



Portland General Electric Company

Charles Goodwin, Jr. Assistant Vice President

PDR

June 12, 1979

Trojan Nuclear Plant  
Docket 50-344  
License NPF-1

Mr. R. H. Engelken, Director  
U.S. Nuclear Regulatory Commission  
Region V  
Suite 202, Walnut Creek Plaza  
1990 N. California Blvd.  
Walnut Creek, California 94596



Dear Sir:

Enclosed is our response to IE Bulletin 79-01 concerning environmental qualifications of Class IE equipment at the Trojan Nuclear Plant. This Bulletin and IE Circular 78-08 required examination of all installed safety-related electrical equipment and the determination that proper documentation exists to assure that this equipment would function under postulated accident conditions. Supplemental information requested at the PGE/Westinghouse/NRC meeting in Washington, D. C. on June 8 concerning this subject will be transmitted by June 15, 1979.

If you have any questions or concerns, please contact me.

Sincerely,

C. Goodwin, Jr.  
Assistant Vice President  
Thermal Plant Operation and  
Maintenance

CG/SML/4kk3A27  
Enclosure

c: Mr. Lynn Frank, Director  
State of Oregon  
Department of Energy

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ENCLOSURE 1

Response to NRC IE Bulletin No. 79-01  
Environmental Qualification of Class 1E Equipment

1. Complete the re-review program described in IE Circular 78-08 within 120 days of receipt of this Bulletin.

PGE Response

The re-review program described in IE Circular 78-08 is complete per the attached document with the exception of PGE's response to an NRC request for supplemental information concerning the short-term trip capabilities and long-term monitoring capabilities of certain installed in-Containment Barton and Foxboro signal transmitters (pressurizer level, RCS wide range pressure, steam generator level, reactor coolant hot/cold leg temperature RTDs) and means for providing interim backup monitoring. This request was made at a joint NRC/Westinghouse/PGE meeting held in Washington D.C. on June 8, 1979. PGE's response will be provided in a supplement to this submittal, as stated in the cover letter.

2. Determine if the types of stem mounted limit switches described above are being used or planned for use on safety-related valves which are located inside containment at your facility. If so, provide a written report to the NRC within the time frame specified and to the address specified in Item 4 below.

PGE Response

No NAMCO switches of these model numbers are in service in a Containment environment at the Trojan Nuclear Plant. As required by the previously issued IE Bulletin 78-04, unqualified NAMCO switches in the Trojan Containment were replaced if they were found to be performing any one of the following functions:

- a. Latch-in capability for valve actuation control circuitry,
- b. Interlocks with other safety-related valves, or
- c. Status panel indication in the control room.

Switches performing simple open-close indication at the valve control switches were not replaced.

3. Provide written evidence of the qualification of electrical equipment required to function under accident conditions [this written evidence should include: 1) component description; 2) description of the accident environment; 3) the environment to which the component or equipment is qualified; 4) the manner of qualification which should include test methods such as sequential, synergistic, etc; and 5) identification of the specific supporting qualification documentation].

For those items not having complete qualification data available for review, identify your plans for determining qualification either by testing or engineering analysis or a combination of these, or by replacement with qualified equipment. Include your schedule for completing these actions and your justification for continued operation.

PGE Response

Enclosed please find Attachment 3 entitled "Environment Qualification Review of Class 1F Electrical Equipment". The following comments are pertinent to this document.

- a. Trojan FSAR Figure 3.11-2 (LOCA temperature) and Figure 3.11-1 (LOCA pressure) are enclosed as Attachments No. 1 and 2, respectively, to assist in the evaluation of equipment temperature and pressure qualifications.
- b. As discussed in the cover letter, a supplement to this submittal will respond to NRC questions concerning short- and long-term qualification requirements and the capability of instruments performing a pressurizer level, RCS pressure, and steam generator level function. This supplement may identify necessary revisions to the Trojan FSAR.
- c. The qualification documentation for Rosemount Model 176KF and 176KS RTDs (pages 6 and 7) is the result of testing completed since the Trojan FSAR was completed. The FSAR will be revised to reflect this change.
- d. Some NAMCO stem-mounted limit switches (Model D2400 and Model D2400X identified on pages 18, 19, 20, 21 and 22) are not qualified for post-accident conditions. However, these switches only perform simple indication functions as discussed above, in item 2, and are therefore satisfactorily qualified for their non-accident environment conditions.
- e. The terminal boxes/terminal blocks listed on page 23 are utilized to provide field junction points for the reactor coolant hot/cold leg temperature and  $\Delta T$  RTDs (Rosemount Model 176KF and 176KS). The qualification documentation referenced for these terminal boxes/terminal blocks is satisfactory except in the areas of peak pressure (40 psia versus 60 psia) and integrated radiation exposure ( $5 \times 10^6$  R versus  $1 \times 10^7$  R). PGE judges that the difference in pressure has no significance with regard to terminal blocks. The difference in radiation qualification is of more consequence. These are a high-quality GE type EB-5 terminal block in a 1/16-in. thick steel enclosure. Similar provisions for terminating cable are found in other qualified Containment equipment. PGE sees no need for additional qualification data.

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- f. The review of the environmental qualification of electrical equipment located outside the Containment references the industry standards that apply to specific types of electrical equipment. These industry standards are based on operating experience and consider the effects of the environment on the electrical equipment. Industry standards allow temperature rise limitation tests to be performed at the environmental conditions existing at the manufacturer's location. For example, proper testing of a motor at an ambient temperature of 30°C (in accordance with the industry standard, NEMA Standard MG1) and meeting appropriate temperature rise limitations will qualify the motor for service in temperatures of 10°C to 40°C. Equipment tested in accordance with these temperature rise limitations have demonstrated, by operating experience, satisfactory operation over a normal range of environment. The majority of electrical equipment (motors, switchgears, batteries, etc) at Trojan was tested within the requirements of current industrial standards. It is PGE's conclusion therefore that equipment tested to industry standards and which operates within a normal environment will function properly when required during actual operating conditions.
4. Report any items which are identified as not meeting qualification requirements for service intended to the Director, Division of Operating Reactors, Office of Nuclear Reactor Regulation, Nuclear Regulatory Commission, Washington D.C., with a copy to the appropriate NRC regional office within 24 hours of identification.

PGE Response

In response to IE Circular 78-08, PGE performed walk-downs of various Class IE equipment inside Containment. PGE reported to the NRC that several splices and cables to the pressurizer level transmitters inside Containment were improperly made and thus were unqualified (Licensee Event Report 78-27). Those unqualified splices were immediately repaired.

The motor operator for valve MO-10010 was found to be below the post-LOCA Containment water level. This motor operator is not qualified for submerged operation. The valve is one of the Containment isolation valves for one of the redundant hydrogen vent systems. This motor operator was identified as not qualified for its intended purpose by telephone conversation between L. W. Erickson of PGE and C. Trammell of the NRC on May 18, 1979. Written notification was performed by letter from C. Goodwin, Jr., of PGE to A. Schwencer of the NRC dated June 1, 1979. Design and construction activities to relocate valve MO-10010 above the post-LOCA containment water level have been initiated and will be complete by June 24, 1979.



A meeting was held at 4 pm on Wednesday, September 13, 1978 in PGE offices to review the results of a two-day NRC inspection. At that meeting, P. Morrell of the NRC, Region V, requested that the following additional items be addressed in PGE's response to IE Circular 78-08:

1. Review Class 1E equipment that may be submerged or located where it could be affected by fuel pool boiling, or a steam line break outside Containment.

PGE Response

Attachment 4 identifies equipment that will become submerged during the loss of coolant accident. The qualification of items 1, 2 and 3 will be addressed by supplemental submittal as noted above. The remainder of these submerged items are not required for long-term ECCS function (see FSAR Section 15.4.1.6) with the exception of the cable in the cable tray. This cable is qualified by prototype test for long-term submerged operation. No Class 1E equipment is located where it will be affected by the fuel pool boiling environment (elevation 93 ft of the Fuel Building). Equipment that may be located in a main steam line break environment is discussed on the environmental preface page of Attachment 3.

2. Confirm that a LOCA constitutes the worst case environment for equipment inside Containment.

PGE Response

A Main Stream Line Break (MSLB) accident inside Containment results in superheated vapor conditions that could result in a higher Containment temperature than if a LOCA were to take place. However, in general, lower levels of Containment peak pressure will result. A superheat condition (with corresponding high Containment atmosphere temperature) should have no significant effect on electrical equipment temperatures because the equipment surface temperature should closely follow the Containment saturation temperature, which is substantially lower than the peak vapor temperature during the superheat phase of the accident. The reason for this is that energy transfer from the Containment atmosphere to heat sinks is significant only when the sink surface is cooler than the saturation temperature so that condensation can occur. If the equipment surface temperature were to become higher than saturation, then the low energy transfer mechanism of convection would govern heat transfer. Since the Containment peak pressure is at a maximum following the design basis LOCA, the Containment saturation temperature for a MSLB accident is no higher than would be the case for a LOCA. It is on these bases that the worst-case environment for Containment-mounted equipment is specified to result from the design basis LOCA.

3. Describe program for identifying items such as terminal blocks, conduits, splices, etc. inside Containment that are of specific NRC concern caused by damage at other plants.

PGE Response

Representative Class IE equipment located in the Containment that must function as described in Tables 3.11-1 and 6.2-1 of the FSAR was selected for the environmental qualification survey. The circuits for this equipment were checked from the Containment penetration to the end device to insure that all components such as connectors, terminal blocks, and splices were in accordance with the design drawings.

Color-marked prints, showing the cable routing, were developed for the survey team to aid them in following the cables in the plant. The survey team developed a checkoff list for each circuit that identified the circuit and all its components between the Containment penetration and the end device. The checkoff list information was then compared with the design drawings to identify any "unqualified" components.

The survey was completed by December 19, 1978.

4. Confirm radiation qualification exposure for Class IE items in the Control and Auxiliary Buildings.

PGE Response

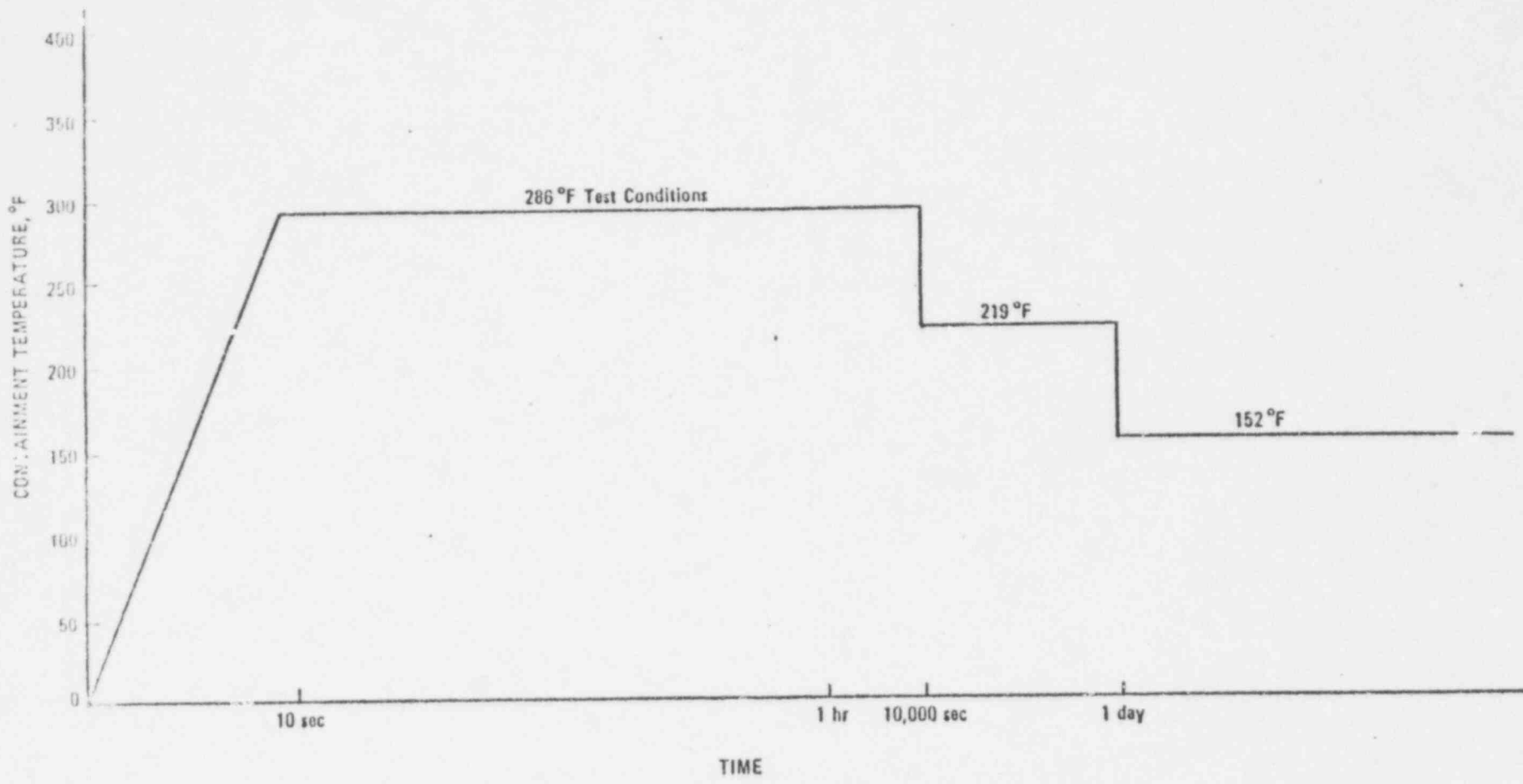
Radiation qualification noted on Attachment 3.

5. Confirm that environmental testing was sequential and the effects cumulative.

PGE Response

Refer to the "Remarks" column for equipment in Attachment 3.

Based on the above, we have concluded that proper documentation exists to assume that the safety-related electrical equipment will function under the environmental conditions created by the postulated loss-of-coolant accident and main stream line break, as specified in the Trojan Final Safety Analysis Report. Supplemental information will be provided to address in-Containment signal transmitter qualifications and interim backup monitoring.

