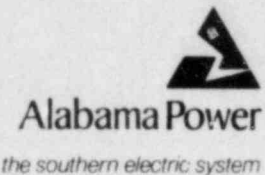


**Mailing Address**  
Alabama Power Company  
600 North 18th Street  
Post Office Box 2641  
Birmingham, Alabama 35291  
Telephone 205 783-6081

**F. L. Clayton, Jr.**  
Senior Vice President  
Flintridge Building



May 20, 1983

Docket Nos. 50-348  
50-364

Director, Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Mr. S. A. Varga

Joseph M. Farley Nuclear Plant - Units 1 and 2  
Fire Protection - 10 CFR 50, Appendix R

Gentlemen:

During the week of April 18, 1983, the Farley NRC Project Manager, Mr. E. A. Reeves, discussed the results of the NRC Staff's review of the design description for Alternative Shutdown Capability at Farley Nuclear Plant - Units 1 and 2 with Mr. R. L. George of Alabama Power Company. This design description was transmitted to the NRC in Alabama Power Company letter dated July 1, 1982 and outlines modifications to the Farley Nuclear Plant to satisfy 10 CFR 50, Appendix R, Section III.G.3. Based on the NRC Staff's review, Mr. E. A. Reeves requested that Alabama Power Company evaluate adding the reactor coolant system cold leg temperature (RCS T<sub>cold</sub>) indication and source range neutron monitor to the Hot Shutdown Panels for Farley Nuclear Plant - Units 1 and 2.

Alabama Power Company has completed an evaluation of the additions of RCS T<sub>cold</sub> indication and source range neutron monitor to the Farley Hot Shutdown Panels. Based on this evaluation, Alabama Power Company has determined that the addition of RCS T<sub>cold</sub> indication is an appropriate modification. Alabama Power Company has determined that the addition of a source range neutron monitor to the Farley Hot Shutdown Panel would be a very expensive modification (\$390,000.00) that would not contribute to the determination of an adequate shutdown margin as defined by the Technical Specifications and current Emergency Operating Procedures.

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PDR ADOCK 05000348  
F PDR

*Acob*

Mr. S. A. Varga  
U. S. Nuclear Regulatory Commission

May 20, 1983  
Page 2

its environmental qualification to be in accordance with the Preliminary Farley Emergency Response Capability (ERC) Integrated Implementation Plan and Schedule.

Section C of the reports provides a response to the NRC letter dated April 12, 1983. This section includes a review of the 30-day response to address the NRC clarifications, the identity of the pages of the TER that require proprietary protection along with a reference to previously submitted applications for withholding and affidavits for protection of the proprietary information, and a discussion of methods used to identify equipment addressed in 10 CFR 50.49(b)(2). It is the judgement of Alabama Power Company that previous submittals comply with 10 CFR 50.49 (a) and (b) as described in this section.

If there are any questions, please advise.

Yours very truly,

  
F. L. Clayton Jr.

FLCJr/DHJ:1sh-D22

Attachments

cc: Mr. R. A. Thomas  
Mr. G. F. Trowbridge  
Mr. J. P. O'Reilly  
Mr. E. A. Reeves  
Mr. W. H. Bradford



JOSEPH M. FARLEY NUCLEAR PLANT - UNIT 1

DOCKET NO. 50-348

ENVIRONMENTAL QUALIFICATION REPORT

JOSEPH M. FARLEY NUCLEAR PLANT  
UNIT 1  
ENVIRONMENTAL QUALIFICATION REPORT

Table of Contents

- Section A - 90 Day Submittal
- Section B - 10CFR50.49 Submittal
- Section C - Response to NRC April 12, 1983 letter
- Attachment 1 - Reference List for Westinghouse  
Justifications for Withholding Proprietary  
Information
- Attachment 2 - Documentation Previously Considered Proprietary
- Attachment 3 - Qualified Equipment Master List

SECTION A  
90-DAY SUBMITTAL

In response to the NRC's Safety Evaluation Report (SER) for the environmental qualification of safety-related electrical equipment, dated February 4, 1983, Alabama Power Company provides this section of the report regarding the review of environmental qualification of Class 1E electrical equipment for Farley Nuclear Plant (FNP) Unit 1. The subjects covered by this section include plans to resolve the outstanding items in Alabama Power Company's response dated March 14, 1983, (30-day response to the SER) and information regarding proprietary portions of the Technical Evaluation Report (TER). The scope of this review ensures that equipment necessary to protect the public health and safety is capable of performing its intended function when subjected to a harsh environment.

Alabama Power Company's letter of March 14, 1983 stated that water-tight fittings were being installed on the Victoreen radiation detectors. Installation of these fittings has been completed and Alabama Power Company now considers the Victoreen radiation detectors fully qualified.

The qualification reports for the Target Rock solenoid valves used on the reactor head vent system are currently under development by Westinghouse with a scheduled completion of May 1983. Alabama Power Company installed these solenoid valves in order to provide the state-of-the-art coincident with the implementation dates required by NUREG-0737. Alabama Power Company will review the reports when issued to ensure that the solenoid valves are qualified to the specific Farley Nuclear Plant accident environment. These solenoid valves are not considered within the scope of 10 CFR 50.49 since, as stated in Alabama Power Company letter of June 23, 1982, such equipment is addressed by the TMI Action Plan and is not essential to achieve a safe shutdown condition. Additionally, the reactor head vent system is de-energized and can not be placed into operation without the approval of the NRC as specified by NUREG-0737, II.B.1. There is no known environmentally caused failure mode of these de-energized solenoid valves that could lead to the spurious or inadvertant operation of the reactor head vent system. The schedule for the full environmental qualification of these solenoid valves therefore does not impair the safe shutdown capability of Farley Nuclear Plant.

All vendors have responded to Alabama Power Company's request for providing justifications for withholding specific TER information from public disclosure. Westinghouse has reviewed the appropriate sections of the TER and has identified information that still requires protection from public disclosure. Applications for withholding and affidavits for protection of the proprietary information were submitted by Westinghouse to the NRC in accordance with 10 CFR 2.790(b) when the proprietary documents were originally submitted. The pages of the TER that Westinghouse considers proprietary are Item No. 16, pages 5i, j, Item No. 18, pages 5b, c, d, e, f, g, h, i, j, Item No. 21, pages 5a, d, e, g, i, j, k, and Item

No. 27, page 5f. Attachment 1 provides a list of the applicable Westinghouse test reports and associated Westinghouse transmittal letter numbers and dates of issue to facilitate the retrieval of justifications for withholding. BIW Cable Systems, General Electric, Okonite, Limitorque, Transamerica - Delaval, Joy Manufacturing and Automatic Switch Company documents referenced in the TER are no longer considered proprietary. This completes the review of proprietary information contained in the TER's as requested by Safety Evaluation Report and the NRC letter dated April 12, 1983.

Equipment items in NRC Category IV "Documentation Not Made Available", include Boston Insulated Wire and Barton Transmitters. Boston Insulated Wire and Cable Company has reviewed the applicable portions of the TER and has determined that their test report and letter of clarification no longer require proprietary protection. The Boston Insulated Wire and Cable Company Test Report 73E062 and letter of clarification, dated August 21, 1981, which addresses their Test Report 73E062, are included as Attachment 2 of this report.



SECTION B  
10 CFR 50.49 SUBMITTAL

In response to the NRC's request in 10 CFR 50.49, "Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants", Alabama Power Company provides this section of the report regarding the review of environmental qualification of electrical equipment important to safety within the scope of 10 CFR 50.49.

Attachment 3 of this report provides a Master List of all electrical equipment important to safety within the scope of 10 CFR 50.49 (b)(1) and (b)(2). This Master List identifies the system, plant ID number, generic name, manufacturer, model and location of each equipment item. All equipment identified in the Master List is environmentally qualified and, therefore, a schedule to upgrade the qualification of electrical equipment within the scope of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49 is not necessary.

In accordance with Generic Letter 82-33, Alabama Power Company provided the NRC, by letter dated April 15, 1983, the Preliminary Farley Emergency Response Capability (ERC) Integrated Implementation Plan and Schedule for the installation of an integrated system for the enhancement of the existing and adequate ERC at FNP. This integrated system addresses Supplement 1 to NUREG-0737, whose basic provisions include Regulatory Guide 1.97. The schedule for the installation of this integrated system, including Regulatory Guide 1.97, is plant-specific and provides for prompt implementation while optimizing the use of utility and NRC resources. R.G. 1.97 includes provisions to upgrade the environmental qualification of accident monitoring instrumentation. The provisions of R.G. 1.97 are addressed in the integrated implementation schedule for the ERC system. Alabama Power Company will provide environmentally qualified accident monitoring equipment (Regulatory Guide 1.97) to satisfy 10 CFR 50.49(b)(3) in accordance with the Preliminary Farley ERC Integrated Implementation Schedule. Consequently, an exemption is requested, pursuant to 10 CFR 50.12, from the requirements of 10 CFR 50.49(g) to allow the schedule for identifying accident monitoring equipment (Regulatory Guide 1.97) as described in 10 CFR 50.49(b)(3) and upgrading its environmental qualification to be in accordance with the Preliminary Farley ERC Integrated Implementation Plan and Schedule in Alabama Power Company letter dated April 15, 1983.

The identity of equipment at FNP within the scope of 10 CFR 50.49(b)(1) and (b)(2) and its qualification is documented in previous Alabama Power Company IEB 79-01B responses, Appendices 1 and 2. In addition, equipment outside the scope of 10 CFR 50.49 has been qualified to satisfy the TMI Action Plan requirements of NUREG-0737. The identity of this TMI Action Plan equipment and its qualification is documented in IEB 79-01B Response - Appendix 3, TMI Action Plan Equipment, transmitted in Alabama Power Company letter dated June 23, 1982. The equipment identified in Appendix 3, not previously addressed in Appendices 1 and 2, is not essential to achieve a safe shutdown condition and is not considered within

Section B  
Page 2

the scope of 10 CFR 50.49. The qualified status of the TMI Action Plan equipment, as with all electrical equipment important to safety, will be maintained environmentally qualified in accordance with the FNP Environmental Qualification Administrative Program discussed in Section C of this report.

SECTION C  
RESPONSE TO NRC APRIL 12, 1983 LETTER

In response to the NRC's Safety Evaluation clarification letter dated April 12, 1983, Alabama Power Company provides this section of the report regarding the review of environmental qualification of Class 1E electrical equipment for Farley Nuclear Plant (FNP) Unit 1. The subjects covered by this section include a review of the Alabama Power Company letter dated March 14, 1983, (30-day response to the SER); a review of information in the Technical Evaluation Report (TER) claimed to be proprietary; a review of the programs and scope of equipment addressed by previous environmental qualification submittals for compliance with paragraphs (a) and (b) of 10 CFR 50.49; and a discussion of methods used to identify the equipment covered by paragraph 10 CFR 50.49 (b)(2). The scope of this review ensures that equipment necessary to protect the public health and safety is capable of performing its intended function when subjected to a harsh environment.

As stated in the letter dated March 14, 1983, it is the judgement of Alabama Power Company that all equipment, which includes I.B, II.A, and IV, required to achieve a safe shutdown condition at FNP is environmentally qualified and Justifications for Continued Operation (JCO) for equipment items in these NRC categories are not necessary. Equipment items in NRC Category IV, "Documentation Not Made Available", are discussed in Section A of this report.

All vendors have responded to Alabama Power Company's request for providing justifications for withholding specific TER information from public disclosure. Information requiring and not requiring proprietary protection is discussed in Section A of this report.

Subsequent to its publication in the Federal Register on January 21, 1983, Alabama Power Company reviewed the provisions of 10 CFR 50.49 to determine differences from the original licensing documents, IEB 79-01B and NUREG-0588. With regards to paragraph (a) of 10 CFR 50.49, Alabama Power Company is implementing an Environmental Qualification Administrative Program for FNP to maintain the qualification of safety-related electrical equipment required to perform its intended function when exposed to a harsh environment. This program includes provisions for procurement that provides for the replacement of electrical equipment important to safety and TMI Action Plan equipment in accordance with 10 CFR 50.49. Additionally, this program provides for design control, procurement control, storeroom control, preventive maintenance, environmental qualification surveillance and document control. This program addresses in-service degradation through preventive maintenance/surveillance with equipment and component refurbishment and/or replacement based on known susceptibility to aging degradation, the results of inspections, and manufacturer's recommendations. This program will maintain the continued qualified status of equipment presently installed and the qualification of equipment associated with any future modifications. Alabama Power Company will review Regulatory Guide 1.89, Rev. 1 upon its issuance and will consider its guidance related to further program modifications. This program, which ensures compliance with 10 CFR 50.49, will be implemented by

the end of the Unit 1 fifth refueling outage currently scheduled for the second quarter of 1984. In the opinion of Alabama Power Company, the FNP Environmental Qualification Administration Program and the methodology by which it was developed complies with 10 CFR 50.49(a).

Additionally, Alabama Power Company has reviewed the scope of equipment addressed in the previous FNP responses to IEB 79-01B and has determined that this scope of equipment satisfies the provisions of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49. The establishment of new qualification programs to address the equipment within the scope of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49 is not necessary.

Accident-monitoring instrumentation described in paragraph (b)(3) of 10 CFR 50.49 will be identified in accordance with the Preliminary Farley ERC Integrated Implementation Plan and Schedule submitted in Alabama Power Company letter dated April 15, 1983. An exemption regarding the identity of accident monitoring equipment and its upgrading from the schedule provided in paragraph (g) of 10 CFR 50.49 has been requested with specificity in Section B of this report.

A Master List of safety-related and nonsafety-related equipment within the scope of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49 is presented in Attachment 3 of this report. The Master List for Farley Nuclear Plant - Unit 1 was developed by a systematic review of design and as-built documentation, the FSAR, Technical Specifications and Emergency Operating Procedures to determine the systems required to perform a safety-related function. The definition of safety-related equipment and its intended function used in developing the Master List is consistent with paragraph (b)(1) of 10 CFR 50.49. The review criteria and the methodology resulted in a Master List that includes safety-related and nonsafety-related equipment whose environmentally caused failure could unacceptably impair the intended function of safety-related equipment.

The review criteria and methodology utilized to develop the Master List for Farley Nuclear Plant Unit 1 are as follows:

1. This review determined the systems and components required to perform a safety-related function. These components were included in the Master List.
2. The control circuitry of components identified in Item 1 above was reviewed for connections (interlocks) to other safety-related and nonsafety-related components. If spurious or inadvertent operation due to environmentally induced failures of the connected components in the harsh environment could adversely affect the completion of a safety function, the connected (interlocks) safety-related or nonsafety-related components were included in the Master List.



3. The instrumentation circuitry of components identified in Item 1 above was reviewed for connection to other safety-related and nonsafety-related components. If spurious or inadvertent operation due to environmentally induced failures of the connected components in the harsh environment could cause erroneous indication of the status of safety-related components, the connected safety-related or nonsafety-related components were included in the Master List.
4. For the components identified in Item 1 above, the power circuitry inside the harsh environment was reviewed. If environmentally induced failures could result in a loss of power to components required to complete a safety-related function, the safety-related or nonsafety-related power circuitry components were included in the Master List. There are no connected safety-related/nonsafety-related power circuits in the harsh environment.

The Master List of Attachment 3 developed from this review criteria and methodology identifies safety-related equipment that is relied upon to remain functional during and following design basis events and nonsafety-related equipment whose environmentally caused failure could unacceptably impair the intended function of safety-related equipment. In the opinion of Alabama Power Company, the equipment identified in the Master List complies with paragraphs (b)(1) and (b)(2) of 10 CFR 50.49.

## ATTACHMENT 1

Reference List for Westinghouse Justifications for Withholding  
Proprietary Information

<u>Westinghouse Test Reports</u>	<u>Westinghouse Letter No.</u>	<u>Date of Issue</u>
1) WCAP-7820	E-SL-100	12/16/71
WCAP-7820 Suppl. 1	E-SL-336	05/31/72
2	NS-RS-075	11/02/73
3	NS-RS-183	03/22/74
4 & 5	N/A	
6	NS-CE-1268	11/05/76
7	N/A	
2) WCAP-7709L	E-SL-042	07/14/71
WCAP-7709L Suppl. 1	E-SL-334	03/23/72
2	N/A	
3	NS-RS-128	01/23/74
4	NS-RS-212	04/21/74
3) WCAP 9157	NS-LE-1600	12/16/77
	NS-TMA-2202	02/14/80
4) Test Report (1950)	NS-TMA-1950	09/29/78
5) Test Report (2120)	NS-TMA-2120	07/14/79

## ATTACHMENT 2

Enclosed are two documents which were previously not made available to the NRC for proprietary reasons. These documents are: (1) Boston Insulated Wire and Cable Company's Test Report 73E062, and (2) Boston Insulated Wire and Cable Company's letter of clarification, dated August 21, 1981, which concerns their Test Report 73E062. These documents are no longer considered proprietary by Boston Insulated Wire and Cable Company.



**BOSTON  
INSULATED  
WIRE & CABLE CO.**

65 BAY STREET · BOSTON · MASSACHUSETTS 02125 · (617) 265-2102 · TELEX 094-540

September 7, 1973

Mr. M. Malcom, Project Manager  
Bechtel Power Corporation  
P.O. Box 607  
Gaithersburg, Maryland 20760

Subject: P.O. #FNP-371  
Instrument Cable  
Joseph M. Farley Nuclear Plant  
Prototype Test Program  
BIW Orders #B040, B041  
B052, B053

Dear Mr. Malcom:

Please find enclosed the prototype test data for the subject order. The data was obtained in accordance with Specification SS-1102-101, Rev. 1, and the test program outlined in our letter of April 13, 1973.

