SEABROOK STATION
Engineering Office

PSNH

Public Service of New Hampshire

May 7, 1986

SBN-1031
T.F. I99.99.10, B7.1.2

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. Vincent S. Noonan, Project Director
PWR Project Directorate No. 5

References:
(a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) Environmental Qualification Site Audit dated February 24-27, 1986
(c) PSNH Letter (SBN-998) dated April 10, 1986, "Response to Environmental Qualification Audit Observation", J. DeVincentis to V. S. Noonan

Subject: Environmental Qualification: Evaluation Work Sheets

Dear Sir:

In accordance with our conversations with your Staff on April 18 and April 29, 1986; enclosed, as Attachment 1, are the 20 revised Qualification Evaluation Work Sheets.

Also, since our last transmittal [Reference (c)], the total package count has increased to 112 packages which leaves 15 Qualification Evaluation Work Sheet packages to be submitted to the NRC. Enclosed, as Attachment 2, please find the remaining 15 work sheet packages.

We have also included hererin, as Attachment 3, a revised copy of the work sheet for File 600-01-04 which should replace the copy transmitted under Reference (c).

We trust the information provided herewith is acceptable and request that the satisfactory resolution of this issue be reflected in the Staff's status report to the Atomic Safety and Licensing Board.

Very truly yours,

John DeVincentis
Director of Engineering

Attachments

cc: Atomic Safety and Licensing Board Service List

A048
1/1

ATTACHMENT 1

Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 113-03-01

Prepared By: Guy A Moore Date: 4/30/86
Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-113-03 Equipment ID No(s).: EDE-CBL-1 Equipment Type: 600 Volts Power Cable Manufacturer: Okonite Model Number: 600 Volt w/Okonite (EPR) Insulation Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment Building (All Zones) Rad Zone: Primary Aux. Building (PB-15A, PB-18) Note 1	Operating Time	1 Year	2 p. 1	1 Year Note 2	3 Appendix 4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	2 p. 1	390	3 p. 3 5	Test	None
	Peak Pressure (Psig)	60	2 p. 1 Appendix 5	112	3 p. 3, 9	Test	None
	Relative Humidity (%)	100	2 p. 1	100	p. 3, 7	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% WT pH = 7.5 - 10.5	2 p. 1	Boric Acid 1.7% WT pH = 10.5	4, 3 p. 4 Appendix 4 p. 7	Test	None
	40 Year Normal Radiation Dose (Rads)	2×10^8	2 p. 1	2×10^8	3 p. 3, 9	Test	None
	Year Accident Radiation Dose (Rads)	---	2 p. 1				
	Aging (^{o}F/Years)	194/40 (90^{o}C)	1 pp. 3, 4	194/40 (90^{o}C)	3 Appendix 2	Test and Analysis	None
Lowest Elevation: (-)23'8" Flood Level: (-)20'8" Above Flood Level: No	Submergence	3' Below Flood Level	7, 8, 10	30 days	9 Note 2	Test and Analysis	None

Documentation References:
1. UE&C Specification No. 9763-006-113-3, Rev. 2, dated 11/30/82.
2. UE&C Drawing No. 9763-F-300219, Rev. 17, Service Environment Chart, dated 7/22/85.
3. FP-31412-06, Nuclear Qualification Document for Okonite Insulated Cable.
4. Seabrook E.Q. File No. 113-03-01, Assessment Checklist, Note 9.
5. Seabrook E.Q. File No. 113-03-01, Assessment Checklist, Note 2.
6. SBU-92605, UE&C's letter to Impell, dated 2/13/85.
7. SBU-96263, Seabrook Station Flooding Study Matrix.
8. Impell Leter No. 0570-032-156, dated 2/2/86.
9. Seabrook E.Q. File No. 113-03-01, Assessment Checklist, Note 3.
10. Memorandum from G. Moore (Impell) to A. Biswas (Impell, 2/22/86.

Notes:
1. The limiting radiation zones are PB-15A and PB-18. Zones PB-4 and PB-19 have been exluded since no electrical equipment is installed in these zones (Reference 6).
2. Inside containment, this cable is connected to motor operated valves SI-V-17 and 32 and CS-V-149. These valves perform safety functions within 24 hours during a LOCA or MSLB. Only the cable connected to these valves may be submerged during these events; however, it is qualified for 30 days when submerged (Ref. 9) during which time all the valves' safety functions will be completed. After 30 days, this equipment will not fail in a manner detrimental to plant safety or mislead the operator. Areas outside containment will be pumped down prior to exceeding the 30 day submergence qualification time.

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO.113-06-02

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Guy A Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-113-06 Equipment ID No(s).: EDE-CBL-4 Equipment Type: Cable Manufacturer: Brand-Rex Model Number: 300V Instrument & Thermocouple Extension Cable Accuracy: Spec: N/A Demon: N/A Note 3 Limiting Environment: Location: Containment Building Rad Zone: Primary Aux. Building (PB-15A, PB-18) Note 1	Operating Time	1 Year	2 p. 1	1 Year	3 p. 19 4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	2 p. 1	385	3 Attachment I p. 19	Test	None
	Peak Pressure (Psig)	60	2 p. 1	113	3 Attachment I p. 19	Test	None
	Relative Humidity (%)	100	2 p. 1	100	3 Attachment I p. 19	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5 to 10.5	2 p. 1	Boric Acid 3.6% by wt. pH 7.5 to 10.5	3 p. 15 6	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	2 p. 1, Note 1	2.0×10^{8}	3 p. C-2	Test	None
	1 Year Accident Radiation Dose (Rads)	-----	2 p. 1				
	Aging (^{o}F/Years)	194/40 (90^{o}C)	1 p. 7	194/40 (90^{o}C)	3 Attachment II	Test and Analysis	None
Lowest Elevation: 4'-5" Flood Level: 5'-5" Above Flood Level: No	Submergence	1' Below Flood Level	8, 9 and 10	30 Days	11 Note 2	Test and Analysis	None

Documentation References:

1. UE&C Specification No. 9763-006-113-6, Rev. 2, 300V Instrument Cable, 11/30/82.
2. UE&C Drawing No. 9763-F-300219, Rev. 17, Service Environment Chart, 7/22/85.
3. FP-31732-03, FRC Report No. F-C5120-4, Qualification of Instrumentation Cables in a Simulated Steam Line Break and Loss-of-Coolant-Accident Environment, 4/12/82.
4. Impell Calculation, 0570-032-004.
5. SBU-92605, UE&C's letter to Impell, dated 2/13/85
6. Seabrook E.Q. File No. 113-06-02, Assessment Checklist, Note 11.
7. Seabrook E.Q. File No. 113-06-02, Assessment Checklist, Note 10.
8. SBU-96263, UE&C letter, "Flooding Study Matrix".
9. Impell Letter No. 0570-032-NY-156, 2/2/86
10. Impell Memorandum from G. Moore to A. Biswas, dated 2/22/86.
11. Seabrook E.Q. File No. 113-06-02, Assessment Checklist, Note 7.

Notes:

1. The limiting zones for radiation are Zones PB-15A and PB-18. Environmental Zones PB-4 and PB-19 have been excluded since no electrical equipment is installed in these areas. (Reference 5)
2. Areas outside containment will be pumped down prior to exceeding the 30 day submergence qualification time.
3. Thermocouple Cable is not required to perform an active safety function subsequent to accident events (Reference 7), and accuracy does not have to be addressed.

Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 113-17-01

Prepared By: Guy A Moore Date: 4/30/86
Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-113-17 Equipment ID No(s).: EDE-CBL-2 Equipment Type: 600 V Control Cable Manufacturer: Anaconda Model Number: FR-EP, 600V Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Containment (All Zones) Rad Zone: Primary Aux. Bldg. (PB-15A, PB-18) Note 1	Operating Time	1 Year	1 Sheet 1	1 Year Note 2	4, p. 4-1, 5, p. 4-2, 6, p. 10 7, Point 3, 6 9	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 Sheet 1	385	5 p. 3-10, 4-2	Test	None
	Peak Pressure (Psig)	60	1 Sheet 1	66	5 p. 3-10, 4-2	Test	None
	Relative Humidity (%)	100	1 Sheet 1	100	5 p. 4-2	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH=7.5 to 10.5	1 Sheet 1	Boric Acid 3.54% by wt. pH=7.5 to 10.5	5 p. 3-10, 4-2,4-3 7, point 5 8	Test	None
	40 Year Normal Radiation Dose (Rads)	2×10^8	1, Sheet 3 Note 1	2×10^8	5 p. 3-2 Appendix C	Test	None
	1 Year Accident Radiation Dose (Rads)	---	1, Sheet 3				
	Aging (^{o}F/Years)	160.7/40 (71.5^{o}C)	3	160.7/40 (71.5^{o}C)	2	Test and Analysis	None
Lowest Elevation: (-)23'0" Flood Level: (-)20'8" Above Flood Level: No	Submergence	3' Below Flood Level	11, 13 and 14	30 days	12 Note 2	Test and Analysis	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Revision 17, Service Environment Chart, 7/22/85.
2. FP-32541-02, Attachment AT-1 to FIRL Technical Report No. F-C4969-1, 7/13/81.
3. MM-#8110A, UE&C Memorandum, dated 12/1/81.
4. FP-32540-02, Attachment AT-2 to F-C4969-1, July 1980.
5. FP-32538-02, FIRL Report No. F-C4969-1, Qualification Test of Class IE Electric Cable in a simulated SLB and LOCA Environment, July 1979.
6. FP-33266-01, ACTON Environmental Testing Corporation, Test Report No. 16587-81N, Revision 1, 7/23/81.
7. VU032814, Anaconda-Ericsson Letter to UE&C, dated 1/6/82.
8. Seabrook E.Q. File No. 113-17-01, Assessment Checklist, Note 3.
9. Seabrook E.Q. File No. 113-17-01, Assessment Checklist, Note 2.
10. SBU-92605, Letter from UE&C to Impell, dated 2/13/85.
11. SBU-96263, Seabrook Station Flooding Study Matrix.
12. Seabrook EQ File No. 113-17-01, Assessment Checklist, Note 13.
13. Impell Letter No. 0570-032-NY-156, 2/2/86.
14. Memorandum from G. Moore (Impell) to A. Biswas (Impell), 2/22/86.

Notes:

1. The limiting radiation zones are PB-15A and PB-18. Environmental Zones PB-4 and PB-19 are excluded since no electrical equipment is installed in these areas (Ref. 10)
2. Inside containment, this cable is connected to motor operated valves SI-V-17 and 32 and CS-V-149. These valves perform their safety functions within 24 hours during a LOCA or MSLB. Only the cable connected to these valves may be submerged during these events; however, it is qualified for 30 days when submerged (Ref. 12) during which time all the valves' safety functions will be completed. After 30 days, this equipment will not fail in a manner detrimental to plant safety or mislead the operator. Areas outside containment will be pumped down prior to exceeding the 30 day submergence qualification time.

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 113-18-01

Prepared By: Jim Buckley Date: 9/30/86
Checked By: Guy A Moore Date: 4/10/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-113-18 Equipment ID No(s).: EDE-CBL-3 Equipment Type: Instrumentation Cable Manufacturer: Anaconda Model Number: 300 Volt, FR-EP Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Containment (All Zones) Rad Zone: Primary Aux. Bldg. (Note 1)	Operating Time	1 Year	2 p. 1	1 Year Note 2	4, p. 10 5, p. 4-2 10, p. 4-1 6, Points 3, 6 7	Test and Analysis	None
	Peak Temperature (^{o}F)	375	2 p. 1	385	5 p. 3-10, 4-2	Test	None
	Peak Pressure (Psig)	60	2 p. 1	66	5 p. 3-10, 4-2	Test	None
	Relative Humidity (%)	100	2 p. 1	100	5 p. 4-2	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by Wt. pH 7.5 to 10.5	2 p. 1	Boric Acid 3.54% by Wt. pH 7.5 to 10.5	5, p. 3-10, 4-2, 4-3 6, Point 5 9	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	2 p. 3, Note 1	$2. \times 10^{8}$	5 p. 3-2 Appendix C	Test	None
	1 Year Accident Radiation Dose (Rads)	---	2 p. 3				
	Aging (^{o}F/Years)	194/40 (90^{o}C)	1 p. 5	194/40 (90^{o}C)	4 p. 6	Test and Analysis	None
Lowest Elevation: (-)22'8" Flood Level: (-)20'8" Above Flood Level: No	Submergence	2' Below Flood Level	8, 11 and 12	30 Days	13 Note 2	Test and Analysis	None

Documentation References:

1. UE&C Specification No. 9763-006-113-18, Rev. 1, Specification for 300 Volt Instrument Cable, 11/30/81.
2. UE&C Drawing No. 9763-F-300219, Rev. 17, Service Environment Chart, 7/22/85.
3. SBU-92605, UE&C Letter, dated 2/13/85.
4. FP-33266-01, ACTON Test Report No. 16587-81N, 7/23/81.
5. FP-32652-02, FIRL Report F-C4969-1, Qualification Test of Class IE Electric Cable in a Simulated SLB and LOCA Environment, 7/80.
6. VU32814, Anaconda's letter to UE&C, dated 1/6/82.
7. Seabrook EQ File No. 113-18-01, Assessment Checklist, Note 3.
8. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix.
9. Seabrook EQ File No. 113-18-01, Assessment Checklist, Note 12.
10. FP-32654-02, Attachment AT-2 to FIRL Report No. F-C4969-1, 7/13/81.
11. Impell Letter No. 0570-032-NY-156, 2/2/86.
12. Impell Memorandum from G. Moore to A. Biswas, 2/22/86.
13. Seabrook EQ File No. 113-18-01, Assessment Checklist, Note 14.

Notes:

1. The limiting zones for radiation are PB-15A and PB-18. Zones PB-4 and PB-19 have been excluded since no electrical equipment is installed in these areas (Reference 3).
2. Inside containment, this cable is connected to motor operated valves SI-V-17 and 32 and CS-V-149. These valves perform their safety functions within 24 hours during a LOCA or MSLB. Only the cable connected to these valves may be submerged during these events; however, it is qualified for 30 days when submerged (Ref. 13) during which time all the valves' safety functions will be completed. After 30 days, this equipment will not fail in a manner detrimental to plant safety or mislead the operator. Areas outside containment will be pumped down prior to exceeding the 30 day submergence qualification time. 3

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 113-20-01

Prepared By: Guy A Moore Date: 4/30/86

Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-113-20 Equipment ID No(s).: EDE-CBL-7 Equipment Type: Instrument Cable Manufacturer: ITT Surprenant Model Number: 300V Instrument Cable Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment Building (All Zones) Rad Zone: Primary Aux. Building (PB-15A, PB-18) Note 1	Operating Time	1 Year	1 p. 1	1 Year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	390	2, p. 11	Test	None
	Peak Pressure (Psig)	60	1 p. 1	113	2, p. 11	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2, p. 11	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by Wt. pH 7.5 to 10.5	1 p. 11	Boric Acid 1.7% by Wt. pH 10.5	2, p. 11 6	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p. 1 Note 1	2.20×10^{8}	2, p. 1	Test	None
	1 Year Accident Radiation Dose (Rads)	---	1 p. 1				
	Aging (^{o}F/Years)	194/40 (90^{o}C)	3 p. 3	208/40 (98^{o}C)	4, 5	Test and Analysis	None
Lowest Elevation: (-)23'8" Flood Level: (-) 20'8" Above Flood Level: No	Submergence	3' Below Flood Level	8, 9 and 10	30 Days	11 Note 2	Test and Analysis	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Rev. 17, Service Environment Chart, 7/22/85.
2. FP-33835-01, FIRL Report F-A5550-8, dated 1/14/83.
3. UE&C Specification 9763-006-113-20, Rev. 1, 12/7/85.
4. Letter of March 16, 1983 from J. Sibley (ITT Surprenant) to R. Mizzau (UE&C).
5. FP-33829-01, Letter of 1/13/83 from J. Sibley (ITT Surprenant) to E.H. Case (UE&C).
6. Seabrook E.Q. File No. 113-20-01, Assessment Checklist, Note 8.
7. SBU-92605, UE&C's letter to Impell, 2/13/85.
8. SBU-96263, UE&C Flooding Study Matrix.
9. Impell Letter No. 0570-032-NY-156, 2/2/86.
10. Impell Memorandum from G. Moore to A. Biswas, 2/22/86.
11. Seabrook E.Q. File No. 113-20-01, Assessment Checklist, Note 9.

Notes:

1. The limiting environment for radiation are Zones PB-15A and PB-18. Environmental Zones PB-4 and PB-19 have been excluded since noelectrical equipment is installed in these areas (Ref. 7).
2. Inside containment, this cable is connected to motor operated valves SI-V-17 and 32 and CS-V-149. These valves perform their safety functions within 24 hours during a LOCA or MSLB. Only the cable connected to these valves may be submerged during these events; however, it is qualified for 30 days when submerged (Ref. 11) during which time all the valves' safety functions will be completed. After 30 days, this equipment will not fail in a manner detrimental to plant safety or mislead the operator. Areas outside containment will be pumped down prior to exceeding the 30 day submergence qualification time.

