

Docket No. 50-346

License No. NPF-3

Serial No. 818

May 17, 1982



RICHARD P. CROUSE
Vice President
Nuclear
(419) 258-5221

Mr. John F. Stolz, Chief
Director of Nuclear Reactor Regulation
Operating Reactor Branch No. 4
Division of Operating Reactors
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Stolz:

This is in response to your letter of March 4, 1982 (Log 921) concerning environmental qualification of safety-related electrical equipment. This deals particularly with equipment related to NUREG 0737 - Post TMI-2 modifications at the Davis-Besse Nuclear Power Station Unit No. 1 (DB-1).

The response is in three sections. Attachment A provides a description of the actual NUREG 0737 modification as it impacts the Toledo Edison Equipment Qualification (EQ) Program. Table 1 then provides a point by point correlation with the Toledo Edison Action and EQ Plan. Attachment B contains System Component Evaluation Worksheets (preliminary information only copies) for items described in Attachment A as well as the latest Master List for the NUREG 0737 components. This listing appears in Chapter 3.2, "TMI Action Items" of the DB-1 Equipment Qualification Manual.

This information is marked "preliminary" and will be formalized in the next revision of DB-1 Equipment Qualification Manual.

The planned installation dates are provided in Toledo Edison's letter of May 8, 1982 (Serial No. 813). As identified these dates may be affected by the recent major repair activity. We will notify you of any impacts.

Very truly yours,

R P Crouse / rpn

RPC:GAB:lab

cc: DB-1 NRC Resident Inspector

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Attachment A

DAVIS-BESSE NUCLEAR POWER STATION

NUREG-0737 MODIFICATIONS

This section provides a description of each NUREG-0737 item which involves a plant modification. Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it is not addressed here. For some of these items, the modifications are ongoing and the equipment qualification process is not complete. Where sufficient information is currently available, draft worksheets were made up to be included in this submittal. Final worksheets are being made up as the necessary information is made available.

Clarification Item

Description

II.B.1

Toledo Edison is installing two vent valves in series on each hot leg high point. The valves are Valcor P/N 52600-6042-1 and are fully qualified by type test. At present, the test report has not been received and is not available for submittal. The figures used are for information only and a draft (for information only copy) SCEW worksheet has been prepared in the interest of this submittal. See the attached Section 3.2 Master list and the draft worksheet for additional details. Qualification documentation is still being developed and final worksheets will be made up as additional information is made available.

II.B.3

Toledo Edison is installing a Post-Accident Sampling System. New harsh components consist of Valcor (identical to that mentioned in II.B.1) and ASCO solenoid valves. The ASCO solenoid valves are model NP type and are fully qualified by type test. See attached Section 3.2 Master List and draft (for information only) SCEW worksheets for additional details. Qualification documentation is being developed and final worksheets will be made up as the necessary information becomes available.

II.D.3

Toledo Edison is modifying their existing Valve Flow Monitoring System (supplied by TEC, Endevco) to upgrade it to fully qualified status. New charge converters, accelerometers, and transient shields are being installed. See the attached Section 3.2 Master List and the draft (for information only) SCEW sheets provided.

II.E.1.2

Toledo Edison is installing a safety-grade auxiliary feedwater flow indication. New harsh components consist of Rosemount 1153 flow transmitters. The qualification process for these transmitters is still ongoing. Preliminary testing data is available which has been used to provide a draft (for information only) SCEW worksheet. See attached Section 3.2 Master List and draft SCEW worksheet for details. Final worksheets will be made up when additional information becomes available.

II.F.1

Toledo Edison is installing a Radiation Monitoring System by Kaman Sciences, as well as a grab sample capability. The Kaman system will have the capability of monitoring the containment atmosphere for Noble Gas, Iodine, and Particulate Radiation. In addition, this system also monitors the station vent stack. The system consists of Containment Post-Accident Normal Range Radiation Elements and Transmitters, Station Vent Effluent Normal Range Radiation Elements and Transmitters, Containment High Range Area Radiation Elements and Transmitters, and a Station Vent Effluent High Range Radiation Elements and Transmitters. In addition, a separate Containment High Range Area Radiation Monitoring System by General Atomics is being installed. See the attached Section 3.2 Master List and the draft (for information only) SCEW sheets. The qualification for the Kaman Sciences equipment is ongoing. Final worksheets will be made up as the information becomes available.

II.F.1(4)

Toledo Edison is installing a Containment Pressure Monitoring System. Components subject to harsh environment consist of Rosemount Model 1153 pressure transmitters. The qualification process for these transmitters is still ongoing. Preliminary testing data is available which has been used here to provide a draft (for information only) SCEW worksheet. See attached Section 3.2 Master List and draft SCEW worksheet for details. Final worksheets will be made up when additional information becomes available.

II.F.1(5)

Toledo Edison is installing both a Narrow-Range and a Wide-Range Containment Sump Level Detection System. The wide-range system incorporates Rosemount 1153 level transmitters qualified to harsh environmental conditions. Qualification program for this equipment is ongoing. The narrow-range system incorporates a Delaval Gems System consisting of a level element (level transmitter) inside containment and a level

receiver outside containment. The Delaval Gems test program is ongoing. For additional details, see the attached Section 3.2. Master List. A draft (for information only) copy of the Rosemount SCEW sheet is provided. Insufficient information is available to formulate SCEW sheets for the Delaval System. Final worksheets will be made up when the information becomes available.

II.F.1(6)

Toledo Edison is making modifications to existing equipment which will not affect equipment qualification status.

II.F.2

Toledo Edison is making modifications to enhance its Incore Thermocouple Temperature Monitoring System. At present, insufficient information is available to formulate SCEW sheets for these components. Final worksheets will be made up as the information becomes available.

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TABLE 1
DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
I.D.2	Plant Safety Parameter Display Console	Qualification not required.	N/A
II.B.1	Reactor Coolant System Vents	TED installing vents per FCR 80-120.	Master List and SCEW sheets updated to reflect the modifications.
II.B.3	Post-Accident Sampling	TED installing Post-Accident Sampling System per FCR 80-147.	Master List and SCEW sheets updated to reflect the modifications.
II.D.3	Valve Position Indication	TED installing Valve Flow Monitoring System per FCR 79-410.	Master List and SCEW sheets updated to reflect the modifications.
II.E.1.2	Auxiliary Feedwater System Initiation and Flow		
	1. Initiation		
	a. Control Grade	N/A	N/A
	b. Safety Grade	Complete. No modifications.	No impact. No modifications made to original plant design.

* Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it will not be addressed here.

TABLE 1

DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
II.E.1.2 (cont'd.)	2. Flow Indication a. Control Grade b. LL A Tech. Specs. c. Safety Grade	N/A N/A TED installing indication system per FCR 79-430.	N/A N/A Master List and SCEW sheet updated to reflect the modifications.
II.E.3.1	Emergency Power for Pressurizer Heaters	Original design. No modifications.	No impact.
II.E.4.1	Dedicated Hydrogen Penetrations	Original Design for H ₂ Dilution system. No modifications.	No impact.
II.E.4.2	Containment Isolation Dependability 1-4 Imp Diverse Isolation	Original Design. No modifications.	No impact.

* Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it will not be addressed here.

TABLE 1

DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
II.E.4.2 (cont'd.)	5. Containment Pressure Setpoint		
	a. Specify pressure	Original Design. No modifications.	No impact.
	b. Modifications	Original Design. No modifications.	No impact.
	6. Containment Purge Valves	Original Design. No modifications.	No impact.
	7. Radiation Signal on Purge Valves	Original Design. No modifications.	No impact.
	8. Tech Specs	Original Design. No modifications.	No impact.
II.F.1	Accident Monitoring		
	1. Noble Gas Monitor	TED installing system per FCR 80-050.	Master List and SCEW sheets updated to reflect the modifications.
	2. Iodine/Particulate Sampling	TED installing system per FCR 80-050.	Master List and SCEW sheets updated to reflect the modifications.

* Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it will not be addressed here.