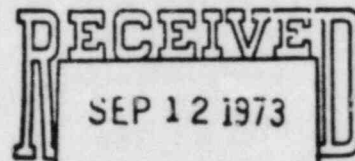
We hope that the results of this program will be useful in your evaluation of the instrument cable.

Please contact us if you have any questions.

Very truly yours,

BOSTON INSULATED WIRE & CABLE CO.

*Richard Kruger*  
Richard Kruger  
Applications Engineer  
BECHTEL POWER CORP.



JOB NO. 7597 - 03/20

RECORD SEPIA

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FILE NO. E25.6

7597-03-E25.6-10-1



7597-03		U-400761
TITLE: Prototype Test Program Results		
JOB: JOSEPH M. FARLEY NUCLEAR PLANT UNIT 1 ALABAMA POWER COMPANY		
MFR. Boston Insulated Wire & Cable Company	P.O. REQ. CLASS	FNP-371 41743-SS IV-A-3

73E062

DOCUMENTATION  
NUREG 0583

VENDOR'S DRAWING REVIEW	
1	<input checked="" type="checkbox"/> Approved - Mfg. may proceed.
2	<input type="checkbox"/> Approved - Submit final dwg. Mfg. may proceed.
3	<input type="checkbox"/> Approved except as noted - Make changes and submit final dwg. - Mfg. may proceed as approved.
4	<input type="checkbox"/> Not approved - Correct and resubmit.
5	<input type="checkbox"/> Review not required - Mfg. may proceed.
Approval of this drawing does not relieve supplier from full compliance with contract or purchase order requirements.	
By <u>L.S. Trill</u> BECHTEL	Date <u>8-4-75</u>
JOB NO. 7597-03	BECHTEL POWER CORPORATION P. O. BOX 607 GAITHERSBURG, MD.

MICROFILMED  
FOR  
RECORDS TRANSFER

7597-03-E25.6-10-1

RECORD SEPIA

C +

CUSTOMER:	Bechtel Corp. (Farley Nuclear Plant)	Lab Test #	73E062
Customer P.O. #	F.N.P. 371	BIW Job #	B040, B041, B052, B053
Customer Item #	Y01	BIW P/N	9537-R-002 (LSS 1893A)
		Spec. #	SS-1102-101

Prototype test report per letter sent to Mr. M. Malcolm of Bechtel Co. by J. Learn of Boston Insulated Wire on April 13, 1973

(1) Para. 8.2.1      Radiation Resistance Test

- Conditioning: (a) Samples air oven aged for 168 hrs. @ 121°C.  
 (b) Aged samples irradiated to a total dose of  $2 \times 10^8$  rads. (See attached radiation certificate -- Attachment I.)

Tests	Spec. Para.	Results
High Voltage (ac)	8.3.1.1a	pass 4 KV ac for 5 min.
Insulation Resistance	8.3.1.1b	$4.5 \times 10^3$ Meg $\Omega$ /M'
Continuity	8.3.1.2	pass
Tensile Strength	8.3.2.1)	1030 psi (O.T.)
Elongation	8.3.2.1) after conditioning	70% (O.E.)
Tensile Strength	8.3.2.2a) BECHTEL POWER CORP	67.9% (O.T.)
Elongation	8.3.2.2a) 168 hrs. @ 121°C	55.8% (O.E.)
Tensile Strength	8.3.2.2b)	97.5% (O.T.)
Elongation	8.3.2.2b) 42 hrs. @ 80 psi 127°C	114% (O.E.)

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Table continued from previous page

## (1) Para. 8.2.1

Tests	Spec. Para.	Results
Gravimetric Water Absorption	8.3.2.3b	129 mg/in <sup>2</sup>
Electrical Water Absorption (E.M. 60)	8.3.2.3a	Dielectric Constant = 3.17
	"	Increase in Capacitance
	"	(1-14 day) = 2.5%
	"	(7-14 day) = 2.9%
	"	Stability Factor
		(14 day) = 0.3

(2) Para. 8.2.2 Flame Resistance Test

(a)

Test	Spec. Paragraph	Conditioning	Result
Vertical Flame	8.2.2.1 (IPCEA S-19-81) para. 6.19.6	—	pass
Vertical Flame	8.2.2.1 (IPCEA S-19-81) para. 6.19.6	168 hrs. @ 121°C	pass

- (b) The results of the vertical flame tray tests which were performed in accordance with paragraph 8.2.2.2 using a burlap igniter flame source are included as Attachments II, III and IV of this report.

BECHTEL POWER CORP.

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JOB NO. 7597 - 03/20

(3) Para. 8.2.3Post-Accident Environment Test

- Conditioning: (a) Sample was aged 168 hrs. @ 121°C.
- (b) Aged sample was irradiated to a dose of  $2 \times 10^8$  rads. (See Attachment I for radiation certificate.)

The result of the autoclave test cycle as specified in paragraph 8.2.3.3 is included as Attachment V. The insulation resistance measurements required by paragraph 8.2.3.5 are also given in this attachment.

In accordance with paragraph 8.2.3.6, the physical and electrical tests specified in paragraphs 8.3.1 and 8.3.2 were performed on the sample upon its removal from the autoclave.

The results of the tests performed on this irradiated and autoclaved sample are given below.

Tests	Spec. Paragraph	Results
High Voltage (ac)	8.3.1.1a	pass 4 KV ac for 5 min.
Insulation Resistance	8.3.1.1b	$2.8 \times 10^4$ Meg $\Omega$ /M'
Continuity	8.3.1.2	pass
Tensile Strength	8.3.2.1)	920 psi (O.T.)
Elongation	8.3.2.1) after autoclave and conditioning	80% (O.E.)
Tensile Strength	8.3.2.2a	52.3% (O.T.)
Elongation	168 hrs. @ 121°C	37.6% (O.E.)
Tensile Strength	8.3.2.2b	74% (O.T.)
Elongation	42 hrs. @ 80 psi and 127°C	68.8% (O.E.)
Gravimetric Water Absorption	8.3.2.3b	15.0 meg/in <sup>2</sup>
Electrical Water Absorption (E.M. 60)	8.3.2.3a BECHTEL POWER CORP. <b>RECEIVED</b> SEP 12 1973	Dielectric Constant = 3.16 Increase in Capacitance (1-14 day) = 2.6% (7-14 day) = 1.8% Stability factor (14 day) = 0.2



## ISOMEDIX

RADIATION CERTIFICATION

Part No.: BIW (a) LSS-1893A  
(b) P/N 9244-H-024

Dose Rate: 1 Mrad/hr

Total Dose: (a) 200 Mrad (b) 60 Mrad

Date Radiation Completed: 6-28-73

Source: Cobalt-60

Conditions: Irradiation performed in air at ambient temperature (70°F) and slight negative pressure (-1/2" water).

Max. Temp. of Sample During Irradiation: 110° F

Dosimetry System: Dosimetry was performed using a Victoreen Model 555 Integrating Dose Rate Meter and Probe. The unit was calibrated on January 15, 1971 by the Victoreen Instrument Company, using Cobalt-60 and Cesium-137 sources whose calibrations are traceable to the U.S. National Bureau of Standards. A copy of the calibration certificate is available.

Other: Samples were rotated and turned during exposure to achieve a more uniform dose distribution.

Post-Irradiation Defects Observed: none

BECHTEL POWER CORP.

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JOB NO. 7597 : 03/20

This is to certify that the subject product was radiation processed in the aforementioned manner.

GRD:mg

*George R. Dietz*  
George R. Dietz  
Manager, Radiation Services

Isomedix Inc. • 25 Eastmans Rd., Hanover, New Jersey Telephone (201) 887-4700

Mailing Address: Post Office Box 177, Parsippany, New Jersey 07054

Isomedix Limited • Benoit Street, Mont. St. Hilairn, Quebec, Canada Telephone (514) 467-1211

Mailing Address: Post Office Box 7, Montreal, Quebec, Canada

General Data Sheet

TEST: <b>Flame Test Inquiry #SS-1102-101</b>	SPEC: <b>8.2.2.2</b>	PAR: <b>8.2.2.2</b>	TEST NO.: <b>73F027A</b>
CONDITIONING: <b>Aged 168 hrs. @ 121°C</b>			DATE: <b>6/18/73</b>
PART, TYPE NO.: <b>LSS-1893A</b>			TESTED BY: <b>W. Barnes</b>
CUSTOMER: <b>Farley (Alabama Power)</b>			LAB. SUP. CHECK: <b>R. Oppenheim</b>
TEST REQUIREMENTS: <b>According to above spec.</b>			TIME: <i>R. Oppenheim</i>
Construction: <b>2X #16 AWG GR-853A min. wall .027, 1X T-92, 2 lap. Wrap #18 AWG solid drain wire; 1X T-33 alum.-Mylar, 2 lap, alum. down, GR-547-J min. wall .054.</b>			TEMP.: RH:

<u>Sample #1</u>	Burlap size	24" x 24" folded
	Soak time	5 min.
	Drain time	Until 159 grams remained
	Ignition time	35 sec.
	Burlap burn time	16 min. 45 sec.
	Continues to burn	6 min.
	Cable damage	12 inches
	Insulation failure	
	1. No electrical failure	
	2. " " "	
	3. " " "	
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BECHTEL POWER CORP.

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SEP 12 1973

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6

General Data Sheet

TEST: <b>Flame Test Inquiry #SS-1102-101</b>	SPEC: <b>8.2.2.2</b>	TEST NO.: <b>73 P027B</b>
CONDITIONING: <b>Aged 168 hrs. @ 121°C</b>		DATE: <b>6/18/73</b>
PART, TYPE NO.: <b>LSS-1893A</b>		TESTED BY: <b>W. Barnes</b>
CUSTOMER: <b>Farley (Alabama Power)</b>		LAB. SUP. CHECK: <b>R. Oppenheim</b>
TEST REQUIREMENTS: <b>According to above spec.</b>		TIME: <b>R. Oppenheim</b> TEMP.: <b>RH:</b>

<b>Sample #2</b>	<b>Burlap size</b>	<b>24" x 24" folded</b>
	<b>Soak time</b>	<b>5 min.</b>
	<b>Drain time</b>	<b>Until 158 grams remained</b>
	<b>Ignition time</b>	<b>20 sec.</b>
	<b>Burlap burning time</b>	<b>28 min. 36 sec.</b>
	<b>Continues to burn</b>	<b>0 sec.</b>
	<b>Cable damage</b>	<b>14 inches</b>
	<b>Insulation failure</b>	
	<b>1. No electrical failure</b>	
	<b>2. 8 min. 0 sec. -- one circuit only*</b>	
	<b>3. No electrical failure</b>	
	<b>4. " " "</b>	
	<b>5. " " "</b>	
	<b>6. " " "</b>	
	<b>7. " " "</b>	
	<b>8. " " "</b>	
	<b>9. " " "</b>	
	<b>10. 19 min. 40 sec. -- one circuit only*</b>	
<b>*One conductor -- shield failure</b>		
<div>           BECHTEL POWER CORP.  <b>RECEIVED</b>            SEP 12 1973            JOB NO. 7597 - 03/20         </div>		



General Data Sheet

TEST: <b>Flame Test Inquiry #SS-1102-101</b>	SPEC: <b>8.2.2.2</b>	PAR: <b>8.2.2.2</b>	TEST NO.: <b>73R027C</b>
CONDITIONING: <b>Aged 168 hrs. @ 121°C</b>			DATE: <b>6/19/73</b>
PART, TYPE NO.: <b>LSS-1893A</b>			TESTED BY: <b>W. Barnes</b>
CUSTOMER: <b>Farley (Alabama Power)</b>			LAB. SUP. CHECK: <b>R Oppenheim</b>
TEST REQUIREMENTS: <b>According to above spec.</b>			TIME IN OUT <i>R. Oppenheim</i> TEMP.: RH:

Sample #3	Burlap size	24" x 24"
	Soak time	7 min.
	Drain time	Until 165 grams remained
	Ignition time	25 sec.
	Burlap burning time	22 min. 5 sec.
	Continues to burn	0 sec.
	Cable damage	15 inches
	Insulation failure	
	1. 10 min. 45 sec.	10 min. 56 sec. *
	2. No electrical failure	
	3. " " " "	
	4. " " " "	
	5. " " " "	
	6. " " " "	
	7. " " " "	
	8. " " " "	
	9. " " " "	
	10. " " " "	

BECHTEL POWER CORP.  
**RECEIVED**  
SEP 16 1973

JOB NO. 7597 - 03/20

\*Two conductors -- shield (or conductor -- conductor failure)

8



BOSTON INSULATED WIRE &amp; CABLE CO.

## General Data Sheet

CUSTOMER: Alabama Power Company  
(Farley Nuclear Plant)

Test No.: 73E062B

Date: July 25, 1973

Spec: Inquiry #SS-1102-101

Post-Incident Environment TestPara. 8.2.3

The electrical circuit specified in para. 8.2.3.2 was maintained for the duration of the test on this irradiated sample. No insulation failure took place.

The chemical spray, consisting of a 10,000 ppm solution of boric acid buffered with NaOH to give a Ph factor of 10.5, was also provided for the test duration. The test cycle and the I.R. readings taken at the required intervals as specified in para. 8.2.3.5 are given in Table 1 below.

TABLE 1I.R. in Meg.  $\Omega$ /M'

<u>Temperature</u>	<u>Pressure</u>	<u>Cond. #1</u>	<u>Cond. #2</u>	<u>Time</u>
80°F	0	$2 \times 10^5$	$1.8 \times 10^5$	Initial Reading
300°F	80 psi	$7 \times 10^2$	$8 \times 10^2$	1 hr.
"	"	$7 \times 10^2$	$8 \times 10^2$	2 hr.
"	"	$7 \times 10^2$	$8 \times 10^2$	3 hr.
"	"	$5 \times 10^2$	$6 \times 10^2$	4 hr.
250°F	16 psi	$5 \times 10^3$	$7 \times 10^2$	1 day
"	"	$5 \times 10^3$	$7 \times 10^2$	2 days
"	"	$4 \times 10^3$	$7 \times 10^2$	3 days
"	"	$1 \times 10^3$	$7 \times 10^2$	4 days
"	"	$4 \times 10^2$	$7 \times 10^1$	5 days
"	"	$1.7 \times 10^3$	$*(10^4 \Omega)$	6 days
"	"	$7 \times 10^3$	$*(3 \times 10^5 \Omega)$	7 days

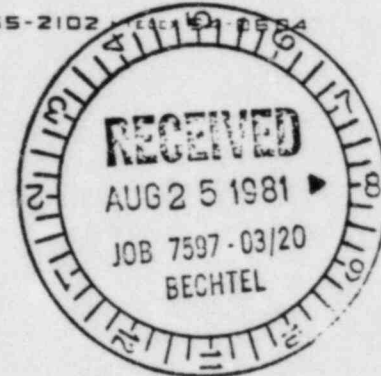
\*Readings taken with Simpson meter. BECHTEL POWER CORP.

RECEIVED  
DEC - 4 1973

JOB NO. 7597 - 03/20



August 21, 1981



Bechtel Power Corporation  
15740 Shady Grove Road  
Gaithersburg, Maryland 20877

Attention: A. A. Vizzi  
Project Engineer

Joseph M. Farley Nuclear Plant Units 1 and 2  
Environmental Qualification  
Purchase Order FNP-371  
Bechtel File E-91  
V-3967

Gentlemen:

In reference to your letter of August 14, 1981, we are enclosing Appendix A & Figure I which apply to the cables with ethylene propylene rubber insulation. The slope of Figure I was derived from tests on EPR insulation as described in Appendix A. A line drawn through the 168 hour/121°C point in Figure I with the same slope (slope represents rate of aging as described in Appendix A) shows a projected life of 40 years at 49°C. Consequently, aging for 168 hours at 121°C represents 40 years at 49°C for the ethylene propylene rubber insulation.

Please contact us if you have any questions.

Very truly yours,

BIW CABLE SYSTEMS, INC.

J R Learn  
J. R. Learn

J. R. Learn  
Applications Engineer

[illegible]

LONG-TERM PHYSICAL AGING PROPERTIES -- 40 YEAR LIFE

Long-term physical aging tests conducted on cables indicate a life in excess of 40 years at 90C for BIW's ethylene propylene rubber insulation. This is shown by the Arrhenius plot in Figure I for cables aged at 200C, 180C, 150C, 136C and 121C.

Accelerated agings were initially made at the five test temperatures on specimens taken from slabs. The slope of the line determined by data points was found to be the same for different end points and can be taken to represent the rate of change by the materials to any defined end condition. By using this slope to determine a line intersecting the 40 year life -- 90C temperature point as shown in Figure I -- we can determine what the expected cable life must be at any aging temperature to represent the equivalent of 40 years at 90C, since any point on the line represents the equivalent of 40 years at 90C.

Specimens of BIW cables were removed from the ovens periodically, as shown in Figure I, and subjected to a dielectric proof test of 2200 volts (twice rated voltage + 1000). After successfully passing the test, the samples were returned to the oven for continued aging. As the data clearly indicate, the cables withstand the proof test voltage when aged in excess of that representing 40 year service. The specimens were subjected to bending after aging in excess of the 40 year conditioning.

As Figure I indicates, cable samples at 200C, 180C, 150C, 136C and 121C have surpassed the 40 year requirement. When bent around a 40X diameter mandrel, the ethylene propylene rubber insulation was undamaged and still withstood the voltage proof test. Passing points above the 40 year-90C life line indicate margin of performance.

Figure I is offered for acceptance as evidence of 40 year life at 90C in lieu of additional testing or data. These tests were conducted in accordance with IEEE 383-1974, para. 2.3.2.



