

January 17, 1984

Docket No. 50-255
LS05-84-01-024

LICENSEE: CONSUMERS POWER COMPANY (CPCo)

FACILITY: Palisades Plant

SUBJECT: SUMMARY OF MEETING HELD ON JANUARY 10, 1984 TO DISCUSS
EQUIPMENT ENVIRONMENTAL QUALIFICATION FOR THE PALISADES PLANT

On January 10, 1984 a meeting was held in Bethesda, Maryland, with representatives of CPCo. A list of attendees is enclosed (Enclosure 1). The purpose of the meeting was to discuss and resolve the outstanding environmental qualification issues for Palisades Plant. The areas discussed were, (1) the deficiencies identified in the Franklin Research Center (FRC) Technical Evaluation Report (TER), (2) the licensee's program for complying with the requirements set forth in 10 CFR 50.49 (EQ Rule), and (3) the licensee's justification for continued operation (JCO) as required. Enclosure 2 is the table of the Electrical Equipment Qualification Deficiencies prepared by CPCo as the basis for discussion.

The licensee was requested to document the results of the meeting and submit them formally to the NRC staff by February 14, 1984.

Original signed by

Walter A. Paulson, Project Manager
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Division of Licensing

Enclosure:

1. List of Attendees
2. Table by CPCo

cc w/enclosure:

See next page

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ATTENDANCE LIST

JANUARY 10, 1984

NRC STAFF AND CONSUMERS POWER COMPANY

<u>Name</u>	<u>Affiliation</u>
Bob Marusich	CPCo
Dave Vandewalle	CPCo
Michael Wode	CPCo
Brian Johnson	CPCo
Kenneth Berry	CPCo
Rudy Karsch	NRC
Paul Shemanski	NRC
Bob LeGrange	NRC
Tommy Le	NRC
T. V. Wambach	NRC

I. Electrical Equipment Qualification Deficiencies

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
A. Solenoid Valves (SV) - ASCO				
1	SV-0861 to 0865, 0867, 0868, 0870, 0873 Actuates Service Water Supply Valve for Containment Air Coolers.	II.C	Items 1 through 20 were categorized as having "Qualified Life Deficiency". The two areas of expressed concern were 1) the method of solenoid enclosure interface and 2) the lack of consideration given to the coil temperature rise when performing the aging analysis.	1) Additional analysis and documentation concluded that either the valves were outside containment and, therefore, were not exposed to LOCA spray or MSLB conditions or that failure mode due to moisture is consistent with the operation mode (the solenoid valves de-energize to perform their safety function). 2) Analysis also concluded that Test Report AQR-67368 reveals that during thermal aging the temperature rise in the coil was present at all times.
2	SV-2113, 2115 Actuates Charging System Step Valves			
3	SV-2117 Actuates Pressurizer Auxiliary Spray Valve			
4	SV-3084, 3085 Actuates High Pressure Safety Injection Valves			
5	SV-0824 Actuates Service Water Shutoff Valves to Containment Air Coolers			
6	SV-3030B Actuates SIRW Tank Level Control Valve			
7	SV-3036, 3059, 3070, 3071, 3212B Actuates Safety Injection and Shutdown Cooling Valves			
8	SV-3027A, 3029A, 3030A, 3031B, 3056A Actuates SIRW Tank Level Control Valves SV-3055A Actuates Shutdown Cooling Heat Exchanger Isolation Valve SV-3213B, 3212A, 3224A Actuates Safety Injection and Shutdown Cooling Valve			
9	SV-3027B, 3057B Actuates SIRW Tank Level Valves			

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
10	SV-3031A, 3056B, 3057A Actuates SIRW Tank Level Control Valves SV-3055B Actuates Shutdown Cooling Heat Exchanger Isolation Valve SV-3213A, 3223A, 3224B, 3037 Actuates Safety Injection and Shutdown Cooling Valves		See Item 1	See Item 1
11	SV-3223B Actuates Safety Injection and Shutdown Cooling Valves			
12	SV-3029B Actuates SIRW Tank Level Control Valve			
13	SV-3001, 3002 Actuates Containment Spray Valves			
14	SV-0522A Actuates Main Steam Isolation Valve to Auxiliary Feedwater Pump			
15	SV-1901 through 1905 NSSS Sampling Valves			
16	SV-1805 through 1808 Actuates Containment Purge Valves			
17	SV-0879, 0880 Service Water Backup to Cool ESF Pumps SV-0913			
18	SV-3069, 0338, 0342, 0346, 0347 Actuates Safety Injection Tank Valves			
19	SV-1038, 1044, 1045 Actuates CWRT Containment Isolation Valves SV-1002, 1007, 1036 Actuates PSDT and CWRT Containment Isolation Valves SV-1103, 1104 Actuates Containment Sump Drain Isolation Valves			