TABLE 1

DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
II.F.1 (cont'd.)	3. Containment High Range Radiation Monitor	TED installing system per FCR 80-050.	Master List and SCEW sheets updated to reflect the modifications.
	4. Containment Pressure	TED installing system per FCR 79-425.	Master List and SCEW sheets updated to reflect the modifications.
	5. Containment Water Level	TED installing system per FCR 79-408, 79-409.	Master List and SCEW sheets updated to reflect the modifications.
	6. Containment Hydrogen Monitoring.	TED making modifications per FCR 79-313.	Master List and SCEW sheets updated to reflect the modifications.
II.F.2	Instrumentation for Detection of Inadequate Core Cooling		
	1. Subcool Meter	Completed	Master List and SCEW sheets updated.
	2. Tech Specs	N/A	N/A
	3. Install Incore Thermocouple System	TED to enhance original design per FCR 80-115.	Master List and SCEW sheets updated to reflect modifications.

* Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it will not be addressed here.

TABLE 1

DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
II.G.1	Power Supplies for Pressurizer Relief Valves, Block Valves, and Level Indicators		
	1. Upgrade to Emergency Source	No modifications made	No impact.
	2. Tech Specs	N/A	N/A
II.K.2	Orders on B&W Plants		
	8. Upgrade AFW System	No modifications	No impact.
	9. FEMA on ICS	No modifications	No impact.
	10. Safety-Grade Trip (Final-ARTS)	TED installing system per FCR 79-184	Master List and SCEW sheets updated to reflect modifications.
	11. Through 20	N/A	N/A

* Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it will not be addressed here.

TABLE 1

DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
II.K.3	Final Recommendations B&O Task Force		
	1. Auto PORV Isolation		
	a. Design	No modifications	No impact.
	b. Test/Install	No modifications	No impact.
	2. Report on PORV Failure	N/A	N/A
	3. Reporting SV&RV Failure and Challenges	N/A	N/A
	5. Auto trip of RCPs		
	a. Proposed Modifications	No Modifications	No impact.
	b. Modify	No modifications	No impact.
	7. Eval of PORV Opening Probability	N/A	N/A
	11. Justify Use of Certain PORV	N/A	N/A
	17. ECCS Outage	N/A	N/A

* Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it will not be addressed here.

TABLE 1

DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
II.K.3 (cont'd.)	30. SB LOCA Methods		
	a. Schedule Outline	N/A	N/A
	b. Model	N/A	N/A
	c. New Analyses	N/A	N/A
	31. Compliance with CFR 50.46	N/A	N/A
	40. RCP Seal Damage	N/A	N/A
	43. Effects of slug flow	N/A	N/A
III.D.3.3	In Plant Radiation Monitoring		
	1. Provide means to determine presence of Radioiodine	N/A	N/A
	2. Modifications to Accurately measure I_2	N/A	N/A

* Where an item is related to administration, training, does not involve modifications, or does not impact environmental qualification, it will not be addressed here.

TABLE 1

DB-1 NUREG-0737 CORRELATION*

Clarification Item	Title	Toledo Edison DB-1 NUREG-0737 Action Plan	Toledo Edison DB-1 Equipment Qualification Program Status
III.D.3.4	Control Room Habitability		
	1. Review	N/A	N/A
	2. Modifications	No modifications made	No impact.

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PRELIMINARY

Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
302H-006	0	ZE4263	Accelerometer	Relief Valve Room		
302H-007	0	ZE4264	Accelerometer	Relief Valve Room		
302H-008	0	ZE4265	Accelerometer	Relief Valve Room		
302H-009	0	ZE4266	Accelerometer	Relief Valve Room		
302H-010	0	ZE4267	Accelerometer	Relief Valve Room		
302H-011	0	ZE4268	Accelerometer	Relief Valve Room		
302H-012	0	ZT4263	Charge Converter	Relief Valve Room		
302H-013	0	ZT4264	Charge Converter	Relief Valve Room		
302H-014	0	ZT4265	Charge Converter	Relief Valve Room		
302H-015	0	ZT4266	Charge Converter	Relief Valve Room		
302H-016	0	ZT4267	Charge Converter	Relief Valve Room		
302H-017	0	ZT4268	Charge Converter	Relief Valve Room		
302H-018	0	SV4608A	Solenoid Valve	Containment		
302H-019	0	SV4610A	Solenoid Valve	Containment		
302H-020	0	SV4608B	Solenoid Valve	Containment		
302H-021	0	SV4610B	Solenoid Valve	Containment		
302H-022	0	Deleted				
302H-023	0	Deleted				
302H-024	0	LE4617	Level Transmitter	Containment		

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Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
302H-025	0	LE4618	Level Transmitter	Containment		
302H-026	0	LIT4617	Level Receiver		Rm. 427	
302H-027	0		Deleted			
302H-028	0	LT4594	Level Transmitter	Containment		
302H-029	0	LT4595	Level Transmitter	Containment		
302H-030	0	FT4630	Flow Transmitter		Rm. 303	
302H-031	0	FT4631	Flow Transmitter		Rm. 314	
302H-032	0	SV4632	Solenoid Valve	Containment		
302H-033	0	SV4662	Solenoid Valve		Rm. 113	
302H-034	0	SV4633	Solenoid Valve		Rm. 113	
302H-035	0	SV4635	Solenoid Valve		Rm. 208	
302H-036	0	SV4636	Solenoid Valve		Rm. 113	
302H-037	0	SV4641	Solenoid Valve		Rm. 236	
302H-038	0	SV4661	Solenoid Valve		Rm. 113	
302H-039	0	SV4634	Solenoid Valve		Rm. 105	
302H-040	0	SV4642	Solenoid Valve		Rm. 113	
302H-041	0	SV4642A	Solenoid Valve		Rm. 113	
302H-042	0	RE4597AA	Radiation Element		Rm. 303	
302H-043	0	RE4597BA	Radiation Element		Rm. 314	
302H-044	0	RT4597AA	Radiation Transmitter		Rm. 304	
302H-045	0	RT4597AB	Radiation Transmitter		Rm. 304	
302H-046	0	RE4597AB	Radiation Element		Rm. 303	
302H-047	0	RE4597BB	Radiation Element		Rm. 314	
302H-048	0	RE4596A	Radiation Element	Containment		
302H-049	0	RE4596B	Radiation Element	Containment		
302H-050	0	FT5090	Flow Transmitter		Rm. 515	
302H-051	0	FT5090A	Flow Transmitter		Rm. 515	
302H-052	0	C5603	Control Panel		Rm. 515	
302H-053	0	C5603A	Control Panel		Rm. 515	
302H-054	0	BF16A	Motor Control Center		Rm. 500	
	0	FT4521	Flow Display Computer		Rm. 304	See 3.01

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				Inside Primary Containment	Outside Primary Containment	
	0	FT4522	Flow Display Computer		Rm. 304	See 3.01
	0	RE2024	Radiation Monitor		Rm. 515	See 2.23
	0	RE2025	Radiation Monitor		Rm. 515	See 2.23
	0	RE5029	Containment Radiation Monitor		Rm. 314	See 2.23
	0	RE5030	Containment Radiation Monitor		Rm. 303	See 2.23
	0	PlC5S	Penetration Assembly	Annulus/ Containment		See 2.21
	0	P2C5C	Penetration Assembly	Annulus/ Containment		See 2.21
	0	P2C5G	Penetration Assembly	Annulus/ Containment		See 2.21
	0	PlP3B	Penetration Assembly	Annulus/ Containment		See 2.21
	0	P2P5F	Penetration Assembly	Annulus/ Containment		See 2.21
	0	CDFl1A-1	Disconnect Switch Cabinet		Rm. 427	See 2.21
	0	RC3706	Relay Cabinet		Rm. 304	See 2.21
	0	MV0239A	Valve Motor Operator	Containment		See 2.24
	0	BF11A	Motor Control Center		Rm. 427	See 2.21
	0	PlC5SI	Penetration Box (Connector)	Containment		See 2.21
	0	PlC5SX	Penetration Box (Terminal Block)			See 2.21
	0	P2C5CI	Penetration Box (Connector)	Containment		See 2.21
	0	P2C5CX	Penetration Box (Terminal Block)			See 2.21
	0	PlP3BI	Penetration Box (Connector)	Containment		See 2.21
	0	PlP3BX	Penetration Box (Terminal Block)		Rm. 303	See 2.21
	0	P2P5FI	Penetration Box (Connector)	Containment		See 2.21
	0	P2P5FX	Penetration Box (Terminal Block)		Rm. 427	See 2.21
	0	P2C5GI	Penetration Box (Connector)	Containment		See 2.21
	0	P2C5GX	Penetration Box (Terminal Block)		Rm. 427	See 2.21
	0	C3801	Gas Analyzer		Rm. 304	See 2.23