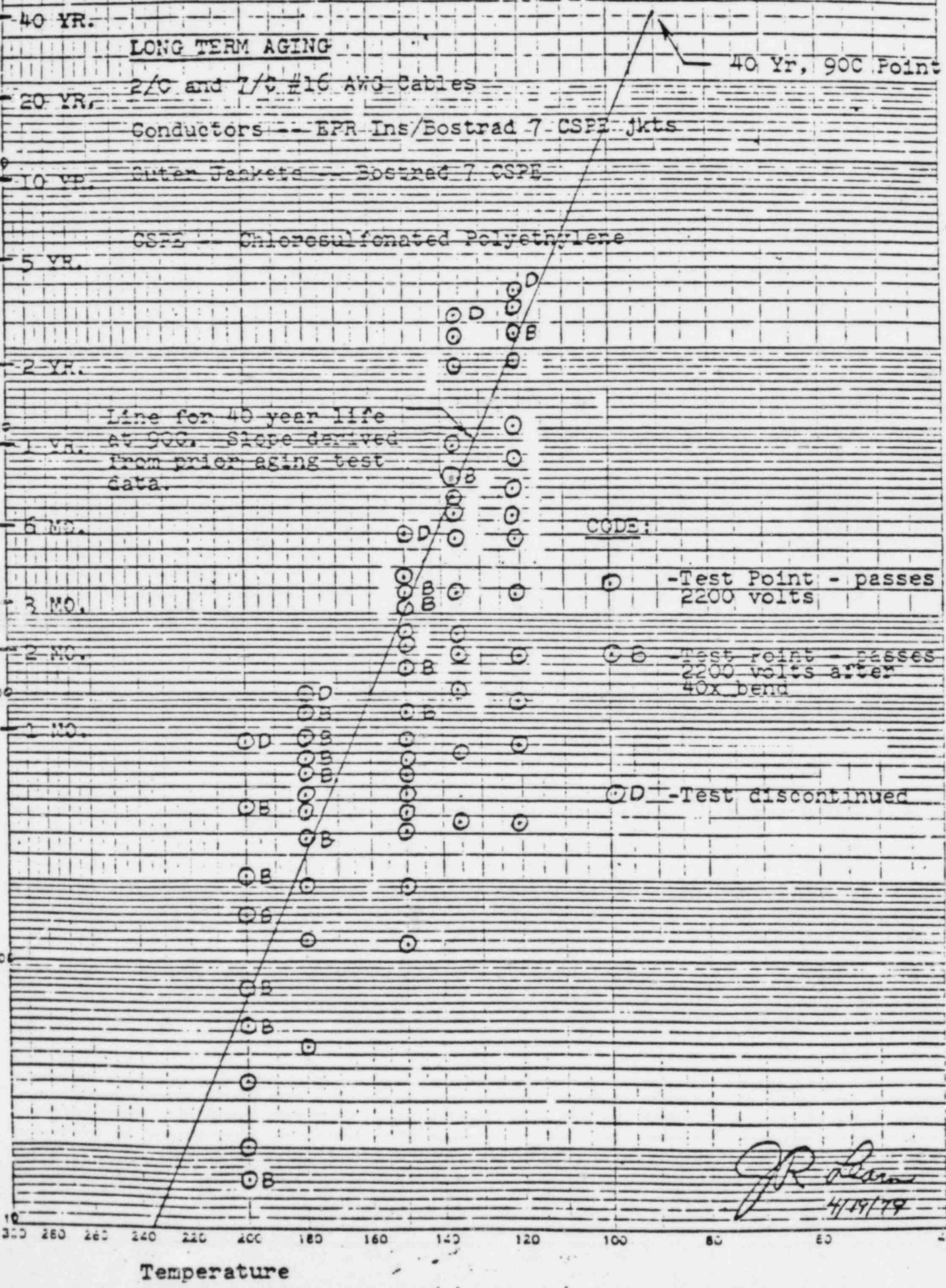
*R. L. Lamm*  
6/24/80



AL A  
(U)  
Agins Time -- Hours

46 8200  
REPLACEMENT APPROX 1111  
TEMPERATURE & AGING CYCLES  
NEUTRON & ENRICH CO.

FIGURE I



JR  
4/19/79



ATTACHMENT 3  
QUALIFIED EQUIPMENT ITEMS

This Master List includes the system, plant ID numbers, generic name, manufacturer, model and location of each qualified equipment item. These are safety-related, Class 1E electrical equipment items, which are required to achieved a safe shutdown condition at FNP.

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.1  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: REACTOR COOLANT INSTRUMENTATION

B-13

[illegible]

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.2  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: REACTOR COOLANT SYSTEM - STEAM GENERATOR B-21

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
N1B21PT402	Press. Transmitter	Barton	763	CTMT	129'
N1B21PT403	Press. Transmitter	Barton	763	CTMT	129'
N1B21TE410	RTD	Rosemount	176KS	CTMT	122'-9"
N1B21TE413	RTD	Rosemount <sup>3</sup>	176KS	CTMT	122'-9"
N1B21TE420	RTD	Rosemount	176KS	CTMT	122'-9"
N1B21TE423	RTD	Rosemount	176KS	CTMT	122'-9"
N1B21TE430	RTD	Rosemount	176KS	CTMT	122'-9"
N1B21TE433	RTD	Rosemount	176KS	CTMT	122'-9"
Q1T52B012	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B030	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B040	Penetration	General Electric	100 Series	CTMT	143'-0"
11TB001	Terminal Block	States Co.	Type ZWM	CTMT	>115'
11TB003	Terminal Block	States Co.	Type ZWM	CTMT	>115'
11TB004	Terminal Block	States Co.	Type ZWM	CTMT	>115'
21TB001	Terminal Block	States Co.	Type ZWM	CTMT	>115'
21TB002	Terminal Block	States Co.	Type ZWM	CTMT	>115'
21TB005	Terminal Block	States Co.	Type ZWM	CTMT	>115'
1VYV5031B	Instr. Cables	Boston Ins. Wire	None	CTMT	>115'
1VYV5033B	Instr. Cables	Boston Ins. Wire	None	CTMT	>115'
1V1V5002E,F,G	Instr. Cables	Boston Ins. Wire	None	CTMT	>115'
1V2V5002E,F,G	Instr. Cables	Boston Ins. Wire	None	CTMT	>115'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.3

Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: REACTOR COOLANT SYSTEM - PRESSURIZER

B-31

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1B31SV8047 (HV8047)	Solenoid Valve	ASCO	NP831654V	CTMT	118'-0"
N1B31ZS8047 (HV8047)	Limit Switch	NAMCO	EA-180	CTMT	118'-0"
Q1T52B022	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B038	Penetration	General Electric	100 Series	CTMT	143'
N1B31SV8047-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	>115'
Q1B31LT459	Level Transmitter	Barton	764	CTMT	132'
Q1B31LT460	Level Transmitter	Barton	764	CTMT	132'
Q1B31LT461	Level Transmitter	Barton	764	CTMT	132'
Q1B31PT455	Pressure Transmitter	Foxboro	E11GM(MCA)	CTMT	166'-6"
Q1B31PT456	Pressure Transmitter	Foxboro	E11GM(MCA)	CTMT	166'-6"
Q1B31PT457	Pressure Transmitter	Foxboro	E11GM(MCA)	CTMT	166'-6"
1VBL5078C	Control Cable	Okonite	None	CTMT	>115'
1VBQ5021E	Control Cable	Okonite	None	CTMT	>115'
Q1T52B012	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B028	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B030	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B040	Penetration	General Electric	100 Series	CTMT	143'
1VYV5031D	Instr. Cable	Boston Ins. Wire	None	CTMT	>115'
1V1V5002U	Instr. Cable	Boston Ins. Wire	None	CTMT	>115'
1V2V5002T,U	Instr. Cables	Boston Ins. Wire	None	CTMT	>115'
1V3V5002T, U	Instr. Cables	Boston Ins. Wire	None	CTMT	>115'



# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.4  
Sheet 2

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: FEEDWATER CONTROL SYSTEM

C-22

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
1VAL5061C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5034C, D	Control Cables	Okonite	None	Mn. Stm. Room	≥ 131'
1VXL5072B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5062B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5035B, D	Control Cables	Okonite	None	Mn. Stm. Room	≥ 131'
1VXL5073A	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
Q1C22LT474	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT475	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT476	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT484	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT485	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT486	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT494	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT495	Level Transmitter	Barton	764	CTMT	159'
Q1C22LT496	Level Transmitter	Barton	764	CTMT	159'
Q1C22FT474	Flow Transmitter	Foxboro	E13DM	CTMT	180'
Q1C22FT475	Flow Transmitter	Foxboro	E13DM	CTMT	180'
Q1C22FT484	Flow Transmitter	Foxboro	E13DM	CTMT	180'
Q1C22FT485	Flow Transmitter	Foxboro	E13DM	CTMT	180'
Q1C22FT494	Flow Transmitter	Foxboro	E13DM	CTMT	180'
Q1C22FT495	Flow Transmitter	Foxboro	E13DM	CTMT	180'
Q1T52B010	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B012	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B028	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B030	Penetration	General Electric	100 Series	CTMT	143'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.4  
Sheet 3

(CLASS IIE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

**SYSTEM:** FEEDWATER CONTROL SYSTEM

C-22

[illegible]

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.5

Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

**SYSTEM:** SAFEGUARD SYSTEMS, RHR/LHSI

E-11

[illegible]

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.6

Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CONTAINMENT COOLING AND PURGE

E-12, E-14, P-13

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1E14V002 (MOV3660)	1" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	134'-6"
Q1E14V004 (MOV3318B)	1" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	116'-0"
Q1P13ZS3196 (HV3196)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P13SV2867B (HV2867)	Solenoid Valve	ASCO	NP831654V	CTMT	129'-0"
Q1P13ZS2867B (HV2867)	Limit Switch	NAMCO	EA-740	CTMT	129'-0"
Q1P13ZS3197 (HV3197)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P13 V2866B (HV2866)	Solenoid Valve	ASCO	NP831654V	CTMT	129'-0"
Q1P13ZS2866B (HV2866)	Limit Switch	NAMCO	EA-740	CTMT	129'-0"
Q1E12SV3999A (HV3999A)	Solenoid Valve	ASCO	NP8316A74E	CTMT	<105'
Q1E12ZS3999A (HV3999A)	Limit Switch	NAMCO	EA-180	CTMT	<105'
Q1E12SV3999B (HV3999B)	Solenoid Valve	ASCO	NP8316A74E	CTMT	<105'
Q1E12ZS3999B (HV3999B)	Limit Switch	NAMCO	EA-180	CTMT	<105'
Q1E12M001A (H001A)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q1E12M001B (H001B)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q1E12M001C (H001C)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q1E12M001D (H001D)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q1T52B005	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B002	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B006	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B041	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"



# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.6  
Sheet 2

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CONTAINMENT COOLING AND PURGE

E-12, E-14, P-13

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1P13SV3196-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 115'
Q1T52B022	Penetration	General Electric	100 Series	CTMT	143'
Q1P13SV2867B-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 115'
Q1P13SV3197-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 115'
Q1P13SV2866B-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 115'
Q1E12SV3999A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	< 115'
Q1T52B025	Penetration	General Electric	100 Series	CTMT	143'
Q1E12SV3999B-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	< 115'
Q1T52B001	Penetration	General Electric	100 Series	CTMT	143'
Q1T52B023	Penetration	General Electric	100 Series	CTMT	143'
1VAFU-R5Q	Power Cable	Okonite	None	CTMT	> 115'
1VAFU-R5D	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5048F	Control Cable	Okonite	None	CTMT	> 115'
1VXR5005H	Control Cable	Okonite	None	CTMT	> 115'
1VAFU-J4Q	Power Cable	Okonite	None	CTMT	> 115'
1VAFU-J4D	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5009C	Control Cable	Okonite	None	CTMT	> 115'
1VYR5066B	Instrument Cable	Boston Ins. Wire	None	CTMT	> 115'
1VBL5008C,D,K,L	Control Cables	Okonite	None	CTMT	> 115'
1VBQ5010J	Control Cable	Okonite	None	CTMT	> 115'
1VYR5035D	Control Cable	Okonite	None	CTMT	> 115'
1VBL5008X, W	Control Cables	Okonite	None	CTMT	> 115'
1VBQ5012F	Control Cable	Okonite	None	CTMT	> 115'
1VYR5035F	Control Cable	Okonite	None	CTMT	> 115'
1VAL5122C	Control Cable	Okonite	None	CTMT	> 115'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.6  
Sheet 3

(CLASS I/E ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

**SYSTEM:** CONTAINMENT COOLING AND PURGE

E-12, E-14, P-13

[illegible]

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.7  
Sheet 1

(CLASS I/E ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

**SYSTEM:** HYDROGEN RECOMBINER SYSTEM

E-17

[illegible]

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.8  
Sheet 1

(CLASS I ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CONTAINMENT POST LOCA AIR MIXING SYSTEM E-19

[illegible]



# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.9  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CHEMICAL AND VOLUME CONTROL/SAFETY INJECTION

E-21

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1E21V038A (MOV8808A)	12" Motor Operated Gate Valve	Limitorque	SMB-4	CTMT	111'-6"
Q1E21V038B (MOV8808B)	12" Motor Operated Gate Valve	Limitorque	SMB-4	CTMT	112'-6"
Q1E21V038C (MOV8808C)	12" Motor Operated Gate Valve	Limitorque	SMB-4	CTMT	113'-6"
Q1E21SV8871 (HV8871)	Solenoid Valve	ASCO	NP831654V	CTMT	129'-0"
Q1E21ZS8871 (HV8871)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1E21V249A (MOV8112)	3" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	123'
N1E21ZS8149A (HV8149A)	Limit Switch	NAMCO	EA-180	CTMT	111'-0"
Q1E21SV8149AB (HV8149A)	Solenoid Valve	ASCO	206-381-6RF	CTMT	111'-0"
N1E21ZS8149B (HV8149B)	Limit Switch	NAMCO	EA-180	CTMT	111'-0"
Q1E21SV8149BB (HV8149B)	Solenoid Valve	ASCO	206-381-6RF	CTMT	111'-0"
N1E21ZS8149C (HV8149C)	Limit Switch	NAMCO	EA-180	CTMT	111'-0"
Q1E21SV8149CB (HV8149C)	Solenoid Valve	ASCO	206-381-6RF	CTMT	111'-0"
Q1T52B002	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B016	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B006	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B038	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
N1E21SV8871-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 116'-0"
Q1E21ZS8808AB	Limit Switch	NAMCO	EA-180	CTMT	111'-6"
Q1E21SZ8808BB	Limit Switch	NAMCO	EA-180	CTMT	112'-6"
Q1E21ZS8808CB	Limit Switch	NAMCO	EA-180	CTMT	113'-6"
Q1T52B014	Penetration	General Electric	100 Series	CTMT	143'-0"
N1E21SV8149AA-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 116'-0"
N1E21SV8149BA-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 116'-0"

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.9  
Sheet 2

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CHEMICAL AND VOLUME CONTROL/SAFETY INJECTION

E-21

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
N1E21SV8149CA-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	116'-0" & above
1VAFU-Z2Q	Power Cable	Okonite	None	CTMT	> 115'
1VAFU-Z2D,G	Control Cables	Okonite	None	CTMT	> 115'
1VAQ5023E	Control Cable	Okonite	None	CTMT	> 115'
1VXKA163B	Control Cable	Okonite	None	CTMT	> 115'
1VBFV-S2Q	Power Cable	Okonite	None	CTMT	> 115'
1VBFV-S2D,G	Control Cables	Okonite	None	CTMT	> 115'
1VBQ5024C	Control Cable	Okonite	None	CTMT	> 115'
1VYKA163B	Control Cable	Okonite	None	CTMT	> 115'
1VAFU-Z3Q	Power Cable	Okonite	None	CTMT	> 115'
1VAFU-Z3D,G	Control Cables	Okonite	None	CTMT	> 115'
1VAQ5024E	Control Cable	Okonite	None	CTMT	> 115'
1VXA163D	Control Cable	Okonite	None	CTMT	> 115'
1VAL5049C	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5022H	Control Cable	Okonite	None	CTMT	> 115'
1VAFU-T4Q	Power Cable	Okonite	None	CTMT	> 115'
1VAFU-T4D	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5018E	Control Cable	Okonite	None	CTMT	> 115'
1VAL5042F	Control Cable	Okonite	None	CTMT	> 115'
1VAL5042G	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5022F	Control Cable	Okonite	None	CTMT	> 115'
1VAL5043F	Control Cable	Okonite	None	CTMT	> 115'
1VAL5043G	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5023C	Control Cable	Okonite	None	CTMT	> 115'
1VAL5044F	Control Cable	Okonite	None	CTMT	> 115'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C. 2.9  
Sheet 3

(CLASS I ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CHEMICAL AND VOLUME CONTROL/SAFETY INJECTION E-21

[illegible]

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.10  
Sheet 1

(CLASS I ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: \_\_\_\_\_ REACTOR CAVITY POST LOCA DILUTION SYSTEM

E-22

[illegible]



# MASTER LIST

Section C.2.11

Sheet 1

Joseph M. Farley Nuclear Plant Unit 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: POST ACCIDENT CONTAINMENT COMBUSTIBLE GAS CONTROL

E-23

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1E23V021 (MOV3536)	2" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	116'-6"
Q1E23V003 (MOV3530)	6" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-6"
Q1E23V022A (MOV3528A)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q1E23V022B (MOV3528B)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q1E23V022C (MOV3528C)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q1E23V022D (MOV3528D)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q1E23V025A (MOV3835A)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q1E23V025B (MOV3835B)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q1T52B005	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B017	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B038	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B016	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B015	Penetration	General Electric	100 Series	CTMT	143'-0"
1VAFU-W4Q	Power Cable	Okonite	None	CTMT	>115'
1VBFU-N2Q	Power Cable	Okonite	None	CTMT	>115'
1VAFU-W4C	Control Cable	Okonite	None	CTMT	>115'
1VAED06E	Control Cable	Okonite	None	CTMT	>115'
1VBFV-N2C	Control Cable	Okonite	None	CTMT	>115'
1VBEE09E	Control Cable	Okonite	None	CTMT	>115'
1VBFV-Y5Q	Power Cable	Okonite	None	CTMT	>115'
1VBFV-Y5C	Control Cable	Okonite	None	CTMT	>115'
1VBFV-Y4Q	Power Cable	Okonite	None	CTMT	>115'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.11