Revision 2

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 129-01-01

Prepared By: Roy A Moore Date: 4/30/86
Checked By: Jim Buckley Date: 4/24/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-129-01 Equipment ID No(s).: EDE-MM-584 Equipment Type: Fuse Blocks and Fuses Manufacturer: Underwriters Safety Device Company/ Gould Model Number: J60030-2SR A4J30 Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Electrical Penetration Area (ET3B) Rad Zone: Electrical Penetration Area (ET3B)	Operating Time	1 Year	[1] p. 1	1 Year	[2] p. 6 - 4 Note 1	Test	None
	Peak Temperature (^{o}F)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Peak Pressure (Psig)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Relative Humidity (%)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^3	[1] p. 4	1.43×10^7	[2] p. 6-4	Test	None
	1 Year Accident Radiation Dose (Rads)	3.4×10^4	[1] p. 4				
	Aging (^{o}F/Years)	85/40	[1] p. 4	104/36.66	[2] p. 6-3 [5]	Test and Analysis	None
Lowest Elevation: N/A Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	[4]	N/A	N/A	N/A	None

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Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34333-01, Acton Qualification Test Report No. 18950-84N, for USD Fuse Blocks to be used at Seabrook Station, dated 12/7/84.
3. Seabrook EQ File No. 129-1-01, Assessment Checklist, Note 2.
4. SBU-96263, UE&C Letter, "Flooding Study Matrix".
5. Seabrook E.Q. File NO. 129-01-01, Assessment Checklist, Note 7

Notes:

1. The equipment is located in the Electrical Penetration Area where radiation is the only harsh environmental parameter.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 129-01-01

Prepared By: Jay A Rowe Date: 4/30/86
Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-129-01 Equipment ID No(s).: EDE-MM-584	Operating Time	1 Year	[1] p. 1	1 Year	[2] p. 5 -3 Note 1	Test	None
	Peak Temperature (°F)	N/A	N/A Note 1	N/A	N/A	N/A	None
Equipment Type: Terminal Blocks	Peak Pressure (Psig)	N/A	N/A Note 1	N/A	N/A	N/A	None
Manufacturer: Westinghouse Model Number: TBAL-90	Relative Humidity (%)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
Accuracy:Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	1.0×10^3	[1] p. 4	1.87×10^8	[2] p. 5-3	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	3.4×10^4	[1] p. 4				
Location: Electrical Penetration Area (ET3B) Rad Zone: Electrical Penetration Area (ET3B)	Aging (°F/Years)	85/40	[1] p. 4	114/41	3	Test and Analysis	None
Lowest Elevation: N/A Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	4	N/A	N/A	N/A	None

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Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-32766-06, Acton Test Report No. 16751-82N, Environmental and Seismic Qualification of Class 1E Terminal Blocks, Rev. 2, 2/6/83.
3. Seabrook EQ File No. 129-01-01, Note 7 of Assessment Checklist.
4. SBU-96263, UE&C Letter, "Flooding Study Matrix"

Notes:

1. The equipment is located in the Electrical Penetration Area where radiation is the only harsh environmental parameter.

Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 172-01-01

Prepared By: [illegible] Date: 5/1/86

Checked By: Jim Buckley Date: 5/2/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-172-01 Equipment ID No(s).: RM-RE-6535A, B RM-RI-6535A, B RM-RM-6535A RM-RM-6535B Equipment Type: Radiation Element, Indicator and Monitor Manufacturer: GA Technologies, Inc. Model Number: RD-10B RL-10 RM-80 Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment Building (All Zones) Rad Zone: Containment Bldg (Gen. Area/Not Submerged) Lowest Elevation: (-)25'-2" Flood Level: (-)20'-8" Above Flood Level: Yes Note 3	Operating Time	62 Minutes	5	7 Hours	3	Test and Analysis	None
	Peak Temperature (^{o}F)	116	3	131	2 App. E-4 p. 18	Test	None
	Peak Pressure (Psig)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Relative Humidity (%)	N/A	N/A Note 1	98	2 App. E-4 p. 17	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1.35×10^{2}	3 6 Note 2	1.1×10^{3}	2 p. 4-1	Test and Analysis	None
	1 Year Accident Radiation Dose (Rads)	8.40×10^{2}	3 6 Note 2				
	Aging (^{o}F/Years)	95/40	3	95/40	2 p. 4-2	Test and Analysis	None
	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-72747-01, Qualification Test Report No. E-255-996, dated 12/7/82.
3. Seabrook E.Q. File No. 172-01-01, Assessment Checklist No. 1, Note 2.
4. SBU-96263, Seabrook Station Flooding Study Matrix.
5. SBN-1024, Environmental Qualification; Post Accident Operability Time, dated 4/30/86.
6. YAEC Memorandum, SB-N02-04.08, E.Q. Dose Spec., dated 5/5/86.

Notes:

1. This equipment is required to function during a Fuel Handling Accident (FHA) only. It will be installed in containment only during outages, and will not be inside containment during normal plant operation. During a FHA, the only above normal environmental parameters to which this equipment will be exposed to are increased temperature and radiation.
2. Normal and accident radiation doses correspond to 25 refueling cycles (90 days each = 2250 days) and 1 day of Fuel Handling Accident operating time (Reference 6), respectively.
3. RM-RM-6535B is located below postulated LOCA/MSLB flood levels. However, equipment will not be installed inside containment whenever a LOCA/MSLB could occur (see Note 1).

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EQUIPMENT QUALIFICATION FILE NO. 172-01-01

Prepared By: Guy A Marr Date: 5/2/86
Checked By: Jam Buckley Date: 5/2/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-172-01 Equipment ID No(s).: RM-RE-6576A, RM-RE-6576B Equipment Type: Radiation Element Manufacturer: General Atomic Model Number: RD-23 (0360-2062) Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Containment Building (Zone CS-13) Rad Zone: Containment Building (General Area/ Not Submerged)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	400	2 App. 9 p. 12	Test	None
	Peak Pressure (Psig)	60	1 p. 1	77	2 App. 9 p. 17	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 App. 9 p. 4	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH = 7.5-10.5	1 p. 1	Boric Acid 1.72% by wt. pH = 10.5	2 App. 9 p. 18 4	Test	None
	40 Year Normal Radiation Dose (Rads)	2×10^{7}	1 p. 1	2.9×10^{8}	3	Test and Analysis	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	120/40	3	Test and Analysis	None
Lowest Elevation: 30'-0" Flood Level: (-)20'-8" Above Flood Level: Yes	Submergence	N/A	5	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-72746-01, Design Qualification Testing of Analog HRRM (RD-23) Rev. 1, dated 5/1/81.
3. Seabrook E.Q. File No. 172-01-01, Assessment Checklist No. 3, Note 2.
4. Seabrook E.Q. File No. 172-01-01, Assessment Checklist No. 3, Note 3.
5. SBU-96263, Seabrook Station Flooding Study Matrix.

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EQUIPMENT QUALIFICATION FILE NO. 172-01-01

Prepared By: Jay A Mone Date: 5/7/86
Checked By: Jim Buckley Date: 5/7/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-172-01 Equipment ID No(s).: RM-SKD-53-1, RM-SKD-53-2 (Note 1), RM-RM-6528 Equipment Type: Wide Range Gas Monitoring Detection and Sample Conditioning Skids Radiation Monitor Manufacturer: GA Technologies, Inc. Model Number: P/N 0366-1001, P/N 0366-2001, RM-80 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Primary Auxiliary Building (Zone PB-8) Rad Zone: Primary Auxiliary Building (Zone PB-8)	Operating Time	1 year	1 p. 1	1 year	2	Test and Analysis	None
	Peak Temperature (^{o}F)	130	5	131	2 3 App. B p. 5	Test	None
	Peak Pressure (Psig)	N/A	N/A Note 2	N/A	N/A	N/A	None
	Relative Humidity (%)	N/A	N/A Note 2	95	3 App. B p. 5	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	N/A	N/A Note 2	N/A	N/A	N/A	None
	1 Year Accident Radiation Dose (Rads)	N/A	N/A Note 2				
	Aging (^{o}F/Years)	104/40	1 p. 3	104/9	2	Test and Analysis	None
Lowest Elevation: 28'-6" Flood Level: (-)21'-6" Above Flood Level: Yes	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. Seabrook E.Q. File No. 172-01-01, Assessment Checklist No. 2, Note 2.
3. FP-72745-02, Qualification Report for WRGM No. E-255-968, Rev. 1, dated 6/81.
4. SBU-96263, Seabrook Station Flooding Study Matrix.
5. UE&C Memorandum No. 29267A, dated 4/2/86.

Notes:

1. Includes I.D. Nos. RM-FCV-6528-1, -2; RM-FI-6528-1, -2; RM-FT-6528-1, -2; RM-FY-6528-1, -2,-3,-4,-5,-6,-7,-8,-9,-10; RM-P-240-1, -2; RM-RC-6528-2; and RM-RE-6528-1, -2 & -3.
2. Qualification required for LOCA and FHA events only. Therefore, the only harsh environmental condition this equipment will be exposed to is temperature.

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EQUIPMENT QUALIFICATION FILE NO. 172-01-01

Prepared By: Guy A Thomas Date: 5/2/86
Checked By: Jim Buckley Date: 5/7/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-172-01 Equipment ID No(s).: RM-RE-6527A, RM-RE-6527B Equipment Type: Radiation Element Manufacturer: GA Technologies, Inc. Model Number: RD-7 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Primary Aux. Building (Zone PB-11) Rad Zone: Primary Aux. Building (Zone PB-11) Lowest Elevation: 25'-0" Flood Level: (-)21'-6" Above Flood Level: Yes	Operating Time	1 year	1 p. 1	1 year	5	Test and Analysis	None
	Peak Temperature (^{o}F)	135	1 p. 3	165	2 App. B, p. 10 5	Test	None
	Peak Pressure (Psig)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Relative Humidity (%)	N/A	N/A Note 1	95	2 App. B, p. 10	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	2.5×10^2	5 6 Note 2	1.1×10^3	3 p. 4-1	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^2	6				
	Aging (^{o}F/Years)	104/40	1 p. 3	Note 2 104/40	3 p. 4-2 5	Test and Analysis	None
	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-73171-01, Qualification Test Report No. E-255-999, dated 7/7/81.
3. FP-73747-01, Qualification Test Report No. E-255-966, dated 12/7/82.
4. SBU-96263, Seabrook Station Flooding Study Matrix.
5. Seabrook E.Q. File No. 172-01-01, Assessment Checklist No. 1, Note 2.
6. UE&C Calculation 44.14-70F Total Integrated Dose Tables, Rev. 2, 5/15/84.

Notes:

1. Qualification required for LOCA and FHA events only. Therefore, increased temperature and radiation are the only above normal environmental conditions to which this equipment may be exposed (Reference 1).
2. The normal radiation dose is reduced to ensure that the qualified dose of 1.1×10^3 rads envelopes the postulated normal and 1 year accident dose with margin. The 2.5×10^2 normal dose is equivalent to 10 years (Reference 5). Therefore, the qualified life of this equipment is 10 years based on radiation aging and 40 years based on thermal aging.

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EQUIPMENT QUALIFICATION FILE NO. 172-01-01

Prepared By: Guy A Moore Date: 5/2/86
Checked By: Jim Buckley Date: 5/7/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-172-01 Equipment ID No(s).: RM-RM-6527A, RM-RM-6527B Equipment Type: Radiation Monitor Manufacturer: GA Technologies, Inc. Model Number: RM-80 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Primary Aux. Building (Zone PB-28) Rad Zone: Primary Aux. Building (Zone PB-28)	Operating Time	1 year	1 p. 1	1 year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	125	1 p. 3	131	2 App. E-1, p. 18 4	Test	None
	Peak Pressure (Psig)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Relative Humidity (%)	N/A	N/A Note 1	98	2 App. E-1, p. 17	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^{3}	1 p. 3	1.1×10^{3}	2 p. 4-1	Test	None
	1 Year Accident Radiation Dose (Rads)	----	1 p. 3				
	Aging (^{o}F/Years)	104/40	1 p. 3	104/40	2 p. 4-2 4	Test and Analysis	None
Lowest Elevation: 26'-9" Flood Level: (-)21'-6" Above Flood Level: Yes	Submergence	N/A	3	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-72747-01, Qualification Test Report No. E-255-996, dated 12/7/82.
3. SBU-96263, Seabrook Station Flooding Study Matrix.
4. Seabrook E.Q. File No. 172-01-01, Assessment Checklist No. 1, Note 2.

Notes:

1. Qualification required for LOCA and FHA events only. Therefore, increased temperature is the only harsh environmental condition to which this equipment may be exposed (Reference 1).

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EQUIPMENT QUALIFICATION FILE NO. 172-01-01

Prepared By: Greg A Mrw Date: 5/2/86
Checked By: Jim Buckley Date: 5/7/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-172-01 Equipment ID No(s).: RM-RE-6566, RM-RM-6566 Equipment Type: Radiation Monitor Manufacturer: GA Technologies, Inc. Model Number: RD-7, RM-80 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Containment Enclosure (Zone CE-1) Rad Zone: Containment Enclosure (Zone CE-1)	Operating Time	62 Minutes	5	2 Hours	4	Test and Analysis	None
	Peak Temperature (^{o}F)	125	1 p. 3	131	2 App. E-1, p. 18 4	Test	None
	Peak Pressure (Psig)	N/A	N/A Note 1	N/A	N/A	N/A	None
	Relative Humidity (%)	N/A	N/A Note 1	98	2 App. E-1, p. 17	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	6.0×10^2	7 Note 2	1.1×10^3	2 p. 4-1	Test	None
	1 Year Accident Radiation Dose (Rads)	4.0×10^2	6				
	Aging (^{o}F/Years)	104/40	1 p. 3	Note 2 104/40	2 p. 4-2 4	Test and Analysis	None
Lowest Elevation: N/A Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	3	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-72747-01, Qualification Test Report No. E-255-996, dated 12/7/82.
3. SBU-96203, Seabrook Station Flooding Study Matrix.
4. Seabrook E.Q. File No. 172-01-01, Assessment Checklist No. 1, Notes 2.
5. SBN-1024 Environmental Qualification; Post Accident Operability Time, dated 4/30/86.
6. SBU-99373, Seabrook Station Integrated Radiation Doses for RM-RM-6566 and RM-RE-6566 dated 5/6/86.
7. Yankee Atomic Memorandum, T. F. I5.1.00, Radiation Monitor RM 6566, dated 4/25/86.

Notes:

1. Qualification required for LOCA events only. Therefore, increased temperature is the only harsh environmental condition to which this equipment may be exposed (Reference 1).
2. The normal radiation dose is reduced to ensure that the qualified dose of 1.1×10^3 rads envelopes the postulated normal and 1 year accident dose with margin. The 6×10^2 normal dose is equivalent to 24 years. Therefore, the qualified life of this equipment is 24 years based on radiation aging and 40 years based on thermal aging.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 173-05-03

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Roy A. Hoe Date: 4/30/86

Equipment Description	Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items	
Purchase Order No.: 9763-006-173-05 Equipment ID No(s).: CC-TY-2171-4 CC-TY-2171-5 CC-TY-2271-4 CC-TY-2271-5	Operating Time	100 Days	7	204 Days	6	Test and Analysis	None	2
	Peak Temperature (^{o}F)	135	1 p. 3	335	3 p.	Test	None	
Equipment Type: E/P Transducer	Peak Pressure (Psig)	0.4	1 p. 3	8.5	3 p.	Test	None	
Manufacturer: Masoneilan Model Number: 8005A	Relative Humidity (%)	100	1 p. 3	100	3 p.	Test	None	
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None	1
Accuracy:Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	4.7×10^{6}	1 p. 3	1×10^{7}	3 p.	Test	None	
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	1.9×10^{5}	1 p. 3					1
Location: Primary Aux. Bldg. (PB-11) Rad Zone: Primary Aux. Bldg. (PB-11)	Aging (^{o}F/Years)	104/40	1 p. 3	104/13.95	5 pp. 4-6 4	Test and Analysis	None	
Lowest Elevation: 27'-0" Flood Level: (-)21'-6" Above Flood Level: Yes	Submergence	N/A	2	N/A	N/A	N/A	None	1

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. SBU-96263, Seabrook Station Flooding Study Matrix.
3. Cygna Report No. 81041-RN002, Rev. C, 2/83.
4. Seabrook Station E.Q. File No. 173-05-03, Assessment Checklist, Note 3.
5. Masoneilan Report No. 1129, dated 1/27/86.
6. Seabrook Station E.Q. File No. 173-05-03, Checklist, Note 8.
7. SBN-988, E.Q.; Post Accident Operating Time, Dated 4/3/86.

Notes:

1

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-65-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Guy A Moe Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items	
Purchase Order No.: 9763-006-248-65 Equipment ID No(s).: MS-V-204, MS-V-205, MS-V-206, MS-V-207 Note 2 Equipment Type: Actuators (and Position Switches) Manufacturer: Limitorque Model Number: SMB-00-10 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Main Steam FW Pipe Chases (PCE-2, PCW-2) Rad Zone: Main Steam FW Pipe Chases (PCE-2, PCW-2)	Operating Time	1 year	1	1 year	3	Test and Analysis	None	
	Peak Temperature (^{0}F)	325	1 p. 2	310	2 p. 14 8 Note 1	Test	None	2
	Peak Pressure (Psig)	4.8	1 p. 2	81	2 p. 16	Test	None	
	Relative Humidity (%)	100	1 p. 2	100	2 p. 18	Test	None	
	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.72% by wt. pH 10.5	2 p. 17 6	Test	None	
	40 Year Normal Radiation Dose (Rads)	1.0×10^{3}	1 p. 2	2.04×10^{8}	2 p. 12 and Appendix C	Test	None	
	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	1 p. 2					
	Aging (^{0}F/Years)	130/40	1 p. 2	Note 3 130/40	4 p. 11	Test and Analysis	None	2
Lowest Elevation: 28'-0" Flood Level: 5'-5" Above Flood Level: Yes	Submergence	N/A	5	N/A	N/A	N/A	None	

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-91743-02, Qualification Test Report, Limitorque Valve Actuators for PWR Service, Project #600456, Rev. 1, dated 12/9/75.
3. Impell Calculation No. 0570-032-060.
4. FP-93952-01, Limitorque Valve Actuator Qualification for Nuclear Power Station Service, Report # B0058, Rev. 0, dated 1/11/80.
5. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix.
6. Seabrook E.Q. File No. 248-65-01, Assessment Checklist No. 1, Note 8.
7. Seabrook E.Q. File No. 248-65-01, Assessment Checklist No. 1, Note 13.
8. Seabrook E.Q. File No. 248-65-01, Assessment Checklist No. 1, Note 1.

Notes:

1. Reference 7 demonstrates using a thermal lag test that the actuator internals will not be exposed to temperatures in excess of 228^{0}F when the external environmental MSLB temperature is 325^{0}F . Therefore the peak test temperature of 310^{0}F envelopes the actual 228^{0}F seen by the actuator internals.
2. Equipment I.D. Nos. MS-ZS-204, -205, -206, -207 are for the integral position indication within these actuators.
3. Although the qualified life as per thermal and aging is 40 years, the number of mechanical cylces during testing limits the qualified life to 16.78 years (Reference 7).

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EQUIPMENT QUALIFICATION FILE NO. 248-65-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Roy A Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-65 Equipment ID No(s).: Note 1 Equipment Type: Terminal Blocks Manufacturer: GE Model Number: GE EB5 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Main Steam FW Pipe Chases (PCE-2, PCW-2) Rad Zone: Main Steam FW Pipe Chases (PCE-2, PCW-2) Lowest Elevation: 28'-0" Flood Level: 5'-5" Above Flood Level: Yes	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	325	1 p. 2	312	2 App. E Figure 4 4 Note 2	Test and Analysis	None
	Peak Pressure (Psig)	4.8	1 p. 2	70	2 App. E Figure 4	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 Para. 3.4.2	Test	None
	Chemical Spray (pH)	N/A	N/A	Boron 2950 mg/L pH 11.2	2 App. I	Test	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^{3}	1 p. 2	2.04×10^{8}	2 Para. 3.2 and App. A	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	1 p. 2				
	Aging (^{o}F/Years)	130/40	1 p. 2	130/40	2 App. A 5	Test and Analysis	None
	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:
1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, 7/22/85.
2. Limitorque Test Report No. B0119, Qualification Type Test Report of Multipoint Terminal Strips for use in Limitorque Valve Actuators for PWR Service.
3. Impell Calculation No. 0570-032-103.
4. Seabrook EQ File No. 248-65-01, Assessment Report No. 2, Note 2.
5. Seabrook EQ File No. 248-65-01, Assessment Report No. 2, Note 6.
6. SBU-96263, Seabrook Flooding Study Matrix.

