



Duquesne Light

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May 19, 1983

Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Attn: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
Washington, DC 20555

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Environmental Qualification of Electrical Equipment
Response to 10 CFR 50 Section 50.49 Rulemaking

Gentlemen:

In accordance with the NRC's January 20, 1983 Rulemaking relating to electrical equipment qualification, we are providing the attached response as required for Beaver Valley Unit 1. This response provides a Master List of Equipment for which qualification is required in order to answer the specific request of 10 CFR 50.49. When this Master List Response is coupled with our recent response to the NRC's Equipment Qualification Safety Evaluation Report, a more complete overview of our equipment qualification program is presented. The Master List of Equipment for which qualification is required contains some recent equipment additions which we have referred to as the Phase 2 Listing. This additional equipment was added during the refueling outage in 1982.

As in previous submittals to the NRC, we have included an Executive Summary Section which identifies those equipment items for which further qualification action is being taken. We are continuing in our efforts to obtain either the necessary qualification documentation or qualified equipment by the deadline date required by 10 CFR 50.49. If specific difficulties in complying with this schedule should occur, we will keep you informed of the situation on a case-by case basis.

If you have any further questions on this response, please contact my office.

A048

Very truly yours,

J. J. Carey
Vice President, Nuclear

Attachment

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PDR ADOCK 05000334
PDR

Beaver Valley Power Station, Unit No. 1
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Washington, DC 20555



DUQUESNE LIGHT COMPANY
NUCLEAR DIVISION

**NUCLEAR SAFETY AND LICENSING
DEPARTMENT**

**RESPONSE TO THE NRC
EQUIPMENT QUALIFICATION RULEMAKING
(10CFR50, SECTION 50.49)**

**BEAVER VALLEY POWER STATION
UNIT 1**

MAY 20, 1983

Response to the NRC

Equipment Qualification

Rulemaking

(10CRF50, Section 50.49)

RESPONSE TO THE NRC
EQUIPMENT QUALIFICATION RULEMAKING
(10CRF50, Section 50.49)

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I. BACKGROUND

I. BACKGROUND

The NRC Rulemaking for Equipment Qualification that was published on January 21, 1983, in the Federal Register which became effective on February 22, 1983, required that licensees of operating plants provide a response to the 10CFR50.49 Rulemaking by May 20, 1983. It is the intent of this response to identify the electrical equipment for Duquesne Light Company's Beaver Valley Power Station Unit 1 that is required to be qualified. This listing is based on the harsh area equipment items that have been previously submitted to the NRC, as well as additional harsh area equipment that has been installed during recent plant outages. The recent additions include electrical items that are either replacement qualified equipment, or equipment required to meet NUREG 0737 TMI Action Plan requirements.

Duquesne Light Company is continuing to maintain an on-going qualification program to address any equipment items for (i) those items for which qualification has yet to be established or (ii) any new equipment items or replacement parts that are needed in the future. In addition, Duquesne Light Company will continue to update its listing of safety-related equipment for which qualification is required as plant or procedural changes are made, in order to assure that the necessary qualification documentation is acquired, reviewed, and maintained.

The Master Listing of safety-related electrical equipment does not include electrical safety-related equipment located in mild areas or equipment related to certain cold shutdown systems since they have been excluded from the scope of the final rule. Duquesne Light Company is continuing, however, to identify mild area equipment as part of its efforts to review this equipment on an overall system basis in order to assess system safety and operability. In addition, replacement equipment and spare parts for mild areas are procured, evaluated, and documented in accordance with Regulatory Guide 1.33, as suggested by the Rulemaking.

10CFR50.49 also requires that the licensee provide a schedule to qualify electrical equipment for which qualification has not yet been established. The Executive Summary portion of this response outlines actions being taken by Duquesne Light Company. At the present time, we are targeting our efforts to have the qualification issues and documentation areas addressed by the early part of 1985 for the majority of the electrical equipment. If we encounter any problems with this schedule that are not currently known, we will advise the NRC on a case-by-case basis.

Duquesne Light Company has placed a considerable amount of qualification documentation in its Equipment Qualification File and is keeping this file current as equipment is upgraded or as spare parts are procured. In accordance with the Rulemaking, the equipment that has been identified in this response's Master Listing has been evaluated against the DOR Guidelines and NUREG 0588 and will not be required to be requalified.