Sheet 2

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

**SYSTEM:**

[illegible]

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.12  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: LIQUID WASTE DISPOSAL SYSTEM

G-21

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1G21SV3376 (HV3376)	Solenoid Valve	ASCO	NP8316A74V	CTMT	109'-0"
Q1G21ZS3376 (HV3376)	Limit Switch	NAMCO	EA-180	CTMT	109'-0"
N1G21ZS1003B (LCV1003)	Limit Switch	NAMCO	EA-180	CTMT	110'-0"
N1G21SV1003B (LCV1003)	Solenoid Valve	ASCO	206-381-6RF	CTMT	110'-0"
Q1G21SV7126 (HV7126)	Solenoid Valve	ASCO	NP831654V	CTMT	117'-0"
Q1G21ZS7126 (HV7126)	Limit Switch	NAMCO	EA-180	CTMT	117'-0"
Q1T52B038	Penetration	General Electric	100 Series	CTMT	143'-0"
01T52B041	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1G21SV3376-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	116'-0"
Q1T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
N1G21SV1003A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	≥116'-0"
N1G21SV7126-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	≥116'-0"
1VBL5045C	Control Cable	Okonite	None	CTMT	> 115'
1VBQ5030J	Control Cable	Okonite	None	CTMT	> 115'
1VYR5066G	Instrument Cable	Boston Ins. Wire	None	CTMT	> 115'
1VAL5037D	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5021J	Control Cable	Okonite	None	CTMT	> 115'
1VAL5036C	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5020J	Control Cable	Okonite	None	CTMT	> 115'

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.13  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: MAIN STEAM

N-11

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1N11ZS3369A (HV3369A)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	128'
Q1N11SV3369AC (HV3369A)	Solenoid Valve	ASCO	NP8316E36V	Mn.Stm. Room	≥131'
Q1N11ZS3369B (HV3369B)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	128'
Q1N11SV3369BC (HV3369B)	Solenoid Valve	ASCO	NP8316E36V	Mn.Stm. Room	≥131'
Q1N11ZS3369C (HV3369C)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	128'
Q1N11SV3369CC (HV3369C)	Solenoid Valve	ASCO	NP8316E36V	Mn.Stm. Room	≥131'
Q1N11ZS3370A (HV3370A)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	128'
Q1N11SV3370AC (HV3370A)	Solenoid Valve	ASCO	NP8316E36V	Mn.Stm. Room	≥131'
Q1N11ZS3370B (HV3370B)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	128'
Q1N11SV3370BC (HV3370B)	Solenoid Valve	ASCO	NP8316E36V	Mn.Stm. Room	≥131'
Q1N11ZS3370C (HV3370C)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	128'
Q1N11SV3370CC (HV3370C)	Solenoid Valve	ASCO	NP8316E36V	Mn.Stm. Room	≥131'
Q1N11ZS3368A (HV3368A)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	≥131'
Q1N11SV3368AA (HV3368A)	Solenoid Valve	ASCO	NP8321A2V	Mn.Stm. Room	≥131'
Q1N11ZS3368B (HV3368B)	Limit Switch	NAMCO	EA-180	Mn.Stm. Room	≥131'
Q1N11SV3368BA (HV3368B)	Solenoid Valve	ASCO	NP8321A2V	Mn.Stm. Room	≥131'
Q1N11ZS3368C (HV3368C)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	≥131'
Q1N11SV3368CA (HV3368C)	Solenoid Valve	ASCO	NP8321A2V	Mn.Stm. Room	≥131'
Q1N11SV3976A (HV3976A)	Solenoid Valve	ASCO	NP8321A2V	Mn.Stm. Room	≥131'
Q1N11ZS3976A (HV3976A)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	≥131'
Q1N11SV3976B (HV3976B)	Solenoid Valve	ASCO	NP8321A2V	Mn.Stm. Room	≥131'
Q1N11ZS3976B (HV3976B)	Limit Switch	NAMCO	EA-180	Mn.Stm. Room	≥131'
Q1N11SV3976C (HV3976C)	Solenoid Valve	ASCO	NP8321A2V	Mn.Stm. Room	≥131'
Q1N11ZS3976C (HV3976C)	Limit Switch	NAMCO	EA- 180	Mn.Stm. Room	≥131'
Q1N11SV3369AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn.Stm. Room	≥131'



# MASTER LIST

Section C.2.13  
Sheet 2

Joseph M. Farley Nuclear Plant Unit 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: MAIN STEAM

N-11

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1N11SV3369BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3369CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3370AA-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3370BA-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3370CA-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3368AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3368BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3368CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3976A-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3976B-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
Q1N11SV3976C-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm. Room	≥ 131'
1VAL5019E, F	Control Cables	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5045C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAQ5013A	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAT0001C, D, E	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5020E, F	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5046C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAQ5015A	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5021E, F	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.13  
Sheet 3

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: MAIM STEAM

N-11

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
1VAL5047C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAQ5017A	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5010E,D	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5021C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBQ5013D	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBT0001F,G,H	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5011E,D	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5022C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBQ5015D	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5012E,D	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5023C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBQ5017E	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5045B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAQ5013B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VXR5008A	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5046B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAQ5015B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VXR5008B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAL5047B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VAQ5017B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VXR5008C	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5021B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBQ5013E	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBL5022B	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'
1VBQ5015E	Control Cable	Okonite	None	Mn. Stm. Room	≥ 131'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.13  
Sheet 4

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM:                      MAIN STEAM

N-11

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# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.14  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: AUXILIARY STEAM

N-12

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1N12SV3234A (HV3234A)	Solenoid Valve	ASCO	NP8320A186V	MN. STM ROOM	≥ 131'
Q1N12ZS3234A (HV3434A)	Limit Switch	NAMCO	EA-180	MN. STM ROOM	≥ 131'
Q1N12SV3234B (HV3234B)	Solenoid Valve	ASCO	NP8320A186V	MN. STM ROOM	≥ 131'
Q1N12ZS3234B (HV3234B)	Limit Switch	NAMCO	EA-180	MN. STM ROOM	≥ 131'
Q1N12SV3235A (HV3235A)	Solenoid Valve	ASCO	NP8321A2V	MN. STM ROOM	≥ 131'
Q1N12ZS3235A (HV3235A)	Limit Switch	NAMCO	EA-180	MN. STM ROOM	≥ 131'
Q1N12SV3235B (HV3235B)	Solenoid Valve	ASCO	NP8321A2V	MN. STM ROOM	≥ 131'
Q1N12ZS3235B (HV3235B)	Limit Switch	NAMCO	EA-180	MN. STM ROOM	≥ 131'
Q1N12SV3234A-A/JB	Terminal Block	States Co.	Type ZWM	MN. STM ROOM	≥ 131'
Q1N12SV3234B-B/JB	Terminal Block	States Co.	Type ZWM	MN. STM ROOM	≥ 131'
Q1N12SV3235A-A/JB	Terminal Block	States Co.	Type ZWM	MN. STM ROOM	≥ 131'
Q1N12SV3235B-B/JB	Terminal Block	States Co.	Type ZWM	MN. STM ROOM	≥ 131'
1VAL5003B	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VAQ5011A	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VXR5007F	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VBL5007B	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VBQ5013B	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VYR5033E	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VAL5004C	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VAQ5010D	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VNR5003A,B *	Instrument Cables	Boston Ins. Wire	None	MN. STM ROOM	≥ 131'
1VBL5005C	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VBQ5011B	Control Cable	Okonite	None	MN. STM ROOM	≥ 131'
1VXKJ183C,D,G,H	Control Cables	Okonite	None	MN. STM ROOM	≥ 131'



# MASTER LIST

Section C.2.15

Sheet 1

Joseph M. Farley Nuclear Plant Unit 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: MAIN FEEDWATER AND CONDENSATE

N-21

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1N21V001A-B (MOV3232A)	14" Motor Operated Stop-Check Globe V1	Limitorque	SMB-4T	Mn.Stm. Room	≥ 131'
Q1N21V001B-B (MOV3232B)	14" Motor Operated Stop-Check Globe V1	Limitorque	SMB-4T	Mn.Stm. Room	≥ 131'
Q1N21V001C-B (MOV3232C)	14" Motor Operated Stop-Check Globe V1	Limitorque	SMB-4T	Mn.Stm. Room	≥ 131'
Q1N21LSH2828A	Level Switch	Gems	LS-36497	Mn.Stm. Room	127'-6"
Q1N21LSH2828B	Level Switch	Gems	LS36487	Mn.Stm. Room	127'-6"
Q1N21LSH2828C	Level Switch	Gems	LS-36497	Mn.Stm. Room	127'-6"
O1N21LSH2829A	Level Switch	Gems	LS-36497	Mn.Stm. Room	127'-6"
Q1N21LSH2829B	Level Switch	Gems	LS-36497	Mn.Stm. Room	127'-6"
O1N21LSH2829C	Level Switch	Gems	LS-36497	Mn.Stm. Room	127'-6"
ALT034	Terminal Block	States Co.	Type ZWM	Mn.Stm. Room	≥ 131'
1VAL5120A,B,C,D	Control Cable	Okonite	None	Mn.Stm. Room	≥ 131'
1VBL5092A, B, C	Control Cable	Okonite	None	Mn.Stm. Room	≥ 131'
1VBFV-K2Q	Power Cable	Okonite	None	Mn.Stm. Room	≥ 131'
1VBFV-K3Q	Power Cable	Okonite	None	Mn.Stm. Room	≥ 131'
1VBFV-L2Q	Power Cable	Okonite	None	Mn.Stm. Room	≥ 131'
1VBFV-K2A	Control Cable	Okonite	None	Mn.Stm. Room	≥ 131'
1VBFV-K3A	Control Cable	Okonite	None	Mn.Stm. Room	≥ 131'
1VBFV-L2A	Control Cable	Okonite	None	Mn.Stm. Room	≥ 131'

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.16  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: AUXILIARY FEEDWATER

N-23

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1N23V011A (MOV3350A)	4" Motor Operated Stop-Check Globe VI	Limitorque	SMB-1	Mn. Stm Room	≥ 131'
Q1N23V011B (MOV3350B)	4" Motor Operated Stop-Check Globe VI	Limitorque	SMB-1	Mn. Stm Room	≥ 131'
Q1N23V011C (MOV3350C)	4" Motor Operated Stop-Check Globe VI	Limitorque	SMB-1	Mn. Stm Room	≥ 131'
Q1N23ZS3228A (HV3228A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	≥ 131'
Q1N23SV3228AA (HV3228A)	Solenoid Valve	ASCO	NP8320A196E	Mn. Stm Room	≥ 131'
Q1N23ZS3228B (HV3228B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	≥ 131'
Q1N23SV3228BA (HV3228B)	Solenoid Valve	ASCO	NP8320A196E	Mn. Stm Room	≥ 131'
Q1N23ZS3228C (HV3228C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	≥ 131'
Q1N23SV3228CA (HV3228C)	Solenoid Valve	ASCO	NP8320A196E	Mn. Stm Room	≥ 131'
Q1N23ZS3227A (HV3227A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	≥ 131'
Q1N23SV3227AA (HV3227A)	Solenoid Valve	ASCO	NP8320A196E	Mn. Stm Room	≥ 131'
Q1N23ZS3227B (HV3227B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	≥ 131'
Q1N23SV3227BA (HV3227B)	Solenoid Valve	ASCO	NP8320A196E	Mn. Stm Room	≥ 131'
Q1N23ZS3227C (HV3227C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	≥ 131'
Q1N23SV3227CA (HV3227C)	Solenoid Valve	ASCO	NP8320A196E	Mn. Stm Room	≥ 131'
Q1N23SV3228AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	≥ 131'
Q1N23SV3228BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	≥ 131'
Q1N23SV3228CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	≥ 131'
Q1N23SV3227AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	≥ 131'
Q1N23SV3227BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	≥ 131'
Q1N23SV3227CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	≥ 131'
1VAFU-U4Q	Power Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAFU-U5Q	Power Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAFU-I2Q	Power Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAFU-U4A, D	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.16  
Sheet 2

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: AUXILIARY FEEDWATER

N-23

PLANT ID NUMBER	COMPONENTS			LOCATION	
	GENERIC NAME	MANUFACTURER	MODEL	BLDG.	ELEV.
1VAFU-U5A, D	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VAFU-I2A, D	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5007B	Control Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5008B	Control Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5009B	Control Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5007C	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	≥ 131'
1VAL5008C	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	≥ 131'
1VAL5009C	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	≥ 131'
1VAQ5010E, K	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VAQ5012E, K	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VAQ5014E, K	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VXR5007K, L, M	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5013C	Control Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5014C	Control Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5015C	Control Cable	Okonite	None	Mn. Stm Room	≥ 131'
1VAL5013D	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	≥ 131'
1VAL5014D	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	≥ 131'
1VAL5015D	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	≥ 131'
1VAQ5048H, K	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VAQ5006C, H	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VAQ5008C, H	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'
1VXR5007G, H, J	Control Cables	Okonite	None	Mn. Stm Room	≥ 131'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.17  
Sheet 1

(CLASS I E ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CHEMICAL INJECTION SYSTEM N-25

[illegible]



# MASTER LIST

Section C.2.18  
Sheet 1

Joseph M. Farley Nuclear Plant Unit 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: SAMPLING SYSTEM

P-15

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1P15SV3103 (HV3103)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3103 (HV3103)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3765 (HV3765)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3765 (HV3765)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3766 (HV3766)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3766 (HV3766)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3179A (HV3179A)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3179A (HV3179A)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3179B (HV3179B)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3179B (HV3179B)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3179C (HV3179C)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3179C (HV3179C)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3180A (HV3180A)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3180A (HV3180A)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3180B (HV3180B)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3180B (HV3180B)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3180C (HV3180C)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3180C (HV3180C)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3181A (HV3181A)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3181A (HV3181A)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3181B (HV3181B)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3181B (HV3181B)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3181C (HV3181C)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q1P15ZS3181C (HV3181C)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1P15SV3104 (HV3104)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"

# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.18  
Sheet 2

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: SAMPLING SYSTEM

P-15

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1P15ZS3104 (HV3104)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1P15SV3103-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3765-A/JB	Terminal Block	Sates Co.	Type ZWM	CTMT	131'-9"
Q1T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1P15SV3766-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3179A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3179B-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3179C-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1P15SV3180A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3180B-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3180C-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3181A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3181B-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3181C-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
Q1P15SV3104-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	131'-9"
1VAL5063B	Control Cable	Okonite	None	CTMT	>115'
1VAQ5049H	Control Cable	Okonite	None	CTMT	>115'
1VXR5010B	Control Cable	Okonite	None	CTMT	>115'
1VAL5065B	Control Cable	Okonite	None	CTMT	>115'
1VAQ5032J	Control Cable	Okonite	None	CTMT	>115'
1VXR5010F	Control Cable	Okonite	None	CTMT	>115'
1VAL5066A	Control Cable	Okonite	None	CTMT	>115'
1VAQ5033J	Control Cable	Okonite	None	CTMT	>115'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.18  
Sheet 3

(CLASS I/E ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: \_\_\_\_\_ SAMPLING SYSTEM

P-15

[illegible]

# MASTER LIST

Section C.2.19  
Sheet 1

Joseph M. Farley Nuclear Plant Unit 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: SERVICE WATER

P-16

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1P16V207A (MOV3441A)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-6"
Q1P16V207B (MOV3441B)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-6"
Q1P16V207C (MOV3441C)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	122'-6"
Q1P16V207D (MOV3441D)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	122'-6"
Q1P16V081 (MOV3131)	6" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-6"
Q1T52B005	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B015	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B014	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
1VBFV-J4Q	Power Cable	Okonite	None	CTMT	> 115'
1VBFV-J4D	Control Cable	Okonite	None	CTMT	> 115'
1VBQ5007D	Control Cable	Okonite	None	CTMT	> 115'
1VYR4006B,D	Control Cables	Okonite	None	CTMT	> 115'
1VYKB164B,C	Control Cables	Okonite	None	CTMT	> 115'
1VBFV-J5Q	Power Cable	Okonite	None	CTMT	> 115'
1VBFV-J5D	Control Cable	Okonite	None	CTMT	> 115'
1VBQ5009D	Control Cable	Okonite	None	CTMT	> 115'
1VAFU-K6Q	Power Cable	Okonite	None	CTMT	> 115'
1VAFU-K6D	Control Cable	Okonite	None	CTMT	> 115'
1VAQ5007D	Control Cable	Okonite	None	CTMT	> 115'
1VXR5005B,D,F	Control Cables	Okonite	None	CTMT	> 115'
1VXKB164B,C	Control Cables	Okonite	None	CTMT	> 115'
1VAFU-W2Q	Power Cable	Okonite	None	CTMT	> 115'



# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.20  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: COMPONENT COOLING WATER

P-17

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG.	ELEV.
Q1P17V097 (MOV3046)	6" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-6"
Q1P17SV3184 (HV3184)	Solenoid Valve	ASCO	NP8316A76V	CTMT	122'-6"
Q1P17ZS3184 (HV3184)	Limit Switch	NAMCO	EA-180	CTMT	122'-6"
Q1P17SV3443 (HV3443)	Solenoid Valve	ASCO	NP8316A74V	CTMT	129'-0"
Q1P17ZS3443 (HV3443)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q1T52B016	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B038	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1P17SV3184-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 115'-0"
Q1T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1T52B041	Penetration	General Electric	100 Series	CTMT	143'-0"
Q1P17SV3443-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	> 115'-0"
1VBFV-C3Q	Power Cable	Okonite	None	CTMT	> 115'
1VBFV-C3D	Control Cable	Okonite	None	CTMT	> 115'
1VBQ5017C	Control Cable	Okonite	None	CTMT	> 115'
1VYR5006F	Control Cable	Okonite	None	CTMT	> 115'
1VBL5009C,D,E,F	Control Cables	Okonite	None	CTMT	> 115'
1VBQ5017H	Control Cable	Okonite	None	CTMT	> 115'
1VYR5035B	Control Cable	Okonite	None	CTMT	> 115'
1VAL5055C	Control Cable	Okonite	None	CTMT	> 115'
1VA05029H	Control Cable	Okonite	None	CTMT	> 115'
1VYR5064F	Control Cable	Okonite	None	CTMT	> 115'

## MASTER LIST

Joseph M. Farley Nuclear Plant Unit 1

Section C.2.19  
Sheet 2

(CLASS I/E ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: SERVICE WATER

P-16

[illegible]

JOSEPH M. FARLEY NUCLEAR PLANT - UNIT 2

DOCKET NO. 50-364

ENVIRONMENTAL QUALIFICATION REPORT

JOSEPH M. FARLEY NUCLEAR PLANT  
UNIT 2  
ENVIRONMENTAL QUALIFICATION REPORT

Table of Contents

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- Attachment 1 - Reference List for Westinghouse  
Justifications for Withholding Proprietary Information
- Attachment 2 - Documentation Previously Considered Proprietary
- Attachment 3 - Westinghouse Request for Withholding Proprietary  
Information
- Attachment 4 - Qualified Equipment Master List



SECTION A  
90-DAY SUBMITTAL

In response to the NRC's NUREG-0588 Safety Evaluation Report (SER), dated February 4, 1983, Alabama Power Company provides this section of the report regarding the review of environmental qualification of Class 1E electrical equipment for Farley Nuclear Plant (FNP) Unit 2. The subjects covered by this section include plans to resolve the outstanding items in Alabama Power Company letter dated March 14, 1983, (30-day response to the SER) and information regarding proprietary portions of the Technical Evaluation Report (TER). The scope of this review ensures that equipment necessary to protect the public health and safety is capable of performing its intended function when subjected to a harsh environment.