Notes:
1. The terminal blocks are used as a component of Limitorque Actuators and do not have a separate I.D. No. I.D. Nos. for the actuators are listed in QEW Sheet 1.
2. Reference 4 demonstrates using a thermal lag test that these terminal blocks, which are located inside the valve actuator, will not be exposed to temperatures in excess of 228^{o}F when the external environmental MSLB temperature is 325^{o}F. Therefore, the peak test temperature of 312^{o}F envelopes the actual 228^{o}F seen by the terminal blocks.

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EQUIPMENT QUALIFICATION FILE NO. 248-65-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Doug A Mow Date: 4/30/86

Equipment Description	Postulated Environment: Parameter	Value	Reference	Qualified Environment: Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-65 Equipment ID No(s).: Note 1 Equipment Type: Cable Manufacturer: Rockbestos Model Number: Rockbestos Firewall SIS Wire (Chemically XLPE) Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Main Steam FW Pipe Chases (PCE-2, PCW-2) Rad Zone: Main Steam FW Pipe Chases (PCE-2, PCW-2) Lowest Elevation: 28'-0" Flood Level: 5'-5" Above Flood Level: Yes	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (°F)	325	1 p. 2	341	2, p. 74 4	Test and Analysis	None
	Peak Pressure (Psig)	4.8	1 p. 2	107.5	2 p. 74	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 p. 28	Test	None
	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.7% by wt. pH 11.7	2 p. 79 5	Test	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^3	1 p. 2	2.0×10^8	2 p. 10	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^4	1 p. 2				
	Aging (°F/Years)	130/40	1 p. 2	194/40	2 p. 49	Test and Analysis	None
	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:
1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, 7/22/85.
2. Rockbestos Test Report No. QR#5804, 9/13/85.
3. Impell Calculation No. 0570-032-104.
4. Seabrook EQ File No. 248-65-01, Assessment Report No. 3, Note 2.
5. Seabrook EQ File No. 248-65-01, Assessment Report No. 3, Note 5.
6. SBU-96263, Seabrook Flooding Study Matrix.

Notes:
1. The Firewall SIS wires are used as a component of Limitorque Actuators covered under EQ File 248-65-01. There is no separate I.D. for the cables.

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EQUIPMENT QUALIFICATION FILE NO. 248-65-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Bry A. Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-65 Equipment ID No(s).: Note 1 Equipment Type: Cable Manufacturer: Rockbestos Model Number: Rockbestos Firewall SIS Wire (Irradiation XLPE) Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Main Steam FW Pipe Chases (PCE-2, PCW-2) Rad Zone: Main Steam FW Pipe Chases (PCE-2, PCW-2) Lowest Elevation: 28'-0" Flood Level: 5'-5" Above Flood Level: Yes	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (°F)	325	1 p. 2	341	2 p. 67 4	Test and Analysis	None
	Peak Pressure (Psig)	4.8	1 p. 2	117.2	2 p. 67	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 p. 65	Test	None
	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.7% by wt. pH 9.6	2 p. 64 5	Test	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^3	1 p. 2	2.0×10^8	2 p. 10 & 47	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^4	1 p. 2				
	Aging (°F/Years)	130/40	1 p. 2	194/40	2 p. 42	Test and Analysis	None
	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:
1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, 7/22/85.
2. Rockbestos Test Report No. QR#5805, 9/13/85.
3. Impell Calculation No. 0570-032-105.
4. Seabrook EQ File No. 248-65-01, Assessment Report No. 4, Note 2.
5. Seabrook EQ File No. 248-65-01, Assessment Report No. 4, Note 5.
6. SBU-96263, Seabrook Flooding Study Matrix.

Notes:
1. The Firewall SIS wires are used as a component of Limitorque Actuators covered under EQ File 248-65-01. There is no separate I.D. for the cables.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 252-16-03

Prepared By: Jim Buckley Date: 4/30/86

Checked By: Eug A Moon Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-252-16	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
Equipment ID No(s).: EAH-FIT-5791, EAH-PDT-5782, EAH-PDT-5783, EAH-PDT-5789, EAH-PDT-5790	Peak Temperature (^{o}F)	148.8	6 p. 105	420	2 p. V-278 p. VI-265	Test	None
Equipment Type: Differential Pressure Transmitter	Peak Pressure (Psig)	N/A	N/A Note 1	N/A	N/A	N/A	None
Manufacturer: ITT Barton	Relative Humidity (%)	N/A	N/A Note 1	N/A	N/A	N/A	None
Model Number: 765	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
Accuracy: Spec: 10.07% Demon: 10.07%	40 Year Normal Radiation Dose (Rads)	4.7×10^{6}	1 p. 3	50.0×10^{6}	2 p. III-6	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	$3.6\ 10^{6}$	1 p. 3				
Location: Containment Enclosure (CE-1) Rad Zone: Containment Enclosure (CE-1)	Aging (^{o}F/Years)	104/40	1 p. 1	104/40	2 p. III-4 5	Test and Analysis	None
Lowest Elevation: N/A Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-73786-02, ITT Barton Test Report #R3-765-2, Low D/P Transmitters, dated 3/5/85.
3. Impell Calculation 0570-032-120.
4. SBU-96263, Seabook Flooding Study Matrix, 10/25/85.
5. PSNH, Seabrook EQ File No. 252-16-03, Assessment Checklist, Note 5.
6. UE&C Calculation Set No. MSVCS-FAG-08, LOCA Outside Containment, dated 4/26/85.

Notes:

1. Qualification is required for a LOCA event only. Therefore, the only harsh environmental conditions this equipment will be exposed to are temperature and radiation.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Greg A. Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01	Operating Time	1 year	1 p.1	1 year	4	Test and Analysis	None
Equipment ID No(s).: EDE-SPL-1	Peak Temperature (^{o}F)	375	1 p.1	390	2 p.6 (Fig. 4)	Test	None
Equipment Type: Heat-Shrink Sleeve	Peak Pressure (Psig)	60	1 p.1	66	2 p.6 (Fig. 4)	Test	None
Manufacturer: Raychem Corporation	Relative Humidity (%)	100	1 p.1	100	2 p.6 (Fig. 4)	Test	None
Model Number: WCSF-N	Chemical Spray (pH)	Boric Acid 1.2% by wt pH=7.5 to 10.5	1 p.1	Boric Acid 3.5% by wt pH = 10.5	2 p.7 5	Test	None
Accuracy:Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p.3 Note 2	2.9×10^{8}	2 p.6 App. 1	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	------	1 p.3				
Location: Inside Containment (All Zones) Rad Zone: Prim. Aux. Bldg. (PB-15A, PB-18)	Aging (^{o}F/Years)	194/40 (90^{o}C)	Note 1	194/40 (90^{o}C)	3 p.9 (Fig. 2) 2 p.4	Test and Analysis	None
Lowest Elevation: Note 3 Flood Level: Note 3 Above Flood Level: Yes	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34175-01, Wyle Laboratories Test Report No. 58442-1, Environmental Qualification Test Report of Raychem WCSF-N Nuclear In-Line Cable Splice Assemblies, dated 5/15/80.
3. FP-34183-01, Raychem Energy Division Report No. EDR-5046, Analysis of Heat Aging Data on WCSF Material to determine pre-aging conditions for Nuclear Qualification Testing, dated 3/4/82.
4. Impell Calculation No. 0570-032-032.
5. PSNH, Seabrook EQ File No. 600-1-01, Assessment Checklist, Note 3.
6. SBU-92605 Letter from UE&C to Impell, dated 2/13/85.
7. SBU-96263, UE&C letter addressed to YAEC on Flooding Study Matrix, dated 4/9/85.
8. Seabrook Station, EQ File No. 600-01-01, Assessment Report, Note 8.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. The total integrated radiation dose in Environmental Zones PB-4 and PB-19 is greater than 2.0×10^{8} rads. No electrical equipmentis installed in these areas (Ref. 6).
3. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Ref. 8).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-02

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Guy A. Moore Date: 4/30/86

Equipment Description	Postulated Environment: Parameter	Value	Reference	Qualified Environment: Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01	Operating Time	1 year	1 p.1	1 year	5	Test and Analysis	None
Equipment ID No(s).: EDE-SPL-2	Peak Temperature (^{o}F)	375	1 p.1	390	2 p.8 (Fig. 5)	Test	None
Equipment Type: Cable Breakout	Peak Pressure (Psig)	60	1 p.1	66	2 p.8 (Fig. 5)	Test	None
Manufacturer: Raychem Corporation	Relative Humidity (%)	100	1 p.1	100	2 p.8 (Fig. 5)	Test	None
Model Number: NCBK-3	Chemical Spray (pH)	Boric Acid 1.2% by wt pH=7.5 to 10.5	1 p.1	Boric Acid 3.5% by wt. pH = 10.5	2 p. 9 6	Test	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p.3 Note 2	2.9×10^{8}	2 p.8 App. A	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	------	1 p.3				
Location: Inside Containment (all zones) Rad Zone: Prim. Aux. Bldg. (PB-15A, PB-18)	Aging (^{o}F/Years)	194/40 (90^{o}C)	Note 1	194/40 (90_C)	3 p.9 (Fig. 2) 4 p.8 (Fig. 2)	Test and Analysis	None
Lowest Elevation: Note 3 Flood Level: Note 3 Above Flood Level: Yes	Submergence	N/A	8	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34176-01, Wyle Laboratories Test Report No. 58442-2, dated 4/3/81.
3. FP-34183-01, Raychem Energy Division Report No. EDR-5046, dated 3/4/82.
4. FP-34182-01, Raychem Energy Division Report No. EDR-5040, dated 10/15/81.
5. Impell Calculation No. 0570-032-035.
6. PSNH, Seabrook EQ File No. 600-1-02, Assessment Checklist, Note 3.
7. SBU-92605, Letter from UE&C to Impell, dated 2/13/85.
8. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix, dated 4/9/85.
9. Seabrook Station, EQ File No. 600-01-02, Assessment Report, Note 8.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. The total integrated radiation dose in Environmental Zones PB-4 and PB-19 is greater than 2.0×10^{8} rads. No electrical equipment is installed in these areas (Ref. 7).
3. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 9).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-03

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Dag A Mon Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01	Operating Time	1 year	1 p. 1	1 year	5	Test and Analysis	None
Equipment ID No(s).: EDE-SPL-3	Peak Temperature (^{o}F)	375	1 p. 1	390	2 p. 7 (Fig. 5)	Test	None
Equipment Type: Motor Connection Kits	Peak Pressure (Psig)	60	1 p. 1	66	2 p. 7 (Fig. 5)	Test	None
Manufacturer: Raychem Corporation	Relative Humidity (%)	100	1 p. 1	100	2 p. 7 (Fig. 5)	Test	None
Model Number: NMCK-35-00	Chemical Spray (pH)	Boric Acid 1.2% by wt pH=7.5 to 10.5	1 p. 1	Boric Acid 3.5% by wt pH = 10.5	2 p. 8 6	Test	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0 x 10^{8}	1 p. 3 Note 2	2.0 x 10^{8}	2 p. 7 App. A	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	------	1 p. 3				
Location: Inside Containment (all zones) Rad Zone: Prim. Aux. Bldg. (PB-15A, PB-18)	Aging (^{o}F/Years)	194/40 (90^{o}C)	Note 1	194/40 (90^{o}C)	3 p. 9 (Fig. 2) 2 p. 4 4, p. 8 (Fig. 2)	Test and Analysis	None
Lowest Elevation: Note 3 Flood Level: Note 3 Above Flood Level: Yes	Submergence	N/A	8	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34177-01, Wyle Laboratories Test Report No. 58442-3, Environmental Qualification Test Report of Raychem NMCK Nuclear Motor Connection Kits, dated 7/28/80.
3. FP-34183-01, Raychem Energy Division Report No. EDR-5046, Analysis of Heat Aging Data on WCSF Material to determine pre-aging conditions for Nuclear Qualification Testing, dated 3/4/82.
4. FP-34182-01, Raychem Energy Division Report No. EDR-5040, Analysis of Heat Aging Data on -52 Molding Material to determine pre-aging conditions for Nuclear Qualification Testing.
5. Impell Calculation No. 0570-032-034.
6. PSNH, Seabrook EQ File No. 600-1-03, Assessment Checklist, Note 3.
7. SBU-92605 Letter from UE&C to Impell, dated 2/13/85.
8. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix, dated 4/9/85.
9. Seabrook Station EQ File No. 600-01-03, Assessment Report, Note 8.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. The total integrated radiation dose in Environmental Zones PB-4 and PB-19 is greater than 2.0 x 10^{8} rads. No electrical equipment is installed in these areas (Ref 7).
3. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 9).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-05

Prepared By: Jim Buckley Date: 4/30/86

Checked By: Guy A Moore Date: 4/30/86

Equipment Description	Postulated Environment: Parameter	Value	Reference	Qualified Environment: Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01	Operating Time	1 year	1 p. 1	1 year	5	Test and Analysis	None
Equipment ID No(s).: EDE-SPL-5	Peak Temperature (^{o}F)	375	1 p. 1	442	2 p. 10 (Fig. 5)	Test	None
Equipment Type: 120V Wire Connection Kits	Peak Pressure (Psig)	60	1 p. 1	132	2 p. 10 (Fig. 5)	Test	None
Manufacturer: Raychem Corporation	Relative Humidity (%)	100	1 p. 1	100	2 p. 10 (Fig. 5)	Test	None
Model Number: NPKV-2	Chemical Spray (pH)	Boric Acid 1.2% by wt pH=7.5 to 10.5	1 p. 1	Boric Acid 1.7% by wt pH = 10.5	2 p. 9 6	Test	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p. 3 Note 2	2.2×10^{8}	2 p. 16 (Table 1) App. A	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	------	1 p. 3				
Location: Containment (all zones) Rad Zone: Prim. Aux. Bldg. (PB-15A, PB-18)	Aging (^{o}F/Years)	194(90^{o}C)/40	Note 1	194(90^{o}C)/40	3 p. 9 (Fig. 2) 2 p.5,16 (Table 1) 4, p. 8 (Fig. 2)	Test and Analysis	None
Lowest Elevation: Note 3 Flood Level: Note 3 Above Flood Level: Yes	Submergence	N/A	8	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34174-01, Wyle Laboratories Test Report No. 58722-1, Environmental Qualification Test Report of Raychem NPKV Nuclear Plant Stub Connection Kits, dated 8/24/82.
3. FP-34183-01, Raychem Energy Division Report No. EDR-5046, Analysis of Heat Aging Data on WCSF Material to determine pre-aging conditions for Nuclear Qualification Testing, dated 3/4/82.
4. FP-34182-01, Raychem Energy Division Report No. EDR-5040, Analysis of Heat Aging Data on -52 Molding Material to determine pre-aging conditions for Nuclear Qualification Testing.
5. Impell Calculation No. 0570-032-042.
6. PSNH, Seabrook EQ File No. 600-1-05, Assessment Checklist, Note 3.
7. SBU-92605 Letter from UE&C to Impell, dated 2/13/85.
8. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix, dated 4/9/85.
9. Seabrook Station, EQ File 600-01-05, Assessment Checklist Note 8.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. The total integrated radiation dose in Environmental Zones PB-4 and PB-19 is greater than 2.0×10^{8} rads. No electrical equipment is installed in these areas (Ref 7).
3. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Ref. 9).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-06

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Greg A Moro Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01	Operating Time	1 year	1 p. 1	1 year	3 4	Test and Analysis	None
Equipment ID No(s).: EDE-SPL-6	Peak Temperature (^{o}F)	144	1 p. 2	194	2 p. 5 4	Test	None
Equipment Type: Cable Jacket Repair Sleeve	Peak Pressure (Psig)	Slightly Positive	1 p. 2	Slightly Positive	2 p. 8 4	Test	None
Manufacturer: Raychem Corporation	Relative Humidity (%)	100	1 p. 2	100	2 p. 8 4	Test	None
Model Number: NJRS	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	1.0×10^{3}	1 p. 3	5.0×10^{7}	2 p. 7 4	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	1.1×10^{5}	1 p. 3				
Location: MS&FW Pipe Chase (PCW-4) EFW PMP BLD (EFW-2) Rad Zone: Primary Aux. Bldg. (PB-1) Note 3	Aging (^{o}F/Years)	194(90^{o}C)/40	Note 1	194(90^{o}C)/40	3 p. 9 (Fig. 2)	Test and Analysis	None
Lowest Elevation: Note 2 Flood Level: Note 2 Above Flood Level: Yes	Submergence	N/A	5	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34348-01, Raychem Energy Division Report No. EDR-5059, dated 3/30/83.
3. Raychem Energy Division Report No. EDR-5046, dated 3/4/82.
4. PSNH, Seabrook EQ File No. 600-1-06, Assessment Checklist, Note 4.
5. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix.
6. Seabrook Station EQF No. 600-01-06, Rev. 0.
7. Seabrook Station, EQ File No. 600-01-06, Assessment Report, Note 5.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 7).
3. Tested parameters restrict the use of this equipment to the environmental zones listed in Section 4.0 (ESE) of Reference 6. Zones PCW-4, EFW-2, and PB-1 are the limiting zones of those listed.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-07

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Bry A Moss Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01 Equipment ID No(s).: EDE-SPL-7	Operating Time	1 year	1 p. 1	1 Year	4	Test and Analysis	None
	Peak Temperature (^{0}F)	375	1 p. 1	442	2 p. 10 (Fig. 6)	Test	None
Equipment Type: Shrinkable Cable Sleeve	Peak Pressure (Psig)	60	1 p. 1	132	2 p. 10 (Fig. 6)	Test	None
Manufacturer: Raychem Corporation Model Number: WCSF-N	Relative Humidity (%)	100	1 p. 1	100	2 pp. 8-10	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by Wt. pH = 7.5 to 10.5	1 p. 1	Boric Acid pH = 10.5	2 p. 8 5	Test	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0 x 10^{8}	1 p. 3 Note 2	2.2 x 10^{8}	2 pp. 6, 16 Table 1	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	----	1 p. 3				
Location: Containment (All zones) Rad Zone: Primary Aux. Bldg. (PB-15A, PB-18)	Aging (^{0}F/Years)	194/40 (90^{0}C)	Note 1	194 (90^{0}C)/40	3 p. 9 (Fig. 2) 2 p. 5, 6, 16 (Table 1)	Test and Analysis	None
Lowest Elevation: Note 3 Flood Level: Note 3 Above Flood Level: Yes	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34473-01, Wyle Laboratories Test Report No. 58772-2, dated 11/18/82, Environmental Qualification Test Report of Raychem WCSF-N In-Line Bolted Splice Assemblies for Raychem Corp.
3. FP-34183-01, Raychem Energy Division Report No. EDR-5046, Analysis of Heat Aging Data on WCSF Material to determine pre-aging conditions for Nuclear Qualification Testing, dated 3/4/82.
4. Impell Calculation No. 0570-032-135.
5. PSNH, Seabrook E.Q. File No. 600-01-07, Assessment Checklist, Note 3.
6. SBU-92605, Letter from UE&C to Impell, dated 2/13/85.
7. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix, dated 4/9/85.
8. Seabrook Station, E.Q. File No. 600-01-07, Assessment Checklist, Note 7.