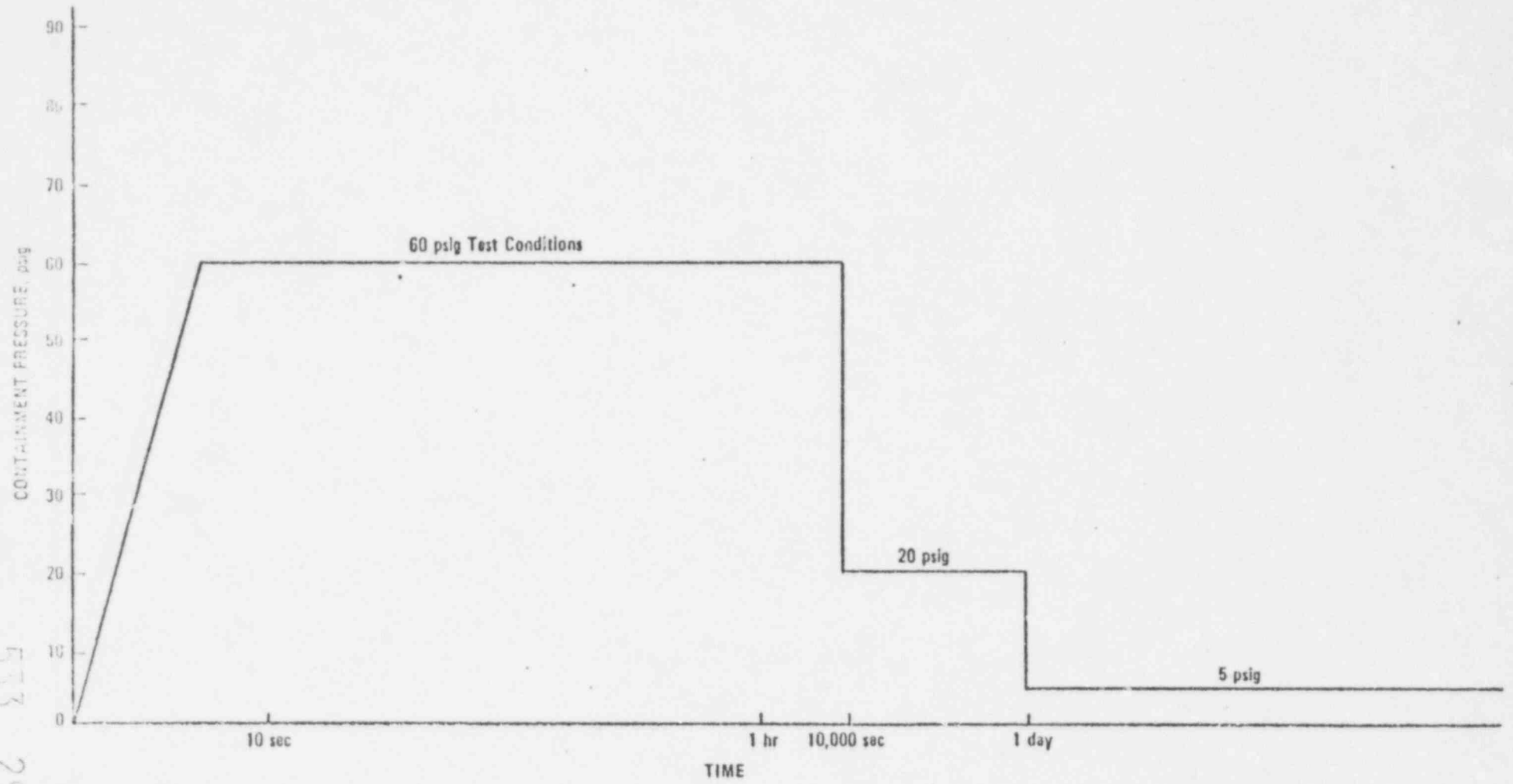


ATTACHMENT NO. 1

FSAR Figure 3.11-2 Environmental Conditions for Equipment Testing - Temperature as a Function of Time

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ATTACHMENT NO. 2

FSAR Figure 3.11-1 Environmental Conditions for Equipment Testing - Pressure as a Function of Time

PORTLAND GENERAL ELECTRIC COMPANY  
TROJAN NUCLEAR PLANT  
ENVIRONMENT QUALIFICATION REVIEW  
OF CLASS 1E ELECTRICAL EQUIPMENT

ATTACHMENT NO. 3

June 12, 1979

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ENVIRONMENT DEFINITIONS FOR QUALIFICATION REVIEW

Environment I - Containment during LOCA

Temperature: Figure 3.11-2 of Trojan FSAR (Attachment 1)  
 Pressure: Figure 3.11-1 of Trojan FSAR (Attachment 2)  
 Humidity: 100%  
 Chemical: Boric Acid of pH 4.9 or boric acid - sodium hydroxide mixture of pH 10.0.  
 Radiation:  $2.1 \times 10^7$  rads (reference 3.11.3.1 of Trojan FSAR)

Environment II - Fuel and Auxiliary Bldg.

Temperature: 50 degrees F to 104 degrees F  
 Pressure: + 1/2 PSIA  
 Humidity: 20 - 100%  
 Radiation:  $4.0 \times 10^5$ R  
 Chemical: None

Environment III - Control and Intake Structure

Temperature: 50 degrees F to 104 degrees F  
 Pressure: Normal  
 Humidity: 20 - 100%  
 Radiation: Normal (outside containment)  
 Chemical: None

Environment IV - Between Containment and Aux./Fuel Bldg. (Outside Environment)

Temperature: -5 degrees F to 107 degrees F  
 Pressure: None  
 Humidity: 0 to 100%  
 Radiation: Normal (outside containment)  
 Chemical: Exposed to water spray from sprinkler system

Environment V - Control Room

Temperature: 50 degrees F to 110 degrees F  
 Pressure: Normal  
 Humidity: 20 to 85%  
 Radiation: Normal  
 Chemical: None

Definitions of terms used in this report:

Sequential Type I: (1) Thermal aging, (2) radiation application equivalent to the aging and accident doses [or aging dose only], (3) LOCA simulation involving pressure, temperature, and chemical spray, [(4) radiation equivalent to accident dose],

Sequential Type II: Same as Type I except no thermal aging.

Non-aging: (1) Combined thermal and radiation aging, (2) combined radiation and LOCA simulation.

Short Term Capability: Qualification tested in post-LOCA environment for less than 24 hr.

Long Term Capability: Qualification tested in post-LOCA environment for 24 hr or more.

Environment VI - Turbine Bldg (Class IE Structure Only)

Temperature: 50 degrees F to 115 degrees F (Diesel Generator Rooms)  
 Pressure: Normal  
 Humidity: 20 - 100%  
 Radiation: Normal  
 Chemical: Exposed to water spray and Halon from fire protection systems (Diesel Generator Rooms and Auxiliary FW Pump Rooms)

Environment VII - Main Steam Line Rupture Outside Containment

The consequences of a steam line rupture would be limited to the Turbine Building and the Main Steam Support Structure as analyzed in PCE-1004 dated January 1974. The Control, Fuel or Auxiliary Building would not be exposed to the effects of a steam line rupture.

Turbine Bldg.

Temperature: 214°F  
 Pressure: 1.0 psig  
 Humidity: 100%

The Class IE equipment located in the Turbine Building (switchgear, emergency diesel generators and auxiliary feedwater pumps) are located in compartments that would prevent any appreciable steam from entering these areas.

Main Steam Support Structure

Temperature: 225°F  
 Pressure: 4.3 psig  
 Humidity: 100%

The Main Steam Support Structure is divided into four individual compartments, and the conditions listed above pertain to the compartment where the rupture occurred. There are no safety-related electrical equipment necessary for a safe shutdown after a main steam line break that is located in this compartment.

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THOJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

VEHICLE DOCUMENTATION

EQUIPMENT IDENTIFICATION	DESCRIPTION	SPEC. NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	HUMIDITY (%)	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
AZ01 thru AZ25	Electrical instrumentation	E-20	Containment	53ft to 75ft	I & IV	300	60	1 x 10 <sup>8</sup> R	Boric acid w/ NaOH	Qualified by Test in Amphenol Report No. 123-1236, August 23, 1972. Sequential Type I - Long-term capability
	Electrical splices at extremity assembly	E-20	Containment	53ft to 75ft	I & IV	300	60	1 x 10 <sup>8</sup> R	Boric acid w/ NaOH pH 9.5-11.0	Qualified by Type test in Raychem test report FC-6033-3 (Franklin Institute Research Lab.) Synergistic. Long-term capability.
Y2001A thru Y2001B	Containment Air Coolers (Self-Heating Motor)	M-66	Containment	205ft	I	300	75	1 x 10 <sup>9</sup> R	Boric acid solution, pH 9-10	Qualified by Type Test in American Air Filter test report AAF-TR-7101 (Also reference technical paper IEEE 71C38E1-61-1971). Sequential Type I - Long-term capability.
X-11A thru X-11B	Hydrogen Recyclers	M-87	Containment	93ft	I	300	69	2 x 10 <sup>8</sup> R	Boric acid w/ NaOH, pH 10	Qualified by Type test in W test report BCAP, 7709-L supplement 2 and supplement 3. Synergistic - Long-term capability.
Y2001A thru Y2001B	Hydrogen Cooling Fans (Self-Heating Motor)	F-09	Containment	215ft	I	300	75	1 x 10 <sup>9</sup> R	Boric acid solution, pH 9-10	Qualified by Type test in American Air Filter test (reference technical paper IEEE 71C38E1-61). Sequential Type I - Long-term capability.
Y02	Control Cable (Control Cable, 24-15, EP, 600V)	E-22	All	All	I	340	100	2 x 10 <sup>8</sup> R	Boric acid w/ NaOH, pH 9.0	Qualified by Type test in Franklin Institute Research Lab. Report F-C3125, Sept. 1971. Sequential Type II - Long-term capability.
Y03	Control Cable (Control Cable, 24-15, EP, 600V)	E-22	All	All	I	340	100	2 x 10 <sup>8</sup> R		
Y05	Control Cable (Control Cable, 24-15, EP, 600V)	E-22	All	All	I	340	100	2 x 10 <sup>8</sup> R		
Y07	Control Cable (Control Cable, 24-15, EP, 600V)	E-22	All	All	I	340	100	2 x 10 <sup>8</sup> R		
Y08A thru Y08B	Self-Heating Motor and Motor Range Detectors	M1	Containment	93ft	Normal Containment Environment	300	180	5 x 10 <sup>5</sup> R		Detectors are not required for Containment Accident situations. Environment parameters were developed by research and production tests by Westinghouse Electric Tube.

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THOJAN NIGELFAK PLANT  
 ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°C)	VENDOR DOCUMENTATION			RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REPAIRS
								TEMP. (°C)	PRESSURE (PSIA)	HUMIDITY (%)			
P10	Power Cable (General Cable, 3/8-#12, EP, 600V)	E-22	A-1	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R	Boric acid w/ NaOH, pH 9.0	Qualified by Type test in Franklin Institute Research Lab. Report F-C3125, Sept. 1971 sequential Type II. Long-term capability
P17	Power Cable (General Cable, 3/8-#12, EP, 600V)	E-22	A-1	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P22	Power Cable (General Cable, 3/8-#10, EP, 600V)	E-22	All	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P16	Power Cable (General Cable, 3/8-#10, EP, 600V)	E-22	All	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P23	Power Cable (General Cable, 3/8-#10, EP, 600V)	E-22	All	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P11	Power Cable (General Cable, 1/2-#2, EP, 600V)	E-22	All	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P07	Power Cable (General Cable, 1/2-#10, EP, 600V)	E-22	All	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P03	Power Cable (General Cable, 1/2-#10 Romex, EP, 600V)	E-22	A-1	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P05	Power Cable (General Cable, 1/2-#10, EP, 600V)	E-22	A-1	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P13	Power Cable (General Cable, 3/8-#8, EP, 600V)	E-22	All	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		
P18	Power Cable (General Cable, 3/8-#8, EP, 600V)	E-22	All	All	All	I	340	100	100	100	2 x 10 <sup>8</sup> R		

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TRUJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT ID	DESCRIPTION	SPEC NO.	BLDG.	LOCATION	FLEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REFERENCE
								PRESSURE (PSIA)	HUMIDITY			
101	Instrumentation cable (American Insulated Wire, 1/8"-#16, EP, 300V)	E-23A	All	All	All	I	286	60	100	1 x 10 <sup>6</sup> R	Boric acid w/ NaOH, pH 9.0	Qualified by Type test in Franklin Institute Research Lab. Report F-C3463, Aug. 1972. Sequential Type II. Long-term capability.
102	Instrumentation Cable (6419, 2/c-#16, 300V, EP, 300V)	E-23A	All	All	All	I	286	60	100	1 x 10 <sup>6</sup> R		Qualified by Type test in Franklin Institute Research Lab. Report F-C3463, Aug. 1972. Sequential Type II. Long-term capability.
103	Instrumentation Cable (6419, 1/c-#16, 300V, EP, 300V)	E-23A	All	All	All	I	286	60	100	1 x 10 <sup>6</sup> R		Qualified by Type test in Franklin Institute Research Lab. Report F-C3463, Aug. 1972. Sequential Type II. Long-term capability.
104	Instrumentation Cable (6419, 1/c-#16, 300V, EP, 300V)	E-23A	All	All	All	I	286	60	100	1 x 10 <sup>6</sup> R		Qualified by Type test in Franklin Institute Research Lab. Report F-C3463, Aug. 1972. Sequential Type II. Long-term capability.
207	Instrumentation Cable (6419, 2/c-#16, 300V, EP, 300V)	E-23A	Containment	All	All	I	286	60	100	1 x 10 <sup>6</sup> R		Qualified by Type test in Franklin Institute Research Lab. Report F-C3463, Aug. 1972. Sequential Type II. Long-term capability.
208	Instrumentation Cable (6419, 1/c-#16, 300V, EP, 300V)	E-23A	Containment	All	All	I	286	60	100	1 x 10 <sup>6</sup> R		Qualified by Type test in Franklin Institute Research Lab. Report F-C3463, Aug. 1972. Sequential Type II. Long-term capability.
209	Instrumentation Cable (6419, 4/c-#16, 300V, EP, 300V)	E-23A	Containment	All	All	I	286	60	100	1 x 10 <sup>6</sup> R		Qualified by Type test in Franklin Institute Research Lab. Report F-C3463, Aug. 1972. Sequential Type II. Long-term capability.
TX1	Instrumentation Cable - Triaxial (6419, PE, 5kV)	E-23B	Containment	All	All	I	307	50	100	3.5 x 10 <sup>7</sup> R	NaOH 10% by weight	Same as Cable 101. Sequential Type II. Long-term capability.
LT459	Pressurizer Level (Coaxial Model 113-DB)	M1	Containment	71 ft	71 ft	I	300	60	100	2 x 10 <sup>6</sup> R	1.5% Boric acid w/ NaOH, pH 9.25-10.0	Qualified by Type test in <u>M</u> Test Report WCAP-8541.
LT460	Pressurizer Level (Coaxial Model 113-DB)	M1	Containment	71 ft	71 ft	I	300	60	100	2 x 10 <sup>6</sup> R		Qualified by Type test in <u>M</u> Test Report WCAP-8541.
LT461	Pressurizer Level (Coaxial Model 113-DB)	M1	Containment	71 ft	71 ft	I	300	60	100	2 x 10 <sup>6</sup> R		Qualified by Type test in <u>M</u> Test Report WCAP-8541.