As pointed out in our March 1983 Response to the NRC's Safety Evaluation Report, Duquesne Light Company is currently addressing the outstanding issues raised by the Franklin Research Center and NRC review. Traceability concerns are being investigated with the original equipment suppliers, certain transmitters are being replaced, and other equipment items are going to be tested. In addition, several equipment items are currently being independently assessed from an aging review standpoint in order to establish spare part replacement frequencies.

II. EXECUTIVE SUMMARY

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The Executive Summary identifies Duquesne Light Company's (DLC) on-going plan to attain a qualified status for those equipment items that have been assessed by the NRC and DLC as requiring further follow-up action in order to achieve qualification. The follow-up action will take different courses ranging from obtaining traceability information from the manufacturer to actually testing some of the equipment. In other instances, replacement of equipment for which qualification documentation has not been completely obtained is currently underway.

It should be noted that the equipment presented in the Executive Summary is a subset of the overall equipment listing identified in the Master List in Section IV of this response, because only items requiring follow-up action are included in the Executive Summary. The balance of the equipment items have been evaluated and judged to be qualified for their BVPS-1 application.

II. EXECUTIVE SUMMARY

EQUIP ITEM NO.	FRC TAB NO.	EQUIPMENT MANUFACTURER/ MODEL NUMBER	EQUIPMENT DESCRIPTION	PLANNED ACTION
5	72	Continental	Cable	Retest for chemical spray and radiation
6	75	Viking	Penetration	Retest penetration for higher radiation dosage
7	79	Buchanan 0211 0511	Terminal Block	Retest may be scheduled depending on outcome of 1983 walkdown
8	80	Penn Union Series 1000	Terminal Block	Conduct aging analysis and determine replacement cycle
10	29	ASCO NP8320A184E	Solenoid	Install qualified seal at conduit interface
10	30	ASCO NP8320A188E	Solenoid	Install qualified seal at conduit interface
10	31	ASCO NP8320A186E	Solenoid	Install qualified seal at conduit interface
10	32	ASCO NP8320A186E	Solenoid	Install qualified seal at conduit interface
10	33	ASCO NP8320A186E	Solenoid	Install qualified seal at conduit interface
10	34	ASCO NP831654E	Solenoid	Install qualified seal at conduit interface
10	35	ASCO NP8316A74E	Solenoid	Install qualified seal at conduit interface

II. EXECUTIVE SUMMARY

EQUIP ITEM NO.	FRC TAB NO.	EQUIPMENT MANUFACTURER/ MODEL NUMBER	EQUIPMENT DESCRIPTION	PLANNED ACTION
11	59	NAMCO EA180	Limit Switch	Install qualified conduit seals at interface
13	57	NAMCO EA740	Limit Switch	Install qualified conduit seals at interface
14	38	Fischer & Porter 10B2496	Transmitter	Replace with qualified Barton Lot 5 transmitters
15	36	Barton 386	Transmitter	Replace with qualified Barton Lot 5 transmitter
16	49	Barton 764LOT2	Transmitter	Investigate test program anomaly. Investigate need for connector soldering
18	83	Mason-Neilan 12522	Transmitter	Replace with qualified Barton Lot 5 transmitter
19	47	Fischer & Porter 50EP1031	Transmitter	Replace with qualified Barton Lot 5 transmitter
19	91	Fischer & Porter 50EP1071	Transmitter	Replace with qualified Barton Lot 5 transmitter
20	46	Barton 763 Lot 2	Transmitter	Perform aging analysis. Investigate need for connector soldering
21	40	Barton 386	Transmitter	Replace with qualified Barton Lot 5 transmitter
22	53	Sostman 119018-2	Resistance Temperature Device	Replace with RDF Corpora- tion RTD's
25	2	Limatorque SMB-00	Motor Operated Valve	Replace valve MOV-CH-310 with qualified operator

II. EXECUTIVE SUMMARY

EQUIP ITEM NO.	FRC TAB NO.	EQUIPMENT MANUFACTURER/ MODEL NUMBER	EQUIPMENT DESCRIPTION	PLANNED ACTION
25	5	Limitorque SMB-00	Motor Operated Valve	Identify materials of construction, establish similarity and perform aging analysis
25	90	Limitorque SMB-00	Motor Operated Valve	Replace valve MOV-SI-842 with qualified operator
26	56	G.E. 5K6319XJ20A	Motor	Perform aging analysis on the lead splice, lead cable insulation, bearings, and lubricant
27	51	Unholtz Dickie 22CA-2TR	Charge Amplifier	Retest the accoustical monitoring system or procure a different system
35	65	Allis Chalmer 480V	Motor Control Center	Perform aging analysis of control transformer
37	24	ASCO NP831655E	Solenoid	Install qualified seal at conduit interface
39	84	NAMCO EA740	Limit Switch	Install qualified seals at conduit interface
40	39	Fischer & Porter 10B2496	Transmitter	Replace with qualified Barton Lot 5 transmitter
41	37	Fischer & Porter 50EP1071BCXB 50EN1071BCXB	Transmitter	Replace with qualified Barton Lot 5 transmitter