Notes:

1. The temperature 194^{0}F (90^{0}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. The total integrated radiation dose in Environmental Zones PB-4 and PB-[illegible] are greater than 2.0 x 10^{8} Rads. No electrical equipment is installed in these areas (Reference 6).
3. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 8).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-08

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Roy A Rose Date: 4/30/86

Equipment Description	Postulated Environment: Parameter	Value	Reference	Qualified Environment: Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01 Equipment ID No(s).: EDE-SPL-8 Equipment Type: Control Cable Splicing Kit Manufacturer: Raychem Corporation Model Number: NPKC Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment (all zones) Rad Zone: Prim. Aux. Bldg. (PB-15A, PB-18) Lowest Elevation: Note 3 Flood Level: Note 3 Above Flood Level: Yes	Operating Time	1 year	1 p. 1	1 year	5	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	442	2 p. 10 (Fig. 6)	Test	None
	Peak Pressure (Psig)	60	1 p. 1	132	2 p. 10 (Fig. 6)	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 p. 10 (Fig. 6)	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt pH=7.5 to 10.5	1 p. 1	Boric Acid 1.7% by wt pH = 10.5	2 p. 9 6	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p. 3 Note 2	2.2×10^{8}	2 p. 17 (Table 1) App. A	Test	None
	1 Year Accident Radiation Dose (Rads)	------	1 p. 3				
	Aging (^{o}F/Years)	194(90^{o}C)/40	Note 1	194(90^{o}C)/40	3 p. 9 (Fig. 2) 2 p.7,17 (Table 1) 4, p. 8 (Fig. 2)	Test and Analysis	None
	Submergence	N/A	8	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34474-01, Wyle Laboratories Test Report No. 58722-6, Environmental Qualification Test Report of Raychem Nuclear Plant Kit (NPK), dated 12/21/82.
3. FP-34183-01, Raychem Energy Division Report No. EDR-5046, Analysis of Heat Aging Data on WCSF Material to determine pre-aging conditions for Nuclear Qualification Testing, dated 3/4/82.
4. FP-34182-01, Raychem Energy Division Report No. EDR-5040, Analysis of Heat Aging Data on -52 Molding Material to determine pre-aging conditions for Nuclear Qualification Testing.
5. Impell Calculation No. 0570-032-136.
6. Seabrook Station EQ File No. 600-01-08, Assessment Report, Note 3.
7. SBU-92605 Letter from UE&C to Impell, dated 2/13/85.
8. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix, dated 10/25/85.
9. Seabrook Station, EQ File 600-01-08, Assessment Report, Note 8.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. The total integrated radiation dose in Environmental Zones PB-4 and PB-19 is greater than 2.0×10^{8} rads. No electrical equipment is installed in these areas (Ref 7).
3. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 9).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-03-01

Prepared By: Drew A. Morse Date: 4/30/86
Checked By: John Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-03 Equipment ID No(s).: EDE-TRM-1 Equipment Type: Electrical Terminal Manufacturer: AMP, Inc. Model Number: PIDG Accuracy:Spec: N/A Demon: N/A Limiting Environment: Location: Containment (All Zones) Rad Zone: Prim. Aux. Bldg. (Zones PB-15A, PB-18)	Operating Time	1 year	1 p. 1	1 year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	470	2 p. 9	Test	None
	Peak Pressure (Psig)	60	1 p. 1	74.5	2 p. 10	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 p. 9	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5-10.5	1 p. 1	Boric Acid 1.72% by wt. pH 10.5 - 12.5	2 p. 9 3	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0x 10^{8}	1 p. 3 Note 1	2.59 x 10^{8}	2 p. 8	Test	None
	1 Year Accident Radiation Dose (Rads)	------	N/A				
	Aging (^{o}F/Years)	194/40 (90^{o}C)	Note 2	194/40 (90^{o}C)	2 p. 6	Test	None
Lowest Elevation: Note 3 Flood Level: Note 3 Above Flood Level: Yes	Submergence	N/A	5	N/A	N/A	N/A	None 3

Documentation References:
1. UE&C Drawing No. 9763-F-300219, Rev. 17, 7/22/85, Service Environment Chart.
2. AMP Qual. Test Report No. 110-11004, Rev. 0, 2/2/82.
3. Seabrook EQ File No. 600-3-01, Assessment Checklist, Note 4.
4. Impell Calculation No. 0570-032-058, Test Profile Extrapolation.
5. SBU-96263, UE&C Flooding Study Matrix.
6. Seabrook Station, Equipment Qualification File No. 600-03-01, Checklist Note 7.

Notes:
1. The total integrated radiation dose in Environmental Zones PB-4 and PB-19 is greater than 2.0x10^{8}. No electrical equipment is installed in these zones (UE&C Letter No. SBU-92605, dated 2/13/85), therefore these locations will not be considered.
2. This temperature, 194^{o}F (90^{o}C), is consistent with the manufacturers specification and Seabrook Class IE cable specification.
3. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 6). 3

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-06-01

Prepared By: Jam Buckley Date: 4/30/86
Checked By: Guy A. Moore Date: 7/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-6 Equipment ID No(s).: Reference 1	Operating Time	1 year	2, p. 1	1 Year 318 Days Note 1	3	Test and Analysis	None
	Peak Temperature (^{o}F)	325	2, p. 2	340	4 p. 7-8 8-2 8-61	Test	None
Equipment Type: Receptacle and Connector/ Cable Assembly EC-210 Series Manufacturer: Namco Controls Model Number: EC 210-19000 EC 210-29000 EC 210-34000 EC 210-44000 Accuracy:Spec: N/A Demon: N/A	Peak Pressure (Psig)	4.8	2, p. 2	68	4 p. 7-8 8-2 8-61	Test	None
	Relative Humidity (%)	100	2, p. 2	100	4 p. 4-3 8-58	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	6 Note 3	2.04×10^{8}	4 p. 5-11 7-8 8-30	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	----	6 Note 3				
Location: MS/FW Pipe Chase (All Zones) Rad Zone: Primary Aux. Bldg. (Zone 18)	Aging (^{o}F/Years)	104/40 130/40	2 p. 2, 3 & 4	104/13.91 130/5.12 Note 1	5	Test and Analysis	None
Lowest Elevation: Note 2 Flood Level: Note 2 Above Flood Level: Yes	Submergence	N/A	7	N/A	Note 2	N/A	None

Documentation References:

1. UE&C Engineering Change Authorization No. 03/14443, Rev. C, dated 3/13/86.
2. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
3. Seabrook Station E.Q. File No. 600-06-01, Assessment Checklist, Note 1.
4. Namco Controls Report No. QTR 142, Rev. 0, dated 3/19/84.
5. Seabrook Station E.Q. File No. 600-06-01, Assessment Checklist, Note 4.
6. SBU-92605 Letter from UE&C to Impell, dated 2/13/85.
7. SBU-96263, Seabrook Station Flooding Study Matrix..
8. Seabrook Station E.Q File No. 600-06-01, Assessment Checklist, Note 7.

Notes:

1. The 318 day operating time and 5.12 year thermal life applies to equipment located in the MS/FW pipe chases only. Equipment located outside containment has a 1 year operating time and a 13.91 year thermal life.
2. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 8).
3. The total integrated radiation dose in Environmental Zones PB-4 and PB-19 is greater than 2.0×10^{8} rads. No electrical equipment is installed in these areas (Reference 6).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-220-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Guy A Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-220	Operating Time	1 Year	1	1 Year	4	Test and Analysis	None
Equipment ID No(s).: CS-V-149, 168; RC-V-22, 23, 87, 88, 122, 124; SI-V-3, 17, 32, 47 (Note 1)	Peak Temperature (^{o}F)	375	1 p. 1	420	3 p. 51	Test	None
	Peak Pressure (Psig)	60	1 p. 1	72	3 p. 51	Test	None
Equipment Type: Valve Actuator	Relative Humidity (%)	100	1 p. 1	100	3 p. 51	Test	None
Manufacturer: Limitorque							
Model Number: SMB-000, SMB-00, SMB-1, SB-00 and SBD-3	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH = 7.5 - 10.5	1 p. 1	Boric Acid 1.43% by Wt. pH = 10.5	3 p. 17 5	Test	None
Accuracy: Spec: N/A Demon: N/A							
Limiting Environment: Location: Containment Bldg. (All Zones) Rad Zone: Containment Bldg. (General Area/ Not Submerged)	40 Year Normal Radiation Dose (Rads)	2.0 x 10^{7}	1 p. 1	1.85 x 10^{8}	3 p. 72	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04 x 10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	Note 3 120/5.6	7	Test and Analysis	None
Lowest Elevation: (-)25'0" Flood Level: (-)20-8" Above Flood Level: No Note 2	Submergence	N/A	2 Note 2	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, 7/22/85.
2. SBU-96263, UE&C Letter, Flooding Study Matrix.
3. WCAP-8687, Supp. 2 - H01A, Revision 1, October, 1984.
4. Impell Calculation No. 0570-032-078.
5. Seabrook E.Q. File No. NSS-220-01, Assessment Checklist No. 1, Note 9.
6. Seabrook E.Q. File No. NSS-220-01, Assessment Checklist No. 1, Note 3.
7. Seabrook E.Q. File No. NSS-220-01, Assessment Checklist No. 1, Note 4.
8. RAI 430.62, Amendment 48, January 1983, pp. RAI 430-47, -48.

Notes:

1. Equipment I.D. #CS-ZS-149 & 168, RC-ZS-23, 87, 122, 124, 7302B and 7311A, & SI-ZS-2403-2, 2413-2, 2423-2 & 2433-2 are for the integral position indication within these actuators.
2. Valve CS-V-168 is submerged [(-)25'-0"] following design basis events. However, it will have performed its containment isolation safety function prior to being submerged. Once submerged the containment isolation safety function will be maintained and postulated failure modes are not detrimental to plant safety (Ref. 8) and will not mislead the operator. All other equipment is located above anticipated flood levels.
3. Although the qualified life per thermal and radiation aging is 5.6 years, the number of mechanical cycles during testing limits the qualified life to 5 years (Reference 6).

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EQUIPMENT QUALIFICATION FILE NO. NSS-220-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Roy A. Moore Date: 4/30/86

Equipment Description	Postulated Environment: Parameter	Value	Reference	Qualified Environment: Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-220 Equipment ID No(s).: Note 1	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	375	2 App. E Figure 4 4	Test and Analysis	None
Equipment Type: Terminal Blocks	Peak Pressure (Psig)	60	1 p. 1	70	2 App. E Figure 4	Test	None
Manufacturer: Marathon, GE, Curtis Model Number: Marathon 300 & 1600, GE EB5, Curtis Type "L"	Relative Humidity (%)	100	1 p. 1	100	2 Para. 3.4.2	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5-10.5	1 p. 1	Boric Acid 1.65% by wt. pH 11.2	2 App. I 5	Test	None
Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment (All Zones), Rad Zone: Containment (General Area/Not submerged)	40 Year Normal Radiation Dose (Rads)	2.0 x 10^{7}	1 p. 1	2.04 x 10^{8}	2 Para. 3.2	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04 x 10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	120/40	2 App. A 6	Test and Analysis	None
Lowest Elevation: (-)25'-0" Flood Level: (-)20'-8" Above Flood Level: No	Submergence	N/A	7 Note 2	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. Limitorque Test Report No. B0119, Qualification Type Test Report of Miltipoint Terminal strips for use in Limitorque Valve Actuators for PWR Service.
3. Impell Calculation No. 0570-032-128.
4. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 2, Note 2.
5. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 2, Note 8.
6. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 2, Note 6.
7. SBU-96263, Seabrook Flooding Study Matrix.
8. RAI 430.62, Amendment 48, January 1983, pp. RAI 430-47, 48.
9. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 5, Note 7.

Notes:

1. The terminal blocks are used as a component of Limitorque Actuators and do not have a separate I.D. No. I.D. Nos. are listed in QEWs, P. 1 of 5.
2. Valve CS-V-168 is submerged [(-)25'-0"] following design basis events. However, it will have performed its containment isolation safety function prior to being submerged. Once submerged the containment isolation safety function will be maintained and postulated failure modes are not detrimental to plant safety (Reference 8) and will not mislead the operator. All other equipment is located above anticipated flood levels.

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EQUIPMENT QUALIFICATION FILE NO. NSS-220-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Jay A Mon Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-220	Operating Time	1 Year	1 p. 1	1 Year	4	Test and Analysis	None
Equipment ID No(s).: Note 1	Peak Temperature (^{o}F)	375	1 p. 1	375	2, p. 74 3, p. 4 5	Test and Analysis	None
	Peak Pressure (Psig)	60	1 p. 1	107.5	2 p. 74	Test	None
Equipment Type: Cable Manufacturer: Rockbestos Model Number: Rockbestos Firewall SIS Wire (Chemically XLPE) Accuracy: Spec: N/A Demon: N/A	Relative Humidity (%)	100	1 p. 1	100	2 p. 73	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5-10.5	1 p. 1	Boric Acid 1.71% by wt. pH 11.7	2 p. 79 6	Test	None
Limiting Environment: Location: Containment (All Zones), Rad Zone: Containment (General Area/Not submerged)	40 Year Normal Radiation Dose (Rads)	2.0×10^{7}	1 p. 1	2.04×10^{8}	2 p. 10	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	194/40 (90_C)	2 p. 49	Test and Analysis	None
Lowest Elevation: (-)25'-0" Flood Level: (-)20'-8" Above Flood Level: No	Submergence	N/A	7 Note 2	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. Rockbestos Test Report No. QR#5804, 9/13/85.
3. Limitorque Project #600508, Valve Actuator Temperature related to high superheat ambient temperatures, Rev. A 8/31/78.
4. Impell Calculation No. 0570-032-129.
5. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 3, Note 2.
6. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 3, Note 5.
7 SBU-96263, Seabrook Flooding Study Matrix.
8. RAI 430.62, Amendment 48, January 1983, pp. RAI 430-47, 48.

Notes:

1. The Firewall SIS Wires are used as a component of Limitorque Actuators covered under this E.Q. File. There is no separate I.D. No. for the cables.
2. Valve CS-V-168 is submerged [(-)25'-0"] following design basis events. However, it will have performed its containment isolation safety function prior to being submerged. Once submerged the containment isolation safety function will be maintained and postulated failure modes are not detrimental to plant safety (Reference 8) and will not mislead the operator. All other equipment is located above anticipated flood levels.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-220-01

Prepared By: Jim Buckley Date: 4/30/86

Checked By: Guy A Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-220 Equipment ID No(s).: Note 1 Equipment Type: Cable Manufacturer: Rockbestos Model Number: Rockbestos Firewall SIS Wire (Irradiation XLPE) Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Containment (All Zones), Rad Zone: Containment (General Area/Not submerged) Lowest Elevation: (-)25'-0" Flood Level: (-)20'-8" Above Flood Level: No Note 2	Operating Time	1 Year	1 p. 1	1 Year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	375	2, p. 67 3, p. 4 5	Test and Analysis	None
	Peak Pressure (Psig)	60	1 p. 1	117.2	2 p. 67	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 p. 65	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5-10.5	1 p. 1	Boric Acid 1.71% by wt. pH 9.6	2 p. 64 6	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{7}	1 p. 1	2.04×10^{8}	2 p. 10	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	194/40 (90^{o}C)	2 p. 49	Test and Analysis	None
	Submergence	N/A	7 Note 2	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, 7/22/85.
2. Rockbestos Test Report No. QR#5805, 9/13/85.
3. Limitorque Project #600508, Valve Actuator Temperature related to high superheat ambient temperatures, Rev. A, 8/31/78.
4. Impell Calculation No. 0570-032-130.
5. Seabrook EQ File No. NSS-220-01, Assessment Report No. 4, Note 2.
6. Seabrook EQ File No. NSS-220-01, Assessment Report No. 4, Note 5.
7. SBU-96263, Seabrook Flooding Study Matrix.
8. RAI 430.62, Amendment 48, January 1983, pp. RAI 430-47, -48.

Notes:

1. The Firewall SIS wires are used as a component of Limitorque Actuators covered under this EQ File. There is no separate I.D. No. for the cables.
2. Valve CS-V-168 is submerged [(-)25'-0"] following design basis events. However, it will have performed its containment isolation safety function prior to being submerged. Once submerged the containment isolation safety function will be maintained and postulated failure modes are not detrimental to plant safety (Ref. 8) and will not mislead the operator. All other equipment is located above anticipated flood levels.