Qualification Test Report No. 950.301, dated June 19, 1981, fully supports the qualification of Victoreen radiation detectors when the detector cables/connectors are sealed from the accident moisture environment of the containment atmosphere. These detectors were installed as an enhancement to the radiation monitoring system to satisfy the requirements of NUREG-0737 and would be used to detect a radiation release due to a potential breach of the reactor coolant pressure boundary. Design of a water-tight sealing for the detector cable/connectors installed at FNP has been completed which duplicates the sealing procedure followed in the Victoreen Test Report No. 950.301. As stated in Alabama Power Company letter of March 14, 1983, the water tight fitting will be installed during the first outage of sufficient duration to complete the modification currently scheduled to begin in the fourth quarter of 1983. The Victoreen radiation detectors are not considered within the scope of 10 CFR 50.49 since, as stated in Alabama Power Company's letter dated June 23, 1982, such equipment is addressed by the TMI Action Plan and is not essential to achieve a safe shutdown condition. The installation of the water tight fittings on the radiation detectors therefore does not impair the safe shutdown capability of Farley Nuclear Plant.

The qualification reports for the Target Rock solenoid valves used on the reactor head vent system are currently under development by Westinghouse with a scheduled completion of May 1983. Alabama Power Company installed these solenoid valves in order to provide the state-of-the-art coincident with the implementation dates required by NUREG-0737. Alabama Power Company will review the reports when issued to ensure that the solenoid valves are qualified to the specific Farley Nuclear Plant accident environment. These solenoid valves are not considered within the scope of 10 CFR 50.49 since, as stated in Alabama Power Company's letter dated June 23, 1982, such equipment is addressed by the TMI Action plan and is not essential to achieve a safe shutdown condition. Additionally, the reactor head vent system is de-energized and can not be placed into operation without the approval of the NRC as specified by NURGE-0737, II.B.1. There is no known environmentally caused failure mode of these de-energized solenoid valves that could lead to the spurious or inadvertant operation of the reactor head vent system.

All vendors have responded to Alabama Power Company's request for providing justifications for withholding specific TER information from public disclosure. Westinghouse has reviewed the appropriate sections of the TER and has identified information that still requires protection from public disclosure. Applications for withholding and affidavits for protection of the proprietary information were submitted by Westinghouse to the NRC in accordance with 10 CFR 2.790(b) when the proprietary documents were originally submitted. The pages of the TER that Westinghouse considers proprietary are Item No. 11, pages 5i, j and Item No. 13, pages 5b, c, d, e, f, g, h, i, j. Attachment 1 provides a list of the applicable Westinghouse test reports and associated Westinghouse transmittal letter numbers and dates of issue to facilitate the retrieval of justification for withholding. BIW Cable Systems, General Electric, Okonite, Limitorque, Transamerica - Delaval, Joy Manufacturing and Automatic Switch Company documents referenced in the TER are no longer considered proprietary. This completes the review of proprietary information contained in the TER's as requested by Safety Evaluation Report and the NRC letter dated April 12, 1983.

Equipment items in NRC Category IV, "Documentation Not Made Available", include Boston Insulated Wire and Barton Transmitters. The Boston Insulated Wire and Cable Company has reviewed the applicable portions of the TER and has determined that their test report and letter of clarification no longer require proprietary protection. The Boston Insulated Wire and Cable Company Test Report 73E062 and letter of clarification, dated August 21, 1981, which addresses their Test Report 73E062, are included as Attachment 2 of this report. As stated in Alabama Power Company's response dated March 14, 1983, Westinghouse considers WCAP-9885, which fully qualifies the Barton transmitters installed in FNP, as a proprietary document. Westinghouse has requested (Attachment 3) that Alabama Power Company not submit their proprietary information to the Franklin Research Center. Pursuant to an agreement reached between Westinghouse and Mr. E. C. Shoemaker of the NRC Office of the Executive Legal Director, Westinghouse will ensure that any such requested material is, or has been, submitted directly to the NRC. Mr. E. C. Shoemaker has discussed this matter with Mr. Z. Rosztoczy of the Equipment Qualification Branch.

SECTION B  
10 CFR 50.49 SUBMITTAL

In response to the NRC's request in 10 CFR 50.49, "Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants", Alabama Power Company provides this section of the report regarding the review of environmental qualification of Class 1E electrical equipment at Farley Nuclear Plant (FNP) Unit 2 regarding the review of environmental qualification of electrical equipment important to safety within the scope of 10 CFR 50.49.

Attachment 4 of this report provides a Master List of all electrical equipment important to safety within the scope of 10 CFR 50.49 (b)(1) and (b)(2). This Master List identifies the system, plant ID number, generic name, manufacturer, model and location of each equipment item. All equipment identified in the Master List is environmentally qualified and, therefore, a schedule to upgrade the qualification of electrical equipment within the scope of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49 is not necessary.

In accordance with Generic Letter 82-33, Alabama Power Company provided the NRC, by letter dated April 15, 1983, a Preliminary Farley Emergency Response Capability (ERC) Integrated Implementation Plan and Schedule for the installation of an integrated system for the enhancement of the existing and adequate ERC at FNP. The integrated system addresses Supplement 1 to NUREG-0737, whose basic provisions include Regulatory Guide 1.97. The schedule for the installation of this integrated system, including Regulatory Guide 1.97, is plant-specific and provides for prompt implementation while optimizing the use of utility and NRC resources. R.G. 1.97 includes provisions to upgrade the environmental qualification of accident monitoring instrumentation. The provisions of R.G. 1.97 are addressed in the implementation schedule for the integrated ERC system. Alabama Power Company will provide environmentally qualified accident monitoring equipment (Regulatory Guide 1.97) to satisfy 10 CFR 50.49(b)(3) in accordance with the Preliminary Farley ERC Integrated Implementation Plan and Schedule. Consequently, an exemption is requested, pursuant to 10 CFR 50.12, from the requirements of 10 CFR 50.49(g) to allow the schedule for identifying accident monitoring equipment (Regulatory Guide 1.97) as described in 10 CFR 50.49(b)(3) and upgrading its environmental qualification of to be in accordance with the Preliminary Farley ERC Integrated Implementation Plan and Schedule in Alabama Power Company letter dated April 15, 1983.

The identity of equipment at FNP within the scope of 10 CFR 50.49(b)(1) and (b)(2) and its qualification is documented in previous Alabama Power Company NUREG-0588 responses, Appendices 1 through 5. In addition, equipment outside the scope of 10 CFR 50.49 has been qualified to satisfy the TMI Action Plan requirements of NUREG-0737. The identity of this TMI Action Plan equipment and its qualification is documented in NUREG-0588 Response - Appendix 6, TMI Action Plan Equipment, transmitted in Alabama Power Company letter dated June 23, 1982. The equipment identified in Appendix 6, not previously addressed in Appendices 1 through 5, is not



essential to achieve a safe shutdown condition and is not considered within the scope of 10 CFR 50.49. The qualified status of the TMI Action Plan equipment, as with all electrical equipment important to safety, will be maintained environmentally qualified in accordance with the FNP Environmental Qualification Administrative Program discussed in Section C of this report.



SECTION C  
RESPONSE TO NRC APRIL 12, 1983 LETTER

In response to the NRC's Safety Evaluation clarification letter dated April 12, 1983, Alabama Power Company provides this section of the report regarding the review of environmental qualification of Class 1E electrical equipment for Farley Nuclear Plant (FNP) Unit 2. The subjects covered by this section include a review of the Alabama Power Company letter dated March 14, 1983, (30-day response to the SER); a review of information in the Technical Evaluation Report (TER) claimed to be proprietary; a review of the programs and scope of equipment addressed by previous environmental qualification submittals for compliance with paragraphs (a) and (b) of 10 CFR 50.49; and a discussion of methods used to identify the equipment covered by paragraph 10CFR50.49 (b)(2). The scope of this review ensures that equipment necessary to protect the public health and safety is capable of performing its intended function when subjected to a harsh environment.

As stated in the letter dated March 14, 1983, it is the judgement of Alabama Power Company that all equipment, which includes NRC Categories I.B, II.A, and IV, required to achieve a safe shutdown condition at FNP is environmentally qualified and Justifications for Continued Operation (JCO) for equipment items in these NRC categories are not necessary. Equipment items in NRC Category IV, "Documentation Not Made Available", are discussed in Section A of this report.

All vendors have responded to Alabama Power Company's request for providing justifications for withholding specific TER information from public disclosure. Information requiring and not requiring proprietary protection is discussed in Section A of this report.

Subsequent to its publication in the Federal Register on January 21, 1983, Alabama Power Company reviewed the provisions of 10 CFR 50.49 to determine differences from the original licensing documents, IEB 79-01B and NUREG-0588. With regards to paragraph (a) of 10 CFR 50.49, Alabama Power Company is implementing an Environmental Qualification Administrative Program for FNP to maintain the qualification of safety-related electrical equipment required to perform its intended function when exposed to a harsh environment. This program includes provisions for procurement that provides for the replacement of electrical equipment important to safety and TMI Action Plan equipment in accordance with 10 CFR 50.49. Additionally, this program provides for design control, procurement control, storeroom control, preventive maintenance, environmental qualification surveillance and document control. This program addresses in-service degradation through preventive maintenance/surveillance with equipment and component refurbishment and/or replacement based on known susceptibility to aging degradation, the results of inspections, and manufacturer's recommendations. This program will maintain the continued qualified status of equipment presently installed and the qualification of equipment associated with any future modifications. Alabama Power Company will review Regulatory Guide 1.89, Rev. 1 upon its issuance and will consider its guidance related to further program modifications. This program,

which ensures compliance with 10 CFR 50.49, will be implemented by the end of the Unit 2 second refueling outage currently scheduled for the fourth quarter of 1983. In the opinion of Alabama Power Company, the FNP Environmental Qualification Administrative Program and the methodology by which it was developed complies with 10 CFR 50.49(a).

Additionally, Alabama Power Company has reviewed the scope of equipment addressed in the previous FNP responses to NUREG-0588 and has determined that this scope of equipment satisfies the provisions of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49. The establishment of new qualification programs to address the equipment within the scope of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49 is not necessary.

Accident-monitoring instrumentation described in paragraph (b)(3) of 10 CFR 50.49 will be identified in accordance with the Preliminary Farley ERC Integrated Implementation Plan and Schedule submitted in Alabama Power Company letter dated April 15, 1983. An exemption regarding the identity of accident monitoring equipment and its upgrading from the schedule provided in paragraph (g) of 10 CFR 50.49 has been requested with specificity in Section B of this report.

A Master List of safety-related and nonsafety-related equipment within the scope of paragraphs (b)(1) and (b)(2) of 10 CFR 50.49 is presented in Attachment 4 of this report. The Master List for Farley Nuclear Plant - Unit 2 was developed by a systematic review of design and as-built documentation, the FSAR, Technical Specifications and Emergency Operating Procedures to determine the systems required to perform a safety-related function. The definition of safety-related equipment and its intended function used in developing the Master List is consistent with paragraph (b)(1) of 10 CFR 50.49. The review criteria and methodology resulted in a Master List that includes safety-related and nonsafety-related equipment whose environmentally caused failure could unacceptably impair the intended function of safety-related equipment.

The review criteria and methodology utilized to develop the Master List for Farley Nuclear Plant Unit 2 are as follows:

1. This review determined the systems and components required to perform a safety-related function or support for the performance of a safety-related function. These components were included in the Master List.
2. The control circuitry of components identified in Item 1 above was reviewed for connections (interlocks) to other safety-related and nonsafety-related components. If spurious or inadvertent operation due to environmentally induced failures of the connected components in the harsh environment could adversely affect the completion of a safety function, the connected (interlocks) safety-related or nonsafety-related components were included in the Master List.

3. The instrumentation circuitry of components identified in Item 1 above was reviewed for connection to other safety-related and nonsafety-related components. If spurious or inadvertent operation due to environmentally induced failures of the connected components in the harsh environment could cause erroneous indication of the status of safety-related components, the connected safety-related or nonsafety-related components were included in the Master List.
4. For the components identified in Item 1 above, the power circuitry inside the harsh environment was reviewed. If environmentally induced failures could result in a loss of power to components required to complete a safety-related function, the safety-related or nonsafety-related power circuitry components were included in the Master List. There are no connected safety-related/nonsafety-related power circuits in the harsh environment.

The Master List of Attachment 4 developed from this review criteria and methodology identifies safety-related equipment that is relied upon to remain functional during and following design basis events and nonsafety-related equipment whose environmentally caused failure could unacceptably impair the intended function of safety-related equipment. In the opinion of Alabama Power Company, the equipment identified in the Master List complies with paragraphs (b)(1) and (b)(2) of 10 CFR 50.49.



## ATTACHMENT 1

Reference List for Westinghouse Justifications for Withholding  
Proprietary Information

<u>Westinghouse Test Reports</u>	<u>Westinghouse Letter No.</u>	<u>Date of Issue</u>
1) WCAP-7820	E-SL-100	12/16/71
WCAP-7820 Suppl. 1	E-SL-336	05/31/72
2	NS-RS-075	11/02/73
3	NS-RS-183	03/22/74
4 & 5	N/A	
6	NS-CE-1268	11/05/76
7	N/A	
2) WCAP-7709L	E-SL-042	07/14/71
WCAP-7709L Suppl. 1	E-SL-334	03/23/72
2	N/A	
3	NS-RS-128	01/23/74
4	NS-RS-212	04/21/74
3) WCAP 9157	NS-LE-1600	12/16/77
	NS-TMA-2202	02/14/80



ATTACHMENT 2

Enclosed are two documents which were previously not made available to the NRC for proprietary reasons. These documents are: (1) Boston Insulated Wire and Cable Company's Test Report 73E062, and (2) Boston Insulated Wire and Cable Company's letter of clarification, dated August 21, 1981, which concerns their Test Report 73E062. These documents are no longer considered proprietary by Boston Insulated Wire and Cable Company.



**BOSTON  
INSULATED  
WIRE & CABLE CO.**

65 BAY STREET · BOSTON · MASSACHUSETTS 02125 · (617) 265-2102 · TELEX 094-540

September 7, 1973

Mr. M. Malcom, Project Manager  
Bechtel Power Corporation  
P.O. Box 607  
Gaithersburg, Maryland 20760

Subject: P.O. #FNP-371  
Instrument Cable  
Joseph M. Farley Nuclear Plant  
Prototype Test Program  
BIW Orders #B040, B041  
B052, B053

Dear Mr. Malcom:

Please find enclosed the prototype test data for the subject order. The data was obtained in accordance with Specification SS-1102-101, Rev. 1, and the test program outlined in our letter of April 13, 1973.

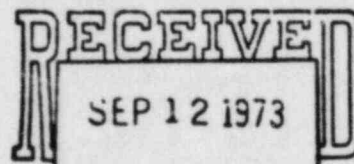
We hope that the results of this program will be useful in your evaluation of the instrument cable.

Please contact us if you have any questions.

Very truly yours,

BOSTON INSULATED WIRE & CABLE CO.

*Richard Kruger*  
Richard Kruger  
Applications Engineer  
BECHTEL POWER CORP.