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
20	SV-0947 through 0951 Component Cooling and Shutdown Heat Exchanger		See Item 1	See Item 1
B. Motor Operated Valves (MOV)				
22	MO-3010, 3012, 3014 Actuates Low Pressure Coolant Injection Valves	II.A	Items 22, 23, 24 and 28 were categorized as "Qualification Not Established". Areas of expressed concern were	1) Additional documentation has been obtained from the vendor to establish positive similarity.
23	MO-3008 Actuates Low Pressure Coolant Injection Valves		1) Inadequate similarity between installed equip- ment and the test	2) There are no motor-brake assemblies on any Palisades MOVs.
24	MO-3015, 3016 Actuates Shutdown Cooling Valves		specimen and 2) no infor- mation supplied on motor- brake assemblies	
28	MO-3007, 3009, 3011, 3013, 3062, 3064, 3066, 3068 Actuates High Pressure Safety Injection Valves			
29	MO-1042A, 1043 Actuates Pressurizer PORV Isolation Valves		Note: Item 29 was removed from the list.	
25	MO-3080, 3081 Actuates HPSI Mode Selection Valve (Long-Term Cooling)	II.A	Items 25, 26, and 27 were categorized as "Qualifica- tion Not Established". Areas of expressed concern were 1) Inadequate simi- larity between installed equipment and the test specimen, 2) Identification of materials used in the motor and motor lead insulations, and 3) Infor- mation on motor-brake assemblies.	1) Additional documentation has been obtained from the vendor to establish positive similarity.
26	MO-3189, 3190, 3198, 3199 Actuates Shutdown Cooling Isolation Valve			2) Limitorque has stated that their motor insulation consists of either RAD H or RH insulation - both qualified. Motor lead insulation is either Raychem Flamtrol or Rockbestos Firewall III -both qualified.
27	MO-3082, 3083 Actuates HPSI Mode Selection Valves			3) There are no motor-brake assemblies on any Palisades MOVs.

C. Position Switches (POS)

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
40	POS-0437A, 0437B Hydrazine Flow Control Valve Position Switch	II.A	Information on specified environment.	Verified mild environment, no steam exposure. Thus removed from list.
42	POS-0861, 0862, 0864, 0865, 0867, 0869, 0870, 0873 Position Indication for SW Valve for Containment Air	I.B	Items 42, 43, and 44 not qualified.	These switches will be replaced.
43	POS-0338, 0342, 0346, 0347 Safety Injection Tank Valve Position Indication			POSS were removed from list.
44	POS-2117 Position Indication for Pressurizer Auxiliary Spray Valve POS-2113, 2115 Charging System Stop Valve Position Indication			These switches will be replaced.

D. Flow, Level, and Pressure Transmitters and Level Elements (FT, LT, PT, and LE)

51	FT-0316, 0317 Transmits HPSI Hot-Leg Flow	II.B	LOCA test failure of the polyethylene O-ring.	O-rings shall be replaced this outage and each time the cover is removed for servicing in the future.
52	FT-0736A, 0737A Transmits Auxiliary Feedwater Flow	II.C	Items 52 and 53 have insufficient qualified life. They are only qualified for 10 years.	A replacement schedule has been established using the Arrhenius methodology and vendor's recommendations.
53	FT-0736, 0737 Transmits Auxiliary Feedwater Flow			

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
54	LE-0446A, 0446B Measures Containment Water Level	II.A	Lack of qualification documentation.	Qualification testing has been completed and documentation received.
55	LS-1105, 1108 Actuates ESF Room Sump Pumps	I.B	Not qualified for accident conditions.	Will be replaced upon redesign of entire sump pump system.
56	LT-0358, 0359 Transmits Containment Sump Level	II.B	No qualification data.	Replaced by LT-6 Remove from list.
57	LT-0751 A, B, C, D, LT-0752A, B, C, D Transmits SG Level-Reactor Trip Alarm and Indication	I.B	Items 57 and 58 are not qualified for accident conditions.	Will be replaced.
58	LT-0701, 0702, 0703, 0704 Transmits SG Level and Pressure for Feedwater Control			
59	LT-0383, 0382 Transmits Containment Sump Level	II.C	Insufficient qualified life These are only qualified for 10 years.	A replacement schedule has been established using the Arrhenius methodology and vendor's recommendations.
60	PT-0306 Transmits LP Safety Injection Discharge Pressure	I.B	Not properly qualified for aging properties.	Will be replaced.
61	PT-0103 Transmits Pressurizer Wide-Range Pressure	I.B	No qualification data.	Pressure now received from different X-MTR. Remove from list.
62	PT-0102A, B, C, D Transmits Pressurizer Pressure	I.B	Insufficient submergence and radiation qualification.	Will be replaced and relocated.
63	PT-0751A, B, C, D Transmits SG Pressure	I.B	No aging data to demonstrate qualification for long-term post-LOCA operation.	Will be replaced.