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EQUIPMENT QUALIFICATION FILE NO. NSS-220-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Greg A. Moore Date: 4/30/86

Equipment Description	Postulated Environment: Parameter	Postulated Environment: Value	Postulated Environment: Reference	Qualified Environment: Value	Qualified Environment: Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-220	Operating Time	1 Year	1 p. 1	1 Year	4	Test and Analysis	None
Equipment ID No(s).: Note 1	Peak Temperature (^{o}F)	375	1 p. 1	375	2, p. 6, 7 3, p. 4 5	Test and Analysis	None
	Peak Pressure (Psig)	60	1 p. 1	70	2 p. 6	Test	None
Equipment Type: Cable Manufacturer: Raychem Model Number: Raychem "Flamtrol" Insulated and Jacketed Cables	Relative Humidity (%)	100	1 p. 1	100	2 p. 6	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5-10.5	1 p. 1	Boric Acid 1.71% by wt. pH 9.5 - 11.0	2 p. 6 6	Test	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0 x 10^{7}	1 p. 1	2.0 x 10^{8}	2 p. 1, 6, 11	Test	None
Limiting Environment: Location: Containment (All Zones), Rad Zone: Containment (General Area/Not submerged)	1 Year Accident Radiation Dose (Rads)	1.04 x 10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	194/40 (90^{o}C)	9	Test and Analysis	None
Lowest Elevation: (-)25'-0" Flood Level: (-)20'-8" Above Flood Level: No	Submergence	N/A	7 Note 2	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. Franklin institute (FIRL) Test Report No. F-C4033-1 for Raychem "Flamtrol" Cables, 1/75.
3. Limitorque Project #600508, Valve Actuator Temperature related to high superheat ambient temperatures, Rev. Z 8/31/78.
4. Impell Calculation No. 0570-032-131.
5. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 5, Note 2.
6. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 5, Note 5.
7. SBU-96263, Seabrook Flooding Study Matrix.
8. RAI 430.62, Amendment 48, January 1983, pp. RAI 430-47, 48.
9. Seabrook E.Q. File No. NSS-220-01, Assessment Report No. 5, Note 7.

Notes:

1. The Raychem "Flamtrol" wires are used as a component of Limitorque Actuators covered under this E.Q. File. There is no separate I.D. No. for the cables.
2. Valve CS-V-168 is submerged [(-)25'-0"] following design basis events. However, it will have performed its containment isolation safety function prior to being submerged. Once submerged the containment isolation safety function will be maintained and postulated failure modes are not detrimental to plant safety (Reference 8) and will not mislead the operator. All other equipment is located above anticipated flood levels.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-220-05

Prepared By: Mary A Pare Date: 4/30/86

Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-NSS-220 Equipment ID No(s).: EDE-ECSA-2 Equipment Type: Electrical Conductor Seal Assembly Manufacturer: Conax Model Number: N-11007 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Containment, (CS-10) Rad Zone: Containment (Gen. Area/Not Submerged) Lowest Elevation: Note 1 Flood Level: Note 1 Above Flood Level: Yes	Operating Time	1 year	1 p. 1	1 year	6	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	420	2 p. 73	Test	None
	Peak Pressure (Psig)	60	1 p. 1	80	2 p. 73	Test	None
	Relative Humidity (%)	100	1 p. 1	100	3 p. 14 2 p. 16	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% Wt. pH 7.5 to 10.5	1 p. 1	Boric Acid 1.43% by wt. pH 10.5	2 p. 16 5	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{7}	1 p. 3	2.04×10^{8}	2 p. 17	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	120/21	2 p. 12 4	Test and Analysis	None
	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. WCAP-8687, Supp. 2 - H08A, Revision 0, Equipment Qualification Test Report - Conax and Litton Electrical Seal Assemblies, August 1983.
3. EQDP-HE-8, Revision 0, 8/83, Equipment Qualification Data Package - Conax and Litton Electrical Seal Assemblies.
4. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 3.
5. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 4.
6. Impell Calculation No. 0570-032-090.
7. SBU-96263, Seabrook Flooding Study Matrix.
8. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 8.

Notes:

1. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 8).

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-220-05

Prepared By: Guy A Moore Date: 4/30/86

Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-NSS-220	Operating Time	1 year	1 p. 1	1 year	6	Test and Analysis	None
Equipment ID No(s).: EDE-ECSA-2	Peak Temperature (^{0}F)	300	1 p. 3	420	2 p. 73	Test	None
Equipment Type: Electrical Conductor Seal Assembly	Peak Pressure (Psig)	0.5	1 p. 3	80	2 p. 73	Test	None
Manufacturer: Conax	Relative Humidity (%)	100	1 p. 3	100	3 p. 14 2 p. 16	Test	None
Model Number: N-11007	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.43% by wt. pH 10.5	2 p. 16 5	Test	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p. 3 Note 1	2.04×10^{8}	2 p. 17	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	-	-				
Location: Primary Aux. Building (PB-15A) Rad Zone: Primary Aux. Building (PB-15A)	Aging (^{0}F/Years)	104/40	1 p. 3	104/40	4	Test and Analysis	None
Lowest Elevation: Note 2 Flood Level: Note 2 Above Flood Level: Yes	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. WCAP-8687, Supp. 2 - H08A, Revision 0, Equipment Qualification Test Report - Conax and Litton Electrical Seal Assemblies, August 1983.
3. EQDP-HE-8, Revision 0, 8/83, Equipment Qualification Data Package - Conax and Litton Electrical Seal Assemblies.
4. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 3.
5. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 4.
6. Impell Calculation No. 0570-032-090.
7. SBU-96263, UE&C Letter, "Flooding Study Matrix".
8. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 8.

Notes:

1. The total integrated radiation dose in Environmental Zone PB4 and PB19 is greater than 2×10^{8} rads. No electrical equipment is installed in these areas, as confirmed by UE&C letter SBU 92605, dated 2/13/85. Therefore, these locations are ignored.
2. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 8).

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-220-05

Prepared By: Roy A. Moss Date: 4/30/86

Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-NSS-220 Equipment ID No(s).: EDE-ECSA-2 Equipment Type: Electrical Conductor Seal Assembly Manufacturer: Conax Model Number: N-11007 Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: MSFW Pipe Chases, (PCW1) Rad Zone: MSFW Pipe Chases, (PCW1) Lowest Elevation: Note 1 Flood Level: Note 1 Above Flood Level: Yes	Operating Time	1 year	1 p. 1	1 year	6	Test and Analysis	None
	Peak Temperature (^{o}F)	325	1 p. 2	420	2 p. 73	Test	None
	Peak Pressure (Psig)	4.8	1 p. 2	80	2 p. 73	Test	None
	Relative Humidity (%)	100	1 p. 2	100	3 p. 14 2 p. 16	Test	None
	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.43% by Wt. pH 10.5	2 p. 16 5	Test	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^{3}	1 p. 2	2.04×10^{8}	2 p. 17	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	1 p. 2				
	Aging (^{o}F/Years)	130/40	1 p. 2	130/12.93	4	Test and Analysis	None
	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. WCAP-8687, Supp. 2 - H08A, Revision 0, Equipment Qualification Test Report - Conax and Litton Electrical Seal Assemblies, August 1983.
3. EQDP-HE-8, Revision 0, 8/83, Equipment Qualification Data Package - Conax and Litton Electrical Seal Assemblies.
4. Seabrook Station, Equipment Qualification File No. NSS 220-05, Checklist Note 3.
5. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 4.
6. Impell Calculation No. 0570-032-090.
7. SBU-96263, Seabrook Flooding Study Matrix.
8. Seabrook Station, Equipment Qualification File No. NSS-220-05, Checklist Note 8.

Notes:

1. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 8).

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ATTACHMENT 2

Public Service Company of New Hampshire
Seabrook Station
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QUALIFICATION EVAL. ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: Doug Moore Date: 4/21/86

Checked By: Jim Buckley Date: 4/21/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-118-01 Equipment ID No(s).: EDE-MM-83, -84, -85, -86, -89, -90, -91, -94, -95, -96, -100, -101, -104, -105, -106, -107, -109, -110, -111, -112, -113, -115, -117, -118, -119, -120, -121, -122, -123, *continued Equipment Type: Electrical Penetrations (Low Voltage Power, Control and Instrumentation) Manufacturer: Westinghouse Model Number: WX-33511 to WX-33518 and WX-33521, WX-33522 Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment (Zones CS-10, -12) Rad Zone: Containment (Zones CS-10, -12)	Operating Time	1 year	1 p. 1	1 year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	375	2 p. 21 3	Test and Analysis	None
	Peak Pressure (Psig)	60	1 p. 1	108	2 p. 21	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 p. 21	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5 - 10.5	1 p. 1	Boric Acid 2.28% by wt. pH 8.5 - 11	2 p. 21	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{7}	1 p. 1	2.2×10^{8}	2 p. 13A and 118	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	158/40 (70^{o}C)	2 p. 12 7	Test and Analysis	None
Lowest Elevation: (-)16'-8" Flood Level: (-)26'-0" Above Flood Level: Yes	Submergence	N/A	5	N/A	N/A	N/A	N/A

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-31510-03, Technical Reports and Qualification Data for Low Voltage, Control and Instrumentation Electrical Penetrations for the Seabrook Station.
3. Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 1, Note 2.
4. Impell Calculation No. 0570-032-121.
5. SBU-96263, Seabrook Flooding Study Matrix.
6. Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 1, Note 7.
7. Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 1, Note 6.

Notes:

* -124, -125, -126, -128, -130, -131, -133, -135, -137, -139

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QUALIFICATION EVAL[illegible]ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: Doug A. Moss Date: 4/21/86

Checked By: Jim Buckley Date: 4/21/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-118-01-01 Equipment ID No(s).: Note 1 Equipment Type: Thermocouple Cable Manufacturer: Rockbestos Model Number: Rockbestos Firewall III, 2/C #16 AWG TC + SH Type kx Accuracy: Spec: N/A, Demon: N/A, Note 2 Limiting Environment: Location: Containment (Zones CS-10, -12) Rad Zone: Containment (Zones CS-10, -12)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	440	2 p. 57 4	Test and Analysis	None
	Peak Pressure (Psig)	60	1 p. 1	117.2	2 p. 67	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 p. 65	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5 - 10.5	1 p. 1	Boric Acid 1.7% by wt. pH 8.9-10.7	2 p. 67 5	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{7}	1 p. 1	2.04×10^{8}	2 p. 10	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	194/40 (90^{o}C)	2 p. 42	Test and Analysis	None
Lowest Elevation: (-)16'-8" Flood Level: (-)20'-8" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	N/A

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. Rockbestos Test Report No. QR#5805, 9/13/85.
3. Impell Calculation No. 0570-032-124.
4. Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 2, Note 3.
5. Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 2, Note 7.
6. SBU-96263, Seabrook Flooding Study Matrix.

Notes:

1. The Thermocouple cable is used with the penetration modules Type WX-33521, WX-33815 and WX-33522 (I.D. #EDE-MM-120, EDE-MM-130 and EDE-MM-131). The cable does not have its own I.D. No.
2. These cables are connected to Incore thermocouple which have an Operating Code B (Reference: Equipment List Sort: P.O. NSS-090, 10/07/85). Hence, these cables are not required to function to mitigate the accident, but must not fail. Therefore, demonstration of accuracy by the cables is not a requirement.

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QUALIFICATION EVA. ION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: Roy A Moore Date: 4/21/86

Checked By: Jim Buckley Date: 4/21/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-118-01 Equipment ID No(s).: Note 1 Equipment Type: Insulating Board Manufacturer: Westinghouse Model Number: Insulating Board with Limitrak Coating Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Elect. Pen. Area (Zone ET-3A) Rad Zone: Elect. Pen. Area (Zone ET-3B)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	N/A	Note 2	N/A	Note 2	N/A	None
	Peak Pressure (Psig)	N/A	Note 2	N/A	Note 2	N/A	None
	Relative Humidity (%)	N/A	Note 2	N/A	Note 2	N/A	None
	Chemical Spray (pH)	N/A	N/A p.	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1×10^3	1 p. 4	1×10^8	2 p. 6a	Test and Analysis	None
	1 Year Accident Radiation Dose (Rads)	3.4×10^4	1 p. 4				
	Aging (^{o}F/Years)	98/40	1 p. 4	129,2/40 (54^{o}C)	2 p. 6	Test and Analysis	None
Lowest Elevation: (-)16'8" Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-32288-04, Qualification Test Report for "Limitrak" Coated Polyplate, W PDS44763BB, Insulation Board following the requirements of IEEE 323-1974.
3. PSNH, Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 3, Note 3.
4. SBU-96263, Seabrook Station "Flooding Study Matrix."

Notes:

1. The insulating boards are used as a component to support the cable connections and do not have any I.D. No.
2. All postulated accident parameters are considered mild except radiation.

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QUALIFICATION EVAL. .ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: [illegible] Date: 4/24/86

Checked By: Jim Buckley Date: 4/24/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-118-01-01 Equipment ID No(s).: Note 1 Equipment Type: Terminal Block Manufacturer: Curtis Model Number: Curtis, Type "L" Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Elect. Pen. Area (Zone ET-3A) Rad Zone: Elect. Pen. Area (Zone ET-3A)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	N/A	Note 2	N/A	Note 2	N/A	None
	Peak Pressure (Psig)	N/A	Note 2	N/A	Note 2	N/A	None
	Relative Humidity (%)	N/A	Note 2	N/A	Note 2	N/A	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1×10^{3}	1 p. 4	2.6×10^{7}	2, p. 2 (Add. 1, p. 4) 4	Test and Analysis	None
	1 Year Accident Radiation Dose (Rads)	3.4×10^{4}	1 p. 4				
	Aging (^{o}F/Years)	98/40	1 p. 4	158/5.31 (70^{o}C)	6	Test	None
Lowest Elevation: (-)16'8" Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	5	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-32289-03, Qualification Test Report for Curtis Type "L" Terminal Block used on the Seabrook Station Electical Penetrations (PEN-TR-80-86).
3. PSNH, Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 4, Note 4.
4. PSNH, Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 4, Note 5.
5. SBU-96263, Seabrook Station "Flooding Study Matrix."
6. PSNH, Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 4, Note 7.

Notes:

1. There is no separate I.D. No. for the terminal blocks. These blocks are used on the outboard side of the penetration assembly for interconnection in Module I.D. Nos. EDE-MM-104 to 107 and EDE-MM-91, 94, 95 and 100.
2. All postulated accident parameters are considered mild except radiation.

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QUALIFICATION EVA. ION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: Doug Plow Date: 4/21/86

Checked By: Jim Buckley Date: 4/21/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-118-01-01 Equipment ID No(s).: Note 1 Equipment Type: Terminal Block Manufacturer: Marathon Model Number: 315 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Elect. Pen. Area (Zone ET-3A) Rad Zone: Elect. Pen. Area (Zone ET-3B)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	N/A	Note 2	N/A	Note 2	N/A	None
	Peak Pressure (Psig)	N/A	Note 2	N/A	Note 2	N/A	None
	Relative Humidity (%)	N/A	Note 2	N/A	Note 2	N/A	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1×10^3	1 p. 4	2.2×10^8	2 p. 20	Test	None
	1 Year Accident Radiation Dose (Rads)	3.4×10^4	1 p. 4				
	Aging (^{o}F/Years)	98/40	1 p. 4	121.87/40 (49.92^{o}C)	2 p. 10 4	Test and Analysis	None
Lowest Elevation: (-)16'8" Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	5	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-31838-03, Qualification Test Report for Terminations, Terminal Block and Connectors to be used in the Electrical Penetrations of the Seabrook Plants, Test Report #PEN-TR-80-18, Rev. 4.
3. PSNH, Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 5, Note 4.
4. PSNH, Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 5, Note 5.
5. SBU-96263, Seabrook Station "Flooding Study Matrix."

Notes:

1. There is no separate I.D. No. for the terminal blocks. These blocks are used on the outboard side of the penetration assembly for interconnection in Module I.D. Nos. EDE-MM-125, 128, 109, 121, 122, 123, 126, 133, 135, 137, 139, 120, 131, 124 and 130.
2. All postulated accident parameters are considered mild except radiation.

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QUALIFICATION EVAL. ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: [illegible] Date: 4/21/86

Checked By: Jim Buckley Date: 4/21/86

Equipment Description	Postulated Environment			Qualified Environment		Qualification Method	Outstanding Items
	Parameter	Value	Reference	Value	Reference		
Purchase Order No.: Equipment ID No(s).: Note 1	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	N/A	Note 2	N/A	Note 2	N/A	None
	Peak Pressure (Psig)	N/A	Note 2	N/A	Note 2	N/A	None
Equipment Type: Terminal Block	Relative Humidity (%)	N/A	Note 2	N/A	Note 2	N/A	None
Manufacturer: Buchanon	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
Model Number: #0530 End Section OTCB CU/AL/CH Blocks	40 Year Normal Radiation Dose (Rads)	1×10^{3}	1 p. 4	2.5×10^{8}	2 p. 3	Test	None
Accuracy: Spec: N/A Demon: (Ref. 5) Limiting Environment:	1 Year Accident Radiation Dose (Rads)	8.4×10^{3}	1 p. 4				
Location: Elect. Pen. Area Zone ET-3A Rad Zone: Elect. Pen. Area Zone ET-3A	Aging (^{o}F/Years)	98/40	1 p. 4	122/40	2 p. 3	Test	None
Lowest Elevation: 15'-8" Flood Level: (-)26'-0" Above Flood Level: Yes	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-33826-02, Qualification Test Report for the Buchanon Thermocouple Terminal Block used on the Seabrook Plant Electrical Penetrations.
3. Seabrook Station; EQ File No. 118-01-01, Assessment Checklist No. 6, Note 4.
4. SBU-96263, Seabrook Station Flooding Study Matrix.
5. Seabrook Station, Assessment Checklist No. 6, Note 7.

Notes:

1. The terminal blocks are used as a component for thermocouple cable interconnection and do not have any separate I.D. Nos.
2. All postulated accident parameters are considered mild except radiation.

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QUALIFICATION EVAL[illegible]ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: Greg A Moore Date: 4/24/86

Checked By: Jim Buckley Date: 4/24/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-118-1 Equipment ID No(s).: Note 1 Equipment Type: Terminal Blocks Manufacturer: Westinghouse Model Number: W#542247 Accuracy: Spec: N/A Demon: Limiting Environment: Location: Elect. Pen. Area (Zone ET-3A) Rad Zone: Elect. Pen. Area (Zone ET-3B)	Operating Time	1 year	1 p. 1	1 year	2 p. 9 3	Test and Analysis	None
	Peak Temperature (^{o}F)	N/A	Note 2	N/A	Note 2	N/A	None
	Peak Pressure (Psig)	N/A	Note 2	N/A	Note 2	N/A	None
	Relative Humidity (%)	N/A	Note 2	N/A	Note 2	N/A	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1×10^{3}	1 p. 4	2.20×10^{8}	2 p. 3	Test	None
	1 Year Accident Radiation Dose (Rads)	3.4×10^{4}	1 p. 4				
	Aging (^{o}F/Years)	98/40	1 p. 4	138^{o}F/40 (59^{o}C)	2 p. 2	Test and Analysis	None
Lowest Elevation: (-)16'8" Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-32354-02, Qualification of W Electrical Terminal Blocks for Use in Seabrook Nuclear Plant per Spec. 9763-118-1, Rev. 1.
3. Seabrook Station, E.Q. File No. 118-01-01, Assessment Checklist No. 7, Note 3.
4. SBU-96263, Seabrook Station Flooding Study Matrix.