JOB NO. 7597 - 03/20

RECORD SEPIA

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FILE NO. E25.6

7597-03-E25.6-10-1

7597-03		U-400761
TITLE: Prototype Test Program Results		
JOB: JOSEPH M. FARLEY NUCLEAR PLANT UNIT 1 ALABAMA POWER COMPANY		
MFR. Boston Insulated Wire & Cable Company	P.O. REQ. CLASS	FNP-371 41743-SS IV-A-3

73E062

DOCUMENTATION  
NUREG 0583

VENDOR'S DRAWING REVIEW	
1 <input checked="" type="checkbox"/>	Approved - Mfg. may proceed.
2 <input type="checkbox"/>	Approved - Submit final dwg. Mfg. may proceed.
3 <input type="checkbox"/>	Approved except as noted - Make changes and submit final dwg. - Mfg. may proceed as approved.
4 <input type="checkbox"/>	Not approved - Correct and resubmit.
5 <input type="checkbox"/>	Review not required - Mfg. may proceed.
Approval of this drawing does not relieve supplier from full compliance with contract or purchase order requirements.	
By <u>L. S. Trill</u> BECHTEL	Date <u>9-4-75</u>
JOB NO. 7597-03	BECHTEL POWER CORPORATION P. O. BOX 807 GAITHERSBURG, MD.

MICROFILMED  
FOR  
RECORDS TO-NOVER

7597-03-E25.6-10-1

RECORD SEPIA

C +

CUSTOMER:	Bechtel Corp. (Parley Nuclear Plant)	Lab Test #	73E062
Customer P.O. #	F.N.P. 371	BIW Job #	B040, B041, B052, B053
Customer Item #	Y01	BIW P/N	9537-R-002 (LSS 1893A)
		Spec. #	SS-1102-101

Prototype test report per letter sent to Mr. M. Malcolm of Bechtel Co. by J. Learn of Boston Insulated Wire on April 13, 1973

(1) Para. 8.2.1      Radiation Resistance Test

- Conditioning: (a) Samples air oven aged for 168 hrs. @ 121°C.  
 (b) Aged samples irradiated to a total dose of  $2 \times 10^8$  rads. (See attached radiation certificate -- Attachment I.)

Tests	Spec. Para.	Results
High Voltage (ac)	8.3.1.1a	pass 4 KV ac for 5 min.
Insulation Resistance	8.3.1.1b	$4.5 \times 10^3$ Meg $\Omega$ /M'
Continuity	8.3.1.2	pass
Tensile Strength	8.3.2.1)	1030 psi (O.T.)
Elongation	8.3.2.1) after conditioning	70% (O.E.)
Tensile Strength	8.3.2.2a	67.9% (O.T.)
Elongation	8.3.2.2a 168 hrs. @ 121°C	55.8% (O.E.)
Tensile Strength	8.3.2.2b	97.5% (O.T.)
Elongation	8.3.2.2b 42 hrs. @ 80 psi 127°C	114% (O.E.)

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2



Table continued from previous page

## (1) Para. 8.2.1

Tests	Spec. Para.	Results
Gravimetric Water Absorption	8.3.2.3b	129 mg/in <sup>2</sup>
Electrical Water Absorption (E.M. 60)	8.3.2.3a	Dielectric Constant = 3.17
	"	Increase in Capacitance
	"	(1-14 day) = 2.5%
	"	(7-14 day) = 2.9%
	"	Stability Factor
		(14 day) = 0.3

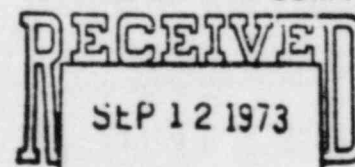
(2) Para. 8.2.2 Flame Resistance Test

(a)

Test	Spec. Paragraph	Conditioning	Result
Vertical Flame	8.2.2.1 (IPCEA S-19-81) para. 6.19.6	—	pass
Vertical Flame	8.2.2.1 (IPCEA S-19-81) para. 6.19.6	168 hrs. @ 121°C	pass

(b) The results of the vertical flame tray tests which were performed in accordance with paragraph 8.2.2.2 using a burlap igniter flame source are included as Attachments II, III and IV of this report.

BECHTEL POWER CORP.



JOB NO. 7597 - 03/20

(3) Para. 8.2.3 Post-Accident Environment Test

- Conditioning: (a) Sample was aged 168 hrs. @ 121°C.
- (b) Aged sample was irradiated to a dose of  $2 \times 10^8$  rads. (See Attachment I for radiation certificate.)

The result of the autoclave test cycle as specified in paragraph 8.2.3.3 is included as Attachment V. The insulation resistance measurements required by paragraph 8.2.3.5 are also given in this attachment.

In accordance with paragraph 8.2.3.6, the physical and electrical tests specified in paragraphs 8.3.1 and 8.3.2 were performed on the sample upon its removal from the autoclave.

The results of the tests performed on this irradiated and autoclaved sample are given below.

Tests	Spec. Paragraph	Results
High Voltage (ac)	8.3.1.1a	pass 4 KV ac for 5 min.
Insulation Resistance	8.3.1.1b	$2.8 \times 10^4$ Meg $\Omega$ /M'
Continuity	8.3.1.2	pass
Tensile Strength	8.3.2.1)	920 psi (O.T.)
Elongation	8.3.2.1) after autoclave and conditioning	80% (O.E.)
Tensile Strength	8.3.2.2a	52.3% (O.T.)
Elongation	168 hrs. @ 121°C	37.6% (O.E.)
Tensile Strength	8.3.2.2b	74% (O.T.)
Elongation	42 hrs. @ 80 psi and 127°C	68.8% (O.E.)
Gravimetric Water Absorption	8.3.2.3b	15.0 meg/in <sup>2</sup>
Electrical Water Absorption (E.M. 60)	8.3.2.3a BECHTEL POWER CORP. <b>RECEIVED</b> SEP 12 1973	Dielectric Constant = 3.16 Increase in Capacitance (1-14 day) = 2.6% (7-14 day) = 1.8% Stability factor (14 day) = 0.2

## ISOMEDIX

RADIATION CERTIFICATION

Part No.: BIW (a) LSS-1893A  
(b) P/N 9244-H-024

Dose Rate: 1 Mrad/hr

Total Dose: (a) 200 Mrad (b) 60 Mrad

Date Radiation Completed: 6-28-73

Source: Cobalt-60

Conditions: Irradiation performed in air at ambient temperature (70°F) and slight negative pressure (-1/2" water).

Max. Temp. of Sample During Irradiation: 110° F

Dosimetry System: Dosimetry was performed using a Victoreen Model 555 Integrating Dose Rate Meter and Probe. The unit was calibrated on January 15, 1971 by the Victoreen Instrument Company, using Cobalt-60 and Cesium-137 sources whose calibrations are traceable to the U.S. National Bureau of Standards. A copy of the calibration certificate is available.

Other: Samples were rotated and turned during exposure to achieve a more uniform dose distribution.

Post-Irradiation Defects Observed: None

BECHTEL POWER CORP.

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SEP 12 1973

JOB NO. 7597 : 03/20

This is to certify that the subject product was radiation processed in the aforementioned manner.

*George R. Dietz*  
George R. Dietz  
Manager, Radiation Services

GRD:mg

Isomedix Inc. • 25 Eastmans Rd., Hanover, New Jersey Telephone (201) 887-4700  
(Mailing Address: Post Office Box 177, Parsippany, New Jersey 07054)

Isomedix Limited • Bennett Street, Mont. St. Hilairn, Quebec, Canada Telephone (514) 467-1211  
(Mailing Address: Post Office Box 7, Montreal, Quebec, Canada)



General Data Sheet

TEST: <b>Flame Test Inquiry #SS-1102-101</b>	SPEC: <b>8.2.2.2</b>	PAR: <b>8.2.2.2</b>	TEST NO.: <b>73P027A</b>
CONDITIONING: <b>Aged 168 hrs. @ 121°C</b>			DATE: <b>6/18/73</b>
PART, TYPE NO.: <b>LSS-1893A</b>			TESTED BY: <b>W. Barnes</b>
CUSTOMER: <b>Farley (Alabama Power)</b>			LAB. SUP. CHECK: <b>R. Oppenheim</b>
TEST REQUIREMENTS: <b>According to above spec.</b>			TIME: <i>R. Oppenheim</i>
Construction: <b>2X #16 AWG GR-853A min. wall .027, 1X T-92, 2 lap. Wrap #18 AWG solid drain wire; 1X T-33 alum.-Mylar, 2 lap, alum. down, GR-547-J min. wall .054.</b>			TEMP.: <b></b> RH: <b></b>

Sample #1	Burlap size	24" x 24" folded
	Soak time	5 min.
	Drain time	Until 159 grams remained
	Ignition time	35 sec.
	Burlap burn time	16 min. 45 sec.
	Continues to burn	6 min.
	Cable damage	12 inches
	Insulation failure	
	1. No electrical failure	
	2. " " "	
	3. " " "	
	4. " " "	
	5. " " "	
	6. " " "	
	7. " " "	
	8. " " "	
	9. " " "	
	10. " " "	

BECHTEL POWER CORP.

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JOB NO. 7597 - 03/20

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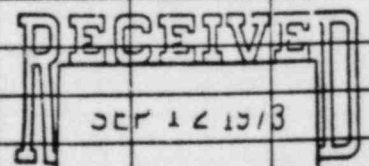


General Data Sheet

TEST: <b>Flame Test Inquiry #SS-1102-101</b>	SPEC: <b>8.2.2.2</b>	TEST NO.: <b>73P027B</b>
CONDITIONING: <b>Aged 168 hrs. @ 121°C</b>		DATE: <b>6/18/73</b>
PART, TYPE NO.: <b>LSS-1893A</b>		TESTED BY: <b>W. Barnes</b>
CUSTOMER: <b>Farley (Alabama Power)</b>		LAB. SUP. CHECK: <b>R. Oppenheim</b>
TEST REQUIREMENTS: <b>According to above spec.</b>		TIME: <b>R. Oppenheim</b> TEMP.: <b>RH:</b>

<u>Sample #2</u>	Burlap size	24" x 24" folded
	Soak time	5 min.
	Drain time	Until 158 grams remained
	Ignition time	20 sec.
	Burlap burning time	28 min. 36 sec.
	Continues to burn	0 sec.
	Cable damage	14 inches
	Insulation failure	
	1. No electrical failure	
	2. 8 min. 0 sec. -- one circuit only*	
	3. No electrical failure	
	4. " " "	
	5. " " "	
	6. " " "	
	7. " " "	
	8. " " "	
	9. " " "	
	10. 19 min. 40 sec. -- one circuit only*	
	*One conductor -- shield failure	

BECHTEL POWER CORP.



JOB NO. 7597 - 03/20

General Data Sheet

TEST: <b>Flame Test Inquiry #SS-1102-101</b>	SPEC: <b>8.2.2.2</b>	TEST NO.: <b>73P027C</b>
CONDITIONING: <b>Aged 168 hrs. @ 121°C</b>		DATE: <b>6/19/73</b>
PART, TYPE NO.: <b>LSS-1893A</b>		TESTED BY: <b>W. Barnes</b>
CUSTOMER: <b>Farley (Alabama Power)</b>		LAB. SUP. CHECK: <b>R Oppenheim</b>
TEST REQUIREMENTS: <b>According to above spec.</b>		TIME IN OUT <i>R. Oppenheim</i> TEMP.: RH:

Sample #3	Burlap size	24" x 24"
	Soak time	7 min.
	Drain time	Until 165 grams remained
	Ignition time	25 sec.
	Burlap burning time	22 min. 5 sec.
	Continues to burn	0 sec.
	Cable damage	15 inches
	Insulation failure	
	1. 10 min. 45 sec.	10 min. 56 sec. *
	2. No electrical failure	
	3. " " "	
	4. " " "	
	5. " " "	
	6. " " "	
	7. " " "	
	8. " " "	
	9. " " "	
	10. " " "	

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JOB NO. 7597 - 03/20

\*Two conductors -- shield (or conductor -- conductor failure)

8

BOSTON INSULATED WIRE &amp; CABLE CO.

## General Data Sheet

CUSTOMER: Alabama Power Company  
(Farley Nuclear Plant)

Test No.: 73E062B

Date: July 25, 1973

Spec: Inquiry #SS-1102-101

Post-Incident Environment TestPara. 8.2.3

The electrical circuit specified in para. 8.2.3.2 was maintained for the duration of the test on this irradiated sample. No insulation failure took place.

The chemical spray, consisting of a 10,000 ppm solution of boric acid buffered with NaOH to give a Ph factor of 10.5, was also provided for the test duration. The test cycle and the I.R. readings taken at the required intervals as specified in para. 8.2.3.5 are given in Table 1 below.

TABLE 1I.R. in Meg  $\Omega$ /M'

<u>Temperature</u>	<u>Pressure</u>	<u>Cond. #1</u>	<u>Cond. #2</u>	<u>Time</u>
80°F	0	$2 \times 10^5$	$1.8 \times 10^5$	Initial Reading
300°F	80 psi	$7 \times 10^2$	$8 \times 10^2$	1 hr.
"	"	$7 \times 10^2$	$8 \times 10^2$	2 hr.
"	"	$7 \times 10^2$	$8 \times 10^2$	3 hr.
"	"	$5 \times 10^2$	$6 \times 10^2$	4 hr.
250°F	16 psi	$5 \times 10^3$	$7 \times 10^2$	1 day
"	"	$5 \times 10^3$	$7 \times 10^2$	2 days
"	"	$4 \times 10^3$	$7 \times 10^2$	3 days
"	"	$1 \times 10^3$	$7 \times 10^2$	4 days
"	"	$4 \times 10^2$	$7 \times 10^1$	5 days
"	"	$1.7 \times 10^3$	$*(10^4 \Omega)$	6 days
"	"	$7 \times 10^3$	$*(3 \times 10^5 \Omega)$	7 days

\*Readings taken with Simpson meter. BECHTEL POWER CORP.

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JUL - 27 1973

JOB NO. 7597 - 03/20

**BOSTON  
INSULATED  
WIRE & CABLE CO.**

65 BAY STREET • BOSTON • MASSACHUSETTS 02125 • (617) 265-2102

August 21, 1981

Bechtel Power Corporation  
15740 Shady Grove Road  
Gaithersburg, Maryland 20877

Attention: A. A. Vizzi  
Project Engineer



Joseph M. Farley Nuclear Plant Units 1 and 2  
Environmental Qualification  
Purchase Order FNP-371  
Bechtel File E-91  
V-3967

Gentlemen:

In reference to your letter of August 14, 1981, we are enclosing Appendix A & Figure I which apply to the cables with ethylene propylene rubber insulation. The slope of Figure I was derived from tests on EPR insulation as described in Appendix A. A line drawn through the 168 hour/121°C point in Figure I with the same slope (slope represents rate of aging as described in Appendix A) shows a projected life of 40 years at 49°C. Consequently, aging for 168 hours at 121°C represents 40 years at 49°C for the ethylene propylene rubber insulation.

Please contact us if you have any questions.

Very truly yours,

BIW CABLE SYSTEMS, INC.

*J. R. Learn*  
J. R. Learn

Applications Engineer

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LONG-TERM PHYSICAL AGING PROPERTIES -- 40 YEAR LIFE

Long-term physical aging tests conducted on cables indicate a life in excess of 40 years at 90C for BIW's ethylene propylene rubber insulation. This is shown by the Arrhenius plot in Figure I for cables aged at 200C, 180C, 150C, 136C and 121C.

Accelerated agings were initially made at the five test temperatures on specimens taken from slabs. The slope of the line determined by data points was found to be the same for different end points and can be taken to represent the rate of change by the materials to any defined end condition. By using this slope to determine a line intersecting the 40 year life -- 90C temperature point as shown in Figure I -- we can determine what the expected cable life must be at any aging temperature to represent the equivalent of 40 years at 90C, since any point on the line represents the equivalent of 40 years at 90C.

Specimens of BIW cables were removed from the ovens periodically, as shown in Figure I, and subjected to a dielectric proof test of 2200 volts (twice rated voltage + 1000). After successfully passing the test, the samples were returned to the oven for continued aging. As the data clearly indicate, the cables withstand the proof test voltage when aged in excess of that representing 40 year service. The specimens were subjected to bending after aging in excess of the 40 year conditioning.

As Figure I indicates, cable samples at 200C, 180C, 150C, 136C and 121C have surpassed the 40 year requirement. When bent around a 40X diameter mandrel, the ethylene propylene rubber insulation was undamaged and still withstood the voltage proof test. Passing points above the 40 year-90C life line indicate margin of performance.

Figure I is offered for acceptance as evidence of 40 year life at 90C in lieu of additional testing or data. These tests were conducted in accordance with IEEE 383-1974, para. 2.3.2.



*R. Lam*  
6/24/80

40 Yr, 90C Point

~~2/C and 7/C #16 AWG Cables~~

Conductors --- EPR Ins/Bostrad 7 CSPC jkts

Guten Jackets - Boston 7 GSPE

CS72 Chlorosulfonated Polyethylene

Line for 40 year life  
at 90G. Slope derived  
from prior aging test  
data.

CODE:

-Test Point - passes				
2200 volts				

Test point - passes  
2200 volts after  
40x bend

~~CD - Test discontinued~~

### Temperature

JR Lane  
4/19/79

~~4/19/79~~

Aging Time -- Hours

[illegible]



Westinghouse  
Electric Corporation

Water Reactor  
Divisions

Nuclear Service Division

Box 2722  
Pittsburgh Pennsylvania 15220

February 19, 1982  
ALA-82-506

Mr. H. O. Thrash, Manager  
Nuclear Generation  
Alabama Power Company  
600 North Eighteenth Street  
Birmingham, Alabama 35291

Dear Mr. Thrash:

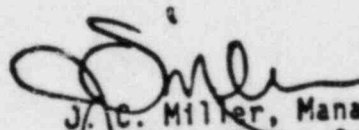
Alabama Power Company  
J. M. Farley Unit 1 and 2  
SAFETY EVALUATION ON EQUIPMENT QUALIFICATION

Recently the NRC has issued letters to some utilities regarding the results of the staff review of the utility response to the Safety Evaluation on Equipment Qualification. The letters (samples attached) request certain EQ information from the utility central file be forwarded to Franklin Research Center to facilitate the NRC contractor review.