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
64	PT-0377 HPSI Hot-Leg Pressure Measurement	II.B	Items 64 and 65 experienced LOCA-test failure of the polyethylene O-ring.	O-rings shall be replaced this outage and each time the cover is removed for servicing in the future.
65	PT-0105A, 0105B Overpressure Protection and PCS Pressure Indicator			
66	PT-1805A, 1812A Transmits Containment Pressure	II.C	Insufficient qualified life. They are only qualified for 10 years.	A replacement schedule has been established using the Arrhenius methodology and vendor's recommendations.
142	LT-0103 Transmits Pressurizer Level	I.B	Not qualified.	Not required for safe shutdown, could be removed from list. But will be replaced.
143	PT-0752A, B, C, D Transmits Steam Generator Pressure	I.B	No aging data to demonstrate qualification for long-term post-LOCA operation.	Will be replaced.

E. Radiation and Temperature Elements, Temperature Switches, and Electropneumatic Positioners (RE, TE, TS, and E/P)

67	RE-2321, 2322 Monitor Radiation Levels Inside Containment	II.A	Lack of adequate similarity between actual and test equipment installation	Additional documentation provides proof of similarity.
68	TS-1849 through 1852, 1856 through 1859	I.B	No qualification data	Will be replaced.
69	TE-0112CA, CB, CC, CD, HA, HB, HC, HD TE-0122 CA, CB, CC, CD, HA, HB, HC, HD TE-0111A, B, H; TE-0121A, B, H	I.B	Not properly qualified for accident conditions	Will be replaced.
70	RE-1805, 1806, 1807, 1808	I.B	No aging data available	Will be replaced.
73	E/P-3025 Lineup and Monitor Shutdown Cooling Flow	II.A	Lack of qualification documentation	Will be replaced.

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
74	E/P-0736, 0737 Operates Auxiliary Feedwater Control Valve	I.B	Lack of aging data.	Have been replaced with E/P-0736A and 0737A. Remove from list.
F. Electric Motors (EMA, EMB)				
75	EMB-1208, 1209, 1210, 1108 Drive Containment Air Coolers	I.B	Qualification tests did not envelope LOCA conditions.	Will be replaced.
76	EMB-0131, 0133, 0211, 0221 Drives ESF Room Air Coolers	I.B	Items 76 and 77 lack qualification data.	Will be replaced.
77	EMB-0155, 0165, 0245, 0255. Drives Injection Room Sump Pump			
78	EMA-1206 Drives Low Pressure Safety Injection Pump P-67A	II.A	Lack of qualification data.	Additional documentation provides qualification.
80	EMA-1210, 1112, 1114 Drives Containment Spray Pump	II.A	Lack of qualification data.	additional documentation provides qualification.
81	EMA-1113, 1207, 1209 Drives High Pressure Safety Injection Pump		Lack of qualification data.	Additional documentation expected from the vendor.
82	EMA-1111 Drives Low Pressure Safety Injection Pump	II.A	Lack of qualification data.	Additional documentation provides qualification.
G. Miscellaneous Equipment (Misc)				
96 102	Electrical Connections	II.A		Items 96 and 102 are redundant to other TER items. Remove from list.
97	Junction Boxes with Terminal Blocks for Containment Air Coolers	I.B	Not Qualified.	Replaced with States Co type ZWM, see Misc 7-1.
98	Terminal Blocks Inside Containment	II.A	Items 98 and 99 had anomalies observed during testing.	Additional analyses and documentation provide qualification.
99	Electrical Penetration Connector Assemblies			

H. Cables

TER Item No	Description	NRC Category	Deficiencies	Proposed Resolution
105 141	FR-EP/CPE - Anaconda	II.A	Items 105 and 141 lack adequate similarity between installed and tested cable.	Additional documentation provides proof of similarity.
109 116 117	XLPE - G.E.	II.A	Items 109, 116, and 117 have the following concerns: 1) Inadequate qualification documentation 2) Inadequate similarity between installed and tested cable 3) Submergence criteria not satisfied.	Additional documentation provides proof of qualification and similarity. Efforts are underway to relocate equipment that could be exposed to submergence inside containment.
113 119 126 135	Anixter Cable			Items 113, 119, 126, 135 not used in Palisades safety circuits. Remove from list.
121 131	Collyer Cable			Items 121 and 131 not used in Palisades safety circuits. Remove from list.
124	EPDM-HYPALON/PVC - Samuel Moore	II.A	Lack of similarity between installed and tested cable.	Additional analyses and documentation proves similarity.
127	FR-EP/CPE - Anaconda		Lack of qualification documentation	Additional documentation provides proof of qualification.