Notes:

1. There is no separate I.D. No. for the terminal blocks. These blocks are used on the outboard side of the penetration assembly for interconnection of cables in Module I.D. Nos. EDE-MM-110 to 113, 115, 117 to 119.
2. All postulated accident parameters are considered mild except radiation.

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QUALIFICATION EVAL. ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: Gary A. Moore Date: 4/24/86

Checked By: Jim Buckley Date: 4/24/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-118-1 Equipment ID No(s).: Note 1 Equipment Type: Terminals Manufacturer: AMP Model Number: 53416-2 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Elect. Pen. Area (Zone ET-3A) Rad Zone: Elect. Pen. Area (Zone ET-3B)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	N/A	Note 2	N/A	Note 2	N/A	None
	Peak Pressure (Psig)	N/A	Note 2	N/A	Note 2	N/A	None
	Relative Humidity (%)	N/A	Note 2	N/A	Note 2	N/A	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1×10^3	1 p. 4	2.59×10^8	2 p. 8	Test	None
	1 Year Accident Radiation Dose (Rads)	3.4×10^4	1 p. 4				
	Aging (^{o}F/Years)	99/40	1 p. 4	194/40 (90^{o}C)	2 p. 6	Test	None
Lowest Elevation: (-)16'8" Flood Level: N/A Above Flood Level: N/A	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34385-01, AMP Qualification Test Report #110-11004.
3. Seabrook Station, E.Q. File No. 118-01-01, Assessment Checklist No. 8, Note 3.
4. SBU-96263, Seabrook Station "Flooding Study Matrix."

Notes:

1. There is no separate I.D. No. for these AMP terminals. The terminals are used in the interconnection of cables in power, control and instrumentation circuits.
2. All postulated accident parameters are considered mild except radiation.

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QUALIFICATION EVA. .ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 118-01-01

Prepared By: Greg A. Perry Date: 4/4/86

Checked By: Jim Buckley Date: 4/21/86

Equipment Description	Postulated Environment			Qualified Environment		Qualification Method	Outstanding Items
	Parameter	Value	Reference	Value	Reference		
Purchase Order No.: Equipment ID No(s).: Note 1	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	392	2 Add. #1 p. 4	Test and Analysis	None
Equipment Type: Triax and Coax Connectors	Peak Pressure (Psig)	60	1 p. 1	120	2 Add. #1 p. 4	Test	None
Manufacturer: Amphenol	Relative Humidity (%)	100	1 p. 1	100	2 Add. #1 p. 4	Test	None
Model Number: Amphenol Jack 52975-1001, 35500-1000 Amphenol Plug 53175-1004, 34500-1000	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5 - 10.5	1 p. 1	Boric Acid 2.28% by wt. pH 10.5	2 Add. #1 p. 4 4	Test	None
Accuracy: Spec: Note 2 Demon:	40 Year Normal Radiation Dose (Rads)	2.0×10^{7}	1 p. 1	2.55×10^{8}	2 Add. #1 p. 3	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
Location: Containment (Zones CS-10, -12) Rad Zone: Containment (Zones CS-10, -12)	Aging (^{o}F/Years)	120/40	1 p. 1	150.11/40 ($65.62^{o}C$)	2 Add. #1 p. 3 5	Test and Analysis	None
Lowest Elevation: (-)15'-8" Flood Level: (-)20'-8" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	N/A

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-32287-04, Qualification Report for a Triax (Coax) connector for use in Seabrook Station Units 1 and 2 following the guidelines of IEEE Standard 323-1974 and 317-1976.
3. Impell Calculation No. 0570-032-125.
4. Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 9, Note 6.
5. Seabrook E.Q. File No. 118-01-01, Assessment Checklist No. 9, Note 3.
6. SBU-96263, Seabrook Flooding Study Matrix.

Notes:

1. There is no specific I.D. Nos. for this component. These plugs and jacks are used for interconnection of triax and coax cables inside and out of containment.
2. For specified and demonstrated accuracy, refer to Seabrook Station E.Q. File No. 118-01-01, Assessment Checklist No. 9, Note 5.

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QUALIFICATION EV. ION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 170-13-01

Prepared By: Gary A. Moss Date: 4/10/86

Checked By: Jim Buckley Date: 4/10/86

Equipment Description	Postulated Environment			Qualified Environment		Qualification Method	Outstanding Items
	Parameter	Value	Reference	Value	Reference		
Purchase Order No.: 9763-006-170-0013 Equipment ID No(s).: NI-NE-6690, NI-NE-6691, EDE-TBX-XP8, EDE-TBX-XP9 Equipment Type: Neutron Flux Monitoring System Manufacturer: Gamma-Metrics Model Number: RCS Series, Model Nos. 200113-107, 108; 200289-101, 103 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Containment (All Zones) Rad Zone: Containment (General Area/ Not Submerged)	Operating Time	1 Year	1 p. 1	1 Year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	420	2 p. 12 3 p. 4-4	Test	None
	Peak Pressure (Psig)	60	1 p. 1	70	2 p. 12 3 p. 4-4	Test	None
	Relative Humidity (%)	100	1 p. 1	100	3 p. 4-1	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by wt. pH 7.5-10.5	1 p. 1	Boric Acid 1.7% by wt. pH 10.5	2 p. 12 5	Test	None
	40 Year Normal Radiation Dose (Rads)	2×10^{7}	1 p. 1	2.0×10^{8}	2 p. 45 Note 2	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^{8}	1 p. 1				
	Aging (^{o}F/Years)	120/40	1 p. 1	120/5	2 p. 27 Note 1	Test	None
Lowest Elevation: (-)32'6" Flood Level: (-) 20'-8" Above Flood Level: No Note 2	Submergence	1 Year	5	1 Year	7	N/A	N/A

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, 7/22/85.
2. FP-73326-01, Qualification Test Report for the RCS Series Neutron Flux Monitoring System, Test Report No. 010, Revision 0, dated April, 1983.
3. FP-73327-01, Seismic and MSLB/LOCA Test Report for the RCS Series Nuetron Flux Monitoring System, Wyle Test Report No. 58826.
4. Impell Calculation No. 0570-032-016, Revision 0.
5. Seabrook E.Q. File No. 170-13-01, Assessment Checklist, Note 5.
6. SBU-96263, UE&C Flooding Matrix.
7. Seabrook E.Q. File No. 170-13-01, Assessment Checklist, Note 10.

Notes:

1. The limiting component is the Junction Box, the connectors and coaxial cables. All other components of the assembly are qualified for 40 years except O-ring, which has a qualified life of 5 years.
2. The lower part of the detector and a portion of the cable assembly are the only items submerged.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 174-00-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Guy A Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-174-00 Equipment ID No(s).: RH-FT-618, RH-FT-619, SI-FT-918, SI-FT-922, CBS-PT-2312, CBS-PT-2313, CBS-PT-2314, CBS-PT-2315, CC-FT-2103, CC-FT-2203, SI-FT-917, SW-FT-6181, SW-FT-6191 Equipment Type: Flow/Pressure Transmitter Manufacturer: Foxboro Co. Model Number: N-E10 Series Accuracy: (N-E11GM) (N-E13DM) Spec: 9.44% 9.11% Demon: 9.44% 9.11% Limiting Environment:	Operating Time	100 Days	7	100 Days	3	Test and Analysis	None
	Peak Temperature (^{o}F)	196	1 p. 4	350	2 Sect. X p. X-70	Test	None
	Peak Pressure (Psig)	1.01	1 p. 4	85	2 Sect. X p. X-70	Test	None
	Relative Humidity (%)	100	1 p. 4	100	2 Sect. X p. X-70	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{7}	1 p. 2	2.0×10^{8}	2, p. iii Sect. IX p. IX-2, -6	Test	None
	1 Year Accident Radiation Dose (Rads)	7.5×10^{7}	1 p. 2				
Location: Equipment Vault (EV-1A/EV-6A) Rad Zone: Mech. Penet. Area (MPA-1)	Aging (^{o}F/Years)	104/40	1 p. 1	104/22.2	2 p. ix 5	Test and Analysis	None
Lowest Elevation: (-)56'-0" Flood Level: (-)55'11" Above Flood Level: No Note 1	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-73912-01, Wyle Report #45592-4, Foxboro N-E10 Series Pressure Transmitters, 5/18/83.
3. Impell Calculation No. 0570-032-092.
4. SBU-96263, UE&C Flooding Study Matrix, 10/25/85.
5. PSNH, Seabrook E.Q. File No. 174-00-01, Assessment Checklist, Note 5.
6. PSNH, Seabrook E.Q. File No. 174-00-01, Assessment Checklist, Note 7.
7. SBN-988, E.Q.; Post Accident Operating Time, dated 4/3/86.

Notes:

1. All equipment is above postulated flood levels except RH-FT-618 and 619 and CBS-PT-2314. Justification for not addressing submergence for these I.D.'s is given in Reference 6.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 174-14-01

Prepared By: [signature] Date: 4/8/86

Checked By: Jim Buckley Date: 4/18/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-174-14 Equipment ID No(s).: MM-TE-1000A, 1000B, 1001A, 1001B, 1002A, 1002B, 1003A, 1003B, 1004A, 1004B, 1005A, 1005B CC-TE-2171, CC-TE-2271 Equipment Type: Temperature Elements Manufacturer: Weed Model Number: N-9015S-E, NE4B250G-18.75AS Accuracy: Spec: $\pm 10^{o}F$ Demon: $\pm 10^{o}F$ Limiting Environment: Location: Prim. Aux. Bldg. (Zone PB-21) Rad Zone: Prim. Aux. Bldg. (Zone PB-21)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	229	1 p. 3	485	2 Vol. 1 p. 70	Test	None
	Peak Pressure (Psig)	1.0	1 p. 2	84.7	2 Vol. 1 p. 70	Test	None
	Relative Humidity (%)	100	1 p. 3	100	2 Vol. 1 p. 70	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	2×10^{7}	1 p. 3	3.03×10^{8}	2 Vol. 1 p. 73	Test	None
	1 Year Accident Radiation Dose (Rads)	3.4×10^{7}	1 p. 3				
	Aging (^{o}F/Years)	104/40	1 p. 3	104/40	2 Vol. 1, p. 8 4	Test and Analysis	None
Lowest Elevation: (-)19'-9" Flood Level: (-)25'-11" Above Flood Level: Yes Note 1	Submergence	N/A	5	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-93869-01, NTS Report Number 548-8854-2, Rev. B, dated 10/21/82 (Three Volumes).
3. Impell Calculation No. 0570-032-093.
4. Seabrook EQ File No. 174-14-01, Note 4 of Assessment Checklist.
5. SBU-96263, UE&C Flooding Study Matrix.

Notes:

1. Lowest elevation and flood level given respresents the worst case based in the actual location of the I.D. Nos. listed.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 174-14-01

Prepared By: Jay A. Moore Date: 4/18/86
Checked By: Jean Buckley Date: 4/18/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-174-14 Equipment ID No(s).: RH-TE-604, 605 Equipment Type: Temperature Elements Manufacturer: Weed Model Number: 612 Accuracy: Spec: $\pm 10^{o}F$ Demon: $\pm 10^{o}F$ Limiting Environment: Location: Mech. Penet. Area (MPA-3) Rad Zone: Mech. Penet. Area (MPA-1)	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	167	1 p. 2	485	2 Vol. 1 p. 70	Test	None
	Peak Pressure (Psig)	1.0	1 p. 2	84.7	2 Vol. 1 p. 70	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 Vol. 1 p. 70	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	2×10^{7}	1 p. 2	3.03×10^{8}	2 Vol. 1 p. 73	Test	None
	1 Year Accident Radiation Dose (Rads)	3.9×10^{7}	1 p. 2				
	Aging (^{o}F/Years)	104/40	1 p. 2	104/40	2 Vol. 1, p. 8 4	Test and Analysis	None
Lowest Elevation: (-)18'0" Flood Level: (-)25'11" Above Flood Level: Yes	Submergence	N/A	5	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-93869-01, NTS Report Number 548-8854-2, Rev. B, dated 10/21/82 (Three Volumes).
3. Impell Calculation No. 0570-03[illegible]-093.
4. Seabrook EQ File No. 174-14-01, Note 4 of Assessment Checklist.
5. SBU-96263, UE&C Flooding Stud[illegible] Matrix.

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QUALIFICATION EVA ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 174-15-01

Prepared By: Jay A Mac Date: 7/23/86
Checked By: Jan Buckley Date: 9/23/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-174-15 Equipment ID No(s).: CBS-LE-2384-1, CBS-LE-2384-2, CBS-LE-2385-1, CBS-LE-2385-2 Equipment Type: Level Transmitter Manufacturer: Transamerican DeLavel Gems Sensor Division Model Number: XM-54852, XM-54853 Accuracy.Spec: ± 3% Demon: ± 3% Limiting Environment: Location: Containment Bldg. CS-10 Rad Zone: Containment Bldg. (General Area/ Not Submerged) Lowest Elevation: (-)21'-2 5/8" Flood Level: (-)20'8" Above Flood Level: No Note 1	Operating Time	1 year	1 p. 1	1 year	2 p. XII-7 3	Test and Analysis	None
	Peak Temperature (°F)	375	1 p. 1	400	2 p. XII-7	Test	None
	Peak Pressure (Psig)	60	1 p. 1	66	2 p. XII-7	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 p. XII-3	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% pH 7.5	1 p. 1	Boric Acid 1.72% pH 8.5 - 11.0	2 p. XII-1, XII-4 4	Test	None
	40 Year Normal Radiation Dose (Rads)	2×10^7	1 p. 1	2.0×10^8	2 p. II-3	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^8	1 p. 1				
	Aging (°F/Years)	120/40	1 p. 1	120/40	2 3	Test and Analysis	None
	Submergence	1 Year	5	1 Year	6	Test and Analysis	None

Documentation References:

1. UE&C Drawing No. 9763-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. Wyle Laboratories Test Report No. 45700-2, dated 12/14/82.
3. Impell Calculation 0570-032-067.
4. Seabrook Station Equipment Qualification File No. 174-15-01, Checklist Note 6.
5. SBU-96263, Seabrook Station Flooding Study Matrix.
6. Seabrook Station E.Q. File No. 174-15-01, Checklist Note 11.

Notes:

1. Equipment I.D. Nos. CBS-LE-2384-1 and CBS-LE-2385-1 only are submerged.

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QUALIFICATION EVAL JN WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-36-01

Prepared By: Jim Buckley Date: 4/22/86

Checked By: Dug A Moss Date: 4/22/86

Equipment Description	Postulated Environment			Qualified Environment		Qualification Method	Outstanding Items
	Parameter	Value	Reference	Value	Reference		
Purchase Order No.: 9763-006-248-36 Equipment ID No(s).: FW-V-30, FW-V-39, FW-V-48, FW-V-57, Note 2 Equipment Type: Hydraulic Operator Manufacturer: Borg-Warner Corporation Model Number: 37951 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: MS & FW Pipe Chases (PCW-1/PCE-1) Rad Zone: MS & FW Pipe Chases (PCW-1/PCE-1)	Operating Time	61 minutes	3	4 hours	2 p. 97 (Fig. 3)	Test	None
	Peak Temperature (°F)	325	1 p. 2	390	2 p. 97 (Fig. 3)	Test	None
	Peak Pressure (Psig)	4.8	1 p. 2	110	2 p. 97 (Fig. 3)	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 p. 38	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^3	1 p. 2	1.2×10^6	2 p. 46	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^4	1 p. 2				
	Aging (°F/Years)	130/40	1 p. 2	130/1.12	5	Test and Analysis	None
Lowest Elevation: 11'0" Flood Level: 5'5" Above Flood Level: Yes Note 1	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-23756-02, Borg-Warner Report #2064, Rev. A, 8/2/85.
3. SB-20692 PSNH Letter to N. Woodward (Impell) from T.C. Tillman and J.W. Stacey (YAEC), dated 4/10/86.
4. SBU-96263, UE&C Flooding Study Matrix, 10/25/85.
5. PSNH, Seabrook EQ File No. 248-36-01, Assessment Checklist No. 1, Note 6a.

Notes:

1. The lowest elevation and flood level represent the worst-case for the location of the equipment I.D. Nos. listed and those in Note 2.
2. Equipment I.D. #FW-FY-V1A1, -V2B1, -V3A1, -V4B1; -V1A2, -V2B2, -V3A2, -V4B2; -V1A3, -V2B3, -V3A3, -V4B3; -V1A4, -V2B4, -V3A4, -V4B4 are for actuation and #FW-PS-PS1A1, -PS1B1; -PS1A2, -PS1B2; -PS1A3, -PS1B3; -PS1A4, -PS1B4 are for closing within the operator.

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QUALIFICATION EVAL ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-36-01

Prepared By: Jim Buckley Date: 4/22/86

Checked By: Guy A Kerr Date: 4/22/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-36 Equipment ID No(s).: FW-ZS-PS3B1, FW-ZS-PS3B2, FW-ZS-PS3B3, FW-ZS-PS3B4 Note 2 Equipment Type: Limit Switch Manufacturer: Namco Controls Model Number: EA 170 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: MS & FW Pipe Chases (PCW-1/PCE-1) Rad Zone: MS & FW Pipe Chases (PCW-1/PCE-1)	Operating Time	61 minutes	3	4 hours	2 p. 97 (Fig. 3)	Test	None
	Peak Temperature (°F)	325	1 p. 2	390	2 p. 97 (Fig. 3)	Test	None
	Peak Pressure (Psig)	4.8	1 p. 2	110	2 p. 97 (Fig. 3)	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 p. 38	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^3	1 p. 2	1.2×10^6	2 p. 46	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^4	1 p. 2				
	Aging (°F/Years)	130/40	1 p. 2	130/1.12	5	Test and Analysis	None
Lowest Elevation: 11'0" Flood Level: 5'5" Above Flood Level: Yes Note 1	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-23756-02, Borg-Warner Report #2064, Rev. A, 8/2/85.
3. SB-20692 PSNH Letter to N. Woodward (Impell) from T.C. Tillman and J.W. Stacey (YAEC), dated 4/10/86.
4. SBU-96263, UE&C Flooding Study Matrix, 10/25/85.
5. PSNH, Seabrook EQ File No. 248-36-01, Assessment Checklist No. 1, Note 6b.

Notes:

1. The lowest elevation and flood level represent the worst-case for the location of the equipment I.D. Nos. listed.
2. This equipment is tested as part of Borg-Warner Mod. #37951 Hydraulic Operator.