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Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
	0	PL1IL	Penetration Assembly	Containment/ Annulus		See 2.21
	0	P2L4G	Penetration Assembly	Containment/ Annulus		See 2.21
	0	PL1LLI	Penetration Box (Connector)	Containment		See 2.21
	0	PL1LLX	Penetration Box (Terminal Block)		Rm. 303	See 2.21
	0	P2L4GI	Penetration Box (Connector)	Containment		See 2.21
	0	P2L4GX	Penetration Box (Terminal Block)		Rm. 427	See 2.21
	0	JT3955	Terminal Block Box	Containment		See 2.21
	0	BE16A	Motor Control Center		Rm. 515	See 2.21

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Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
	0	C5716	Engineering Safety Features Panel		Rm. 505	
	0	C5717	Engineering Safety Features Panel		Rm. 505	
	0	C5755A	Post-Accident Monitoring Panel		Rm. 505	
	0	C5755C	Safety Features Actuation Panel		Rm. 505	
	0	C5755E	Reactor Protector Panel		Rm. 505	
	0	C5756C	Safety Features Actuation Panel		Rm. 505	
	0	C5756E	Reactor Protector Panel		Rm. 505	
	0	C5759B	Instrument Cabinet		Rm. 505	
	0	C5762C	Safety Features Actuation Panel		Rm. 505	
	0	C5762E	Reactor Protector Panel		Rm. 505	
	0	C5763B	Post-Accident Monitoring Panel		Rm. 505	
	0	C5763C	Safety Features Actuation Panel		Rm. 505	
	0	C5763E	Reactor Protector Panel		Rm. 505	
	0	C5798	Post-Accident Monitoring Panel		Rm. 505	
	0	C5799	Post-Accident Monitoring Panel		Rm. 505	
	0	RT2387	Readout Module		Rm. 404	See 2.23
	0	C5798	Control Cabinet		Rm. 505	
	0	C5799	Control Cabinet		Rm. 505	
	0	C5763A	Control Room Panel		Rm. 505	
	0	C5755G	Control Room Panel		Rm. 505	
	0	C5716	Engineer Safety Features Panel		Rm. 505	
	0	Y1A	120V AC Dist. Panel		Rm. 429	
	0	Y2A	120V AC Dist. Panel		Rm. 428	
	0	SV4651	Solenoid Valve		Rm. 106A	
	0	SV4653	Solenoid Valve		Rm. 106A	
	0	SV4656	Solenoid Valve		Rm. 106A	
	0	SV4657	Solenoid Valve		Rm. 106A	
	0	SV4658	Solenoid Valve		Rm. 106A	
	0	SV4663	Solenoid Valve		Rm. 106A	
	0	SV4644A	Solenoid Valve		Rm. 106A	
	0	SV4644B	Solenoid Valve		Rm. 106A	

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Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
	0	SV4645A	Solenoid Valve		Rm. 106A	
	0	SV4645B	Solenoid Valve		Rm. 106A	
	0	SV4646B	Solenoid Valve		Rm. 106A	
	0	SV4637	Solenoid Valve		Rm. 106A	
	0	SV4660	Solenoid Valve		Rm. 106A	
	0	SV4647	Solenoid Valve		Rm. 106A	
	0	SV4646A	Solenoid Valve		Rm. 106A	
	0	SV4659	Solenoid Valve		Rm. 106A	
	0	SV4652	Solenoid Valve		Rm. 106A	
	0	Later	Sample Pump		Rm. 106A	
	0	Later	Sample Pump		Rm. 106A	
	0	Cl708	Control Panel		Rm. 106A	
	0	D1P	125V DC Dist. Panel		Rm. 429	
	0	D2P	125V DC Dist. Panel		Rm. 428	
	0	C5763B	Control Room Panel		Rm. 505	
	0	C5755A	Control Room Panel		Rm. 505	
	0	C5765A	Control Room Panel		Rm. 505	
	0	C5765B	Control Room Panel		Rm. 505	
	0	C5765C	Control Room Panel		Rm. 505	
	0	C5765D	Control Room Panel		Rm. 505	
	0	BF16A	Motor Control Center		Rm. 428	
	0	BE16A	Motor Control Center		Rm. 402	
	0	RE4598AA	Radiation Element		Turb. Bldg.	
	0	RE4598BA	Radiation Element		Turb. Bldg.	
	0	RE4598AB	Radiation Element		Turb. Bldg.	
	0	RE4598BB	Radiation Element		Turb. Bldg.	
	0	RT4598AA	Radiation Transmitter		Rm. 603	
	0	RT4598AB	Radiation Transmitter		Rm. 603	
	0	RT4598BB	Radiation Transmitter		Rm. 603	
	0	RT4598BA	Radiation Transmitter		Rm. 603	
	0	RT4597BA	Radiation Transmitter		Rm. 310	

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Worksheet Index No.	Rev.	Plant ID Number	Generic Name	LOCATION		REMARKS
				Inside Primary Containment	Outside Primary Containment	
	0	RT4597BB	Radiation Transmitter		Rm. 310	
	0	N/A	Plant Safety Grade Final ARTS System		Later	
	0	TDI4950	Temperature Indicator		Rm. 505	
	0	TDI4951	Temperature Indicator		Rm. 505	
	0	PT4587	Pressure Transmitter		Rm. 404	
	0	PT4588	Pressure Transmitter		Rm. 426	
	0	LIT4618	Level Receiver		Rm. 402	
	0	RE2387	Radiation Monitor		Rm. 407	
	0	RE2389	Radiation Monitor		Rm. 410	
	0	RT2389	Readout Module		Rm. 404	
	0	EC4606	Delay Cabinet		Rm. 428	

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-006
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZE4263	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Accelerometer	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 2273A	Chemical Spray	Boric Acid 1900 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	11.05 Years Note 3	I	J-31 CAL-53	Sequential Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment Relief Valve Room							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-006A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test, which lasted 33 days, subjected the accelerometer and associated cabling to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the accelerometer to a more severe environment than that which would result from the postulated LOCA. Since the accelerometer remained functional throughout the test and subsequent to the test, it can be concluded that the accelerometer would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the accelerometers to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the accelerometer to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-007
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZE4264	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Accelerometer							
Manufacturer: TEC	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Model Number: 2273A							
Function: PORV Flow Detection	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Accuracy: Spec: N/A Demon: N/A							
Service: Valve Flow Monitoring System	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	CAL-44	J-31	Sequential Test	None
Location: Containment Relief Valve Room							
Flood Level Elev: 572'-2"	Aging	40 Years	11.05 Years Note 3	I	J-31 CAL-53	Sequential Test, Analysis	None
Above Flood Level: Yes							
Needed for:	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-007A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test, which lasted 33 days, subjected the accelerometer and associated cabling to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the accelerometer to a more severe environment than that which would result from the postulated LOCA. Since the accelerometer remained functional throughout the test and subsequent to the test, it can be concluded that the accelerometer would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the accelerometers to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the accelerometer to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-008
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZE4265	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Accelerometer	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 2273A	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	11.05 Years Note 3	I	J-31 CAL-53	Sequential Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment Relief Valve Room							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-008A

Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test, which lasted 33 days, subjected the accelerometer and associated cabling to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the accelerometer to a more severe environment than that which would result from the postulated LOCA. Since the accelerometer remained functional throughout the test and subsequent to the test, it can be concluded that the accelerometer would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the accelerometers to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the accelerometer to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-009

Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZE4266	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Accelerometer							
Manufacturer: TEC	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Model Number: 2273A	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Function: PORV Flow Detection							
Accuracy: Spec: N/A Demon: N/A	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System							
Location: Containment Relief Valve Room	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	CAL-44	J-31	Sequential Test	None
Flood Level Elev: 572'-2"	Aging	40 Years	11.05 Years Note 3	I	J-31 CAL-53	Sequential Test, Analysis	None
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-009A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test, which lasted 33 days, subjected the accelerometer and associated cabling to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the accelerometer to a more severe environment than that which would result from the postulated LOCA. Since the accelerometer remained functional throughout the test and subsequent to the test, it can be concluded that the accelerometer would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the accelerometers to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the accelerometer to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-010

Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZE4267	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Accelerometer							
Manufacturer: TEC	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Model Number: 2273A							
Function: PORV Flow Detection	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
	Accuracy: Spec: N/A Demon: N/A	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System							
Location: Containment Relief Valve Room	Radiation	1.7 x 10 ⁷ RADS	2.0 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Flood Level Elev: 572'-2"	Aging	40 Years	11.05 Years Note 3	I	J-31 CAL-53	Sequential Test, Analysis	None
Above Flood Level: Yes							
Needed for:	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Hot Shutdown X							
Cold Shutdown X							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-010A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test, which lasted 33 days, subjected the accelerometer and associated cabling to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the accelerometer to a more severe environment than that which would result from the postulated LOCA. Since the accelerometer remained functional throughout the test and subsequent to the test, it can be concluded that the accelerometer would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the accelerometers to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the accelerometer to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-011
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZE4268	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Accelerometer	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 2273A	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	11.05 Years Note 3	I	J-31 CAL-53	Sequential Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment Relief Valve Room							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-011A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test, which lasted 33 days, subjected the accelerometer and associated cabling to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the accelerometer to a more severe environment than that which would result from the postulated LOCA. Since the accelerometer remained functional throughout the test and subsequent to the test, it can be concluded that the accelerometer would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the accelerometers to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the accelerometer to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

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Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-012
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZT4263	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Charge Converter	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 504	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7 x 10 ⁷ RADS	2.22 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	13.9 Years Note 3	I	J-31 CAL-53	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-012A

Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test, which lasted 33 days, subjected the charge converter and associated transient shield to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the charge converter to a more severe environment than that which would result from the postulated LOCA. Since the charge converter remained functional throughout the test and subsequent to the test, it can be concluded that the charge converter would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the charge converter to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the charge converter to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-013
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZT4264	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Charge Converter	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 504	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7 x 10 ⁷ RADS	2.22 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	13.9 Years Note 3	I	J-31 CAL-53	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-013A

Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test, which lasted 33 days, subjected the charge converter and associated transient shield to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the charge converter to a more severe environment than that which would result from the postulated LOCA. Since the charge converter remained functional throughout the test and subsequent to the test, it can be concluded that the charge converter would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the charge converter to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the charge converter to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-014
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZT4265	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Charge Converter	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 504	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7 x 10 ⁷ RADS	2.22 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	13.9 Years Note 3	I	J-31 CAL-53	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-014
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZT4265	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Charge Converter	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 504	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7 x 10 ⁷ RADS	2.22 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	13.9 Years Note 3	I	J-31 CAL-53	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-014A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test, which lasted 33 days, subjected the charge converter and associated transient shield to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the charge converter to a more severe environment than that which would result from the postulated LOCA. Since the charge converter remained functional throughout the test and subsequent to the test, it can be concluded that the charge converter would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the charge converter to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the charge converter to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-015
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	J	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZT4266	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Charge Converter	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 504	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7 x 10 ⁷ RADS	2.22 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	13.9 Years Note 3	I	J-31 CAL-53	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-015A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test, which lasted 33 days, subjected the charge converter and associated transient shield to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the charge converter to a more severe environment than that which would result from the postulated LOCA. Since the charge converter remained functional throughout the test and subsequent to the test, it can be concluded that the charge converter would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the charge converter to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the charge converter to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-016
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZT4267	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Charge Converter	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Manufacturer: TEC	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
Model Number: 504	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis	None
Function: PORV Flow Detection	Radiation	1.7 x 10 ⁷ RADS	2.22 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Accuracy: Spec: N/A Deviation: N/A	Aging	40 Years	13.9 Years Note 3	I	J-31 Note 3	Simultaneous Test, Analysis	None
Service: Valve Flow Monitoring System	Submergence	572'-2"	636'-0"	B	M-32	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-016A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test, which lasted 33 days, subjected the charge converter and associated transient shield to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the charge converter to a more severe environment than that which would result from the postulated LOCA. Since the charge converter remained functional throughout the test and subsequent to the test, it can be concluded that the charge converter would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the charge converter to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the charge converter to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302E-017

Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-31 Note 1	Simultaneous Test	None
Plant ID No. ZT4268	Temperature (°F)	283.0	510.0	H, X	J-31	Simultaneous Test	None
Component: Charge Converter							
Manufacturer: TEC	Pressure (PSIA)	52.0	96.7	G, X	J-31	Simultaneous Test	None
Model Number: 504							
Function: PORV Flow Detection	Relative Humidity (%)	100.0	100.0	A	J-31	Simultaneous Test	None
	Accuracy: Spec: N/A Demon: N/A	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	J-31 Note 2	Simultaneous Test, Analysis
Service: Valve Flow Monitoring System	Radiation	1.7 x 10 ⁷ RADS	2.22 x 10 ⁸ RADS	CAL-44	J-31	Sequential Test	None
Flood Level Elev: 572'-2"	Aging	40 Years	13.9 Years Note 3	I	J-31 CAL-53	Simultaneous Test, Analysis	None
Above Flood Level: Yes							
Needed for:	Submergence	572'-2"	636"-0"	B	M-32	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-017A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test, which lasted 33 days, subjected the charge converter and associated transient shield to two transients. The first transient reached a maximum of 510°F and 96.7 psia and lasted for 400 seconds. The second transient reached a maximum of 510°F and 96.7 psia and lasted for 30 hours. The temperature and pressure were then maintained at 170°F and 34.7 psia for the rest of the test. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days.

Based on this information, it can be concluded that the test subjected the charge converter to a more severe environment than that which would result from the postulated LOCA. Since the charge converter remained functional throughout the test and subsequent to the test, it can be concluded that the charge converter would remain functional during and after exposure to the environment that would result from the postulated LOCA (Reference G, H, X).

2. The test subjected the charge converter to 60 minutes of spray at a pH of 4.5 and a concentration of 13,000 to 14,000 ppm, followed by a spray of higher pH (due to the addition of sodium phosphate), which was continued until the end of the test period, 32 days, 22 hours. The concentration and pH of boric acid at Davis-Besse is initially approximately 5.0. Upon recirculation, the pH is 7.0 or greater due to the addition of trisodium phosphate.

The test subjected the charge converter to a more severe chemical spray environment, since the initial spray has a lower pH than that at Davis-Besse (due to the higher concentration) and since the test lasted over 32 days.

3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-018A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The component remained functional throughout and after the test, therefore, it can be concluded that the valve will remain functional during the short-term accident environment and the long-term cooldown at ambient conditions (References G, H, and X). Test report documentation is currently being finalized. A draft copy has been reviewed and the final worksheets will be made up when the final test report becomes available. Environmental parameters shown here are actual test valves taken from the draft copy of the test report.
2. Revision 1 of CAL-40 qualifies components tested in a high pH concentration boric acid spray to conditions present at Davis-Besse Unit 1.
3. Components located at RCS hot leg high points and therefore will not be subject to submergence.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-019A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The component remained functional throughout and after the test, therefore, it can be concluded that the valve will remain functional during the short-term accident environment and the long-term cooldown at ambient conditions (References G, H, and X). Test report documentation is currently being finalized. A draft copy has been reviewed and the final worksheets will be made up when the final test report becomes available. Environmental parameters shown here are actual test valves taken from the draft copy of the test report.
2. Revision 1 of CAL-40 qualifies components tested in a high pH concentration boric acid spray to conditions present at Davis-Besse Unit 1.
3. Components located at RCS hot leg high points and therefore will not be subject to submergence.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-020

Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

Date:

Date:

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	F	Note 1	Simultaneous Test	None
Plant ID No.: SV4608B	Temperature (°F)	283.0	346.0	H, X	Note 1	Simultaneous Test	None
Component: Solenoid Valve							
Manufacturer: Valcor	Pressure (PSIA)	52.0	133.0	G, X	Note 1	Simultaneous Test	None
Model Number: 52600-6042-1	Relative Humidity (%)	100.0	100.0	A	Note 1	Simultaneous Test	None
Function: RCS High Point Vent							
Accuracy: Spec: N/A Demon: N/A	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	CAL-40 Note 2	Simultaneous Test	None
Service: RCS High Point Vent							
Location: Containment	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	CAL-44	Note 1	Sequential Test	None
Flood Level Elev: 572'-2"	Aging	40 Years	40 Years	I	Note 1	Sequential Test	None
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>	Submergence	572'-2"	Note 3	B	Note 3	N/A	None
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-020A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The component remained functional throughout and after the test, therefore, it can be concluded that the valve will remain functional during the short-term accident environment and the long-term cooldown at ambient conditions (References G, H, and X). Test report documentation is currently being finalized. A draft copy has been reviewed and the final worksheets will be made up when the final test report becomes available. Environmental parameters shown here are actual test valves taken from the draft copy of the test report.
2. Revision 1 of CAL-40 qualifies components tested in a high pH concentration boric acid spray to conditions present at Davis-Besse Unit 1.
3. Components located at RCS hot leg high points and therefore will not be subject to submergence.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-021
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	F	Note 1	Simultaneous Test	None
Plant ID No.: SV4610B	Temperature (°F)	283.0	346.0	H, X	Note 1	Simultaneous Test	None
Component: Solenoid Valve	Pressure (PSIA)	52.0	133.0	G, X	Note 1	Simultaneous Test	None
Manufacturer: Valcor	Relative Humidity (%)	100.0	100.0	A	Note 1	Simultaneous Test	None
Model Number: 52600-6042-1	Chemical	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	CAL-40 Note 2	Simultaneous Test	None
Function: RCS High Point Vent	Radiation	1.7 x 10 ⁷ RADS	2.0 x 10 ⁸ RADS	CAL-44	Note 1	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years	I	Note 1	Sequential Test	None
Service: RCS High Point Vent	Submergence	572'-2"	Note 3	B	Note 3	N/A	None
Location: Containment	Hot Shutdown	<input checked="" type="checkbox"/>					
Flood Level Elev: 572'-2"	Cold Shutdown	<input checked="" type="checkbox"/>					
Above Flood Level: Yes							
Needed for:							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-021A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The component remained functional throughout and after the test, therefore, it can be concluded that the valve will remain functional during the short-term accident environment and the long-term cooldown at ambient conditions (References G, H, and X). Test report documentation is currently being finalized. A draft copy has been reviewed and the final worksheets will be made up when the final test report becomes available. Environmental parameters shown here are actual test valves taken from the draft copy of the test report.
2. Revision 1 of CAL-40 qualifies components tested in a high pH concentration boric acid spray to conditions present at Davis-Besse Unit 1.
3. Components located at RCS hot leg high points and therefore will not be subject to submergence.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-024

Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____

Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMA Action Items	Operating Time	1 Year	Note 1	U	Note 1	Note 1	Note 1
Plant ID No. LE4617	Temperature (°F)	283.0	Note 1	H, X	Note 1	Note 1	Note 1
Component: Level Transmitter							
Manufacturer: Delaval	Pressure (PSIA)	52.0	Note 1	G, X	Note 1	Note 1	Note 1
Model Number: 323	Relative Humidity (%)	100.0	Note 1	A	Note 1	Note 1	Note 1
Function: Monitors Containment Sump Level							
Accuracy: Spec: Demon:	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Note 1	A	Note 1	Note 1	Note 1
Service: Containment N.R. Sump Level							
Location: Containment	Radiation	1.7×10^7 RADS	Note 1	CAL-44	Note 1	Note 1	Note 1
Flood Level Elev: 572'-2"	Aging	40 Years	Note 1	I	Note 1	Note 1	Note 1
Above Flood Level: No							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>	Submergence	572"-2"	Note 1	B	Note 1	Note 1	Note 1
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-024A
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Prepared by: _____ Date: _____
Checked by: _____ Date: _____

NOTES

PRELIMINARY

1. Qualification is underway. Documentation has not yet been reviewed.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-025
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification	Outstanding
	Parameter	Specification	Qualification	Specification	Qualification	Method	Items
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Note 1	Note 1
Plant ID No. LE4618	Temperature (°F)	283.0	Note 1	H, X	Note 1	Note 1	Note 1
Component: Level Transmitter	Pressure (PSIA)	52.0	Note 1	G, X	Note 1	Note 1	Note 1
Manufacturer: Delaval	Relative Humidity (%)	100.0	Note 1	A	Note 1	Note 1	Note 1
Model Number: 323	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Note 1	A	Note 1	Note 1	Note 1
Function: Monitors Containment Sump Level	Radiation	1.7 x 10 ⁷ RADS	Note 1	CAL-44	Note 1	Note 1	Note 1
Accuracy: Spec: Demon:	Aging	40 Years	Note 1	I	Note 1	Note 1	Note 1
Service: Containment N.R. Sump Level	Submergence	572"-2"	Note 1	B	Note 1	Note 1	Note 1
Location: Containment							
Flood Level Elev: 572'-2" Above Flood Level: No							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Index No.: 302H-025A
Rev.: 0

SYSTEM COMPONENT EVALUATION WORKSHEET

Facility: Davis-Besse Unit 1
Docket: 50-346

NOTES

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

1. Qualification is underway. Documentation has not yet been reviewed.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-026
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification	Outstanding
	Parameter	Specification	Qualification	Specification	Qualification	Method	Items
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Note 1 Analysis	Note 1
Plant ID No. LIT4617	Temperature (°F)	N/A	N/A	Note 2	N/A	Analysis	Note 1
Component: Level Receiver	Pressure (PSIA)	N/A	N/A	Note 2	N/A	Analysis	Note 1
Manufacturer: Delaval	Relative Humidity (%)	N/A	N/A	Note 2	N/A	Analysis	Note 1
Model Number: 323	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Monitors Containment Sump Level	Radiation	3.12 x 10 ⁵ RADS	Note 1	T	Note 1	Analysis	Note 1
Accuracy: Spec: Demon:	Aging	40 Years	Note 1	I	Note 1	Analysis	Note 1
Service: Containment N.R. Sump Level	Submergence	N/A	N/A	N/A	N/A	N/A	N/A
Location: Rm. 427							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-026A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

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1. Qualification is underway. Documentation has not yet been reviewed.
 2. Only harsh environment seen is increased radiation due to recirculated fluids.

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Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-028A

Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. Testing is currently under way for the qualification of Rosemount 1153 series transmitters. Test conditions listed are from Rosemount test plan.
2. This component's function is to monitor containment water level. Component submergence will occur after component has performed its function. Component failure will not mislead operator since containment flooding is indicated by this transmitter until it becomes submerged.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-029A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

-
1. Testing is currently under way for the qualification of Rosemount 1153 series transmitters. Test conditions listed are from Rosemount test plan.
 2. This component's function is to monitor containment water level. Component submergence will occur after component has performed its function. Component failure will not mislead operator since containment flooding is indicated by this transmitter until it becomes submerged.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-030
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification	Outstanding
	Parameter	Specification	Qualification	Specification	Qualification	Method	Items
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	Note 1	Simultaneous Test	None
Plant ID No. FT4630	Temperature (°F)	218.0	350.0	C-303	Note 1	Simultaneous Test	None
Component: Flow Transmitter	Pressure (PSIA)	17.16	99.7	C-303	Note 1	Simultaneous Test	None
Manufacturer: Rosemount	Relative Humidity (%)	100.0	100.0	A	Note 1	Simultaneous Test	None
Model Number: 1153	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Monitors Flow	Radiation	1.16×10^6 RADS	4.0×10^7 RADS	T	Note 1	Sequential Test	None
Accuracy: Spec: 5.0% Demon: Note 1	Aging	40 Years	40 Years	I	Note 1	Sequential Test	None
Service: Auxiliary Feedwater to Steam Generator 1	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 303							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-030A

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Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____

Checked by: _____ Date _____

-
1. Testing is currently under way for the qualification of Rosemount 1153 series transmitters. Test conditions listed are from Rosemount test plan.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-031
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	Note 1	Simultaneous Test	None
Plant ID No. FT4631	Temperature (°F)	221.0	350.0	C-314	Note 1	Simultaneous Test	None
Component: Flow Transmitter	Pressure (PSIA)	19.76	99.7	C-314	Note 1	Simultaneous Test	None
Manufacturer: Rosemount	Relative Humidity (%)	100.0	100.0	A	Note 1	Simultaneous Test	None
Model Number: 1153	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Monitors Flow	Radiation	1.0 x 10 ⁶ RADS	4.0 x 10 ⁷ RADS	T	Note 1	Sequential Test	None
Accuracy: Spec: 5.0% Demon: Note 1	Aging	40 Years	40 Years	I	Note 1	Sequential Test	None
Service: Auxiliary Feedwater to Steam Generator 2	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 314							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1

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SYSTEM COMPONENT EVALUATION WORKSHEET

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NOTES

Prepared by: _____ Date _____

Checked by: _____ Date _____

PRELIMINARY

-
1. Testing is currently under way for the qualification of Rosemount 1153 series transmitters. Test conditions listed are from Rosemount test plan.

