EES REF. NO.
				BLDG.	ELEV.			
M001	1-AR-PT-5837H		Press Trans.	Reactor	102	No	No	155
P303AO	1-KP-ZS-5837B		Limit Switch	Reactor	102	No	No	139
132017	1-KP-FT-6053A		Flow Trans.	Reactor	102	No	No	155A
132017	1-KP-FT-6053B		Flow Trans.	Reactor	102	No	No	155A
P303AO	1-KP-SV-6055A		Solenoid Valve	Reactor	77	No	No	140
P303AO	1-KP-ZS-6055A		Position Switch	Reactor	77	No	No	141

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TABLE 3.11-5

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EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

P&ID
M-83-1

SYSTEM: REACTOR BLDG. SUPPLY CONTROL DIAG.
GR

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	EESS REF. NO.
				BLDG.	ELEV.			
M780AO	1-GR-HS-9385C		Hand Switch	Reactor	77	No	No	96
M780AO	1-GR-TE-9385C		Temp. Elemt.	Reactor	102	No	No	93
M780AO	1-GR-TS-9385C		Temp. Sw.	Reactor	102	No	No	94
M780AO	1-GR-FSL-9385C1		Flow Sw. Low	Reactor	102	No	No	92
M780AO	1-GR-FSL-9385C3		Flow Sw. Low	Reactor	102	No	No	92
M780AO	1-GR-HS-9385D		Hand Switch	Reactor	77	No	No	96
M780AO	1-GR-TE-9385D		Temp. Elemt.	Reactor	102	No	No	93
M780AO	1-GR-TS-9385D		Temp. Sw.	Reactor	102	No	No	94
M780AO	1-GR-FSL-9385D1		Flow Sw. Low	Reactor	102	No	No	92
M780AO	1-GR-FSL-9385D3		Flow Sw. Low	Reactor	102	No	No	92
132017	1-GU-FT-9394A		Flow Trans.	Reactor	132	No	No	155A
132017	1-GU-FT-9394B		Flow Trans.	Reactor	178	No	No	155A
132017	1-GU-FT-9394C		Flow Trans.	Reactor	132	No	No	155A
132017	1-GU-FT-9394D		Flow Trans.	Reactor	162	No	No	155A
132017	1-GU-FT-9394E		Flow Trans.	Reactor	162	No	No	155A
132017	1-GU-FT-9394F		Flow Trans.	Reactor	178	No	No	155A
M780AO	1-GU-SV-9395A		Solenoid Valve	Reactor	178	No	No	90
M7170	1-GU-ZS-9395A		Position Switch	Reactor	178	No	No	86
M780AO	1-GU-SV-9395B		Solenoid Valve	Reactor	178	No	No	90
M7170	1-GU-ZS-9395B		Position Switch	Reactor	178	No	No	86
M780AO	1-GU-ME-9425A		Moisture Trans.	Reactor	145	No	No	165
M780AO	1-GU-MT-9425A		Moisture Trans.	Reactor	145	No	No	165
M786Q	1-GU-MY-9425A		Moisture Controller (SCR)	Reactor	145	No	No	100
M780AO	1-GU-ME-9425B		Moisture Trans.	Reactor	145	No	No	165
M780AO	1-GU-MT-9425B		Moisture Trans.	Reactor	145	No	No	165
M786Q	1-GU-MY-9425B		Moisture Controller (SCR)	Reactor	145	No	No	100