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TROJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT IDENTIFICATION	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
											VENDOR DOCUMENTATION
PT 455 Pressurizer Pressure (Barton Model 393)	M1	Containment	73 ft	I	286	60	100	2 x 10 <sup>8</sup> R	Post accident spray solution	Qualified by similarity to Model 386 in M Test Report WCAP-7744. Also M letter to NRC dated July 25, 1975, on the corrosion effects of DBA on safety related transmitters and M letter to NRC, Oct. 1, 1975, on accuracy tolerances for accident condition. Sequential Type II. Short-term capability.	
PT 456 Pressurizer Pressure (Barton Model 393)	M1	Containment	71 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
PT 457 Pressurizer Pressure (Barton Model 393)	M1	Containment	73 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
PT 458 Pressurizer Pressure (Barton Model 393)	M1	Containment	73 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT512 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R		Qualification per Franklin Institute Research Lab Report C-2623, Sequential Type II. Short-term capability.	
FT513 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	109	2 x 10 <sup>8</sup> R			
FT514 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT515 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT516 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT517 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT518 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT519 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT520 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT521 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT522 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT523 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT524 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
FT525 Steam Generator Steam Flow (Barton Model 386)	M1	Containment	50 ft	I	286	60	100	2 x 10 <sup>8</sup> R			
PT403 RCS Wide Range Pressure (Barton Model 389)	M1	Containment	48 ft	I	---	---	---	---	---	Transmitters not tested for Containment accident situations.	
PT405 RCS Wide Range Pressure (Barton Model 389)	M1	Containment	48 ft	I	---	---	---	---	---		

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INSIDE CONTAINMENT

EQUIPMENT IDENTIFICATION	RPPC NO.	Bldg.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY (%)	VENDOR DOCUMENTATION			METHOD OF QUALIFICATION AND REMARKS
									RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS	
LT517 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft.	I	286	60	100	2 x 10 <sup>6</sup> R	Post accident spray solution	Same as FT512	Same as FT512	
LT518 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT519 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT527 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT528 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT529 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT537 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT538 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT539 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT542 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT548 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
LT549 30w Generator Narrow Range Level Station Model 384	MI	Containment	48 ft	I	286	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	
FT474 DC Flow Station Model E13-D4	MI	Containment	49 ft	I	300	60	100	2 x 10 <sup>6</sup> R	1.5% Boric Acid w/NaOH, Report WCAP-8541, Sequential Type II but separate testing for LOCA and radiation. Short-term capability. Qualified by Type Test in M Test Report WCAP-8541, Sequential Type II but separate testing for LOCA and radiation. Short-term capability.	Same as FT512	Same as FT512	
FT475 DC Flow Station Model E13-DH	MI	Containment	49 ft	I	300	60	100	2 x 10 <sup>6</sup> R		Same as FT512	Same as FT512	

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THORJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1F ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
FT416	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R	1.5% boric acid w/ NaOH, pH 9.25-10.0	Qualified by Type Test in W Test Report WCAP-8341. Sequential Type II but separate testing for LOCA and radiation. Short-term capability.
FT422	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT423	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT426	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT436	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT435	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT435	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT444	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT445	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
FT446	AC Flow (Foster Model E13-DH)	M1	Containment	49 ft	I	300	60	100	2 x 10 <sup>8</sup> R		
TE413A & B	AC Hot/Co.4 & Temp. (Foster Model 176FS)	M1	Containment	60 ft	I	320	90	100	2 x 10 <sup>8</sup> R	1.14% boric acid w/ 0.17% NaOH	Qualified by Type Test in W Test Report WCAP 9157. Sequential Type II. Long-term capability.

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TRUJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION			METHOD OF QUALIFICATION AND REMARKS
								ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	RADIATION	
TE423A & B	RC Hot/Cold Log Temp. (Boremount Model 176KS)	M1	Containment	60 ft	I	320	90	100	2 x 10 <sup>8</sup> R	1.14% Boric Acid w/0.17% NaOH	Same as TE 413A & B
TE433A & B	RC Hot/Cold Log Temp. (Boremount Model 176KS)	M1	Containment	60 ft	I	320	90	100	2 x 10 <sup>8</sup> R		
TE443A & B	RC Hot/Cold Log Temp. (Boremount Model 176KS)	M1	Containment	60 ft	I	320	90	100	2 x 10 <sup>8</sup> R		
TE453A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		
TE4611A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		
TE425A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		
TE427A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		
TE430A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		
TE431A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		
TE440A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		
TE441A & B	RC AT Boremount Model 176KF)	M1	Containment	60' 8"	I	320	90	100	2 x 10 <sup>8</sup> R		

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II F ASTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIP. ID N.Y.	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS

MO2009A	Containment Recirculation Valves (Limitorque Model SHB-3)	M-114	Containment	55'9"	I	340	60	100	2 x 10 <sup>6</sup> R	Post accident NaOH solution	Qualified by Type test in Limitorque report of FREL No. F-C 3441 (Franklin Institute) and F-C1327. Reference Trojan PSAR Section 3.11, Table 3.11-4, Sheet 6 of 6 and Section 3.11.3-3. Sequential Type I and Synergistic. Long-term capability.
MO2009B	Containment Recirculation Valves	M-114	Containment	55'9"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009C	Limitorque Model SHB-3 Isolation Valves	M-134D	Containment	79'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009D	Limitorque Model SHB-00 Isolation Valves	M-134D	Containment	77'0"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009E	Limitorque Model SHB-000 Isolation Valves	M-134D	Containment	78'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009F	Limitorque Model SHB-00 Isolation Valves	M-134D	Containment	77'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009G	Limitorque Model SHB-000 Isolation Valves	M-134D	Containment	70'4"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009H	Limitorque Model SHB-00 Isolation Valves	M-134D	Containment	78'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009I	Limitorque Model SHB-00 Isolation Valves	M-134D	Containment	78'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO2009J	Limitorque Model SHB-00 Isolation Valves	M-134D	Containment	69'0"	I	340	60	100	2 x 10 <sup>6</sup> R		

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TRUJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	RPEC NO.	BLDG.	LOCATION	ELEV	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	VENDOR DOCUMENTATION	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
MO3305A	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	78'3"	I	340	60	100	2 x 10 <sup>6</sup> R	Post accident NaOH solution	Qualified by Type test in Limitorque report of FIBL No. F-C 3441 (Franklin Institute) and F-C3327. Reference Trojan FSAR Section 3.11, Table 3.11.3-4, Sheet 6 of 6 and Section 3.11.3-3. Sequential Type I and Synergistic. Long-term capability.
MO3306A	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	70'6"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3306B	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	78'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3307A	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	69'0"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3309A	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	78'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3309B	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	70'6"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3310A	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	76'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3310B	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	69'0"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3311A	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	78'3"	I	340	60	100	2 x 10 <sup>6</sup> R		
MO3311B	Isolation Valves (Limitorque Model SHB-00)	M-134D	Containment	Containment	70'6"	I	340	60	100	2 x 10 <sup>6</sup> R		

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

COMPONENT NO.	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TMP. (°F)	PRESSURE (PSIA)	VIBRIDITY	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
MO3116A	CCW Isolation Valve (Motororque Model SHB-00)	M-134D	Containment	78'3"	I	340	60	100	2 x 10 <sup>8</sup> R		Qualified by Type test in Lintorque report of FIRL No. F-C 3441 (Franklin Institute) and F-C3327. Reference Trojan PSAR Section 3.11, Table 3.11-4, Sheet 6 of 6 and Section 3.11.3-3. Sequential Type I and Synergistic. Long-term capability.
MO3116B	CCW Isolation Valve (Motororque Model SHB-00)	M-134D	Containment	69'0"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31297	CCW Isolation Valve (Motororque Model SHB-00)	M-134D	Containment	79'3"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31298A	CCW Isolation Valve (Motororque Model SHB-000)	M-112B	Containment	62'11"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31298B	CCW Isolation Valve (Motororque Model SHB-000)	M-112B	Containment	62'11"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31298C	CCW Isolation Valve (Motororque Model SHB-000)	M-112B	Containment	67'9"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31298D	CCW Isolation Valve (Motororque Model SHB-000)	M-112B	Containment	62'11"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31605	CCW Isolation Valve (Motororque Model SHB-000)	M-112A	Containment	45'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31347	CCW Isolation Valve (Motororque Model SHB-000)	M-208B	Containment	62'4"	I	340	60	100	2 x 10 <sup>8</sup> R		
MO31299	CCW Isolation Valve (Motororque Model SHB-000)	M-208B	Containment	78'3"	I	340	60	10	2 x 10 <sup>8</sup> R		

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC. NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
801007	Containment Purge Valves (Microtorque Model SHB-3)	M-209	Containment	Containment	116'5"	I	340	60	100	2 x 10 <sup>8</sup> R	Post accident NaOH solution	Qualified by Type test in limiter report of FIRM No. F-C 3041 (Franklin Institute) and F-C3327. Reference Trojan FSAR Section 3.11, Table 3.11-4, Sheet 6 of 6 and Section 3.11.2-3. Sequential Type 1 and Synergistic. Long-term capability.
801008	Containment Purge Valves (Microtorque Model SHB-3)	M-209	Containment	Containment	116'5"	I	340	60	100	2 x 10 <sup>8</sup> R		
801009	Containment Hydrogen Vent (Microtorque Model SHB-00)	M-209	Containment	Containment	78'3"	I	340	60	100	2 x 10 <sup>8</sup> R		
801010	Containment Hydrogen Vent (Microtorque Model SHB-00)	M-209	Containment	Containment	78'3"	I	340	60	100	2 x 10 <sup>8</sup> R		
801011	Containment Hydrogen Vent (Microtorque Model SHB-00)	M-209	Containment	Containment	56'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
801012	Containment Hydrogen Vent (Microtorque Model SHB-00)	M-209	Containment	Containment	51'8"	I	340	60	100	2 x 10 <sup>8</sup> R		
801013	Chilled Water Return Line (Microtorque Model SHB-000)	M-209	Containment	Containment	81'0"	I	340	60	100	2 x 10 <sup>8</sup> R		
801014	Chilled Water Supply Line (Microtorque Model SHB-000)	M-209	Containment	Containment	81'0"	I	340	60	100	2 x 10 <sup>8</sup> R		
801015	Microtorque Model SHB-000 Valve (Microtorque Model SHB-000)	M-138A	Containment	Containment	44'7"	I	340	60	100	2 x 10 <sup>8</sup> R		
801016	Microtorque Model SHB-000 Valve (Microtorque Model SHB-000)	M-138A	Containment	Containment	64'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
801017	Microtorque Model SHB-000 Valve (Microtorque Model SHB-000)	M-138A	Containment	Containment	49'6"	I	340	60	100	2 x 10 <sup>8</sup> R		

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INDIAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	SPEC NO.	ELEV. FT.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						PRESSURE (PSIA)	HEMIDITY %			
MO5651A-D	Process Sample System Electrode Model SHB-000)	M-138A	54'	I	34.0	60	100	2 x 10 <sup>8</sup> R	Post accident NaOH solution	Qualified by Type test in Limitorque report of FIRL No. F-C 3441 (Franklin Institute) and F-C3327. Reference Trojan FSAR Section 3.11, Table 3.11-4, Sheet 6 of 6 and Section 3.11.3-3. Sequential Type I and Synergistic. Long-term capability.
MO5653	Process Sample System Electrode Model SHB-000)	M-138A	54'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5654	Process Sample System Electrode Model SHB-000)	M-138A	54'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5655	Process Sample System Electrode Model SHB-000)	M-138A	54'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5658	Process Sample System Electrode Model SHB-000)	M-138A	54'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5659	Process Sample System Electrode Model SHB-000)	M-138A	55'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5671	Process Sample System Electrode Model SHB-000)	M-138A	96'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5673	Process Sample System Electrode Model SHB-000)	M-138A	98'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5674	Process Sample System Electrode Model SHB-000)	M-138A	72' 6"	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5676A	Process Sample System Electrode Model SHB-000)	M-138A	129'	I	34.0	60	100	2 x 10 <sup>8</sup> R		
MO5676B	Process Sample System Electrode Model SHB-000)	M-138A	129'	I	34.0	60	100	2 x 10 <sup>8</sup> R		

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TROJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

VENDOR DOCUMENTATION

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
MC8701	HR Isolation (Limitorque Model SMB-2)	F-1R	Containment	Containment	61'9"	I	340	60	100	2 x 10 <sup>8</sup> R	Post accident NaOH solution	Qualified by Type test in Limitorque report of TIRL No. F-C 3441 (Franklin Institute) and F-C3377. Reference Trojan SAR Section 3.11, Table 3.11-4, Sheet 6 of 6 and Section 3.11.3-2. Sequential Type I and Synergistic. Long-term capability.
MC8702	HR Isolation (Limitorque Model SMB-2)	M-1R	Containment	Containment	61'9"	I	340	60	100	2 x 10 <sup>8</sup> R		
MC8708A	A.com. Th. Isolation (Limitorque Model SMB-4)	M-1R	Containment	Containment	52'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
MC8708B	A.com. Th. Isolation (Limitorque Model SMB-4)	M-1R	Containment	Containment	52'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
MC8708C	A.com. Th. Isolation (Limitorque Model SMB-4)	M-1R	Containment	Containment	52'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
MC8708D	A.com. Th. Isolation (Limitorque Model SMB-4)	M-1R	Containment	Containment	52'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
MC8708E	A.com. Th. Isolation (Limitorque Model SMB-4)	M-1R	Containment	Containment	52'6"	I	340	60	100	2 x 10 <sup>8</sup> R		
CV8076	Process System	M-1R	Containment	Containment	54'0"	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Qualified by evaluation in W litter (NS-CE-691) to NEC dated July 10, 1972. (These air operated valves are controlled by three way solenoids).
CV8076	Process System	M-1R	Containment	Containment	59'0"	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as CV8076.
CV8076	Process System	M-1R	Containment	Containment	59'0"	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as CV8076.

TAMM

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TROJAN NUCLEAR PLANT  
 ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1R ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC. NO.	BLDG.	LOCATION	FLV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (%Y)	PRESSURE (PSIA)	HUMIDITY	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REFERENCE
CV8141A	RCP Seal	M-1R	Containment	70'	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Qualified by evaluation in M letter (NS-CE-69). No NRC dated July 10, 1975. (These air operated valves are controlled by three-way solenoids).
CV8141B	RCP Seal	M-1R	Containment	70'	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8141C	RCP Seal	M-1R	Containment	70'	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8141D	RCP Seal	M-1R	Containment	70'	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8142	RCP Seal	M-1R	Containment	79'	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8143	Each, Letdown	M-1R	Containment	68'	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8145	PSZR System	M-1R	Containment	65.7m	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8146	ESZR System	M-1R	Containment	65.7m	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8147	Charging Line Isolation	M-1R	Containment	65.7m	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8149A	Letdown Isolation Line	M-1R	Containment	63'	I	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.