Rev.: 0

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: Post-Accident Sampling	Operating Time	1 Year	1.1 Years	F	Note 1	Simultaneous Test	None
Plant ID No.: SV4632	Temperature (°F)	283.0	346.0	H, X	Note 1	Simultaneous Test	None
Component: Solenoid Valve							
Manufacturer: Valcor	Pressure (PSIA)	52.0	133.0	G, X	Note 1	Simultaneous Test	None
Model Number: 52600-6042-1	Relative Humidity (%)	100.0	100.0	A	Note 1	Simultaneous Test	None
Function: Post-Accident Sampling							
Accuracy: Spec: N/A Demon: N/A	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	CAL-40 Note 2	Simultaneous Test	None
Service: Post-Accident Sampling Valve							
Location: Containment	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	A	Note 1	Sequential Test	None
Flood Level Elev: 572'-2"	Aging	40 Years	40 Years	I	Note 1	Sequential Test	None
Above Flood Level: No							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>	Submergence	572'-2"	Note 3	B	Note 3	N/A	None
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1

SYSTEM COMPONENT EVALUATION WORKSHEET

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NOTES

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

1. The component remained functional throughout and after the test, therefore, it can be concluded that the valve will remain functional during the short-term accident environment and the long-term cooldown at ambient conditions (References G, H, and X). Test report documentation is currently being finalized. A draft copy has been reviewed and the final worksheets will be made up when the final test report becomes available. Environmental parameters shown here are actual test valves taken from the draft copy of the test report.
2. Revision 1 of CAL-40 qualifies components tested in a high pH concentration boric acid spray to conditions present at Davis-Besse Unit 1.
3. Component will perform its function prior to submergence.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-033
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4662	Temperature (°F)	346.0	346.0	C-113	J-18	Simultaneous Test	None
Component: Solenoid Valve	Pressure (PSIA)	16.06	124.7	C-113	J-18	Simultaneous Test	None
Manufacturer: ASCO	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
Model Number: NP	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Post-Accident Sampling	Radiation	7.1×10^6 RADS	2.0×10^8 RADS	T	J-18	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Service: Post-Accident Sampling Valve	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 113							
Flood Level Elev: 572'-2"							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

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NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

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COMPONENT MATERIALS EVALUATION SHEET

Index No.: 302H-033B
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Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4662
Manufacturer: ASCO

Component: Solenoid Valve
Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4633	Temperature (°F)	155.0	346.0	C-113	J-18	Simultaneous Test	None
Component: Solenoid Valve							
Manufacturer: ASCO	Pressure (PSIA)	16.06	124.7	C-113	J-18	Simultaneous Test	None
Model Number: NP	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
Function: Post-Accident Sampling							
Accuracy: Spec: N/A Demon: N/A	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Service: Post-Accident Sampling Valve							
Location: Auxiliary Bldg. Rm. 113	Radiation	7.1×10^6 RADS	2.0×10^8 RADS	T	J-18	Sequential Test	None
Flood Level Elev: 572'-2"	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>	Submergence	N/A	N/A	N/A	N/A	N/A	None
Cold Shutdown <input checked="" type="checkbox"/>							

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NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

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COMPONENT MATERIALS EVALUATION SHEET

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PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

Plant I.D. No.: SV4633

Component: Solenoid Valve

Manufacturer: ASCO

Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-035

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PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4635	Temperature (°F)	192.0	346.0	C-208	J-18	Simultaneous Test	None
Component: Solenoid Valve	Pressure (PSIA)	16.25	124.7	C-208	J-18	Simultaneous Test	None
Manufacturer: ASCO	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
Model Number: NP	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Post-Accident Sampling	Radiation	1.97×10^6 RADS	2.0×10^8 RADS	T	J-18	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Service: Post-Accident Sampling Valve	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 208							
Flood Level Elev: 572'-2" Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-035A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

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COMPONENT MATERIALS EVALUATION SHEET

Index No.: 302H-035B
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Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4635

Component: Solenoid Valve

Manufacturer: ASCO

Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Facility: Davis-Besse Unit 1
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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-036
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4636	Temperature (°F)	155.0	346.0	C-113	J-18	Simultaneous Test	None
Component: Solenoid Valve	Pressure (PSIA)	16.06	124.7	C-113	J-18	Simultaneous Test	None
Manufacturer: ASCO	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
Model Number: NP	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Post-Accident Sampling	Radiation	7.1 x 10 ⁶ RADS	2.0 x 10 ⁸ RADS	T	J-18	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Service: Post-Accident Sampling Valve	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 113							
Flood Level Elev: 572'-2"							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-036A

Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

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COMPONENT MATERIALS EVALUATION SHEET

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Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4636

Component: Solenoid Valve

Manufacturer: ASCO

Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Facility: Davis-Besse Unit 1
Docket: 50-16

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-037
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4641	Temperature (°F)	198.0	346.0	C-236	J-18	Simultaneous Test	None
Component: Solenoid Valve							
Manufacturer: ASCO	Pressure (PSIA)	15.51	124.7	C-236	J-18	Simultaneous Test	None
Model Number: NP							
Function: Post-Accident Sampling	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
	Accuracy: Spec: N/A Demon: N/A	N/A	N/A	N/A	N/A	N/A	None
Service: Post-Accident Sampling Valve							
Location: Auxiliary Bldg. Rm. 236	Radiation	1.97 x 10 ⁶ RADS	2.0 x 10 ⁸ RADS	T	J-18	Sequential Test	None
Flood Level Elev: 572'-2"	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Above Flood Level: N/A							
Needed for:	Submergence	N/A	N/A	N/A	N/A	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-037A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 302H-037B
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4641

Component: Solenoid Valve

Manufacturer: ASCO

Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-038
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4661	Temperature (°F)	155.0	346.0	C-113	J-18	Simultaneous Test	None
Component: Solenoid Valve							
Manufacturer: ASCO	Pressure (PSIA)	16.06	124.7	C-113	J-18	Simultaneous Test	None
Model Number: NP	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
Function: Post-Accident Sampling							
Accuracy: Spec: N/A Demon: N/A	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Service: Post-Accident Sampling Valve	Radiation	7.1×10^6 RADS	2.0×10^8 RADS	T	J-18	Sequential Test	None
Location: Auxiliary Bldg. Rm. 113							
Flood Level Elev: 572'-2"	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Above Flood Level: N/A							
Needed for:	Submergence	N/A	N/A	N/A	N/A	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-038A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 302H-038B

Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4661
Manufacturer: ASCO

Component: Solenoid Valve
Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-039
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4634	Temperature (°F)	130.0	346.0	C-105	J-18	Simultaneous Test	None
Component: Solenoid Valve	Pressure (PSIA)	16.06	124.7	C-105	J-18	Simultaneous Test	None
Manufacturer: ASCO	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
Model Number: NP	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Post-Accident Sampling	Radiation	1.9 x 10 ⁶ RADS	2.0 x 10 ⁸ RADS	T	J-18	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Service: Post-Accident Sampling Valve	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 105							
Flood Level Elev: 572'-2"							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-039A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 302H-039B
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4634
Manufacturer: ASCO

Component: Solenoid Valve
Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-040
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4642	Temperature (°F)	155.0	346.0	C-113	J-18	Simultaneous Test	None
Component: Solenoid Valve	Pressure (PSIA)	16.06	124.7	C-113	J-18	Simultaneous Test	None
Manufacturer: ASCO	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
Model Number: NP	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Function: Post-Accident Sampling	Radiation	7.1×10^6 RADS	2.0×10^8 RADS	T	J-18	Sequential Test	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Service: Post-Accident Sampling Valve	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 113							
Flood Level Elev: 572'-2"							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-040A
Rev.: 0

NOTES

PRELIMINARY

Prepared by: _____ Date _____
Checked by: _____ Date _____

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 302H-040B
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4642