HCGS PSAR
TABLE 3.11-5

EQUIPMENT SELECTED FOR HARSH ENVIRONMENT QUALIFICATION

SYSTEM: RFAC BLDG EXH CONTRL
GU

PAID
M-84-1

P.O.	ID NO. NOTE (5)	MPL NO.	COMPONENT	LOCATION		PAM EQUIP. NOTE (1)	TMI ACTION PLAN EQUIP. NOTE (2)	REF. NO.
				BLDG.	ELEV.			
M7860	1AC-045		Heater Control Panel	Reactor	145	No	No	100,163
M7860	1RC-045		Heater Control Panel	Reactor	145	No	No	100,163
M7170	1A-V-206		Fan & FH Actuator	Reactor	145	No	No	83
M7130	1B-V-206		Fan & FH Actuator	Reactor	145	No	No	83
M7280	1-GU-SV-9414A1		Solenoid Valve	Reactor	178	No	No	88
M7280	1-GR-SV-9414A2		Solenoid Valve	Reactor	178	No	No	88
M7280	1-GU-ZS-9414A		Position Switch	Reactor	178	Yes	No	89
M7280	1-GU-SV-9414R1		Solenoid Valve	Reactor	178	No	No	88
M7280	1-GU-SV-9414R2		Solenoid Valve	Reactor	178	No	No	88
M7280	1-GU-ZS-9414R		Position Switch	Reactor	178	Yes	No	89
112017	1-GU-FT-9425A		Flow Trans.	Reactor	145	No	No	155A
M780A0	1-GU-PDT-9425A		Press. Diff. Trans.	Reactor	145	No	No	99
M780A0	1-GU-TE-9425A		Temp. Elemt.	Reactor	145	No	No	93
M7170	1-GU-HD-9425A1		Hand Damper Actuator	Reactor	145	No	No	87
M7170	1-GU-HD-9425A2		Hand Damper Actuator	Reactor	145	No	No	87
M7170	1-GU-FD-9425A3		Flow Damper Actuator	Reactor	145	No	No	87
M7170	1-GU-FD-9425A5		Flow Damper Actuator	Reactor	145	No	No	87
112017	1-GU-FT-9425B		Flow Trans.	Reactor	145	No	No	155A
M780A0	1-GU-PDT-9425B		Press. Diff. Trans.	Reactor	145	No	No	99
M780A0	1-GU-TE-9425B		Temp. Elemt.	Reactor	145	No	No	93
M7170	1-GU-HD-9425B1		Hand Damper Actuator	Reactor	145	No	No	87
M7170	1-GU-HD-9425B2		Hand Damper Actuator	Reactor	145	No	No	87
M7170	1-GU-FD-9425B3		Flow Damper Actuator	Reactor	145	No	No	87
M7170	1-GU-FD-9425B5		Flow Damper Actuator	Reactor	145	No	No	87
M7170	1-GU-FD-9426A		Flow Damper Actuator	Reactor	145	No	No	84
M780A0	1-GU-FT-9426A		Flow Trans.	Reactor	145	No	No	99
M780A0	1-GU-FSL-9426A1		Flow Sw. Low	Reactor	145	No	No	92
M780A0	1-GU-PDT-9426A1		Press. Diff. Trans.	Reactor	201	No	No	99
M780A0	1-GU-FSL-9426A2		Flow Sw. Low	Reactor	145	No	No	92
M780A0	1-GU-PDT-9426A2		Press. Diff. Trans.	Reactor	102	No	No	99

HCGS FSAR
TABLE 3.11-5
NOTES

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- (1) This column identifies the equipment located in a harsh environment required for post accident monitoring as defined in R.G.1.97 and FSAR Section 1.8.1.97.1.
- (2) This column identifies the equipment located in a harsh environment identified as TMI Action Plan Equipment as defined in NUREG 0737.
- (3) Items that are generic are purchased and used throughout the plant and may be used in the DRA Harsh Environment.
- (4) Electric Penetration Assemblies for control and instrumentation circuits include inline splice connector kits.
- (5) Limit or position switch tag numbers have been created by using the "ZS" designator in lieu of the valve (HV) designator for purposes of equipment qualification accountability only. These tag numbers may not be found in P&ID's, schematics or the instrument index. Exceptions to this occur when position switches are mounted on manual valves or are under M001 (NSSS) P.O. In that case the tag numbers may be found in the instrument index and applicable P&ID's.

Amendment 16