Where the requested information is not proprietary to Westinghouse, it is appropriate for utilities to submit such information directly to Franklin. Pursuant to an agreement reached between Westinghouse and Mr. E. Shomaker of the NRC Office of the Executive Legal Director, who has discussed this matter with Mr. Z. Rosztoczy of the Equipment Qualification Branch, we ask that you not submit Westinghouse proprietary information to Franklin. Westinghouse will ensure that any such requested material is, or has been, submitted directly to the NRC on a timely basis.

Should you have any questions concerning this advice, please contact myself or Mr. George Butterworth of our Nuclear Safety Department (412) 373-5761.

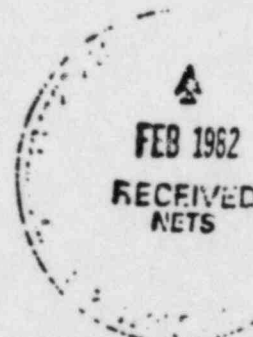
Very truly yours,

  
J. C. Miller, Manager  
Operating Plant Service  
Southern Region

VLM/93L  
Attachment

cc: R. P. McDonald  
O. D. Kingsley, Jr.  
O. Batum  
R. H. Baulig

J. R. Crane  
W. G. Hairston, III  
R. W. Wise W





ATTACHMENT 4  
QUALIFIED EQUIPMENT ITEMS

This Master List includes the system, plant ID numbers, generic name, manufacturer, model and location of each qualified equipment item. These are safety-related, Class 1E electrical equipment items, which are required to achieve a safe shutdown condition at FNP.



# MASTER LIST

Joseph M. Farley Nuclear Plant Unit 2

Section C.2.1  
Sheet 1

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: REACTOR COOLANT INSTRUMENTATION

B-13

PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
N2B13TE412B	RTD	Rosemount	176KF	CTMT	124'-0"
N2B13TE412D	RTD	Rosemount	176KF	CTMT	124'-0"
N2B13TE422B	RTD	Rosemount	176KF	CTMT	124'-0"
N2B13TE422D	RTD	Rosemount	176KF	CTMT	124'-0"
N2B13TE432B	RTD	Rosemount	176KF	CTMT	124'-0"
N2B13TE432D	RTD	Rosemount	176KF	CTMT	124'-0"
Q2T52B012	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B028	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B030	Penetration	General Electric	100 Series	CTMT	143'-0"
12TB001	Terminal Block	States Co.	Type ZWM	CTMT	124'-0"
12TB002	Terminal Block	States Co.	Type ZWM	CTMT	124'-0"
22TB003	Terminal Block	States Co.	Type ZWM	CTMT	124'-0"
22TB004	Terminal Block	States Co.	Type ZWM	CTMT	124'-0"
32TB001	Terminal Block	States Co.	Type ZWM	CTMT	124'-0"
32TB002	Terminal Block	States Co.	Type ZWM	CTMT	124'-0"
2V1V5002B, D	Instr. Cables	Boston Ins. Wire	None	CTMT	124'-0"
2V2V5002B, D	Instr. Cables	Boston Ins. Wire	None	CTMT	124'-0"
2V3V5002B, D	Instr. Cables	Boston Ins. Wire	None	CTMT	124'-0"

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: REACTOR COOLANT SYSTEM - STEAM GENERATOR

B-21

PLANT ID NUMBER	GENERIC NAME	COMPONENTS		LOCATION	
		MANUFACTURER	MODEL	BLDG	ELEV
N2B21PT402	Press. Transmitter	Barton	763	CTMT	116'-0"
N2B21PT403	Press. Transmitter	Barton	763	CTMT	116'-0"
N2B21TE410	RTD	Rosemount	176KS	CTMT	122'-9"
N2B21TE413	RTD	Rosemount	176KS	CTMT	122'-9"
N2B21TE420	RTD	Rosemount	176KS	CTMT	122'-9"
N2B21TE423	RTD	Rosemount	176KS	CTMT	122'-9"
N2B21TE430	RTD	Rosemount	176KS	CTMT	122'-9"
N2B21TE433	RTD	Rosemount	176KS	CTMT	122'-9"
Q2T52B040	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B012	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B030	Penetration	General Electric	100 Series	CTMT	143'-0"
12TB001	Terminal Block	States Co.	Type ZWM	CTMT	122'-9"
12TB003	Terminal Block	States Co.	Type ZWM	CTMT	122'-9"
12TB004	Terminal Block	States Co.	Type ZWM	CTMT	122'-9"
22TB001	Terminal Block	States Co.	Type ZWM	CTMT	122'-9"
22TB002	Terminal Block	States Co.	Type ZWM	CTMT	122'-9"
22TB005	Terminal Block	States Co.	Type ZWM	CTMT	122'-9"
2VYV5031B	Instr. Cables	Boston Ins. Wire	None	CTMT	122'-9"
2VYV5033B	Instr. Cables	Boston Ins. Wire	None	CTMT	122'-9"
2V1V5002E, F, G	Instr. Cables	Boston Ins. Wire	None	CTMT	122'-9"
2V2V5002E, F, G	Instr. Cables	Boston Ins. Wire	None	CTMT	122'-9"

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: REACTOR COOLANT SYSTEM - PRESSURIZER

B-31

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2B31SV8047 (HV8047)	Solenoid Valve	ASCO	NP831654E	CTMT	118'-0"
N2B31ZS8047 (HV8047)	Limit Switch	NAMCO	EA-180	CTMT	118'-0"
Q2T52B002	Penetration	General Electric	100 Series	CTMT	147'-0"
Q2T52B038	Penetration	General Electric	100 Series	CTMT	147'-0"
N2B31SV8047-B/JE	Terminal Block	States Co.	Type ZWM	CTMT	118'-0"
Q2B31LT459	Level Transmitter	Barton	764	CTMT	116'-0"
Q2B31LT460	Level Transmitter	Barton	764	CTMT	116'-0"
Q2B31LT461	Level Transmitter	Barton	764	CTMT	116'-0"
Q2B31PT455	Pressure Transmitter	Barton	763	CTMT	116'-0"
Q2B31PT456	Pressure Transmitter	Barton	763	CTMT	116'-0"
Q2B31PT457	Pressure Transmitter	Barton	763	CTMT	116'-0"
2VBL5078C	Control Cable	Okonite	None	CTMT	116'-0" & above
2VBQ5021E	Control Cable	Okonite	None	CTMT	116'-0" & above
Q2T52B012	Penetration	General Electric	100 Series	CTMT	147'-0"
Q2T52B028	Penetration	General Electric	100 Series	CTMT	147'-0"
Q2T52B030	Penetration	General Electric	100 Series	CTMT	147'-0"
Q2T52B040	Penetration	General Electric	100 Series	CTMT	147'-0"
2VYV5031D	Instr. Cable	Boston Ins. Wire	None	CTMT	116'-0" & above
2V1V5002U	Instr. Cable	Boston Ins. Wire	None	CTMT	116'-0" & above
2V2V5002T, U	Instr. Cables	Boston Ins. Wire	None	CTMT	116'-0" & above
2V3V5002T, U	Instr. Cables	Boston Ins. Wire	None	CTMT	116'-0" & above

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: FEEDWATER CONTROL SYSTEM

C-22

PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	COMPONENTS LOCATION	
				BLDG	ELEV
N2C222S0478 (FCV478)	Limit Switch	NAMCO	EA - 180	Aux. Bldg.	121'-0"
N2C22SV0478A (FCV478)	Solenoid Valve	ASCO	HV-206-381-2RU	Aux. Bldg.	121'-0"
N2C22SV0478B (FCV478)	Solenoid Valve	ASCO	HV-206-381-2RU	Aux. Bldg.	121'-0"
N2C222S0488 (FCV488)	Limit Switch	NAMCO	EA-180	Aux. Bldg.	121'-0"
N2C22SV0488A (FCV488)	Solenoid Valve	ASCO	HV-206-381-2RU	Aux. Bldg.	121'-0"
N2C22SV0488B (FCV488)	Solenoid Valve	ASCO	HV-206-381-2RU	Aux. Bldg.	121'-0"
N2C222S0498 (FCV498)	Limit Switch	NAMCO	EA-180	Aux. Bldg.	121'-0"
N2C22SV0498A (FCV498)	Solenoid Valve	ASCO	HV-206-381-2RU	Aux. Bldg.	121'-0"
N2C22SV0498B (FCV498)	Solenoid Valve	ASCO	HV-206-381-2RU	Aux. Bldg.	121'-0"
N2C222S0479 (FCV479)	Limit Switch	NAMCO	EA-180	Aux. Bldg.	121'-0"
N2C22SV0479A (FCV479)	Solenoid Valve	ASCO	HV-206-381-4U	Aux. Bldg.	121'-0"
N2C22SV0479B (FCV479)	Solenoid Valve	ASCO	HV-206-381-4U	Aux. Bldg.	121'-0"
N2C222S0489 (FCV489)	Limit Switch	NAMCO	EA-180	Aux. Bldg.	121'-0"
N2C22SV0489A (FCV489)	Solenoid Valve	ASCO	HV-206-381-4U	Aux. Bldg.	121'-0"
N2C22SV0489B (FCV489)	Solenoid Valve	ASCO	HV-206-381-4U	Aux. Bldg.	121'-0"
N2C222S0499 (FCV499)	Limit Switch	NAMCO	EA-180	Aux. Bldg.	121'-0"
N2C22SV0499A (FCV499)	Solenoid Valve	ASCO	HV-206-381-4U	Aux. Bldg.	121'-0"
N2C22SV0499B (FCV499)	Solenoid Valve	ASCO	HV-206-381-4U	Aux. Bldg.	121'-0"
N2C22SV0478A-A/JB	Terminal Block	States Co.	Type ZWM	Aux. Bldg.	121'-0"
N2C22SV0488A-A/JB	Terminal Block	States Co.	Type ZWM	Aux. Bldg.	121'-0"
N2C22SV0498A-A/JB	Terminal Block	States Co.	Type ZWM	Aux. Bldg.	121'-0"
2VAL5060B	Control Cable	Okonite	None	Aux. Bldg.	121'-0"
2VBL4025B	Control Cable	Okonite	None	Aux. Bldg.	121'-0"
2VXL5071A	Control Cable	Okonite	None	Aux. Bldg.	121'-0"



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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: FEEDWATER CONTROL SYSTEM

C-22

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
2VAL5061C	Control Cable	Okonite	None	Aux. Bldg.	121'-0"
2VBL5034C, D	Control Cables	Okonite	None	Aux. Bldg.	121'-0"
2VXL5072B	Control Cable	Okonite	None	Aux. Bldg.	121'-0"
2VAL5062B	Control Cable	Okonite	None	Aux. Bldg.	121'-0"
2VBL5035B, D	Control Cables	Okonite	None	Aux. Bldg.	121'-0"
2VXL5073A	Control Cable	Okonite	None	Aux. Bldg.	121'-0"
Q2C22LT474	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT475	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT476	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT484	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT485	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT486	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT494	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT495	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22LT496	Level Transmitter	Barton	764	CTMT	121'-0"
Q2C22FT474	Flow Transmitter	Barton	764	CTMT	121'-0"
Q2C22FT475	Flow Transmitter	Barton	764	CTMT	121'-0"
Q2C22FT484	Flow Transmitter	Barton	764	CTMT	121'-0"
Q2C22FT485	Flow Transmitter	Barton	764	CTMT	121'-0"
Q2C22FT494	Flow Transmitter	Barton	764	CTMT	121'-0"
Q2C22FT495	Flow Transmitter	Barton	764	CTMT	121'-0"
Q2T52B010	Penetration	General Electric	100 Series	CTMT	121'-0"
Q2T52B012	Penetration	General Electric	100 Series	CTMT	121'-0"
Q2T52B028	Penetration	General Electric	100 Series	CTMT	121'-0"
Q2T52B030	Penetration	General Electric	100 Series	CTMT	121'-0"



(CLASS I ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM SAFEGUARD SYSTEMS, RHR/LHSI

E-11

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM CONTAINMENT COOLING AND PURGE

E-12, E-14, P-13

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2E14V002 (MOV3660)	1" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	134'-6"
Q2E14V004 (MOV3318B)	1" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	116'-0"
DELETED-					
Q2F13ZS3196 (HV3196)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2F13SV2867B (HV2867)	Solenoid Valve	ASCO	NP831654V	CTMT	129'-0"
Q2F13ZS2867B (HV2867)	Limit Switch	NAMCO	EA-740	CTMT	129'-0"
DELETED -					
Q2F13ZS3197 (HV3197)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2F13SV2866B (HV2866)	Solenoid Valve	ASCO	NP831654V	CTMT	129'-0"
Q2F13ZS2866B (HV2866)	Limit Switch	NAMCO	EA-740	CTMT	129'-0"
Q2E12SV3999A (HV3999A)	Solenoid Valve	ASCO	NP8316A74E	CTMT	89'-4"
Q2E12ZS3999A (HV3999A)	Limit Switch	NAMCO	EA-180	CTMT	89'-4"
Q2E12SV3999B (HV3999B)	Solenoid Valve	ASCO	NP8316A74E	CTMT	91'-4"
Q2E12ZS3999B (HV3999B)	Limit Switch	NAMCO	EA-180	CTMT	91'-4"
Q2E12M001A (H001A)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q2E12M001B (H001B)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q2E12M001C (H001C)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q2E12M001D (H001D)	CTMT Clr. Fan Motor	Joy Mfg. Co.	Type P	CTMT	155'-0"
Q2T52B005	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B002	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B006	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B041	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"



(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CONTAINMENT COOLING AND PURGE

E-12, E-14, P-13

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2P13SV3196-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	129'-0"
Q2T52B022	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2P13SV2867B-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	129'-0"
Q2P13SV3197-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	129'-0"
Q2P13SV2866B-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	129'-0"
Q2E12SV3999A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	118'
Q2T52B025	Terminal Block	States Co.	Type ZWM	CTMT	118'
Q2E12SV3999B-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	118'
Q2T52B001	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B023	Penetration	General Electric	100 Series	CTMT	143'
2VAFU-R5Q	Power Cable	Okonite	None	CTMT	Varies
2VAFU-R5D	Control Cable	Okonite	None	CTMT	Varies
2VAQ5048F	Control Cable	Okonite	None	CTMT	Varies
2VXR5005H	Control Cable	Okonite	None	CTMT	Varies
2VAFU-J4Q	Power Cable	Okonite	None	CTMT	Varies
2VAFU-J4D	Control Cable	Okonite	None	CTMT	Varies
2VAQ5009C	Control Cable	Okonite	None	CTMT	Varies
2VYR5066B	Instrument Cable	Boston Ins. Wire	None	CTMT	Varies
2VBL5008C,D,K,L	Control Cables	Okonite	None	CTMT	Varies
2VBO5010J	Control Cable	Okonite	None	CTMT	Varies
2VYR5035D	Control Cable	Okonite	None	CTMT	Varies
2VBL5008X, W	Control Cables	Okonite	None	CTMT	Varies
2VBO5012F	Control Cable	Okonite	None	CTMT	Varies
2VYR5035F	Control Cable	Okonite	None	CTMT	Varies
2VAL5122C	Control Cable	Okonite	None	CTMT	Varies

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SYSTEM: HYDROGEN RECOMBINER SYSTEM

E-17

[illegible]

(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CONTAINMENT POST LOCA AIR MIXING SYSTEM E-19

[illegible]



(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

STEM: CHEMICAL AND VOLUME CONTROL/SAFETY INJECTIONE-21

PLANT ID NUMBER	GENERIC NAME	COMPONENTS		LOCATION	
		MANUFACTURER	MODEL	BLDG	ELEV
Q2E21V038A (MOV8088A)	12" Motor Operated Gate Valve	Limitorque	SMB-4	CTMT	111'-6"
Q2E21V038B (MOV8088B)	12" Motor Operated Gate Valve	Limitorque	SMB-4	CTMT	112'-6"
Q2E21V038C (MOV8088C)	12" Motor Operated Gate Valve	Limitorque	SMB-4	CTMT	113'-6"
Q2E21SV8871 (HV8871)	Solenoid Valve	ASCO	NP831654V	CTMT	129'-0"
Q2E21ZS8871 (HV8871)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2E21V249A (MOV8112)	3" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	123'
N2E21ZS8149A (HV8149A)	Limit Switch	NAMCO	EA-180	CTMT	111'-0"
Q2E21SV8149AB (HV8149A)	Solenoid Valve	ASCO	NP831654V	CTMT	111'-0"
N2E21ZS8149B (HV8149B)	Limit Switch	NAMCO	EA-180	CTMT	111'-0"
Q2E21SV8149BB (HV8149B)	Solenoid Valve	ASCO	NP831654V	CTMT	111'-0"
N2E21ZS8149C (HV8149C)	Limit Switch	NAMCO	EA-180	CTMT	111'-0"
Q2E21SV8149CB (HV8149C)	Solenoid Valve	ASCO	NP831654V	CTMT	111'-0"
Q2T52B002	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B016	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B006	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B038	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
N2E21SV8871-A/JB	Junction Box	<i>States Co</i>	<i>Type ZWM</i>	CTMT	143'-0"
Q2E21ZS8808AB	Limit Switch	NAMCO	EA-180	CTMT	111'-6"
Q2E21SZ8808BB	Limit Switch	NAMCO	EA-180	CTMT	112'-6"
Q2E21ZS8808CB	Limit Switch	NAMCO	EA-180	CTMT	113'-6"
Q2T52B014	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
N2E21SV8149AA-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	116'-0"
N2E21SV8149BA-A/JB	Terminal Box	States Co.	Type ZWM	CTMT	116'-0"