Component: Solenoid Valve

Manufacturer: ASCO

Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-041
Rev.: 0

PRELIMINARY

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	J-18 Note 1	Simultaneous Test	None
Plant ID No. SV4642A	Temperature (°F)	155.0	346.0	C-113	J-18	Simultaneous Test	None
Component: Solenoid Valve							
Manufacturer: ASCO	Pressure (PSIA)	16.06	124.7	C-113	J-18	Simultaneous Test	None
Model Number: NP							
Function: Post-Accident Sampling	Relative Humidity (%)	100.0	100.0	A	J-18	Simultaneous Test	None
	Chemical Spray	N/A	N/A	N/A	N/A	N/A	None
Accuracy: Spec: N/A Demon: N/A							
Service: Post-Accident Sampling Valve	Radiation	7.1 x 10 ⁶ RADS	2.0 x 10 ⁸ RADS	T	J-18	Sequential Test	None
Location: Auxiliary Bldg. Rm. 113							
Flood Level Elev: 572'-2"	Aging	40 Years	40 Years Note 3	I	Note 2	Analysis	None
Above Flood Level: N/A							
Needed for:	Submergence	N/A	N/A	N/A	N/A	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-041A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

1. The test subjected the solenoid valve to a transient of 346° and 124.7 psia for 5 hours, followed by a cooldown to ambient. The solenoid valve was then subjected to a second transient of 346° and 124.7 psia for 3 hours, then a cooldown to 320° and 89.7 psia for 3 hours, then a cooldown to 250°F and 29.7 psia for 3 days, 13 hours, then a cooldown to 200°F and 24.7 psia, which was maintained for 26 days. The temperature in containment peaks at 282°F in 17 seconds. The pressure in containment peaks at 52 psia in 50 seconds. The conditions in containment return to ambient after 7 days. Based on this information, it can be concluded that the test subjected the solenoid valve to a more severe environment than that which would result from the postulated LOCA. Since the solenoid valve remained functional throughout the test and subsequent to the test, it can be concluded that the solenoid valve would remain functional during and after exposure to the environment that would result from the postulated LOCA (References G, H, and X).
2. Materials evaluation conducted. Materials sensitive to radiation and/or thermal aging summarized on attached evaluation.
3. Materials and/or components sensitive to thermal aging will be replaced as per maintenance and replacement schedules to assure that associated component will maintain functional operability in harsh environments.

Facility: Davis-Besse Unit 1
Docket: 50-346

COMPONENT MATERIALS EVALUATION SHEET

Index No.: 302H-041B
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

Plant I.D. No.: SV4642A
Manufacturer: ASCO

Component: Solenoid Valve
Model No.: NP

		THERMAL AGING		RADIATION	
Parts List	Materials List	Qualification	Reference	Qualification	Reference
Guide, Core	Brass	Not Sensitive			
Pilot Seat Cartridge	Brass	Not Sensitive			
Screws	Steel	Not Sensitive			
Body & Bonnet	Brass	Not Sensitive			
Insert	Brass	Not Sensitive			
Retaining Rings	Brass	Not Sensitive			
Strainer	Stainless Steel	Not Sensitive			
Spring, Core	Stainless Steel	Not Sensitive			
Spring, Disc	Stainless Steel	Not Sensitive			
Sol. Base Sub-Assembly	Metallic	Not Sensitive			
Core Tube	Stainless Steel	Not Sensitive			
Core & Plugnut	Stainless Steel	Not Sensitive			
Shading Coil	Copper	Not Sensitive			
Disc Holder	Stainless Steel	Not Sensitive			
Gaskets	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Disc	Ethylene Propylene	40 Years @ 62.5°C	CAL-1		
Diaphragm Assemblies	Ethylene Propylene, Brass	40 Years @ 62.5°C	CAL-1		
Class H Coil: *					
Enclosure	Steel	Not Sensitive			
Outerwrap	Fiberglass	40 Years	Y		
Varnish	Silicone	40 Years @ 105°C	W-2		
Lead Wire Insulation	Silicone Rubber, Glass	40 Years	Y		
	Braid				
Magnet Wire Insulation	Enamel	40 Years @ 200°C	CAT-3B		
Insulation	Nomex	40 Years @ 105°C	W-2		
Insulation	Iso-Mica	40 Years @ 105°C	W-2		
	Epoxy	40 Years @ 90°C	W-2		
Insulation	Silicone Resin	40 Years @ 105°C	W-2		
	Mica	40 Years @ 105°C	W-2		

Material & Parts List Reference: V-3A, V-3F, CAT-3B, ROC-3A, ROC-3D

* Coil is scheduled for replacement in accordance with manufacturer's recommendations.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-042
Rev.: 0

Prepared by: _____ Date: _____
Checked by: _____ Date: _____

PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification	Outstanding
	Parameter	Specification	Qualification	Specification	Qualification	Method	Items
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Simultaneous Test	Note 1
Plant ID No. RE4597AA	Temperature (°F)	218.0	Note 1	C-303	Note 1	Simultaneous Test	Note 1
Component: Radiation Element							
Manufacturer: Kaman Sciences	Pressure (PSIA)	17.16	Note 1	C-303	Note 1	Simultaneous Test	Note 1
Model Number: KMG-HRH	Relative Humidity (%)	100.0	Note 1	A	Note 1	Simultaneous Test	Note 1
Function: Radiation Monitoring							
Accuracy: Spec: Note 1 Demon:	Chemical Spray	N/A	N/A	N/A	N/A	N/A	N/A
Service: Post-Accident Sampling	Radiation	1.16 x 10 ⁶ RADS	Note 1	T	Note 1	Sequential Test	Note 1
Location: Auxiliary Bldg. Rm. 303							
Flood Level Elev: N/A	Aging	40 Years	Note 1	I	Note 1	Sequential Test	Note 1
Above Flood Level: N/A							
Needed for:	Submergence	N/A	N/A	N/A	N/A	N/A	None
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

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SYSTEM COMPONENT EVALUATION WORKSHEET

Index No.: 302H-042A
Rev.: 0

NOTES

Prepared by: _____ Date _____
Checked by: _____ Date _____

PRELIMINARY

-
1. Qualification efforts are underway. Final test report documentation has not been received.

Facility: Davis-Besse Unit 1
Docket: 50-346

SYSTEM COMPONENT EVALUATION WORKSHEET

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Rev.: 0

Prepared by: _____ Date: _____

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PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Simultaneous Test	Note 1
Plant ID No. RE4597BA	Temperature (°F)	221.0	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Component: Radiation Element							
Manufacturer: Kaman Sciences	Pressure (PSIA)	19.76	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Model Number: KMG-HRH	Relative Humidity (%)	100.0	Note 1	A	Note 1	Simultaneous Test	Note 1
Function: Radiation Monitoring							
Accuracy: Spec: Note 1 Demon:	Chemical Spray	N/A	N/A	N/A	N/A	N/A	N/A
Service: Post-Accident Sampling							
Location: Auxiliary Bldg. Rm. 314	Radiation	1.0 x 10 ⁶ RADS	Note 1	T	Note 1	Sequential Test	Note 1
Flood Level Elev: N/A Above Flood Level: N/A	Aging	40 Years	Note 1	I	Note 1	Sequential Test	Note 1
Needed for: Hot Shutdown <input checked="" type="checkbox"/>	Submergence	N/A	N/A	N/A	N/A	N/A	None
Cold Shutdown <input checked="" type="checkbox"/>							

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Docket: 50-346

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Prepared by: _____ Date _____
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PRELIMINARY

-
1. Qualification efforts are underway. Final test report documentation has not been received.

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PRELIMINARY

Prepared by: _____ Date: _____
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EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Simultaneous Test	Note 1
Plant ID No. RT4597AA	Temperature (°F)	208.0	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Component: Radiation Transmitter	Pressure (PSIA)	15.83	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Manufacturer: Kaman Sciences	Relative Humidity (%)	100.0	Note 1	A	Note 1	Simultaneous Test	Note 1
Model Number: KMG-HRH	Chemical Spray	N/A	N/A	N/A	N/A	N/A	N/A
Function: Radiation Monitoring	Radiation	6.53 x 10 ⁴ RADS	Note 1	T	Note 1	Sequential Test	Note 1
Accuracy: Spec: Note 1 Demon:	Aging	40 Years	Note 1	I	Note 1	Sequential Test	Note 1
Service: Post-Accident Sampling	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 304							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

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PRELIMINARY

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1. Qualification efforts are underway. Final test report documentation has not been received.