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TRINITY NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
								PRESSURE (PSIA)	HUMIDITY			
CV81478	Letdown Isolation Line	M-1R	Containment	Containment	63'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Qualified by evaluation in W letter: (NS-CE-692) to NSC dated July 10, 1975. (These air operated valves are controlled by three way solenoids).
CV8149C	Letdown Isolation Line	M-1R	Containment	Containment	63'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8153	Letdown Isolation Line	M-1R	Containment	Containment	48.5"	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8154	Letdown Isolation Line	M-1R	Containment	Containment	47.6"	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8165A	Pri. HX-Up to RCP Line	M-1R	Containment	Containment	68'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8166B	Pri. HX-Up to RCP Line	M-1R	Containment	Containment	68'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8168C	Pri. HX-Up to RCP Line	M-1R	Containment	Containment	68'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8168D	Pri. HX-Up to RCP Line	M-1R	Containment	Containment	63'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV8182J	SIS Test	M-1R	Containment	Containment	59'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV81874	SIS Test	M-1R	Containment	Containment	58'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.
CV81875	RIR Isolation	M-1R	Containment	Containment	56'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of boric acid	Same as above.

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
	SI Test	M-1R	Containment	58'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Qualified by evaluation in W letter (NS-CE-692) to NRC dated July 10, 1975. (These air operated valves are controlled by three way solenoids).	
CV8671	Accumulator Sys	M-1R	Containment	58'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8675A	Accumulator Sys	M-1R	Containment	69'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8675B	Accumulator Sys	M-1R	Containment	69'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8675C	Accumulator Sys	M-1R	Containment	69'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8675D	Accumulator Sys	M-1R	Containment	69'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8676A	Accumulator Sys	M-1R	Containment	47'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8676B	Accumulator Sys	M-1R	Containment	47'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8676C	Accumulator Sys	M-1R	Containment	47'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8676D	Accumulator Sys	M-1R	Containment	47'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CV8677A	SI Test Line	M-1R	Containment	49'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	

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INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
								PRESSURE (PSIA)	HUMIDITY			
CVS0776	SI Test Line	M-1K	Containment	50'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Qualified by evaluation in letter NS-CE-692 to NRC dated July 10, 1975. (These air operated valves are controlled by three way solenoid-).	
CVS077C	SI Test Line	M-1R	Containment	50'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS077D	SI Test Line	M-1F	Containment	50'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS077S	Accumulator Sys	M-1K	Containment	49'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS077B	Accumulator Sys	M-1R	Containment	49'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS077E	Accumulator Sys	M-1K	Containment	49'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS077D	Accumulator Sys	M-1R	Containment	49'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS051	SIS System	M-1R	Containment	63'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS052	SIS System	M-1R	Containment	58'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS053A	SIS System	M-1R	Containment	56'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	
CVS053B	SIS System	M-1R	Containment	56'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.	

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INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	Bldg.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION FAILURE RATE (PSIA)	I	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
CV6889C	SIS System	M-1R	Containment	56'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Qualified by evaluation in letter (85-12-692) to NRC dated July 10, 1975. (These air operated valves are controlled by three way solenoids).
CV8300A	SIS System	M-1R	Containment	56'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.
CV8300A	SIS System	M-1R	Containment	56'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.
CV8300B	SIS System	M-1R	Containment	56'	I	350	60	100	1 x 10 <sup>6</sup> R	1.2% of Boric Acid	Same as above.
Z8876	Wrm Mounted Limit Switches	MIR(2)	Containment	61'9"	I	340	70	100	2 x 10 <sup>6</sup> R	Boric Acid w/ NaOH, pH 10-11	Qualified by Type test in ACP-Cleveland Development Co./Namco test report, Murch 2, 1978. (These are Namco Model EA-180 Sequential Type I. Long-term capability.
Z8876	Wrm Mounted Limit Switches	MIR(2)	Containment	61'9"	I	340	70	100	2 x 10 <sup>6</sup> R	-	Not environmentally qualified for post accident conditions, but are not required for any accidents and only used for valve position indication. (These limit switches are Namco Model D2400).
Z8876	Wrm Mounted Limit Switches	MIR(2)	Containment	54'0"	I	340	70	100	2 x 10 <sup>6</sup> R	-	Not environmentally qualified for post accident conditions, but are not required for any accidents and only used for valve position indication. (These limit switches are Namco Model D2400).
Z8880A	Wrm Mounted Limit Switches	MIR(2)	Containment	52'6"	I	200	-	100	1 x 10 <sup>6</sup> R	-	Not environmentally qualified for post accident conditions, but are not required for any accidents and only used for valve position indication. (These limit switches are Namco Model D2400).
Z8880B	Wrm Mounted Limit Switches	MIR(2)	Containment	52'6"	I	200	-	100	1 x 10 <sup>6</sup> R	-	Not environmentally qualified for post accident conditions, but are not required for any accidents and only used for valve position indication. (These limit switches are Namco Model D2400).

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION	ELV	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
							PRESSURE (PSIA)	HUMIDITY (%)			
25858C	MIR(2)	Containment	52' 6"	I	200	-	100	1 x 10 <sup>5</sup> R	-	Not environmentally qualified for post accident conditions, but are not required for any accident and only used for valve position indication. (These limit switches are Namco Model D2400.)	
25859D	MIR(2)	Containment	52' 6"	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25860E	MIR(2)	Containment	59'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25861F	MIR(2)	Containment	59'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25862G	MIR(2)	Containment	70'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25863H	MIR(2)	Containment	70'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25864I	MIR(2)	Containment	70'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25865J	MIR(2)	Containment	70'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25866K	MIR(2)	Containment	79'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25867L	MIR(2)	Containment	68'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25868M	MIR(2)	Containment	65' 7"	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25869N	MIR(2)	Containment	65' 7"	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25870O	MIR(2)	Containment	65' 7"	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25871P	MIR(2)	Containment	63'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
25872Q	MIR(2)	Containment	63'	I	360	70	100	2 x 10 <sup>8</sup> R	Boric acid w/ NaOH, pH 10-11	Qualified by Type test AOE-Cleveland Development Co./Namco test report, March 3, 1978. (These are Namco Model EA-180). Sequential Type 1. Long-term capability.	

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TWOJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT	DESCRIPTION	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICES CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
								PRESSURE (PSIA)	HUMIDITY			
Z58149B	Stem Mounted Limit Switches	MIR(2)	Containment	63'	I	I	340	70	100	2 x 10 <sup>8</sup> R	Boric acid w/ NaOH, pH 10-11	Qualified by Type test in ACRS-Cleveland Development Co./Nasco test report, March 3, 1978. (These are Nasco Model EA-180.) Sequential Type 1. Long-term capability.
Z58149C	Stem Mounted Limit Switches	MIR(2)	Containment	63'	I	I	340	70	100	2 x 10 <sup>8</sup> R		
Z58153	Stem Mounted Limit Switches	MIR(2)	Containment	48'5"	I	I	200	-	100	1 x 10 <sup>6</sup> R		Not environmentally qualified for post accident conditions, but are not required for any accidents and only used for valve indication. (These are Nasco Model D2400.)
Z58154	Stem Mounted Limit Switches	MIR(2)	Containment	47'6"	I	I	200	-	100	1 x 10 <sup>6</sup> R		Same as above.
Z58160A	Stem Mounted Limit Switches	MIR(2)	Containment	68'	I	I	200	-	100	1 x 10 <sup>6</sup> R		Same as above.
Z58165B	Stem Mounted Limit Switches	MIR(2)	Containment	68'	I	I	200	-	100	1 x 10 <sup>6</sup> R		Same as above.
Z58165C	Stem Mounted Limit Switches	MIR(2)	Containment	68'	I	I	200	-	100	1 x 10 <sup>6</sup> R		Same as above.
Z58166D	Stem Mounted Limit Switches	MIR(2)	Containment	68'	I	I	200	-	100	1 x 10 <sup>6</sup> R		Same as above.
Z58173	Stem Mounted Limit Switches	MIR(2)	Containment	59'	I	I	340	70	100	2 x 10 <sup>8</sup> R	Boric acid w/ NaOH, pH 10-11	Qualified by Type test in ACRS-Cleveland Development Co./Nasco test report, March 3, 1978. (These are Nasco Model EA-180.) Sequential Type 1. Long-term capability.
Z58174	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	I	340	70	100	2 x 10 <sup>8</sup> R		Same as Z58153.
Z58175	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	I	200	-	100	1 x 10 <sup>6</sup> R		Same as Z58153.
Z58176	Stem Mounted Limit Switches	MIR(2)	Containment	58'	I	I	200	-	100	1 x 10 <sup>6</sup> R		Same as Z58153.
Z58177	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	I	340	100	100	2 x 10 <sup>8</sup> R		Same as Z58149B.
Z58175A	Stem Mounted Limit Switches	MIR(2)	Containment	69'	I	I	340	100	100	2 x 10 <sup>8</sup> R		Same as Z58153.

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VERDIAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1F ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT No.	DESCRIPTION	SPEC No.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND BREAKS
								PRESSURE (PSIA)	HUMIDITY			
Z58875A	Stem Mounted Limit Switches	MIR(2)	Containment	69'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Not environmentally qualified for post accident conditions, but are not required for any accident situation and only used for valve indication. (These are Namco Model D2400K.)	
Z58875C	Stem Mounted Limit Switches	MIR(2)	Containment	69'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58875D	Stem Mounted Limit Switches	MIR(2)	Containment	69'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58875A	Stem Mounted Limit Switches	MIR(2)	Containment	47'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58875B	Stem Mounted Limit Switches	MIR(2)	Containment	47'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58876A	Stem Mounted Limit Switches	MIR(2)	Containment	47'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58876B	Stem Mounted Limit Switches	MIR(2)	Containment	47'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58876A	Stem Mounted Limit Switches	MIR(2)	Containment	47'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58876B	Stem Mounted Limit Switches	MIR(2)	Containment	49'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58877A	Stem Mounted Limit Switches	MIR(2)	Containment	50'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58877B	Stem Mounted Limit Switches	MIR(2)	Containment	50'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58877C	Stem Mounted Limit Switches	MIR(2)	Containment	50'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58877D	Stem Mounted Limit Switches	MIR(2)	Containment	50'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58879A	Stem Mounted Limit Switches	MIR(2)	Containment	49'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	
Z58879B	Stem Mounted Limit Switches	MIR(2)	Containment	49'	I	200	-	100	1 x 10 <sup>4</sup> R	-	Same as above.	

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

VENDOR DOCUMENTATION

FIGURE NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	REL. HUMIDITY %	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
258879C	Stem Mounted Limit Switches	MIR(2)	Containment	49'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Not environmentally qualified for post accident conditions, but are not required for any accident situation and only used for valve indication. (These are Numco Model D2400.)
258879D	Stem Mounted Limit Switches	MIR(2)	Containment	40'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258831	Stem Mounted Limit Switches	MIR(2)	Containment	63'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258852	Stem Mounted Limit Switches	MIR(2)	Containment	58'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258877A	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258889B	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258889C	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258890D	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258890A	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258890B	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258891	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258891B	Stem Mounted Limit Switches	MIR(2)	Containment	56'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as above.
258893A	Stem Mounted Limit Switches	MIR(2)	Containment	129'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as 258879C.
258893B	Stem Mounted Limit Switches	MIR(2)	Containment	129'	I	200	-	100	1 x 10 <sup>6</sup> R	-	Same as 258879C.

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TROJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

INSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS	VENDOR DOCUMENTATION	
											U/L/D	E
ATB201	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1	This terminal box is a steel enclosure that is fully gasketed and has General Electric terminal blocks. (Reference Conn. Yankee Atomic Co. test report, March 16, 1978.) Sequential Type I. Long-term capability. Same as above.		
ATB204	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
ATB205	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
ATB206	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
ATB207	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
ATB208	Terminal Box	F12	Containment 60'	I	266	40	100	5 x 10 <sup>6</sup> R	See Note 1			
ATB209	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
ATB210	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB201	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB204	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB205	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB206	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB207	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB208	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB209	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			
BTB210	Terminal Box	F12	Containment 60'	I	286	40	100	5 x 10 <sup>6</sup> R	See Note 1			

Note: 1. Chemical spray consisted of 2640 ppm solution of boric acid.

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TROYAN NUCLEAR PLANT  
 ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIP. ID.	DESCRIPTION NO.	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION			RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
			BLDG.	ELEV.		TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %			
A200 A201 A210	5 kV Metal Clad Switchgear and Circuit Breakers	E-8	Control	61 ft	III	104	Normal (See Note 2)	-	Normal	NA	Qualified by operating experience based on industry type tests. This equipment meets the requirements of IEEE Std 27-191 (ANSI C37-20). Reference ITE Test Reports.
A100 A101	5 kV Metal Clad Switchgear and Circuit Breakers	E-8	Turbine	69 ft	III	104	Normal	-	Normal	NA	Same as A100.
E01/E03 E02/E04	480 V Load Centers and Circuit Breakers	E-9	Control Turbine	63 ft 69 ft	III IV	104	Normal	-	Normal	NA	Qualified by operating experience based on industry type tests. This equipment was tested per the requirements of ANSI C37-20 (1969) and NEMA Std SG5-1971. Reference ITE Test Reports.
Q108C	4 kV Transfer Switches & Switchboard	E-6	Aux	45 ft	II	104	Normal	-	Normal	NA	Qualified by operating experience based on industry type tests. This equipment was tested per the requirements of ANSI C37-20 (1969), NEMA Std SG5-1971 and IEEE326-1971. Reference ITE Test Reports.
Q210C	4 kV Transfer Switch & Switchboard	E-6	Intake Structure	45 ft	III	104	Normal	-	Normal	NA	Same as Q108C.
B21 B23 B25	480 V Motor Control Centers	E-11	Control	61 ft	III	104	Normal	-	Normal	NA	Qualified by operating experience based on industry type tests. This equipment was tested per the requirements of NEMA Std. ICl-1-1970, NEMA Std AB1-1970. Reference ITE Test Reports.
B22 B24 B26	480 V Motor Control Centers	E-11	Turbine	69 ft	VI	104	Normal	-	Normal	NA	Same as B21.

Note 2: This normal pressure is referring to atmospheric pressure.