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QUALIFICATION EVAL. ,ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-36-01

Prepared By: Jim Buckley Date: 4/22/86
Checked By: Guy A Moore Date: 4/22/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-36 Equipment ID No(s).: FW-ZS-PS3A1, FW-ZS-PS3A2, FW-ZS-PS3A3 Equipment Type: Limit Switch Manufacturer: Namco Controls Model Number: EA 180 Accuracy: Spec: N/A, Demon: N/A Limiting Environment:	Operating Time	1 year	[1] p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	325	[1] p. 2	374	[2] p. 10-14	Test	None
	Peak Pressure (Psig)	4.8	[1] p. 2	100	[2] p. 10-14	Test	None
	Relative Humidity (%)	100	[1] p. 2	100	[2] p. 10-14	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^{3}	[1] p. 2	2.04×10^{8}	[2] p. 10-5	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	[1] p. 2				
Location: MS & FW Pipe Chases (PCW-1/PCE-1) Rad Zone: MS & FW Pipe Chases (PCW-1/PCE-1)	Aging (^{o}F/Years)	130/40	[1] p. 2	130/5.5	[2] p. 4-12 (Fig. 8)	Test and Analysis	None
Lowest Elevation: 11'0" Flood Level: 5'5" Above Flood Level: Yes	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. Namco Test Report #QTR105 for Namco Limit Switches EA 180 (Mfgd. after 2/80) Rev. 4, 1/9/84.
3. Impell Calculation No. 0570-032-105, Rev. 0.
4. SBU-96263, UE&C Flooding Study Matrix, 10/25/85.

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QUALIFICATION EVAL[illegible]ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-36-01

Prepared By: Jim Buckley Date: 4/22/86.

Checked By: [signature] Date: 4/22/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-36 Equipment ID No(s).: FW-ZS-PS3A4 Equipment Type: Limit Switch Manufacturer: Namco Controls Model Number: EA-180 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: MS & FW Pipe Chase (PCW-1) Rad Zone: MS & FW Pipe Chase (PCW-1)	Operating Time	1 year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	325	1 p. 2	348	2 App. D p. 8	Test	None
	Peak Pressure (Psig)	4.8	1 p. 2	125	2 App. D p. 8	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 p. 8 of 11	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1.0×10^{3}	1 p. 2	2.04×10^{8}	2 p. 4 of 11 App. A	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	1 p. 2				
	Aging (^{o}F/Years)	130/40	1 p. 2	130/.839	5	Test and Analysis	None
Lowest Elevation: 11'-0" Flood Level: 5'-5" Above Flood Level: Yes	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. ACDC Report Qualification of Namco Controls Limit Switch Model EA-180, Rev. 1, Sept. 5, 1978.
3. Seabrook E.Q. File No. 248-36-01, Assessment Checklist No. 3, Note 12.
4. SBU-96263, Flooding Study Matrix.
5. Seabrook E.Q. File No. 248-36-01, Assessment Checklist No. 3, Note 6.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-38-01

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Greg A. Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-38 Equipment ID No(s).: MSD-V-44, MSD-V-45, MSD-V-46, MSD-V-47 Note 2 Equipment Type: Valve Actuator Manufacturer: Limitorque Model Number: SMB-000-2 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Main Steam FW Pipe Chase (PCE-1, PCW-1) Rad Zone: Main Steam FW Pipe Chase (PCE-1, PCW-1)	Operating Time	1 year	1 p. 1	1 year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	325	1 p. 2	385	5 Figure 2 9	Test	None
	Peak Pressure (Psig)	4.8	1 p. 2	66	5 Figure 2	Test	None
	Relative Humidity (%)	100	1 p. 2	100	3 p. 18	Test	None
	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.72 % by wt. pH 10.5 - 11.1	3 p. 17 7	Test	None
	40 Year Normal Radiation Dose (Rads)	1×10^3	1 p. 2	2.04×10^8	3 p. 12 and Appendix C	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^4	1 p. 2				
	Aging (^{o}F/Years)	130/40	1 p. 2	(Note 1) 130/40	2 p. 10	Test and Analysis	None
Lowest Elevation: 6'0" Flood Level: 5'5" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-93952-01, Limitorque Report B0058, Rev. 0, 1/11/80.
3. FP-91743-02, Limitorque Report 600456. Rev. 0, 12/9/75.
4. Impell Calculation 0570-032-075.
5. FP-3.935-01, Limitorque Report B0027, Rev. A, 10/18/78.
6. SBU-96263, Seabrook Station Flooding Study Matrix.
7. Seabrook E.Q. File No. 248-38-01, Assessment Checklist No. 1, Note 9.
8. Seabrook E.Q. File No. 248-38-01, Assessment Checklist No. 1, Note 8.
9. Seabrook E.Q. File No. 248-38-01, Assessment Checklist No. 1, Note 1.

Notes:

1. Although the qualified life as per thermal and radiation aging is 40 years, the number of mechanical cycles done during the test limits the qualified life to 16.78 years (Reference 8).
2. Equipment I.D. Nos. MSD-ZS-44, 45, 46 and 47 are for the integral position indication within these actuators.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-38-01

Prepared By: Jim Buckley Date: 4/2/86

Checked By: Doug A Mow Date: 4/2/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-38 Equipment ID No(s).: Note 1 Equipment Type: Terminal Blocks Manufacturer: Marathon, GE, Buchanan, Curtis Model Number: Marathon 300 & 1600, Buchanan 0222 & 0524, GE EB5, Curtis Type "L" Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Main Steam FW Pipe Chase PCE-1, PCW-1 Rad Zone: Main Steam FW Pipe Chase PCE-1, PCW-1	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	325	1 p. 2	325	2 App. E Figure 4 4	Test and Analysis	None
	Peak Pressure (Psig)	4.8	1 p. 2	70	2 App. E Figure 4	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 Para. 3.4.2	Test	None
	Chemical Spray (pH)	N/A	N/A	Boron Acid 1.65% by Wt. pH 11.2	2 App. I 7	Test	None
	40 Year Normal Radiation Dose (Rads)	1×10^{3}	1 p. 2	2.04×10^{8}	2 Para. 3.2	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	1 p. 2				
	Aging (^{o}F/Years)	130/40	1 p. 2	130/40	2 App. A 5	Test and Analysis	None
Lowest Elevation: 6'-0" Flood Level: 5'-5" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, 7/22/85.
2. Limitorque Test Report No. B0119, Qualification Type Test Report of Multipoint Terminal Strips for use in Limitorque Valve Actuators for PWR Service.
3. Impell Calculation No. 0570-032- .
4. Seabrook E.Q. File No. 248-38-01, Assessment Report No. 2, Note 2.
5. Seabrook E.Q. File No. 248-38-01, Assessment Report No. 2, Note 6.
6. SBU-96263, Seabrook Flooding Study Matrix.
7. Seabrook E.Q. File No. 248-38-01, Assessment Report No. 2, Note 8.

Notes:

1. The terminal blocks are used as a component of Limitorque Actuators and do not have a separate I.D. No. I.D. Nos. are listed in QEW Sheet 1.

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QUALIFICATION EVAL .ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-38-01

Prepared By: Jim Buckley Date: 4/2/86

Checked By: Doug A Moore Date: 4/2/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-248-38 Equipment ID No(s).: Note 1	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	325	1 p. 2	341	2, p. 72 7, p. 4 4	Test and Analysis	None
	Peak Pressure (Psig)	4.8	1 p. 2	107	2 p. 72	Test	None
Equipment Type: Cable Manufacturer: Rockbestos Model Number: Rockbestos Firewall SIS Wire (Chemically XLPE) Accuracy: Spec: N/A Demon: N/A	Relative Humidity (%)	100	1 p. 2	100	2 p. 72	Test	None
	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.7% by wt. pH 11.7	2 p. 79 5	Test	None
	40 Year Normal Radiation Dose (Rads)	1×10^{3}	1 p. 2	2.04×10^{8}	2 p. 10	Test	None
Limiting Environment: Location: Main Steam FW Pipe Chase PCE-1, PCW-1 Rad Zone: Main Steam FW Pipe Chase PCE-1, PCW-1	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	1 p. 2				
	Aging (^{o}F/Years)	130/40	1 p. 2	194/40	2 p. 49	Test and Analysis	None
Lowest Elevation: 6'-0" Flood Level: 5'-5" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, 7/22/85.
2. Rockbestos Test Report No. QR#5804, 9/13/85.
3. Impell Calculation No. 0570-032- .
4. Seabrook E.Q. File No. 248-38-01, Assessment Report No. 3, Note 2.
5. Seabrook E.Q. File No. 248-38-01, Assessment Report No. 3, Note 5.
6. SBU-96263, Seabrook Flooding Study Matrix.
7. FP-91935-01, Limitorque Valve Actuators Temperature Related to High Superheat Ambient Temperatures.

Notes:

1. The Firewall SIS wires are used as a component of Limitorque Actuators covered under EQ File 248-38-01. There is no separate I.D. for the cables.

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QUALIFICATION EVAL ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 248-38-01

Prepared By: Jim Buckley Date: 4/2/86
Checked By: Guy A Moore Date: 4/2/86

Equipment Description	Postulated Environment			Qualified Environment		Qualification Method	Outstanding Items
	Parameter	Value	Reference	Value	Reference		
Purchase Order No.: 9763-006-248-38 Equipment ID No(s).: Note 1 Equipment Type: Cable Manufacturer: Rockbestos Model Number: Rockbestos Firewall SIS Wire (Irradiation XLPE) Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Main Steam FW Pipe Chase PCE-1, PCW-1 Rad Zone: Main Steam FW Pipe Chase PCE-1, PCW-1 ~~Lowest Elevation: 6'-8"~~ Flood Level: 5'-5" Above Flood Level: Yes	Operating Time	1 Year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	325	1 p. 2	341	2, p. 65 7, p. 4 4	Test and Analysis	None
	Peak Pressure (Psig)	4.8	1 p. 2	117	2 p. 65	Test	None
	Relative Humidity (%)	100	1 p. 2	100	2 p. 65	Test	None
	Chemical Spray (pH)	N/A	N/A	Boric Acid 1.7% by wt. pH 9.6	2 p. 64 5	Test	None
	40 Year Normal Radiation Dose (Rads)	1×10^{3}	1 p. 2	2.00×10^{8}	2 p. 10	Test	None
	1 Year Accident Radiation Dose (Rads)	8.2×10^{4}	1 p. 2				
	Aging (^{o}F/Years)	130/40	1 p. 2	194/40	2 p. 42	Test and Analysis	None
	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, 7/22/85.
2. Rockbestos Test Report No. QR#5805, 9/13/85.
3. Impell Calculation No. 0570-032- .
4. Seabrook E.Q. File No. 248-38-01, Assessment Report No. 4, Note 2.
5. Seabrook E.Q. File No. 248-38-01, Assessment Report No. 4, Note 5.
6. SBU-96263, Seabrook Flooding Study Matrix.
7. FP-91935-01, Limitorque Valve Actuators Temperature Related to High Superheat Ambient Temperatures.

Notes:

1. The Firewall SIS wires are used as a component of Limitorque Actuators covered under EQ File 248-38-01. There is no separate I.D. for the cables.

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QUALIFICATION EVA ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 252-16-01

Prepared By: Dan A Klose Date: 4/4/86

Checked By: Jim Buckley Date: 4/14/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-325 Equipment ID No(s).: RH-FIS-610, RH-FIS-611 Equipment Type: Differential Pressure Switch Manufacturer: ITT Barton Model Number: 581A-0 Accuracy: Spec: 9.2% Demon: 9.2% Limiting Environment: Location: Equipment Vault EV-1A, 1B Rad Zone: Equipment Vault EV-1A, 1B	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (°F)	189	1 p. 4	370	2 Vol. 3 V-49	Test	None
	Peak Pressure (Psig)	1.01	1 p. 4	82	2 Vol. 3 V-50	Test	None
	Relative Humidity (%)	100	1 p. 4	100	2 Vol. 3 p. V-48, 49, 50	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	4.7×10^6	1 p. 4	2.0×10^8	2 Vol. 2 Appendix II Section C pp. 5, 6	Test	None
	1 Year Accident Radiation Dose (Rads)	9.6×10^6	1 p. 4				
	Aging (°F/Years)	104/40	1 p. 3	104/20	2 Vol. 1 Sec. 3.1.B1 (p. 10)	Test	None
Lowest Elevation: (-)57'0" Flood Level: (-)55'11" Above Flood Level: No Note 1	Submergence	N/A	4	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-73500-01, ITT Barton Qualification Test Report #R3-580A-9, ITT Barton 580A Series Differential Pressure Switches, dated 12/22/83, Volumes 1 through 4.
3. Seabrook E.Q. File No. 252-16-01, Assessment Checklist, Note 9.
4. SBU-96263, UE&C Letter, "Flooding Study Matrix".
5. Seabrook E.Q. File No. 252-16-01, Assessment Checklist, Note 8
6. FP-73645-01, Engineering Report #R3-580A-15, dated 1/30/84.

Notes:

1. Equipment I.D. No. RH-FIS-610 is submerged. However, justification for not addressing submergence is provided in Reference 5.

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QUALIFICATION EVA. ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 252-16-01

Prepared By: [illegible] Date: 4/14/86

Checked By: Jim Buckley Date: 4/14/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-252-16 Equipment ID No(s).: COP-PDS-1788, COP-PDS-1789 Equipment Type: Differential Pressure Switch Manufacturer: ITT Barton Model Number: 581A-1 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Primary Aux. Bldg. PB-3 Rad Zone: Primary Aux. Bldg. PB-3	Operating Time	1 year	1 p. 1	1 year	3	Test and Analysis	None
	Peak Temperature (^{o}F)	158	1 p. 3	180	4 p. 1-2	Test	None
	Peak Pressure (Psig)	.5	1 p. 3	5	4 p. 1-2	Test	None
	Relative Humidity (%)	100	1 p. 3	100	4 p. 1-2	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1×10^3	1 p. 3	5.0×10^7	4 p. 1-2	Test	None
	1 Year Accident Radiation Dose (Rads)	1.8×10^2	1 p. 3				
	Aging (^{o}F/Years)	104/40	1 p. 3	104/20	2 Vol. 1 Sec. 3.1.B1 (p. 10)	Test	None
Lowest Elevation: 57'6" Flood Level: (-)21'6" Above Flood Level: Yes	Submergence	N/A	5	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 17, dated 7/22/85.
2. FP-73500-01, ITT Barton Qualification Test Report #R3-580A-9, ITT Barton 580A Series Differential Pressure Switches, dated 12/22/83, Volumes 1 through 4.
3. Impell Calculation No. 0570-032-065, Revision 1.
4. FP-73645-01, Engineering Report #R3-580A-15, dated 1/30/84.
5. SBU-96263, UE&C Letter, "Flooding Study Matrix".

Notes:

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 252-16-04

Prepared By: Guy A. Moss Date: 4/30/86

Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-252-16 Equipment ID No(s).: CAP-PDSH-5497, CAP-PDSH-5498 Equipment Type: Differential Pressure Switch Manufacturer: ITT Barton Model Number: 581-1 Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Primary Aux. Bldg. (PB-5) Rad Zone: Primary Aux. Bldg. (PB-5) Lowest Elevation: 59'-0" Flood Level: (-)21'-6" Above Flood Level: Yes	Operating Time	1 year	1 p. 1	1 Year	6	Test and Analysis	None
	Peak Temperature (^{o}F)	129.4	4 Table 1	220	2 Appendix II Section C	Test	None
	Peak Pressure (Psig)	N/A	N/A Note 1	3.4	2 Appendix II Section C	Test	None
	Relative Humidity (%)	N/A	N/A Note 1	100	2 Appendix II Section C	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	1×10^{3}	5 pp. 27, 28 Note 1	1.94×10^{8}	2, p. 9 Appendix II Section C 3, pp. 3, 9	Test	None
	1 Year Accident Radiation Dose (Rads)	1.8×10^{2}	5 pp. 27, 28 Note 1				
	Aging (^{o}F/Years)	104/40	1 p. 3	104/40	8	Test and Analysis	None
	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. ITT Barton Qualification Test Report No. R3-580-10, ITT Barton Differential Pressure Indicating Switches, Models 580-1 and 581-1, dated 6/2/83.
3. ITT Barton Qualification Test Report No. R3-580-10, Models 580 and 581, Amendment No. 1, September 6, 1983.
4. UE&C Calculation Set No. MSVCS-FAG-08, dated 4/26/85.
5. UE&C Calculation Set No. 4.4.14-70F, Total Integrated Dose Tables, Revision 3, 11/84.
6. Seabrook E.Q. File No. 252-16-04, Assessment Checklist, Note 3.
7. SBU-96263, Seabrook Station Flooding Study Matrix, 10/25/85.
8. Seabrook E.Q. File No. 252-16-04, Assessment Checklist, Note 6.

Notes:

1. Qualification required for LOCA events only. Therefore, the only harsh parameter is temperature for Zones PB-3 and PB-5. To obtain a more accurate value for the TID, doses for areas 19 and 22 from Reference 5 were used, based on specific equipment locations.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 252-38-01

Prepared By: Jim Buckley Date: 2/24/86
Checked By: Gary A. Moore Date: 2/24/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-252-38 Equipment ID No(s).: EPA-TSH-5430, EPA-TSH-5431, PAH-TSH-5391, PAH-TSH-5393 Equipment Type: Temperature Switch Manufacturer: ASCO Model Number: SA11A204R/QF10A4R Accuracy: Spec: 1% of Full Range Value, Demon: 1% of Full Range Value Limiting Environment: Location: Primary Aux. Building (PB-11) Rad Zone: Primary Aux. Building (PB-11)	Operating Time	30 Days	5	160 Days	3	Test and Analysis	None
	Peak Temperature (°F)	135	1 p. 3	210	2 p. 22	Test	None
	Peak Pressure (Psig)	0.4	1 p. 3	2.0	2 p. 35	Test	None
	Relative Humidity (%)	100	1 p. 3	100	2 p. 22	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	4.7×10^6	1 p. 3	6.47×10^6	2 App. D, p. 4	Test	None
	1 Year Accident Radiation Dose (Rads)	1.9×10^5	1 p. 3				
	Aging (°F/Years)	104/40	1 p. 3	104/12.96	/	Test and Analysis	None
Lowest Elevation: 30'-0" Flood Level: -21'-6" Above Flood Level: YES	Submergence	N/A	4	N/A	N/A	N/A	N/A

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Revision 16, 4/12/85.
2. FP-7356I-02, AQR 020184, Revision 1, Report on Qualification of ASCO Tri-point Temperature Switches.
3. Impell Calculation No. 0570-032-072.
4. SBU-96263, Flooding Study Matrix.
5. SBU-19963, PSNH Letter "Qualified Temperature Switches".
6. Seabrook E.Q. File No. 252-38-01, Assessment Checklist Note 2.
7. Seabrook E.Q. File No. 252-38-01, Assessment Checklist Note 14.