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Prepared by: _____ Date: _____
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EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Simultaneous Test	Note 1
Plant ID No. RT4597AB	Temperature (°F)	218.0	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Component: Radiation Transmitter	Pressure (PSIA)	17.16	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Manufacturer: Kaman Sciences	Relative Humidity (%)	100.0	Note 1	A	Note 1	Simultaneous Test	Note 1
Model Number: KMG-HRH	Chemical Spray	N/A	N/A	N/A	N/A	N/A	N/A
Function: Radiation Monitoring	Radiation	1.16 x 10 ⁶ RADS	Note 1	T	Note 1	Sequential Test	Note 1
Accuracy: Spec: Note 1 Demon:	Aging	40 Years	Note 1	I	Note 1	Sequential Test	Note 1
Service: Post-Accident Sampling	Submergence	N/A	N/A	N/A	N/A	N/A	None
Location: Auxiliary Bldg. Rm. 303							
Flood Level Elev: N/A							
Above Flood Level: N/A							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

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PRELIMINARY

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1. Qualification efforts are underway. Final test report documentation has not been received.

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PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Simultaneous Test	Note 1
Plant ID No. RE4597AB	Temperature (°F)	218.0	Note 1	C-303	Note 1	Simultaneous Test	Note 1
Component: Radiation Element							
Manufacturer: Kaman Sciences	Pressure (PSIA)	17.16	Note 1	C-303	Note 1	Simultaneous Test	Note 1
Model Number: KMG-HRH	Relative Humidity (%)	100.0	Note 1	A	Note 1	Simultaneous Test	Note 1
Function: Radiation Monitoring							
Accuracy: Spec: Note 1 Demon:	Chemical Spray	N/A	N/A	N/A	N/A	N/A	N/A
Service: Post-Accident Sampling							
Location: Auxiliary Bldg. Rm. 303	Radiation	1.16 x 10 ⁶ RADS	Note 1	T	Note 1	Sequential Test	Note 1
Flood Level Elev: N/A Above Flood Level: N/A	Aging	40 Years	Note 1	I	Note 1	Sequential Test	Note 1
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>	Submergence	N/A	N/A	N/A	N/A	N/A	None
Cold Shutdown <input checked="" type="checkbox"/>							

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1. Qualification efforts are underway. Final test report documentation has not been received.

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PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	Note 1	U	Note 1	Simultaneous Test	Note 1
Plant ID No. RE4597BB	Temperature (°F)	221.0	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Component: Radiation Element							
Manufacturer: Kaman Sciences	Pressure (PSIA)	19.76	Note 1	C-314	Note 1	Simultaneous Test	Note 1
Model Number: KMG-HRH	Relative Humidity (%)	100.0	Note 1	A	Note 1	Simultaneous Test	Note 1
Function: Radiation Monitoring							
Accuracy: Spec: Note 1 Demon:	Chemical Spray	N/A	N/A	N/A	N/A	N/A	N/A
Service: Post-Accident Sampling							
Location: Auxiliary Bldg. Rm. 314	Radiation	1.0 x 10 ⁶ RADS	Note 1	T	Note 1	Sequential Test	Note 1
Flood Level Elev: N/A Above Flood Level: N/A	Aging	40 Years	Note 1	I	Note 1	Sequential Test	Note 1
Needed for:							
Hot Shutdown X	Submergence	N/A	N/A	N/A	N/A	N/A	None
Cold Shutdown X							

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PRELIMINARY

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1. Qualification efforts are underway. Final test report documentation has not been received.

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PRELIMINARY

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EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	E-15 Note 1	Sequential Test	None
Plant ID No. RE4596A	Temperature (°F)	283.0	390.0	H, X	E-15	Sequential Test	None
Component: Radiation Element	Pressure (PSIA)	52.0	91.7	G, X	E-15	Sequential Test	None
Manufacturer: General Atomic	Relative Humidity (%)	100.0	100.0	A	E-15	Sequential Test	None
Model Number: RO-23	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	E-15 CAL-40 Note 2	Sequential Test, Analysis	None
Function: Radiation Detection	Radiation	1.7×10^7 RADS	2.0×10^8 RADS	CAL-44	E-15 Note 3	Analysis	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years Note 4	I	E-15	Sequential Test	None
Service: Radiation Monitoring	Submergence	572'-2"	Note 5	B	Note 5	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for:							
Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

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NOTES

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PRELIMINARY

1. The test subjected the radiation detector to an initial transient of 315°F and 91.7 psia for 1 hour, followed by a cooldown to 105°F and 14.7 psia. The second transient consisted of 10 hours at 315°F and 91.7 psia for 10 hours, followed by a cooldown to 205°F and 58.7 psia for 84 hours, then 10 days at 150° and 20.7 psia. The temperature in containment peaks at 283° in 17 seconds. The pressure in containment peaks at 52.0 psia in 50 seconds. The pressure in containment peaks at 52.0 psia in 50 seconds. The conditions in containment return to ambient in 7 days.

Based on this information, it can be concluded that the test subjected the radiation detector to an overall more severe environment than that which would result from a postulated LOCA. Since the radiation detector remained functional during and after exposure to the harsh environment, it can be concluded that the radiation detector will remain functional during and after exposure to the harsh environment which would result from the postulated LOCA (References G, H, and X).

2. Revision 1 of CAL-40 qualifies components tested in a high pH chemical spray to a pH of 5.0.
3. Analysis of radiation qualification is based on radiation-resistant materials used in construction of radiation detector unit.
4. Materials and/or components sensitive to thermal aging (aluminum electrolytic capacitors [Reference E-15]) will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.
5. This component will be located above the flood level as per FCR 80-50.

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Prepared by: _____ Date: _____
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PRELIMINARY

EQUIPMENT DESCRIPTION	ENVIRONMENT			DOCUMENTATION REF.		Qualification Method	Outstanding Items
	Parameter	Specification	Qualification	Specification	Qualification		
System: TMI Action Items	Operating Time	1 Year	1.1 Years	U	E-15 Note 1	Sequential Test	None
Plant ID No. RE4596B	Temperature (°F)	283.0	390.0	H, X	E-15	Sequential Test	None
Component: Radiation Element	Pressure (PSIA)	52.0	91.7	G, X	E-15	Sequential Test	None
Manufacturer: General Atomic	Relative Humidity (%)	100.0	100.0	A	E-15	Sequential Test	None
Model Number: RO-23	Chemical Spray	Boric Acid 1800 ppm pH 5.0	Boric Acid 1800 ppm pH 5.0	A	E-15 CAL-40 Note 2	Sequential Test, Analysis	None
Function: Radiation Detection	Radiation	1.7 x 10 ⁷ RADS	2.0 x 10 ⁸ RADS	CAL-44	E-15 Note 3	Analysis	None
Accuracy: Spec: N/A Demon: N/A	Aging	40 Years	40 Years Note 4	I	E-15	Sequential Test	None
Service: Radiation Monitoring	Submergence	572'-2"	Note 5	B	Note 5	N/A	None
Location: Containment							
Flood Level Elev: 572'-2"							
Above Flood Level: Yes							
Needed for: Hot Shutdown <input checked="" type="checkbox"/>							
Cold Shutdown <input checked="" type="checkbox"/>							

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NOTES

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PRELIMINARY

1. The test subjected the radiation detector to an initial transient of 315°F and 91.7 psia for 1 hour, followed by a cooldown to 105°F and 14.7 psia. The second transient consisted of 10 hours at 315°F and 91.7 psia for 10 hours, followed by a cooldown to 205°F and 58.7 psia for 84 hours, then 10 days at 150° and 20.7 psia. The temperature in containment peaks at 283° in 17 seconds. The pressure in containment peaks at 52.0 psia in 50 seconds. The pressure in containment peaks at 52.0 psia in 50 seconds. The conditions in containment return to ambient in 7 days.

Based on this information, it can be concluded that the test subjected the radiation detector to an overall more severe environment than that which would result from a postulated LOCA. Since the radiation detector remained functional during and after exposure to the harsh environment, it can be concluded that the radiation detector will remain functional during and after exposure to the harsh environment which would result from the postulated LOCA (References G, H, and X).

2. Revision 1 of CAL-40 qualifies components tested in a high pH chemical spray to a pH of 5.0.
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4. Materials and/or components sensitive to thermal aging (aluminum electrolytic capacitors [Reference E-15]) will be replaced as per maintenance and replacement schedules to assure that associated components will maintain functional operability in harsh environments.
5. This component will be located above the flood level as per FCR 80-50.