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BRIDGEMAN NUCLEAR PLANT  
 ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT  
 OUTSIDE CONTAINMENT

EQUIPMENT ID	DESCRIPTION	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						TEMP. (°F)	PRESSURE (PSIA)			
D01/002	125V DC Distribution Centers	E-15	Control	63 ft	III	104	Normal	Normal	NA	Qualified by operating experience based on industry type tests. This equipment was tested per the requirements of NEMA Std ICS-1-1970.
D01/002	125V DC Batteries	E-16	Control	63 ft	III	104	Normal	Normal	NA	Qualified by operating experience based on industry type tests. This equipment was tested per the requirements of NEMA Std R12-1971.
D01/004	125V DC Battery Chargers	E-17	Control	63 ft	III	104	Normal	Normal	NA	Qualified by operating experience based on industry type tests. This equipment was tested per the requirements of NEMA Std R12-1971.
A11	Power Cab	E-21	Fuel/Aux	All	II	350	Normal	5x10 <sup>5</sup> g	NA	Okonite Wire and Cable: Laboratory Technical information dated May 7, 1971. Refer to Note 3.
A11	Power Cable	E-21	Fuel/Aux	All	II	350	Normal	5x10 <sup>5</sup> g	NA	
A01	Instrument Cable	E-23A	All	All	II, III IV, V VI	340	60	1x10 <sup>8</sup> g	NA	Qualified by Type Test in Franklin Institute Research Lab. Test Report, FC-3463, August 1972. Refer to Note 2.
A80		E-23B	Control	All	IV & III					
A01	Relays	E-31	Control Turbine	All 62 ft	IV & III	90	Normal	5x10 <sup>5</sup> g	NA	Qualified by operating experience based on industry type tests. All of Class 1E relays were tested per requirements of ANSI -C37.90 (IEEE-313). Reference to generic report by GE of May 20, 1977 in GEZ-0678.
A01	Switchboard Wire	E-23A	Control	All	III	194	Normal	5x10 <sup>5</sup> g	NA	Qualified by type test based on industry type tests. This equipment was tested to requirements of IPCEA 5-49-81.
A01	Hydrogen Pressure Supply	H-87	Cable Penetration Area	31 ft	II	300	60	2x10 <sup>8</sup> g	NA	Qualified by type test based on M WCAP 7710L test report. This equipment was qualified for LCCA environment, but is located outside containment.

NOTE 3: These cables were qualified for LOCA environment even though they are not utilized in Containment.

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TRUJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
			BLDG.	AUX.			PRESSURE (PSIA)	WETTED AREA (SQ FT)			
P-210A5	CCM Pumps	M-18	Fuel/Aux	45 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	Qualified by operating experience based on industrial type tests. These equipment were tested per the requirements of NEMA Std MG-1, USAS C-50.2, and IEEE Pub. #112A.
P-210C	CCM Pumps	M-18	Aux	45 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-201A, B, C	Service Water Pump	M-32	Intake Structure	45 ft	IV	32-104	Normal	-	Normal	NA	
P-201A5	Containment Spray Pump	M-22	Aux	5 ft	II	32-104	Normal	100	1x10 <sup>6</sup> R	NA	
P-210A, B, CSD	S4 Booster Pump	M-32	Aux	45 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-210A5	Component Cooling Water Makeup Pump	M-32	Aux	45 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-201A5	Centrifugal Charging Pumps	M-1	Aux	25 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-212	Positive Displacement Charging Pump	M-1	Aux	25 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-211A5	BA Transfer Pumps	M-1	Fuel	66 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-201A5	R/R Pumps	M-1	Aux	5 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-201A5	Safety Injection Pumps	M-1	Aux	5 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-210A5	ROSOX Injection Revis. Pump	M-1	Aux	25 ft	II	32-104	Normal	-	1x10 <sup>6</sup> R	NA	
P-102A	Aux. FM Turbine Driven Pump	M-12	Turbine	45 ft	VI	50-120	Normal	-	Normal	NA	This equipment meets the requirements of Trojan Spec M12 and undergone various full load testing.
P-102B	Aux. FM Diesel Driven Pump	M-12	Turbine	45 ft	VI	50-120	Normal	-	Normal	NA	

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THORJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
			BLDG.	ELEV.			PRESSURE (PSIA)	HUMIDITY			
VC 1007AB	Battery Room Exhaust Fans	F09	Control	65 ft	III	104	Normal	-	Normal	NA	Qualified by operating experience based on industry type test. These equipment were tested per the requirements of NEMA Std. MG-1.
V 2510A	Containment Spray Pump Coolers	F09	Aux	5 ft	II	104	Normal	-	Normal	NA	
V 1007A,B	SWR Pump Fan	F09	Aux	5 ft	II	104	Normal	-	Normal	NA	
V 1007B	Safety Injection Pump Unit Coolers	F09	Aux	5 ft	II	104	Normal	-	Normal	NA	
V 1007A,B	'B' SWGR Room Unit Coolers	F09	Control	65 ft	III	104	Normal	-	Normal	NA	
V 1007A,B	Cable Spreading Room Coolers	F09	Control	77 ft	III	104	Normal	-	Normal	NA	
V 1007A	Control Room Emergency Fan	F09	Control	105 ft	V	104	Normal	-	Normal	NA	
V 1007B	Control Room Emergency Re-heater Coil	F09	Control	105 ft	V	104	Normal	-	Normal	NA	
VE 1010AB	Control Room Emergency Heaters	F09	Control	105 ft	V	104	Normal	-	Normal	NA	No Information available.
VW 1017/18B	Battery Ra Unit Heaters	F09	Control	63 ft	III	120	Normal	-	Normal	NA	No Information available.
VC 1013/16Z	DC Supply Fans	F09	Turbine	55 ft	VI	120	Normal	-	Normal	NA	
VC 1013/15B	DC Exhaust Fans	F09	Turbine	55 ft	VI	120	Normal	-	Normal	NA	
VC 1013/15B	DC Exhaust Fans	F09	Turbine	55 ft	VI	120	Normal	-	Normal	NA	
VC 1013/16C	'A' SWGR Room Coolers	F09	Turbine	55 ft	VI	120	Normal	-	Normal	NA	

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT No.	DESCRIPTION No.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS	
							PRESSURE (PSIA)	HUMIDITY %				
V2514a,b	Centrifugal Charging Pump Coolers	F09	Aux	25 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA	This equipment was designed to the requirements of NEMA Std. MG-1. The motors for these fans and coolers utilize Class B insulation which has a maximum temperature rating of 130°C.	
V2514a,c	Component Cooling Water Pump Coolers	F09	Aux	45 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA		
V2514a,b	SR Booster Pump Coolers	F09	Aux	45 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA		
V2514a,b	Containment Hydrogen Vent Fans	F09	Penetration Area	93 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA		
V2514a,b	Containment Purge Exhaust Fans	F09	Penetration Area	94 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA		
V2514a,b	SW Pump Fans	F09	Intake Structure	55 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA		
V2165	APM Diesel Supply Fan	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA		Qualified by operating experience based on industry tests. This equipment was designed and tested to NEMA Std. MG-1. The motors for these fans utilize Class F insulation which has a maximum temperature rating of 155°C.
V2167	APM Diesel Exhaust Fan	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA		
V2166	APM Turbine Supply Fan	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA		
V2168	APM Turbine Exhaust Fan	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA		

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TRIGA NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS I ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

DESCRIPTION NO.	SPEC NO.	LOCATION BLDG.	ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						PRESSURE (PSIA)	HUMIDITY %			
V2316A	F09	Aux	25 ft	I	104	Normal	-	1x10 <sup>6</sup> R	NA	This equipment was designed to the requirements of NEMA Std. MG-1. The motors for these fans and coolers utilize Class B insulation which has a maximum temperature rating of 130°C.
V2316A, B, C	F09	Aux	45 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A	F09	Aux	45 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A	F09	Penetration Area	93 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A, B	F09	Penetration Area	94 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A, B	F09	103 ft	II	104	Normal	-	-	1x10 <sup>6</sup> R	NA	
V2316A, B	F09	Intake Structure	55 ft	II	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA	
V2316A	F09	Turbine	45 ft	VI	104	Normal	-	1x10 <sup>6</sup> R	NA	

Qualified by operating experience based on industry tests. This equipment was designed and tested to NEMA Std. MG-1. The motors for these fans utilize Class F insulation which has a maximum temperature rating of 155°C.

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TRUJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	HUMIDITY (%)	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
PT0001A1	A/W Pap B Disch Press	M218	Control	93 ft	V	40-125	10 - 90	Normal	NA	Qualification was not required. The equipment is located in control room and will experience normal ambient conditions. (These instruments are Fisher Porter Model 50EK1000).
PT0001A2	A/W Pap A Disch Press	M218	Control	93 ft	V	30-130	-	Normal	NA	
PT0001B1	A/W Pap B Disch Press	M218	Control	93 ft	V	30-130	-	Normal	NA	
PT0001A3	A/W Pap A/ Sta Line Diff	M218	Turbine C160	45 ft	VI	30-130	-	Normal	NA	
PT0001B3	A/W Pap B/ Sta Line Diff	M218	Turbine C160	45 ft	VI	30-130	-	Normal	NA	
LY0001A	Diesel Oil Level TR 1119A	M218	Control	93 ft	V	30-130	-	Normal	NA	
LY0001B	Diesel Oil Level TR 1119B	M218	Control	93 ft	V	30-130	-	Normal	NA	
PT0001	Containment Pressure	M218	Control	93 ft	V	30-130	-	Normal	NA	
PT0001	Containment Pressure	M218	Control	93 ft	V	30-130	-	Normal	NA	
PT0002	Containment Pressure	M218	Control	93 ft	V	30-130	-	Normal	NA	
PT0003	Containment Pressure	M218	Control	93 ft	V	30-130	-	Normal	NA	
LY1899	RWST Level	M218	Control	93 ft	V	30-130	-	Normal	NA	
LY1900	RWST Level	M218	Control	93 ft	V	30-130	-	Normal	NA	
LY1901	RWST Level	M218	Control	93 ft	V	30-130	-	Normal	NA	
LY1898	RWST Level	M218	Control	93 ft	V	30-130	-	Normal	NA	

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POOR ORIGINAL

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TUOHIA NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT	DESCRIPTION NO.	SPEC NO.	BLDC.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						TEMP. (°F)	PRESSURE (PSIA)			
PS1701A	A/W Pmp F 102A Disch	M21E	Control	93 ft	V	40-125	Normal	Normal	NA	Qualification was not required. The equipment is located in control room and will experience normal ambient conditions. This controller is a Fisher Porter Model 5JEG.
PS1701B	A/W Pmp P102B Disch	M21B	Control	93 ft	V	40-125	Normal	Normal	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701A	S/S Pump Discharge Rdr Press	M231	Intake Struct	23 ft	III	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701B	S/S Pump Discharge Rdr Press	M233	Intake Struct	23 ft	III	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701A	Serv Wtr Booster Pmp A Disch	M233	Aux	45 ft	II	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701B	Serv Wtr Booster Pmp B Disch	M232	Aux	45 ft	II	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701C	Serv Wtr Booster Pmp C Disch	M233	Aux	45 ft	II	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701D	Serv Wtr Booster Pmp D Disch	M233	Aux	45 ft	II	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701A	SW Booster Pmp A & C Suct	M233	Intake Struct	23 ft	III	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701B	SW Booster Pmp B & D Suct	M233	Intake Struct	23 ft	III	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701C	SW Booster Pmp A & C Suct	M233	Intake Struct	23 ft	III	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701D	SW Booster Pmp B & D Suct	M233	Intake Struct	23 ft	III	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1701A	SW Booster Pmp B & D Disch	M233	Aux	45 ft	II	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.
PS1801B	SW Booster Pmp A & C Disch	M233	Aux	45 ft	II	50-185	Normal	4 x 10 <sup>5</sup> R	NA	Qualified by test in Mercoird Corp. test report 44285-1.

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

DESCRIPTION NO.	SPEC NO.	Bldg.	LOCATION	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
					TEMP. (OF)	PRESSURE (PSIA)			
TS1002B	M233	Process Yard	45 ft	Outside Environment	37-104	+/-5	4x10 <sup>5</sup>	NA	Qualified by test in Mercoild Corp. test report 44293-1.
TS1002C	M233	Process Yard	45 ft	Outside Environment	37-104	+/-5	4x10 <sup>5</sup>	NA	
TS1002D	M233	Process Yard	45 ft	Outside Environment	37-104	+/-5	4x10 <sup>5</sup>	NA	
TS1002E	M233	Process Yard	45 ft	Outside Environment	37-104	+/-5	4x10 <sup>5</sup>	NA	
TS1002F	M233	Process Yard	45 ft	Outside Environment	37-104	+/-5	4x10 <sup>5</sup>	NA	Statement of Conformance by ITT Barton meeting Trojan's Spec M-228. (These transmitters are ITT Barton Model 288A).
TS1002G	M228	Aux/Fuel	75 ft	IV	-60 to 200	Normal	Normal	NA	
TS1002H	M228	Aux/Fuel	75 ft	IV	-60 to 200	Normal	Normal	NA	
TS1002I	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002J	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002K	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002L	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002M	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002N	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002O	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002P	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002Q	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002R	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	
TS1002S	M228	MSSS	63 ft	VII	-60 to 200	Normal	Normal	NA	

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						PRESSURE (PSIA)	HUMIDITY %			
IT-1899	M-228	Yard Area	46'-7"	Outside Environment	-40 to 160	Normal	-	Normal	NA	This device has successfully passed LOCA type environmental conditions and is housed in weather proof enclosures. Reference WPCAB 7744 and IIT Barton Test Report. These transmitters are IIT Barton Model 393.
IT-1900	M-228	Yard Area	46'-7"	Outside Environment	-40 to 160	Normal	-	Normal	NA	
IT-1903	M-228	Yard Area	46'-7"	Outside Environment	-40 to 160	Normal	-	Normal	NA	
IT-1908	M-228	Yard Area	46'-7"	Outside Environment	-40 to 160	Normal	-	Normal	NA	
IT-1910	M-228	Outside Containment	71'-5"	IV	-40 to 160	Normal	-	Normal	NA	
IT-1911	M-228	Outside Containment	55'-2"	IV	-40 to 160	Normal	-	Normal	NA	
IT-1912	M-228	Outside Containment	68'-1"	IV	-40 to 160	Normal	-	Normal	NA	
IT-1913	M-228	Outside Containment	64'-10"	IV	-40 to 160	Normal	-	Normal	NA	
IT-1914	M-228	Turb	49'-3"	VI	-40 to 160	Normal	-	Normal	EA	
IT-1915	M-228	Turb	48'-6"	VI	-40 to 160	Normal	-	Normal	NA	
IT-1916	M-228	Aux/Fuel	75 ft	IV	-60 to 200	Normal	-	Normal	NA	Statement of Conformance by IIT Barton Meeting Trojans Spec. M-228. These transmitters are IIT Barton Model 288A).
IT-1917	M-228	Aux/Fuel	75 ft	IV	-60 to 200	Normal	-	Normal	NA	