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: CHEMICAL AND VOLUME CONTROL/SAFETY INJECTION

E-21

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
N2E21SV8149CA-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	116'-0" & above
2VAFU-Z2Q	Power Cable	Okonite	None	CTMT	Varies
2VAFU-Z2D, G	Control Cables	Okonite	None	CTMT	Varies
2VAQ5023E	Control Cable	Okonite	None	CTMT	Varies
2VXKA163B	Control Cable	Okonite	None	CTMT	Varies
2VBFV-S2Q	Power Cable	Okonite	None	CTMT	Varies
2VBFV-S2D, G	Control Cables	Okonite	None	CTMT	Varies
2VBQ5024C	Control Cable	Okonite	None	CTMT	Varies
2VYKA163B	Control Cable	Okonite	None	CTMT	Varies
2VAFU-Z3Q	Power Cable	Okonite	None	CTMT	Varies
2VAFU-Z3D, G	Control Cables	Okonite	None	CTMT	Varies
2VAQ5024E	Control Cable	Okonite	None	CTMT	Varies
2VXA163D	Control Cable	Okonite	None	CTMT	Varies
2VAL5049C	Control Cable	Okonite	None	CTMT	Varies
2VAQ5022H	Control Cable	Okonite	None	CTMT	Varies
2VAFU-T4Q	Power Cable	Okonite	None	CTMT	Varies
2VAFU-T4D	Control Cable	Okonite	None	CTMT	Varies
2VAQ5018E	Control Cable	Okonite	None	CTMT	Varies
2VAL5042F	Control Cable	Okonite	None	CTMT	Varies
2VAL5042G	Control Cable	Okonite	None	CTMT	Varies
2VAQ5022F	Control Cable	Okonite	None	CTMT	Varies
2VAL5043F	Control Cable	Okonite	None	CTMT	Varies
2VAL5043G	Control Cable	Okonite	None	CTMT	Varies
2VAQ5023C	Control Cable	Okonite	None	CTMT	Varies
2VAL5044F	Control Cable	Okonite	None	CTMT	Varies







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SYSTEM: POST ACCIDENT CONTAINMENT COMBUSTIBLE GAS CONTROL

E-23

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2E23V021 (MOV3536)	2" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	116'-6"
Q2E23V003 (MOV3530)	6" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-6"
Q2E23V022A (MOV3528A)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q2E23V002B (MOV3528B)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q2E23V022C (MOV3528C)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q2E23V022D (MOV3528D)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q2E23V025A (MOV3835A)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q2E23V025B (MOV3835B)	3/4" Motor Operated Globe Valve	Limitorque	SMB-000	CTMT	126'-6"
Q2T52B005	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B017	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B038	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B016	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B015	Penetration	General Electric	100 Series	CTMT	143'-0"
2VAFU-W4Q	Power Cable	Okonite	None	CTMT	116'-0" & above
2VBFU-N2Q	Power Cable	Okonite	None	CTMT	116'-0" & above
2VAFU-W4C	Control Cable	Okonite	None	CTMT	116'-0" & above
2VAED06E	Control Cable	Okonite	None	CTMT	116'-0" & above
2VBFV-N2C	Control Cable	Okonite	None	CTMT	116'-0" & above
2VBEE09E	Control Cable	Okonite	None	CTMT	116'-0" & above
2VBFV-Y5Q	Power Cable	Okonite	None	CTMT	116'-0" & above
2VBFV-Y5C	Control Cable	Okonite	None	CTMT	116'-0" & above
2VBFV-Y4Q	Power Cable	Okonite	None	CTMT	116'-0" & above



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## LIQUID WASTE DISPOSAL SYSTEM

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

STEM: MAIN STEAM

N-11

PLANT ID NUMBER	GENERIC NAME	COMPONENTS		LOCATION	
		MANUFACTURER	MODEL	BLDG	ELEV
Q2N112S3369A (HV3369A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	127'-5"
DELETED					
Q2N11SV3369AC (HV3369A)	Solenoid Valve	ASCO	NP8316E36V	Mn. Stm Room	135'-0"
Q2N112S3369B (HV3369B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	127'-5"
DELETED					
Q2N11SV3369BC (HV3369B)	Solenoid Valve	ASCO	NP8316E36V	Mn. Stm Room	135'-0"
Q2N112S3369C (HV3369C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	127'-5"
DELETED					
Q2N11SV3369CC (HV3369C)	Solenoid Valve	ASCO	NP8316E36V	Mn. Stm Room	135'-0"
Q2N112S3370A (V3370A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	127'-5"
DELETED					
Q2N11SV3370AC (HV3370A)	Solenoid Valve	ASCO	NP8316E36V	Mn. Stm Room	135'-0"
Q2N112S3370B (HV3370B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	127'-5"
DELETED					
Q2N11SV3370BC (HV3370B)	Solenoid Valve	ASCO	NP8316E36V	Mn. Stm Room	135'-0"
Q2N112S3370C (HV3370C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	127'-5"
DELETED					
Q2N11SV3370CC (HV3370C)	Solenoid Valve	ASCO	NP8316E36V	Mn. Stm Room	135'-0"
Q2N112S3368A (HV3368A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	131'-7"
Q2N11SV3368AA (HV3368A)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	131'-7"
Q2N112S3368B (HV3368B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	131'-7"
Q2N11SV3368BA (HV3368B)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	131'-7"
Q2N112S3368C (HV3368C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	131'-7"
Q2N11SV3368CA (HV3368C)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	131'-7"
Q2N11SV3976A (HV3976A)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	131'-7"



CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: MAIN STEAM

N-11

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2N11ZS3976A (HV3976A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	131'-7"
Q2N11SV3976B (HV3976B)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	131'-7"
Q2N11ZS3976B (HV3976B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	131'-7"
Q2N11SV3976C (HV3976C)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	131'-7"
Q2N11ZS3976C (HV3976C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	131'-7"
Q2N11SV3369AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	131'-0"
Q2N11SV3369BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	131'-0"
Q2N11SV3369CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	131'-0"
Q2N11SV3370AA-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
Q2N11SV3370BA-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
Q2N11SV3370CA-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
Q2N11SV3368AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
Q2N11SV3368BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
Q2N11SV3368CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
Q2N11SV3976B-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
Q2N11SV3976C-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	137'-0"
2VAL5019E, F	Control Cables	Okonite	None	Mn. Stm Room	135' & above
2VAL5045C	Control Cable	Okonite	None	Mn. Stm Room	135' & above
2VAQ5013A	Control Cable	Okonite	None	Mn. Stm Room	135" & above

## MASTER LIST

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: MAIN STEAMN-11

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
2VAT0001C, D, E	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAL5020E, F	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAL5046C	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAQ5015A	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAL5021E, F	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAL5047C	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAQ5017A	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBL5010E, D	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBL5021C	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBQ5013D	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBT0001F, G, H	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBL5011E, D	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBL5022C	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBQ5015D	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBL5012E, D	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBL5023C	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VBQ5017E	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAL5045B	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAQ5013B	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VXR5008A	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAL5046B	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAQ5015B	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VXR5008B	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAL5047B	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above
2VAQ5017B	Control Cable	Okonite	None	Mn. Stm Room	127'-5" & above



(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

EM: AUXILIARY STEAM

N-12

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2N12SV3234A (HV3234A)	Solenoid Valve	ASCO	NP8320A186V	Mn. Stm Room	135'-0"
Q2N12ZS3234A (HV3434A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	134'-0"
Q2N12SV3234B (HV3234B)	Solenoid Valve	ASCO	NP8320A186V	Mn. Stm Room	135'-0"
Q2N12ZS3234B (HV3234B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	134'-0"
Q2N12SV3235A (HV3235A)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	135'-0"
Q2N12ZS3235A (HV3235A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	140'-0"
Q2N12SV3235B (HV3235B)	Solenoid Valve	ASCO	NP8321A2V	Mn. Stm Room	135'-0"
Q2N12ZS3235B (HV3235B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	140'-0"
Q2N12SV3234A-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	135'-0" & above
Q2N12SV3234B-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	135'-0" & above
Q2N12SV3235A-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	135'-0" & above
Q2N12SV3235B-B/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	135'-0" & above
2VAL5003B	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAQ5011A	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VXR5007F	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VBL5007B	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VBQ5013E	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VYR5033E	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5004C	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAQ5010D	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VNR5003A,B	Instrument Cables	Boston Ins. Wire	None	Mn. Stm Room	135'-0" & above
2VBL5005C	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VBQ5011B	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VXKJ183C, D, G, H	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above



SYSTEM: MAIN FEEDWATER AND CONDENSATE

N-21

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

STEM AUXILIARY FEEDWATER

N-23

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2N23V011A (MOV3350A)	4" Motor Operated Stop-Check Globe V1	Limitorque	SMB-1	Mn. Stm Room	137'-5"
Q2N23V001B (MOV3350B)	4" Motor Operated Stop-Check Globe V1	Limitorque	SMB-1	Mn. Stm Room	137'-5"
Q2N23V001C (MOV3350C)	4" Motor Operated Stop-Check Globe V1	Limitorque	SMB-1	Mn. Stm Room	137'-5"
Q2N23ZS3228A (HV3228A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	135'-0"
Q2N23SV3228AA (HV3228A)	Solenoid Valve	ASCO	NP8320A186V	Mn. Stm Room	135'-0"
Q2N23ZS3228B (HV3228B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	135'-0"
Q2N23SV3228BA (HV3228B)	Solenoid Valve	ASCO	NP8320A186V	Mn. Stm Room	135'-0"
Q2N23ZS3228C (HV3228C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	135'-0"
Q2N23SV3228CA (HV3228C)	Solenoid Valve	ASCO	NP8320A168V	Mn. Stm Room	135'-0"
Q2N23ZS3227A (HV3227A)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	135'-0"
Q2N23SV3227AA (HV3227A)	Solenoid Valve	ASCO	NP8320A168V	Mn. Stm Room	135'-0"
Q2N23ZS3227B (HV3227B)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	135'-0"
Q2N23SV3227BA (HV3227B)	Solenoid Valve	ASCO	NP8320A168V	Mn. Stm Room	135'-0"
Q2N23ZS3227C (HV3227C)	Limit Switch	NAMCO	EA-180	Mn. Stm Room	135'-0"
Q2N23SV3227CA (HV3227C)	Solenoid Valve	ASCO	NP8320A168V	Mn. Stm Room	135'-0"
Q2N23SV3228AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	144'-0"
Q2N23SV3228BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	144'-0"
Q2N23SV3228CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	144'-0"
Q2N23SV3227AA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	144'-0"
Q2N23SV3227BA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	144'-0"
Q2N23SV3227CA-A/JB	Terminal Block	States Co.	Type ZWM	Mn. Stm Room	144'-0"
2VAFU-U4Q	Power Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAFU-U5Q	Power Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAFU-I2Q	Power Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAFU-U4A, D	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: AUXILIARY FEEDWATER

N-23

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
2VAFU-U5A, D	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VAFU-I2A, D	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5007B	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5008B	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5009B	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5007C	Instrument Cablw	Boston Ins. Wire	None	Mn. Stm Room	135'-0" & above
2VAL5008C	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	135'-0" & above
2VAL5009C	Instrument Cables	Boston Ins. Wire	None	Mn. Stm Room	135'-0" & above
2VAQ5010E, K	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VAQ5012E, K	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VAQ5014E, K	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VXR5007K, L, M	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5013C	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5014C	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5015C	Control Cable	Okonite	None	Mn. Stm Room	135'-0" & above
2VAL5013D	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	135'-0" & above
2VAL5014D	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	135'-0" & above
2VAL5015D	Instrument Cable	Boston Ins. Wire	None	Mn. Stm Room	135'-0" & above
2VAQ5048H, K	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VAQ5006C, H	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VAQ5008C, H	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above
2VXR5007G, H, J	Control Cables	Okonite	None	Mn. Stm Room	135'-0" & above







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Sheet 1

CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: SAMPLING SYSTEM

P-15

PLANT ID NUMBER	GENERIC NAME	COMPONENTS		LOCATION	
		MANUFACTURER	MODEL	BLDG	ELEV
Q2P15SV3103 (HV3103)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3103 (HV3103)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3765 (HV3765)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3765 (HV3765)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3766 (HV3766)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3766 (HV3766)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3179A (HV3179A)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3179A (HV3179A)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3179B (HV3179B)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3179B (HV3179B)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3179C (HV3179C)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3179C (HV3179C)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3180A (HV3180A)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3180A (HV3180A)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3180B (HV3180B)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3180B (HV3180B)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3180C (HV3180C)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3180C (HV3180C)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3181A (HV3181A)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3181A (HV3181A)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3181B (HV3181B)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"
Q2P15ZS3181B (HV3181B)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3181C (HV3181C)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-9"
Q2P15ZS3181C (HV3181C)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2P15SV3104 (HV3104)	Solenoid Valve	ASCO	NP8320A184V	CTMT	129'-0"

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: SAMPLING SYSTEM

P-15

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2P15ZS3104 (HV3104)	Limit Switch	NAACo	EA-180	CTMT	129'-0"
Q2T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2P15SV3103-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3765-A/JB	Junction Box	State	Type ZWM	CTMT	135'-0"
Q2T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2P15SV3766-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3179A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3179B-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3179C-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2P15SV3180A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3180B-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3180C-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3181A-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3181B-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3181C-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
Q2P15SV3104-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	135'-9"
2VAL5063B	Control Cable	Okonite	None	CTMT	129'-0" & above
2VAQ5049H	Control Cable	Okonite	None	CTMT	129'-0" & above
2VXR5010B	Control Cable	Okonite	None	CTMT	129'-0" & above
2VAL5065B	Control Cable	Okonite	None	CTMT	129'-0" & above
2VAQ5032J	Control Cable	Okonite	None	CTMT	129'-0" & above
2VXR5010F	Control Cable	Okonite	None	CTMT	129'-0" & above
2VAL5066A	Control Cable	Okonite	None	CTMT	129'-0" & above
2VAQ5033J	Control Cable	Okonite	None	CTMT	129'-0" & above

SYSTEM: SAMPLING SYSTEM

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: SERVICE WATER

P-16

COMPONENTS					
PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2P16V207A (MOV3441A)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-0"
Q2P16V207B (MOV3441B)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-0"
Q2P16V207C (MOV3441C)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-0"
Q2P16V207D (MOV3441D)	10" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-0"
Q2P16V081 (MOV3131)	6" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-0"
Q2T52B005	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B015	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B007	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B014	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
2VBFV-J4Q	Power Cable	Okonite	None	CTMT	130'-0" & above
2VBFV-J4D	Control Cable	Okonite	None	CTMT	130'-0" & above
2VBQ5007D	Control Cable	Okonite	None	CTMT	130'-0" & above
2VYR4006B, D	Control Cables	Okonite	None	CTMT	130'-0" & above
2VYKB164B, C	Control Cables	Okonite	None	CTMT	130'-0" & above
2VBFV-J5Q	Power Cable	Okonite	None	CTMT	130'-0" & above
2VBFV-J5D	Control Cable	Okonite	None	CTMT	130'-0" & above
2VBQ5009D	Control Cable	Okonite	None	CTMT	130'-0" & above
2VAFU-K6Q	Power Cable	Okonite	None	CTMT	130'-0" & above
2VAFU-K6D	Control Cable	Okonite	None	CTMT	130'-0" & above
2VAQ5007D	Control Cable	Okonite	None	CTMT	130'-0" & above
2VXR5005B, D, F	Control Cables	Okonite	None	CTMT	130'-0" & above
2VXKB164B, C	Control Cables	Okonite	None	CTMT	130'-0" & above
2VAFU-W2Q	Power Cable	Okonite	None	CTMT	130'-0" & above



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SYSTEM: SERVICE WATER P-16

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(CLASS IE ELECTRICAL EQUIPMENT REQUIRED TO FUNCTION UNDER POSTULATED ACCIDENT CONDITIONS)

SYSTEM: COMPONENT COOLING WATER

P-17

PLANT ID NUMBER	GENERIC NAME	MANUFACTURER	MODEL	LOCATION	
				BLDG	ELEV
Q2P17V097 (MOV3046)	6" Motor Operated Gate Valve	Limitorque	SMB-00	CTMT	130'-6"
Q2P17SV3184 (HV3184)	Solenoid Valve	ASCO	NP8316A77V	CTMT	118'-0"
Q2P17ZS3184 (HV3184)	Limit Switch	NAMCO	EA-180	CTMT	118'-0"
Q2P17SV3443 (HV3443)	Solenoid Valve	ASCO	NP8316A74V	CTMT	129'-0"
Q2P17ZS3443 (HV3443)	Limit Switch	NAMCO	EA-180	CTMT	129'-0"
Q2T52B016	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B038	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B020	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2P17SV3184-B/JB	Terminal Block	States Co.	Type ZWM	CTMT	118'-0"
Q2T52B019	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2T52B041	Penetration	General Electric	100 Series	CTMT	143'-0"
Q2P17SV3443-A/JB	Terminal Block	States Co.	Type ZWM	CTMT	129'-0"
2VBFV-C3Q	Power Cable	Okonite	None	CTMT	118'-0" & above
2VBFV-C3D	Control Cable	Okonite	None	CTMT	118'-0" & above
2VBQ5017C	Control Cable	Okonite	None	CTMT	118'-0" & above
2VYR5006F	Control Cable	Okonite	None	CTMT	118'-0" & above
2VBL5009C,D,E,F	Control Cables	Okonite	None	CTMT	118'-0" & above
2VBQ5017H	Control Cable	Okonite	None	CTMT	118'-0" & above
2VYR5035B	Control Cable	Okonite	None	CTMT	118'-0" & above
2VAL5055C	Control Cable	Okonite	None	CTMT	118'-0" & above
2VA05029H	Control Cable	Okonite	None	CTMT	118'-0" & above
2VYR5064F	Control Cable	Okonite	None	CTMT	118'-0" & above