Notes:

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QUALIFICATION EVA. .ON WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-09

Prepared By: Jim Buckley Date: 4/11/86

Checked By: Guy A Moss Date: 4/11/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01 Equipment ID No(s).: EDE-SPL-9 Equipment Type: Electrical Splices Manufacturer: Raychem Corporation Model Number: WCSF-N S1119 Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment (All zones) Rad Zone: Primary Aux. Bldg. (PB-15A, PB-18)	Operating Time	1 year	1 p. 1	1 Year	4	Test and Analysis	None
	Peak Temperature (^{o}F)	375	1 p. 1	442	2 p. 10 (Fig. 6)	Test	None
	Peak Pressure (Psig)	60	1 p. 1	132	2 p. 10 (Fig. 6)	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2 pp. 8-10	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by Wt. pH = 7.5 to 10.5	1 p. 1	Boric Acid pH = 10.5	2 p. 8 5	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^{8}	1 p. 3 Note 2	2.2×10^{8}	2 pp. 6, 16 Table 1	Test	None
	1 Year Accident Radiation Dose (Rads)	----	1 p. 3				
	Aging (^{o}F/Years)	194/40 (90^{o}C)	Note 1	194 (90^{o}C)/40	3 p. 9 (Fig. 2) 2 p. 5, 6, 16 (Table 1)	Test and Analysis	None
Lowest Elevation: Note 3 Flood Level: Above Flood Level: Note 3	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. FP-34473-01, Wyle Laboratories Test Report No. 58772-2, dated 11/18/82, Environmental Qualification Test Report of Raychem WCSF-N In-Line Bolted Splice Assemblies for Raychem Corp.
3. FP-34183-01, Raychem Energy Division Report No. EDR-5046, Analysis of Heat Aging Data on WCSF Material to determine pre-aging conditions for Nuclear Qualification Testing, dated 3/4/82.
4. Impell Calculation No. 0570-032-143, Rev. 0.
5. PSNH, Seabrook E.Q. File No. 600-01-09, Assessment Checklist, Note 3.
6. SBU-92605, Letter from UE&C to Impell, dated 2/13/85.
7. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix, dated 4/9/85.
8. Seabrook Station, E.Q. File No. 600-01-09, Assessment Checklist, Note 7.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. The total integrated radiation dose in Environmental Zone PB-4 is greater than 2.0×10^{8} Rads. No electrical equipment is installed in this area (Reference 6).
3. Verification with respect to whether this splice is submerged subsequent to a design basis event is complete and addressed in Reference 8.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-10

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Greg A Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01 Equipment ID No(s).: EDE-SPL-10 Equipment Type: Electrical Splices (Hydrogen Recombiner) Manufacturer: Raychem Corporation Model Number: WCFS-N 502A834-52/144 Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Containment (CS-13) Rad Zone: Containment (CS-13)	Operating Time	1 year	1 p. 1	1 Year	7	Test and Analysis	None
	Peak Temperature	375	1 p. 1	442	2, p. 10(Fig.5) 3, p. 10(Fig.6) 4, p. 10(Fig.6)	Test	None
	Peak Pressure (Psig)	60	1 p. 1	132	2, p. 10(Fig.5) 3, p. 10(Fig.6) 4, p. 10(Fig.6)	Test	None
	Relative Humidity (%)	100	1 p. 1	100	2, p. 10(Fig.5) 3, p. 10(Fig.6) 4, p. 10(Fig.6)	Test	None
	Chemical Spray (pH)	Boric Acid 1.2% by Wt. pH=7.5 to 10.5	1 p. 1	Boric Acid 1.7% by Wt. pH=10.5	2, p. 9 3, p. 9 4, p. 8 9	Test	None
	40 Year Normal Radiation Dose (Rads)	2.0×10^7	1 p. 1	2.2×10^8	2,p.16(Table 1) 3,p.17(Table 1) 4,p.16(Table 1)	Test	None
	1 Year Accident Radiation Dose (Rads)	1.04×10^8	1 p. 1				
	Aging (^oF/Years)	194/40	Note 1	194/40	2, p. 5, 16 3, p. 7, 17 4, p. 5, 16 5, p. 9(Fig. 2) 6, p. 8(Fig. 2)	Test and Analysis	None
Lowest Elevation: 25'-0" Flood Level: (-)20'-8" Above Flood Level: Yes	Submergence	N/A	8	N/A	N/A	N/A	None

Documentation References:
1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17 dated 7/22/85.
2. FP-34176-01, Wyle Laboratories Test Report No. 58722-1, dated 8/24/82.
3. FP-34474-01, Wyle Laboratories Test Report No. 58722-6, dated 12/21/82.
4. FP-34473-01, Wyle Laboratories Test Report No. 58722-2, dated 11/18/82.
5. FP-34183-01, Raychem Energy Division Report No. EDR-5046, dated 3/4/82.
6. FP-34182-01, Raychem Energy Division Report No. EDR-5040, dated 10/15/81.
7. Seabrook Station, EQ File 600-01-10, Assessment Report, Note 1.
8. SBU-96263, UE&C letter addressed to YAEC on Flooding Study Matrix, dated 10/25/85.
9. Seabrook Station, EQ File 600-01-10, Assessment Report, Note 3.

Notes:
1. The temperature 194°F (90°C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.

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QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-08-01

Prepared By: Guy A Moss Date: 4/30/86

Checked By: Jim Buckley Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-08 Equipment ID No(s).: EDE-TERM-2	Operating Time	1 year	1 p. 1	1 Year	3	Test and Analysis	None
	Peak Temperature	325	1 p. 2	340	7 pp. 5, 6 4	Test	None
Equipment Type: Terminal Blocks	Peak Pressure (Psig)	4.8	1 p. 2	70	2 App. E Figure 4	Test	None
Manufacturer: Marathon	Relative Humidity (%)	100	1 p. 2	100	2 para.3.4.2	Test	None
Model Number: Marathon 300 Series	Chemical Spray (pH)	N/A	N/A	Boron 2950 mg/L P_h 11.2	2 App. 1	Test	None
Accuracy:Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	2.0×10^8	1 p. 3	2.04×10^8	2 para 3.2	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	---------	1 p. 3				
Location: MS & FW Pipe Chase (PCW-1, 2, 3, 5 - PCE-1, 2, 3,) Rad Zone: Primary Aux. Bldg. (Note 1)	Aging (^oF/Years)	130/40	1 p. 3	130/40	2 App. A 9	Test and Analysis	None
Lowest Elevation: Note 2 Flood Level: Note 2 Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. Limitorque Test Report No. B0119, Qualification Type Test Report of Multipoint Terminal Strips for use in Limitorque Valve Actuators for PWR Service.
3. Seabrook E.Q. File No. 600-08-01, Assessment Report, Note 2.
4. Seabrook E.Q. File No. 600-08-01, Assessment Report, Note 1.
5. Seabrook E.Q. File No. 600-08-01, Assessment Report, Note 7.
6. SBU-96263, Seabrook Flooding Study Matrix.
7. FP-31838-03, Qualification Test Report for Terminations, Terminal Block and Connecters to be used in the Electrical Penetrations of the Seabrook Plants, Test Report #PEN-TR-80-18, Rev. 4.
8. SBU-92605, Letter from UE&C to Impell, dated 2/13/86.
9. Seabrook E.Q. File No. 600-08-01, Assessment Report, Note 4.

Notes:

1. The limiting zones for radiation are PB-15A and PB-18. Environmental zones PB-4 and PB-19 have been excluded since no electrical equipment is installed in these zones (Ref. 8).
2. This is generic equipment which is not qualified for submergence, and is not submerged in the plant in any application where operability is required (Reference 5).

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-205-01

Prepared By: [signature] Date: 10/30/85

Checked By: [signature] Date: 10/30/85

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-205 Equipment ID No(s).: CS-P-2A, CS-P-2B Equipment Type: Charging Pump Motors 600 HP 4000 V, 1800 RPM Manufacturer: Westinghouse Model Number: HSWI 5810S Frame Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Primary Aux. Bldg. (PB-20A) Rad Zone: Primary Aux. Bldg. (PB-20A)	Operating Time	1 year	1 p. 1	1 year	4	Test and Analysis	None
	Peak Temperature (°F)	144	1 p. 3	324	3 p. 15 & 37	Test	None
	Peak Pressure (Psig)	1.00	1 p. 3	81.9	3 p. 26	Test	None
	Relative Humidity (%)	100	1 p. 3	100	2 p. 9	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	4.7×10^6	1 p. 3	2.0×10^8	3 p. 14 & 16	Test	None
	1 Year Accident Radiation Dose (Rads)	2.9×10^7	1 p. 3				
	Aging (°F/Years)	104/40	1 p. 3	248/13.88 (120°C)	5 Note 1	Test and Analysis	None
Lowest Elevation: 9'0" Flood Level: (-)21'-6" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. WCAP 8687, Supp. 2-A02A, Environmental, Rev. 2, March 1983.
3. WCAP 7829, Fan Cooler Motor Unit Test, Rev. 0, April 1972.
4. Impell Calculation No. 0570-032-046, Rev. 0
5. PSNH, Seabrook EQ File No. NSS-205-01, Assessment Checklist, Note 1.
6. SBU-96263, Seabrook Station Flooding Study Matrix.

Notes:

1. Qualified life accounts for normal ambient plus heat rise for a continuously running motor.

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EV. ION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-205-01

Prepared By: [signature] Date: 10/30/85

Checked By: [signature] Date: 10/30/85

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-205 Equipment ID No(s).: RH-P-8A, RH-P-8B Equipment Type: RHR Pump Motors 400 HP, 4000 V, 1800 RPM. Manufacturer: Westinghouse Model Number: VSWI 5009P39 Frame Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Equipmenmt Vaults (EV-3A) Rad Zone: Equipment Vaults (EV-3A)	Operating Time	1 year	1 p. 1	1 year	4	Test and Analysis	None
	Peak Temperature (°F)	189	1 p. 4	324	3 p. 15 & 37	Test	None
	Peak Pressure (Psig)	1.00	1 p. 4	81.9	3 p. 26	Test	None
	Relative Humidity (%)	100	1 p. 4	100	2 p. 9	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	4.7×10^6	1 p. 4	2.0×10^8	3 p. 14 & 16	Test	None
	1 Year Accident Radiation Dose (Rads)	4.7×10^7	1 p. 4				
	Aging (°F/Years)	104/40	1 p. 4	266/6.20 (130°C)	5	Test and Analysis	None
Lowest Elevation: (-)54'6" Flood Level: (-)55'-11" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. WCAP 8687, Supp. 2-A02A, Environmental, Rev. 2, March 1983.
3. WCAP 7829, Fan Cooler Motor Unit Test, Rev. 0, April 1972.
4. Impell Calculation No. 0570-032-046, Rev. 0
5. PSNH, Seabrook EQ File No. NSS-205-01, Assessment Checklist, Note 1.
6. SBU-96263, Seabrook Station Flooding Study Matrix.

Notes:

1. Qualified life accounts for normal ambient plus heat rise for a continuously running motor.

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. NSS-205-01

Prepared By: _____ Date: 10/30/85

Checked By: _____ Date: 10/30/85

Equipment Description	Postulated Environment Parameter	Postulated Environment Value	Postulated Environment Reference	Qualified Environment Value	Qualified Environment Reference	Qualification Method	Outstanding Items
Purchase Order No.: NSS-205 Equipment ID No(s).: SI-P-6A, SI-P-6B Equipment Type: SI Pump Motors 450 HP, 4000 V, 3600 RPM. Manufacturer: Westinghouse Model Number: HSWI 5808-H Frame Accuracy: Spec: N/A, Demon: N/A Limiting Environment: Location: Equipmenmt Vaults (EV-4A) Rad Zone: Equipment Vaults (EV-4A)	Operating Time	1 year	1 p. 1	1 year	4	Test and Analysis	None
	Peak Temperature (°F)	189	1 p. 4	324	3 p. 15 & 37	Test	None
	Peak Pressure (Psig)	1.00	1 p. 4	81.9	3 p. 26	Test	None
	Relative Humidity (%)	100	1 p. 4	100	2 p. 9	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	4.7×10^6	p. 4	2.0×10^8	3 p. 14 & 16	Test	None
	1 Year Accident Radiation Dose (Rads)	3.0×10^7	p. 4				
	Aging (°F/Years)	104/40	1 p. 4	104/40	5	Test and Analysis	None
Lowest Elevation: (-)48'6" Flood Level: (-)55'-11" Above Flood Level: Yes	Submergence	N/A	6	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F300219, Service Environment Chart, Rev. 17, dated 7/22/85.
2. WCAP 8687, Supp. 2-A02A, Environmental, Rev. 2, March 1983.
3. WCAP 7829, Fan Cooler Motor Unit Test, Rev. 0, April 1972.
4. Impell Calculation No. 0570-032-046, Rev. 0
5. PSNH, Seabrook EQ File No. NSS-205-01, Assessment Checklist, Note 1.
6. SBU-96263, Seabrook Station Flooding Study Matrix.

Notes:

1. Qualified life is based on normal standby de-energized condition of motor.

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ATTACHMENT 3

Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-04

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Barry A. Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01	Operating Time	100 Days	9	100 Days	3	Test and Analysis	None
Equipment ID No(s).: EDE-SPL-4	Peak Temperature (^{o}F)	189	1 p. 4	348	2 Att. 4, p. 6	Test	None
Equipment Type: 8 Kv Motor Connection Kit	Peak Pressure (Psig)	1.00	1 p. 4	28	2 Att. 4, p.6	Test	None
Manufacturer: Raychem Corporation	Relative Humidity (%)	100	1 p. 4	100	2 Att. 4, p.3	Test	None
Model Number: NMCK8	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
Accuracy: Spec: N/A Demon: N/A	40 Year Normal Radiation Dose (Rads)	4.7×10^{6}	1 p.4	5.0×10^{7}	2 p.2 & 16	Test	None
Limiting Environment:	1 Year Accident Radiation Dose (Rads)	2.9×10^{7}	6 p. 13				
Location: Equipment Vault (EV-3A) Rad Zone: Equipment Vault (EV-3A)	Aging (^{o}F/Years)	104/40	1 p. 4	104/40	5	Test and Analysis	None
Lowest Elevation: Note 1 Flood Level: (-)55'11" Above Flood Level: Note 1	Submergence	N/A	7	N/A	N/A	N/A	None

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Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 16, dated 4/12/85.
2. FP-34181-01, Raychem Energy Division Report No. EDR-5037, dated 1/15/82.
3. Impell Calculation No. 0570-032-039.
4. Report on Analysis of High Energy Line Break (HELB) Outside Containment, UE&C Report No. 9763-006-S-N-2, dated 3/1/85.
5. PSNH, EQ File No. 600-01-04, Assessment Checklist, Note 1a.
6. UE&C PIN #7737-NA-01200-4-02110113, dated 11/6/84, Total Integrated Radiation Doses.
7. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix.
8. PSNH, EQ File No. 600-01-04, Assessment Checklist, Note 7.
9. SBN-988, E.Q.; Post Accident Operating Time, dated 4/3/86.

Notes:

1. Equipment where these splice kits have been used are located either above flood level or if located below flood level their failure will not be detrimental to plant safety for the postulated event which causes flooding in that area (Ref. 8).

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Public Service Company of New Hampshire
Seabrook Station
Docket: 50-443

QUALIFICATION EVALUATION WORK SHEET

EQUIPMENT QUALIFICATION FILE NO. 600-01-04

Prepared By: Jim Buckley Date: 4/30/86
Checked By: Greg A. Moore Date: 4/30/86

Equipment Description	Postulated Environment Parameter	Value	Reference	Qualified Environment Value	Reference	Qualification Method	Outstanding Items
Purchase Order No.: 9763-006-600-01 Equipment ID No(s).: EDE-SPL-4 Equipment Type: 8 Kv Motor Connection Kit Manufacturer: Raychem Corporation Model Number: NMCK8 Accuracy: Spec: N/A Demon: N/A Limiting Environment: Location: Equipment Vault (EV-3A) Rad Zone: Equipment Vault (EV-3A) Lowest Elevation: Note 2 Flood Level: (-)55'11" Above Flood Level: Note 2	Operating Time	100 Days	9	100 Days	3	Test and Analysis	None
	Peak Temperature (^{o}F)	189	1 p. 4	348	2 Att. 4, p. 6	Test	None
	Peak Pressure (Psig)	1.00	1 p. 4	28	2 Att. 4, p.6	Test	None
	Relative Humidity (%)	100	1 p. 4	100	2 Att. 4, p.3	Test	None
	Chemical Spray (pH)	N/A	N/A	N/A	N/A	N/A	None
	40 Year Normal Radiation Dose (Rads)	4.7×10^{6}	1 p.4	5.0×10^{7}	2 p.2 & 16	Test	None
	1 Year Accident Radiation Dose (Rads)	2.9×10^{7}	6 p. 13				
	Aging (^{o}F/Years)	194(90^{o}C)/40	Note 1	194(90^{o}C)/15.92 Note 1	5	Test and Analysis	None
	Submergence	N/A	7	N/A	N/A	N/A	None

Documentation References:

1. UE&C Drawing No. 9763-F-300219, Service Environment Chart, Rev. 16, dated 4/12/85.
2. FP-34181-01, Raychem Energy Division Report No. EDR-5037, dated 1/15/82.
3. Impell Calculation No. 0570-032-039.
4. Report on Analysis of High Energy Line Break (HELB) Outside Containment, UE&C Report No. 9763-006-S-N-2, dated 3/1/85.
5. PSNH, EQ File No. 600-01-04, Assessment Checklist, Note 1b.
6. UE&C PIN #7737-NA-01200-4-02110113, dated 11/6/84, Total Integrated Radiation Doses.
7. SBU-96263, UE&C Letter addressed to YAEC on Flooding Study Matrix.
8. PSNH, EQ File No. 600-01-04, Assessment Checklist, Note 7.
9. SBN-988, E.Q.; Post Accident Operating Time, dated 4/3/86.

Notes:

1. The temperature 194^{o}F (90^{o}C) is consistent with the manufacturer's and Seabrook Class 1E cable specification.
2. Equipment where these splice kits have been used are located either above flood level or if located below flood level their failure will not be detrimental to plant safety for the postulated event which causes flooding in that area (Ref. 8).

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