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FWK ORIGINAL

THIRUM HUIFAB PLANT  
 ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION			RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
					TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %			
15-4979A Diesel F.O. Day Tank T-132A	M-228	Turb	49'-7"	VI	-60 to 200	Normal	-	NA	Statement of conformance by IIT Barton meeting Trojan's Spec. M-228. (These transmitters are IIT Barton Model 285A).	
15-4979B Diesel F.O. Day Tank T-132B	M-228	Turb	49'-7"	VI	-60 to 200	Normal	-	NA		
15-4911A Emergency DSL Tank T-111A	M-228	Turb	49'	VI	-60 to 200	Normal	-	NA		
15-4905A Emergency DSL Tank T-111A	M-228	Turb	49'	VI	-60 to 200	Normal	-	NA		
15-4911B Emergency DSL Tank T-111B	M-228	Turb	49'	VI	-60 to 200	Normal	-	NA		
15-4905B Emergency DSL Tank T-111B	M-228	Turb	49'	VI	-60 to 200	Normal	-	NA		
15-4911A SW Pmp Trip A	M-228	Aux	49'	II	-60 to 200	Normal	-	NA		
15-4911B SW Pmp Trip B	M-228	Aux	49'	II	-60 to 200	Normal	-	NA		
15-4911A CW Surge Tank A	M-228	HSSS	75'	IV	-60 to 200	Normal	-	NA		
15-4911B CW Surge Tank B	M-228	HSSS	75'	IV	-60 to 200	Normal	-	NA		
15-4911A AFW Pmp P-02A Disch	M218	Turbine C160	45'	VI	40-105	Normal	-	NA		
15-4911B AFW Pmp P102B Disch	M218	Turbine C160	45'	VI	40-105	Normal	-	NA		
15-4905A Diesel Oil Storage Tk	M224	Process Yrd	41'	Outside Environment	-40 to 160	Normal	-	NA	Statement of conformance by Fisher Porter meeting Trojan's Spec. M-224. (These transmitters are Fisher Porter Model 3340).	
15-4905B Diesel Oil Storage Tk	M224	Process Yrd	41'	Outside Environment	-40 to 160	Normal	-	NA		

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YUJIAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION			RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY (%)			
M01006A	Containment Spray Valve	M113B	Aux	26'-7"	II	311	6"	100	2x10 <sup>8</sup> R	NA	All of the following listed valve operators are low torque manufactured and utilize Class B insulated motor. This type of motor operated valve was type test in the generic environment. WCAP-7744 qualified the Class B insulated motor to LOCA environment for 8 hours. All of the listed valves are located outside containment. These valves are qualified by type test and operating experience.
M01006B	"	M113B	"	26'-7"	II	311	60	100	2x10 <sup>8</sup> R	NA	
M01006C	Cond. & Feedwater Valve	M134D	Turbine	44'-4"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
M01006D	"	M134D	"	44'-4"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
M01006E	Cont. Spray Sys. Valve	M138A	Piping Penetration Area	41'-6"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006F	"	M138A	"	41'-6"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006G	Cont. Spray Sys. Valve	M138A	Piping Penetration Area	58'-10"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006H	"	M138A	"	78'-2"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006I	Cont. Spray Sys. Valve	M138A	Aux	11'-6"	II	311	60	100	2x10 <sup>8</sup> R	NA	
M01006J	"	M138A	"	11'-6"	II	311	60	100	2x10 <sup>8</sup> R	NA	
M01006K	Cond. & Feedwater Valve	M208B	Turbine	45'-10"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
M01006L	Component Cooling Valve	M208D	Piping Penetration Area	78'-3"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006M	"	M208D	"	55'-9"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006N	"	M208D	"	78'-3"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006O	"	M208D	Fuel	53'-3"	IV	311	60	100	2x10 <sup>8</sup> R	NA	
M01006P	Component Cooling	M208E	"	67'-6"	IV	311	60	100	2x10 <sup>8</sup> R	NA	

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TRUJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

QIP NO.	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION PRESSURE (PSIA)	HUMIDITY %	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
200200	Gen. Gen. Slowdown Valve	M-60	Main Svc. Support Structure Area	53'-10"	VII	311	60	100	2x10 <sup>8</sup> R	NA	All of the following listed valve operators are Limitorque manufactured and utilize a Class B insulated motor. This type of motor operated valve was type tested in the Generic M tests in WCAP-7744 for a LOCA environment. WCAP-7744 qualified the Class B insulated motor to LOCA environment for 8 hours. All of the listed valves are located outside containment. These valves are qualified by type test and operating experience.
200201	"	M-60	"	53'-11"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200202	"	M-60	"	53'-4"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200203	"	M-60	"	53'-6"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200204	"	M112A	"	61'-9"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200205	"	M112A	"	63'-11"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200206	"	M112A	"	63'-11"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200207	"	M112A	"	61'-7"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200208	Main Steam Valve	M109B	"	71'-0"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200209	"	M109B	"	71'-0"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200210	"	M109B	"	71'-0"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200211	"	M109B	"	71'-0"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200212	Aux. Steam Valve	M109B	Turbine	54'-0"	VII	311	60	100	2x10 <sup>8</sup> R	NA	
200213	Diesel Fuel Oil Valve	M112A	"	58'-4"	VI	311	60	100	2x10 <sup>8</sup> R	NA	
200214	"	M112A	"	58'-4"	VI	311	60	100	2x10 <sup>8</sup> R	NA	
200215	Diesel Fuel Oil Valve	M112A	"	47'-7"	VI	311	60	100	2x10 <sup>8</sup> R	NA	
200216	"	M112A	"	47'-6"	VI	311	60	100	2x10 <sup>8</sup> R	NA	
200217	Feedwater	M112A	Turbine	45'-8"	VII	311	60	100	2x10 <sup>8</sup> R	NA	

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TRUMAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II ELECTRICAL EQUIPMENT

CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
			BLDG.	ELEV.			PRESSURE (PSIA)	HUMIDITY %			
M-208	CLM Isol	M-208	Aux	66'-0"	II	311	60	2x10 <sup>8</sup> R	NA	All of the following listed valve operators are limited torque manufactured and utilize a Class B insulated motor. This type of motor operated valve was type tested in the generic W tests in NCAP-7744 for a LOCA environment. NCAP-7744 qualified the Class B insulated motor to LOCA environment for 8 hours. All of the listed valves are located outside containment. These valves are qualified by type test and operating experience.	
M-208	Component Clg. Valve	M-208	Aux	34'-3"	II	311	60	2x10 <sup>8</sup> R	NA		
M-208	"	M-208	Aux	34'-3"	II	311	60	2x10 <sup>8</sup> R	NA		
M-209	Hydrogen Vent Sys. Valve	M-209	Between Cont. & Aux Bldg.	81'-3"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-209	"	M-209	"	81'-3"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-209	"	M-209	"	53'-10"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-209	"	M-209	"	53'-4"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-113B	Containment Sampling Valve	M-113B	"	95'-0"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-113B	"	M-113B	"	95'-0"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-113B	"	M-113B	"	78'-0"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-113B	"	M-113B	"	78'-0"	IV	311	60	2x10 <sup>8</sup> R	NA		
M-113B	"	M-113B	Aux	101'-0"	II	311	60	2x10 <sup>8</sup> R	NA		
M-113B	"	M-113B	Aux	101'-0"	II	311	60	2x10 <sup>8</sup> R	NA		
M-113B	Volume Control Tank	MIR	Aux		II	311	60	2x10 <sup>8</sup> R	NA		
M-112C	"	MIR	Aux		II	311	60	2x10 <sup>8</sup> R	NA		
M-112D	RWT Valve	MIR	Aux		II	311	60	2x10 <sup>8</sup> R	NA		
M-112E	RWT Valve	MIR	Aux		II	311	60	2x10 <sup>8</sup> R	NA		
M-310A	Emergency Ejection	MIR	Aux	25 ft	II	311	60	2x10 <sup>8</sup> R	NA		
M-310B	Clg. Line Isolation	MIR	Aux	25 ft	II	311	60	2x10 <sup>8</sup> R	NA		

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIP. NO.	DESCRIPTION	SPEC. NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
							PRESSURE (PSIA)	HUMIDITY %			
000000	Chg. Line Isolation	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	All of the following listed valve operators are limited torque manufactured and utilize a Class B insulated motor. This type of motor operated valve was type tested in the generic M tests in WC-9-7366 for a LOCA environment. WCAP-7744 qualified the Class B insulated motor to LOCA environment for 8 hours. All of the listed valves are located outside containment. These valves are qualified by type test and operating experience.
000010	Chg. Line Isolation	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000011	Chg. Line Isolation	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000012	MIR Suction	MIR	Aux	5 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000013	MIR Suction	MIR	Aux	5 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000014	RHR Isolation	MIR	Aux	5 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000015	SF Suction	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000016	SF Suction	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000017	Boron Injection	MIR	Fuel	45 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000018	Boron Injection	MIR	Fuel	45 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000019	SI System	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000020	SI System	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000021	Boron Inj. Fan	MIR	Aux	45 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000022	Boron Inj. Fan	MIR	Aux	45 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000023	RHR Sys.	MIR	Aux	5 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000024	RHR Sys.	MIR	Aux	5 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000025	SI Suction	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000026	Crossover Valve	MIR	Aux	5 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000027	Crossover Valve	MIR	Aux	5 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	
000028	LP SI	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>8</sup> R	NA	

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS B ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

DESCRIPTION NO.	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
		BLDG.	ELEV.			PRESSURE (PSIA)	HUMIDITY %			
W08-11A	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	<p>All of the following listed valve operators are limiter torque manufactured and utilize a Class B insulated motor. This type of motor operated valve was type tested in the generic M tests in WCAP-7744 for a LOCA environment. WCAP-7744 qualified the Class B insulated motor to LOCA environment for 8 hours. All of the listed valves are located outside containment. These valves are qualified by type test and operating experience.</p>
W08-11B	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-12	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-13	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-14	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-15A	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-15B	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-16	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-17	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-18	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-19	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-20	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-21	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-22	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-23	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-24	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-25	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-26	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-27	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-28	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-29	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-30	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-31	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-32	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-33	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-34	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-35	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-36	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-37	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-38	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-39	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-40	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-41	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-42	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-43	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-44	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-45	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-46	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-47	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-48	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-49	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-50	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-51	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-52	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-53	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-54	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-55	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-56	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-57	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-58	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-59	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-60	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-61	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-62	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-63	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-64	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-65	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-66	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-67	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-68	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-69	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-70	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-71	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-72	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-73	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-74	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-75	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-76	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-77	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-78	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-79	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-80	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-81	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-82	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-83	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-84	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-85	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-86	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-87	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-88	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-89	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-90	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-91	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-92	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-93	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-94	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-95	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-96	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-97	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-98	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-99	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	
W08-100	MIR	Aux	25 ft	II	311	60	100	2x10 <sup>6</sup> R	NA	

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TWOJAR NUCLEAR FLABT  
 ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT  
 OUTSIDE CONTAINMENT

SAP ID	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REPAIRS
						TEMP. (°F)	PRESSURE (PSIA)			
PT513	STM Generator	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	Qualified by Type Test W WCAP 3764 for LCCA environment. These transmitters are located outside the containment. (ITT Barton Model 345).
PT514	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT516	Pressure	MI	PSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT524	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT525	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT526	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT534	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT535	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT536	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT544	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT545	Pressure	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT546	Pressure	MI	KSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT510	Stm Gen. Feedwater Flow	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	
PT511	Stm Gen. Feedwater Flow	MI	MSSB	59 ft	1V, VII	-5 to 286	60	1 x 10 <sup>8</sup> R	N.A.	

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Same as above. These transmitters are ITT Barton Model 384.

TROJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1C ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	TEMP. (°F)	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
							PRESSURE (PSIA)	HUMIDITY %			
11-11	Stm Gen. Feedwater Flow	M1	MSSB	59 ft	IV, VII	-5 to 286	60	100	1 x 10 <sup>6</sup> R	N.A.	Qualified by Type Test W MCAP 7744 for LOCA environment. These transmitters are located outside the containment (ITT Barton Model 384.)
11-11	Stm Gen. Feedwater Flow	M1	MSSB	59 ft	IV, VII	-5 to 286	60	100	1 x 10 <sup>6</sup> R	N.A.	
11-11	Stm Gen. Feedwater Flow	M1	MSSS	59 ft	IV, VII	-5 to 286	60	100	1 x 10 <sup>6</sup> R	N.A.	
11-11	Stm Gen. Feedwater Flow	M1	MSSS	59 ft	IV, VII	-5 to 286	60	100	1 x 10 <sup>6</sup> R	N.A.	
11-11	Stm Gen. Feedwater Flow	M1	MSSS	59 ft	IV, VII	-5 to 286	60	100	1 x 10 <sup>6</sup> R	N.A.	
11-11	Stm Gen. Feedwater Flow	M1	MSSS	59 ft	IV, VII	-5 to 286	60	100	1 x 10 <sup>6</sup> R	N.A.	

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TROJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 12 ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT	DESCRIPTION NO.	SPEC. P.P.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION			RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY (%)			
C21001	Containment Isolation	M209	Aux	93 FT	II	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	Qualified by operating experience and industry tests in ASCO test report 112 June 4, 1976. (These are air operated valves utilizing ASCO solenoids HTB16C33 and 830C26V with explosion proof/watertight enclosures).
C21002	Containment Isolation	M209	Aux	93 FT	II	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21003A	Chilled Water Return	M209	Aux	77 FT	II	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21003B	Chilled Water Supply	M209	Aux	77 FT	II	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21007	EUR Sample	M113	Aux	9 FT	II	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	Qualified by operating experience and industry tests in ASCO test report 112 June 4, 1976. (These are air operated valves utilizing ASCO solenoids HTB120A22 and HTB120A90 with watertight enclosures).
C21008	EUR Sample	M113	Aux	9 FT	II	32 to 176	Normal	100	7x10 <sup>7</sup> R	NA	
C21009	Stm Line Drain	M112	Main Stm Support Structure	77 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21010	Stm Line Drain	M112	Main Stm Support Structure	77 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21011	Stm Line Drain	M112	Main Stm Support Structure	77 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	Qualified by operating experience and industry tests in ASCO test report 112 June 4, 1976. (These are air operated valves utilizing ASCO solenoids HTB120A22 and HTB120A90 with watertight enclosures).
C21012	Stm Line Drain	M112	Main Stm Support Structure	77 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21013	Stm Line Drain	M112	Main Stm Support Structure	77 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21014	Stm Line Drain	M112	Main Stm Support Structure	77 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	
C21015	Stm Gen Bldg	M112	Main Stm Support Structure	93 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	Qualified by operating experience and industry tests in ASCO test report 112 June 4, 1976. (These are air operated valves utilizing ASCO solenoids HTB120A22 and HTB120A90 with watertight enclosures).
C21016	Stm Gen Bldg	M112	Main Stm Support Structure	93 FT	IV, VII	32 to 176	Normal	100	2x10 <sup>7</sup> R	NA	

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TRISTAR NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT IDENTIFICATION	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
							TEMP. (°F)	PRESSURE (PSIA)			
CV 10041	Gen Gen Bldg	M112	Main Stem Support Structure	93 FT	IV, VII	Normal	32 to 176	100	2x10 <sup>5</sup> R	NA	See CV1782.
CV 10042	Gen Gen Bldg	M112	Main Stem Support Structure	93 FT	IV, VII	Normal	32 to 176	100	2x10 <sup>5</sup> R	NA	See CV1782.
CV 10043	Main Stem Isolation Valve	M123	Main Stem Support Structure	73 FT	IV, VII	Normal	-5 to 107	20-80	3x10 <sup>5</sup> R	NA	Statement of conformance by R.G. Laurance Co. complying with Trojan's Spec. M123. Note that CV2216 has failed because of adverse weather conditions, LFR78-05 dated March 17, 1978.
CV 2216	Main Stem Isolation Valve	M123	Main Stem Support Structure	73 FT	IV, VII	Normal	-5 to 107	20-80	3x10 <sup>5</sup> R	NA	
CV 2256	Main Stem Isolation Valve	M123	Main Stem Support Structure	73 FT	IV, VII	Normal	-5 to 107	20-80	3x10 <sup>5</sup> R	NA	
CV 2256	Main Stem Isolation Valve	M123	Main Stem Support Structure	73 FT	IV, VII	Normal	-5 to 107	20-80	3x10 <sup>5</sup> R	NA	
CV 10044	Aux FM Valves	M204	Main Stem Support Structure	59 FT	IV, VII	Normal	340	100	2x10 <sup>8</sup> R	NA	These valves are Limitor and utilize a Class B type test by M on WCAP environment.
CV 10045	Aux FM Valves	M204	Main Stem Support Structure	59 FT	IV, VII	Normal	340	100	2x10 <sup>8</sup> R	NA	
CV 10046	Aux FM Valves	M204	Main Stem Support Structure	59 FT	IV, VII	Normal	340	100	2x10 <sup>8</sup> R	NA	
CV 10047	Aux FM Valves	M204	Main Stem Support Structure	59 FT	IV, VII	Normal	340	100	2x10 <sup>8</sup> R	NA	

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CV 10041-014

TRUJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT ID	DESCRIPTION	SPEC ID	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND R. MARKS	
							TEMP. (°F)	PRESSURE (PSIA)				
CV3004A1	Aux FM Valves	M204	Main Stm Support Structure	59 FT	IV, VII	Normal	340	Normal	100	2x10 <sup>8</sup> g	NA	See CV3004A1.
CV3004A2	Aux FM Valves	M204	Main Stm Support Structure	59 FT	IV, VII	Normal	340	Normal	100	2x10 <sup>8</sup> g	NA	See CV3004A1.
CV3004A3	Aux FM Valves	M204	Main Stm Support Structure	59 FT	IV, VII	Normal	340	Normal	100	2x10 <sup>8</sup> g	NA	See CV3004A1.
CV3712A	CCW Isolation	M208B2	Aux	45 FT	II	Normal	32-176	Normal	100	-	NA	Statement of conformance by Allis Chalmers complying with Trojan's Spec. M208. These are air operated valves utilizing ASCO solenoids 8321A6 with explosion proof/watertight enclosures.
CV3712B	CCW Isolation	M208B2	Aux	45 FT	II	Normal	32-176	Normal	100	-	NA	Statement of conformance by Allis Chalmers complying with Trojan's Spec. M208. These are air operated valves utilizing ASCO solenoids 8321A6 with explosion proof/watertight enclosures.
CV3712C	CCW Isolation	M208B2	Fuel	45 FT	II	Normal	32-176	Normal	100	-	NA	Statement of conformance by Allis Chalmers complying with Trojan's Spec. M208. These are air operated valves utilizing ASCO solenoids 8321A6 with explosion proof/watertight enclosures.
CV3712D	CCW Isolation	M208B2	Fuel	45 FT	II	Normal	32-176	Normal	100	-	NA	Statement of conformance by Allis Chalmers complying with Trojan's Spec. M208. These are air operated valves utilizing ASCO solenoids 8321A6 with explosion proof/watertight enclosures.
CV3712E	SW to EDG	M208B4	D.G. Area	45 FT	VI	Normal	32-176	Normal	100	-	NA	Statement of conformance by Fisher Controls complying with Trojan's Spec. M208B4. (These are air operated valves utilizing ASCO solenoids 8321A5 with explosion proof/watertight enclosures).
CV3712F	SW to EDG	M208B4	D.G. Area	45 FT	VI	Normal	32-176	Normal	100	-	NA	Statement of conformance by Fisher Controls complying with Trojan's Spec. M208B4. (These are air operated valves utilizing ASCO solenoids 8321A5 with explosion proof/watertight enclosures).
CV3712G	SW System	M208B4	D.G. Area	45 FT	VI	Normal	32-176	Normal	100	-	NA	Statement of conformance by Fisher Controls complying with Trojan's Spec. M208B4. (These are air operated valves utilizing ASCO solenoids 8321A5 with explosion proof/watertight enclosures).
CV3712H	SW to HVAC	M208B4	Aux	48 FT	IV	Normal	32-176	Normal	100	-	NA	Same as above
CV3712I	SW to HVAC	M208B4	Aux	48 FT	IV	Normal	32-176	Normal	100	-	NA	Same as above
CV3712J	SW System	M36	Yard Area	45 FT	Outside	Normal	-	Normal	-	-	NA	No information available.
CV3712K	SW System	M36	Yard Area	45 FT	Outside	Normal	-	Normal	-	-	NA	No information available.
CV3712L	SW System	M208	D.G. Area	45 FT	VI	Normal	32-176	Normal	100	-	NA	See CV3712A.
CV3712M	SW Isol.	M208	Intake St.	30 FT	III	Normal	32-176	Normal	100	-	NA	See CV3712A.
CV3712N	SW Isol.	M208	Intake St.	30 FT	III	Normal	32-176	Normal	100	-	NA	See CV3712A.
CV3712O	SW Isol.	M312	Aux	45 FT	II	Normal	32-176	Normal	-	-	NA	See CV2294.
CV3712P	SW Isol.	M312	Aux	45 FT	II	Normal	32-176	Normal	-	-	NA	Statement of conformance by Anchor Valve complying with Trojan's Spec. M312. These are air operated valves utilizing ASCO solenoids MT8302B26WU with watertight enclosures.
CV3712Q	SW Isol.	M312	Aux	45 FT	II	Normal	32-176	Normal	-	-	NA	Statement of conformance by Anchor Valve complying with Trojan's Spec. M312. These are air operated valves utilizing ASCO solenoids MT8302B26WU with watertight enclosures.
CV3712R	SW Isol.	M312	Outside Aux	45 FT	II	Normal	32-176	Normal	100	2x10 <sup>7</sup> g	NA	Statement of conformance by Anchor Valve complying with Trojan's Spec. M312. These are air operated valves utilizing ASCO solenoids MT8302B26WU with watertight enclosures.

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 13 ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						TEMP. (°F)	PRESSURE (PSIA)			
CV2294	Gas Collect	M138	MSSS	45 FT	IV, VII	Normal	32-176	2x10 <sup>7</sup> /g	RA	Statement of conformance by Anchor Val complying with Trojans Spec. M138. The air operated valves utilize ASCO solenoid RTB302828RU with watertight enclosure See CV2294.
CV2294	Instr. Air	M112	MSSS	61 FT	IV, V	Normal	32-176	2x10 <sup>7</sup> /g	NA	See CV2294.
CV2294	Instr. Air	M112	MSSS	61 FT	IV, VII	Normal	32-176	2x10 <sup>7</sup> /g	NA	See CV4181.
CV2294	RedST Sys	M138	Aux	45 FT	II	Normal	32-176	2x10 <sup>7</sup> /g	NA	See CV4181.
CV2294	RedST Sys	M138	Aux	45 FT	II	Normal	32-176	2x10 <sup>7</sup> /g	NA	Qualified by operating experience and test in ASCO test report 112, June 4, 1976. (Air operated valves with ASCO solenoids 8320A90HB in explosion proof watertight enclosure).
CV2294	Air Sample	M113	Cable Penetration Area	45 FT	IV	Normal	32-176	2x10 <sup>7</sup> /g	NA	
CV2294	RCS Sample	M113	Cable Penetration Area	45 FT	IV	Normal	32-176	2x10 <sup>7</sup> /g	NA	
CV2657	PSZR Sample	M113	Cable Penetration Area	45 FT	IV	Normal	32-176	2x10 <sup>7</sup> /g	NA	
CV2659	PSZR Sample	M113	Cable Penetration Area	45 FT	IV	Normal	32-176	2x10 <sup>7</sup> /g	NA	
CV2659	RCDT Sample	M113	Cable Penetration Area	45 FT	IV	Normal	32-176	2x10 <sup>7</sup> /g	NA	
CV2659	PSZR Sample	M1R	Cable Penetration Area	45 FT	IV	60	350	1x10 <sup>6</sup> /g	NA	Qualified by evaluation and test in W letter to NRC dated July 10, 1975. (These air operated valves are the same type as utilized inside the containment).
CV2659	PSZR Sys	M1R	Aux	63 Ft	II	60	350	1x10 <sup>6</sup> /g	NA	
CV2659	PSZR Sys	M1R	Aux	56 Ft	II	60	350	1x10 <sup>6</sup> /g	NA	
CV2659	Letdown Isol.	M1R	Aux	63 Ft	II	60	350	1x10 <sup>6</sup> /g	NA	
CV2659	Boron Inj.	M1R	Aux	25 Ft	II	60	350	1x10 <sup>6</sup> /g	NA	

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TRIGAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CRITICAL	METHOD OF QUALIFICATION AND REMARKS
					TEMP. (°F)	PRESSURE (PSIA)			
SV22776	Boron Inj. Accum. Sys	M1A	25 Ft	II	350	60	1x10 <sup>6</sup> R	NA	Qualified by evaluation and test in W letter to NRC dated July 10, 1977. (These air operated valves are the same type as utilized inside the containment).  Statement of conformance by R.C. Lawrence Co. complying with Trojan's Spec. N-232. Note that CV22779 has had component failure because of adverse weather conditions, ER78-09 dated March 31, 1978.
SV22777	Boron Inj. Accum. Sys	M1R	59 Ft	II	350	60	1x10 <sup>6</sup> R	NA	
CV22778	Boron Inj. Accum. Sys	M1R	25 Ft	II	350	60	1x10 <sup>6</sup> R	NA	
CV22779	Boron Inj. Accum. Sys	M1R	63 Ft	II	350	60	1x10 <sup>6</sup> R	NA	
CV22780	Boron Inj. Accum. Sys	M1R	45 Ft	II	350	60	1x10 <sup>6</sup> R	NA	
SV22781	Steam Isolation Bypass Solenoid Valves	M232	101 FT	IV	-5 to 107	Normal	3x10 <sup>5</sup> R	NA	
SV22782	Steam Isolation Bypass Solenoid Valves	M232	101 FT	IV	-5 to 107	Normal	3x10 <sup>5</sup> R	NA	
SV22783	Steam Isolation Bypass Solenoid Valves	M232	101 FT	IV	-5 to 107	Normal	3x10 <sup>5</sup> R	NA	
SV22784	Steam Isolation Bypass Solenoid Valves	M232	101 FT	IV	-5 to 107	Normal	3x10 <sup>5</sup> R	NA	
SV22785	Steam Isolation Bypass Solenoid Valves	M232	101 FT	IV	-5 to 107	Normal	3x10 <sup>5</sup> R	NA	
SV22786	Steam Isolation Bypass Solenoid Valves	M232	101 FT	IV	-5 to 107	Normal	3x10 <sup>5</sup> R	NA	
SV22787	Steam Isolation Bypass Solenoid Valves	M232	101 FT	IV	-5 to 107	Normal	3x10 <sup>5</sup> R	NA	

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT ID	DESCRIPTION	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
			BLDG.	ELEV.		TEMP. (°F)	PRESSURE (PSIA)			
2510001	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	No information available other than the enclosure is Nema 3 with GE light and switch (CR29-0).
2510002	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510003	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510004	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510005	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510006	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510007	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510008	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510009	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510010	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510011	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510012	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510013	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510014	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510015	APM Manual Reset Pushbutton Station	F12	Main Stm Support Structure	59 ft	IV, VII	32-104	Normal	-	-	
2510016	Stem Mounted Limit Switch	M209	Aux	93 ft	II	32-104	Normal	-	-	Statement of conformance by BIF complying with Trojan's Spec. M209. (These limit switches are Cutler Hammer type LT 10316H).
2510017	Stem Mounted Limit Switch	M209	Aux	93 ft	I:	32-104	Normal	-	-	
2510018	Stem Mounted Limit Switch	M209	Aux	93 ft	II	32-104	Normal	-	-	
2510019	Stem Mounted Limit Switch	M209	Aux	93 ft	II	32-104	Normal	-	-	

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

SYSTEM NO.	DESCRIPTION NO.	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						TEMP. (°F)	PRESSURE (PSIA)			
251782	Stem Mounted Limit Switch	M112	Aux	9 Ft	II	32-200	Normal	-	-	Statement of conformance by Rockwell complying with Trojans Specs. M11 & M12 (These limit switches are Namco D2400X).
251783	Stem Mounted Limit Switch	M112	Aux	9 Ft	II	32-200	Normal	-	-	
251784	Stem Mounted Limit Switch	M112	Main Stem Support Structure	77 Ft	IV, VII	32-200	Normal	-	-	
251785	Stem Mounted Limit Switch	M112	Main Stem Support Structure	77 Ft	IV, VII	32-200	Normal	-	-	
251786	Stem Mounted Limit Switch	M112	Main Stem Support Structure	77 Ft	IV, VII	32-200	Normal	-	-	
251787	Stem Mounted Limit Switch	M112	Main Stem Support Structure	77 Ft	IV, VII	32-200	Normal	-	-	
251788	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251789	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251790	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251791	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251792	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251793	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251794	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251795	Stem Mounted Limit Switch	M112	Main Stem Support Structure	93 Ft	IV, VII	32-200	Normal	-	-	
251796	Stem Mounted Limit Switch	M20882	Aux	45 Ft	II	32-104	Normal	-	-	Statement of conformance by Allis Chalmers complying with Trojans Spec. M20882 (These limit switches are Mirco Switch OPD-AB).
251797	Stem Mounted Limit Switch	M20882	Aux	45 Ft	II	32-104	Normal	-	-	

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THOJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

DESCRIPTION NO.	SPEC. NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION			RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
					TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %			
251712A	M20884	D.G. Area	45 Ft	VI	31-75	Normal	-	-	Statement of conformance by Fisher Controls complying with Trojans Spec. M20884. (These limit switches are Nasco D2400X).	
251712B	M20884	D.G. Area	45 Ft	VI	31-200	Normal	-	-		
251712C	M20884	D.G. Area	45 Ft	VI	31-200	Normal	-	-		
251720A	M30884	Aux	48 Ft	II	31-200	Normal	-	-		
251720B	M30884	Aux	48 Ft	II	31-200	Normal	-	-		
251720C	M36	Yard Area	45 Ft	Outside	31-200	Normal	-	-		
251720D	M36	Yard Area	45 Ft	Outside	31-200	Normal	-	-		
251720E	M20884	D.G. Area	45 Ft	VI	31-200	Normal	-	-		
251803	M20884	Intake St.	30 Ft	III	31-200	Normal	-	-		
251804	M20884	Intake St.	30 Ft	III	31-200	Normal	-	-		
251805	M112A	Aux	45 Ft	II	31-200	Normal	-	-		
251806	M138	Outside Aux	45 Ft	II	31-104	Normal	-	-		
251807	M138	MSSS	45 Ft	IV, VII	31-104	Normal	-	-		
251808	M112A	MSSS	61 Ft	IV, VII	31-200	Normal	-	-		

See ZS1782.

Statement of conformance by Anchor Val Co. complying with Trojans Spec. M138. (These limit switches are Micro Switch OTF2-RN).

See ZS1782.

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PROGRAM REVIEW OF PLANT ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS II ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

PART NO.	DESCRIPTION	SPEC NO.	BLDG.	LOCATION ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
						TEMP. (°F)	PRESSURE (PSIA)			
250023	Stem Mounted Limit Switch	M112	MSS	61 Ft	IV, VII	32-200	Normal	-	-	See ZS1782.
250025	Stem Mounted Limit Switch	M138	Aux	45 Ft	II	32-104	Normal	-	-	See ZS4181.
250026	Stem Mounted Limit Switch	M138	Aux	45 Ft	II	32-104	Normal	-	-	See ZS4181.
250027	Stem Mounted Limit Switch	M113	Cable Penetration Area	45 Ft	IV	32-200	Normal	-	-	See ZS1782.
250028	Stem Mounted Limit Switch	M113	Cable Penetration Area	45 Ft	IV	32-200	Normal	-	-	See ZS1782.
250029	Stem Mounted Limit Switch	M113	Cable Penetration Area	45 Ft	IV	32-200	Normal	-	-	See ZS1782.
250030	Stem Mounted Limit Switch	M113	Cable Penetration Area	45 Ft	IV	32-200	Normal	-	-	See ZS1782.
250031	Stem Mounted Limit Switch	M113	Cable Penetration Area	45 Ft	IV	32-200	Normal	-	-	See ZS1782.
250032	Stem Mounted Limit Switch	M1R	Cable Penetration Area	45 Ft	IV	32-200	Normal	2x10 <sup>6</sup> R	-	Qualified by Type Test in Ramco test report dated March 17, 1978 (Ramco EA170).
250033	Stem Mounted Limit Switch	M1R	Aux	63 Ft	II	32-200	Normal	2x10 <sup>6</sup> g	-	Qualified by Type Test in Ramco test report dated March 17, 1978 (Ramco LA170).
250034	Stem Mounted Limit Switch	M1R	Aux	56 Ft	II	32-200	Normal	2x10 <sup>6</sup> g	-	Same as above
250035	Stem Mounted Limit Switch	M1R	Aux	63 Ft	II	32-200	Normal	2x10 <sup>6</sup> g	-	See ZS8025.

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TRIGA NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT ID	DEFINITION NO.	BPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY %	RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND RE-TESTS
			BLDG.	ELEV.							
25000A	Stem Mounted Limit Switch	M13	Aux	25 Ft	II	32-200	Normal	-	-	-	Statement of Conformance by Nasco complying with M Spec.
25000B	Stem Mounted Limit Switch	M18	Aux	25 Ft	II	32-200	Normal	-	-	-	Same as above.
25000C	Stem Mounted Limit Switch	M18	Aux	59 Ft	II	32-200	Normal	-	-	-	Same as above.
25000D	Stem Mounted Limit Switch	M18	Aux	25 Ft	II	32-200	Normal	-	-	-	Same as above.
25000E	Stem Mounted Limit Switch	M18	Aux	45 Ft	II	32-200	Normal	-	-	-	Same as above.
25000F	Stem Mounted Limit Switch	M18	Aux	45 Ft	II	32-200	Normal	-	-	-	Same as above.
25000G	Stem Mounted Limit Switch	M2082	Aux	45 Ft	II	32-200	Normal	-	-	-	See CV3303.
25000H	Stem Mounted Limit Switch	M2088	Aux	63 Ft	II	32-200	Normal	100	2 x 10 <sup>6</sup> R	-	See CV3303.
25000A	Stem Mounted Limit Switch	M18	Aux		II	32-200	Normal	100	2 x 10 <sup>6</sup> R	-	Qualified by type test in Nasco test report dated March 17, 1978 (Nasco EA170).
25000B	Stem Mounted Limit Switch	M18	Aux		II	32-200	Normal	100	2 x 10 <sup>6</sup> R	-	Qualified by type test in Nasco test report dated March 17, 1978 (Nasco EA170).

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TWOJAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION			RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
			BLDG.	ELEV.		TEMP. (°F)	PRESSURE (PSIA)	HUMIDITY (%)			
Y15	Inverter #1	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of ANSI C37.12. Test results for this equipment are kept by the manufacturer, W.
Y16	Inverter #2	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y17	Inverter #3	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y18	Inverter #4	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y19	Preferred AC Bus	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y20	Preferred AC Bus	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y21	Preferred AC Bus	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y22	Preferred AC Bus	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y23	Preferred AC Bus	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y24	Preferred AC Bus	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment meets the requirements of NEMA Std. PB-1 and UL-67. This results for this standard equipment are kept by the manufacturer, W.
Y25	NIS Regulator	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment was designed and tested to NEMA Std. TR1-1968.
Y26	NIS Regulator	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment was designed and tested to NEMA Std. TR1-1968.
Y27	NIS Regulator	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment was designed and tested to NEMA Std. TR1-1968.
Y28	NIS Regulator	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment was designed and tested to NEMA Std. TR1-1968.
Y29	Reactor Trip Switchgear	M1	Control	65 ft	III	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment was designed and tested to ANSI C37 and ANSI 39.1.
C-2055B	Post LOCA Containment Hydrogen Analysis	H87	Aux	55 ft	II	32-104	Normal	-	Normal	NA	Qualified by operating experience based upon industry test. This equipment was designed and tested to NEMA ICS and ANSI 39.1.

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ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1B ELECTRICAL EQUIPMENT

TROJAN NUCLEAR PLANT

OUTSIDE CONTAINMENT

EQUIPMENT IDENTIFICATION	DESCRIPTION NO.	SPEC NO.	LOCATION		ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
			BLDG.	ELEV.		TEMP. (°F)	PRESSURE (PSIA)			
6101A/B	Post LOCA Hydrogen Recombiner Panels	M07	Control	93 ft	V	40-120	Normal	15-95	NA	Qualified by operating experience based on on-going operating history. Equipment meets the requirements of W Spec 679-042 and industry standards NEMA ICL and IPCEA S-61-402.
611	Radiation Monitoring Panel	M-110	Control	93 ft	V	40-104	Normal	15-95	NA	Only the control switches and associated wiring are Class 1E on this particular panel. The switches (G.E. 58H) and wiring have passed in-situ tests IPCEA S-19-81 and ANSI-C-90.
6101A	Diesel Generator Control Panel	M16	Turbine	45 ft	VI	40-104	Normal	-	Water Spray	This equipment was designed and tested to ANSI C37.20, ANSI C57.13 and IPCEA S-19-81. This panel is a NEMA 3R enclosure and is raintight.
6106A/B	Diesel Generators	M16	Turbine	45 ft	VI	40-120	Normal	-	Water Spray	Qualified by operating experience based on industry standards. This equipment has been designed and tested to ANSI C30.10, ANSI C50.12, IEEE, NEMA MG-1-20.46, ANSI C37.20, ANSI C57.12, and IEEE 115 & 606 (Bruce CH Diesel).
6101/G201	Diesel Generator C/A Terminal Cabinet	M16	Turbine	45 ft	VI	40-104	Normal	-	Water Spray	The generator utilizes Class 7 insulation which has maximum continuous temperature rating of 150°C (302°F).
6101/G202	Diesel Generator Field Terminals	M16	Turbine	45 ft	VI	40-104	Normal	-	Water Spray	Same as above. This device is housed in NEMA 4 Enclosure for water protection. Same as above. This device is housed on NEMA Enclosure for water protection.

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THORIAN NUCLEAR PLANT  
ENVIRONMENTAL QUALIFICATION REVIEW OF CLASS 1E ELECTRICAL EQUIPMENT

OUTSIDE CONTAINMENT

EQUIPMENT NO.	DESCRIPTION	SPEC. FD.	BLDG.	LOCATION	ELEV.	ENVIRONMENTAL SERVICE CONDITION	VENDOR DOCUMENTATION		RADIATION	CHEMICAL	METHOD OF QUALIFICATION AND REMARKS
							TEMP. (°F)	PRESSURE (PSIA)			
G10303	Diesel Generator Neutral Grounding Resistor	M16	Turbine	45 ft	VI	Normal	40-104	Normal	Normal	Water Spray	Same as above. This device is housed on NEMA 4 Enclosure for water protection.
G10304	Diesel Generator Air Compressor	M16	Turbine	45 ft	VI	Normal	40-120	Normal	Normal	Water Spray	Qualified by operating experience based on industry tests. This equipment was tested per requirements of NEMA MG-1. This motor has Class 3 insulation which has 130°C maximum temperature and a total enclosed enclosure.
	Wiring Generator	M16	Turbine	45 ft	VI	Normal	150	Normal	Normal	Water Spray	This equipment was tested and designed to IPCLA 5-1981. This wiring has insulation temperature rating of 150°C (302°F).
	APW Diesel Battery Charger	M12	Tur.	45 ft	VI	Normal	0-120	Normal	Normal	NA	Qualified by operating experience based on industry tests. This equipment was tested per requirements of NEMA Std. R12-1976. (La Marche Model A31).
Q71	APW Diesel Batteries	M12	Turbine	45 ft	VI	Normal	50-104	Normal	Normal	NA	
G10301	APW Diesel Control Box & Component (Woodward Governor)	M12	Turbine	45 ft	VI	Normal	50-150	Normal	Normal	NA	This enclosure is a NEMA 4 Enclosure that protects the equipment from water and severe external condensation. The equipment is Woodward Governor Model 2301 that is designed and tested to IEEE 606 and NEMA Std. ICS.
	APW Turbine Trip Contactors	M12	Turbine	45 ft	VI	Normal	50-104	Normal	Normal	NA	Same as above.
APW04	APW Turbine Control Box (Woodward Governor)	M12	Turbine	45 ft	VI	Normal	50-150	Normal	Normal	NA	Same as BTR701
	Wiring on APW Diesel Driven Pump	M12	Turbine	45 ft	VI	Normal	194	Normal	Normal	NA	This wiring Type TA with insulation temperature rating of 90°C (194°F) in accordance with National Electric Code and was tested to IPCLA 5-1981.

TABLE 1-01V

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LIST OF SAFETY-RELATED EQUIPMENT BELOW THE  
 MAXIMUM WATER LEVEL (52'-11-1/2")  
 IN CONTAINMENT FOLLOWING A LOCA

Reference: Trojan FSAR Section 15.4.1.6

<u>Item No.</u>	<u>Equipment No.</u>	<u>Elevation</u>	<u>Description</u>
1	FT512, FT513, FT522, FT523, FT532, FT533, FT542, FT543	50'	Steam Generator Flow Transmitters
2	PT403, PT405	48'	RCS Wide Range Pressure Transmitter
3	LT517, LT518, LT519, LT527, LT528, LT529, LT537, LT538, LT539, LT547, LT548, LT549	48'	Steam Generator Level Transmitter
4	FT414, FT415, FT416, FT424, FT425, FT426, FT434, FT435, FT436, FT444, FT445, FT446	49'	Reactor Coolant Loop Flow Transmitter
5	MO1605	43'-6"	Condensate Drain Tank Valve
6	MO4003	44'-7"	Reactor Coolant Drain Tank Valve
7	MO4180	49'-6"	Containment Sump Discharge Valve
8	MO8808A, MO8808B, MO8808C, MO8808D	52'-6"	Accumulator Tank Isolation Valve
9	CV8153	48'-5"	Letdown Isolation Valve
10	CV8154	47'-6"	Letdown Isolation Valve
11	CV8876A, CV8876B, CV8876C, CV8876D	47'	Accumulator Tank to RCDT Valve
12	CV8877A	49'	Safety Injection Test Line Valve
13	CV8877B, CV8877C, CV8877D	50'	Safety Injection Test Line Valve
14	CV8879A, CV8879B, CV8879C, CV8879D	49'	Accumulator System Valve

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<u>Item No.</u>	<u>Equipment No.</u>	<u>Elevation</u>	<u>Description</u>
15(1)	DIC901	52'-5"	Instrumentation Cable Tray
16(1)	CIC901	52'-5"	Instrumentation Cable Tray

(1) Cable tray DIC901 contains cables associated with RCS pressure (PT403), RCS Loop 4 hot and cold leg temperature (TE441A, B and TE440A, B), pressurizer pressure (PT458), steam generator loop level (LT517, LT527, LT537, LT547), and pressurizer relief valve discharge temperature (TE465).

(2) Cable tray CIC901 contains cable associated with RCS loop flow (FT416, FT426, FT436, FT446), RCS Loop 3 hot and cold leg temperature (TE430A, B and TE431A, B), pressurizer vapor pressure (PT457), pressurizer level (LT461), steam generator loop levels (LT518, LT528, LT538, LT548), and pressurizer relief valve discharge temperature (TE464).

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