II. EXECUTIVE SUMMARY

EQUIP ITEM NO.	FRC TAB NO.	EQUIPMENT MANUFACTURER/ MODEL NUMBER	EQUIPMENT DESCRIPTION	PLANNED ACTION
44	22	Limitorque SMB-2T	Motor Operated Valve	Performed aging analysis
45	10	Limitorque SMB-00	Motor Operated Valve	Obtain traceability documents and motor brake details
45	12	Limitorque SMB-00	Motor Operated Valve	Obtain traceability documents and motor brake details
45	13	Limitorque SMB-00	Motor Operated Valve	Perform aging analysis and identify motor brake details
47	63	Westinghouse S.O.71F13335	Motor	Analyze motor constituent parts for thermal, radiation, and wear aging
48	64	Westinghouse FR58085 S.O.70FG7723	Motor	Analyze constituent parts for thermal, radiation, and wear aging
2008	-	ASCO NP8320A189E	Solenoid	Install qualified seal at conduit interface
2021	-	NAMCO EA180-11302	Limit Switch	Install qualified seals at conduit interface
2022	-	ASCO NP8320A187E	Solenoid	Install qualified seal at conduit interface
2073	41	Gems XM-36495	Level Transmitter	Replace with qualified transmitter

III. METHODOLOGY FOR MASTER LIST DEVELOPMENT

III. METHODOLOGY FOR MASTER LIST DEVELOPMENT

The Master List of qualified equipment presented in Section IV of this response was developed in two phases. The first phase was limited to safety-related electrical equipment which was originally installed in the plant. The second phase pertained to safety-related electrical equipment which has been installed as replacement or new equipment during recent outages. Duquesne Light Company had presented the first phase listing of equipment in several previous submittals to the NRC and it was this list of equipment that had been reviewed by the NRC and FRC in 1982. The second phase listing of equipment items had not been previously identified to the NRC because the equipment had been placed in operation in 1982.

The methodology for the development of the original plant equipment listing (first phase) involved a system review of several different plant documents including the following:

- § Electrical Schematics
- § Electrical Physical Drawings
- § Emergency Operating Procedures
- § Final Safety Analysis Report
- § Electrical Equipment Lists
- § Cable and Raceway Schedules

After this first phase listing was developed, Duquesne Light Company operations personnel then reviewed the list. This review resulted in the addition of some equipment items and the deletion of other equipment that were not required to mitigate the consequences of an accident or bring the plant to a safe shutdown condition.

The second phase listing was developed by examining safety-related design change packages of Duquesne Light Company to determine the equipment's function in the plant, the type of environmental exposure, and what specific equipment was required to be qualified because of NRC regulations. The majority of this equipment was associated with NUREG 0737, TMI Action Plan, and Regulatory Guide 1.97, Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant and Environmental Conditions During and Following Accident.

The methodology which was implemented, determined if the equipment was safety-related and was required to be qualified. It involved reviewing, in detail, the various plant change modification documents.

This process involved the review of numerous types of plant documents including the following:

- § Design Change Package Design Concept
- § System Summary
- § Index for Design Output
- § Purchase Orders and Specifications
- § System Diagrams
- § Electrical Schematics
- § Electrical Physical Drawings
- § Cable and Raceway Schedules
- § Equipment Location Drawings

As a result of this review to determine which equipment required qualification, all harsh area equipment identified as fulfilling a safety-related function for accident mitigation, containment isolation, post accident monitoring, off-site radiation release, or to shut down the reactor, were incorporated in the Phase 2 Master List. The determination of whether or not certain auxiliary equipment was to be considered as safety-related, for which qualification would be needed, was based on the equipment's particular safety-related function, location, and basic design concept parameters.

In addition, NUREG 0737 and Regulatory Guide 1.97 were reviewed in-depth to determine Duquesne Light Company compliance with the NRC requirements. At this time, Duquesne Light Company is continuing to review specific equipment associated with Reg. Guide 1.97 to determine which instrument systems have a high probability of attaining qualification status.

The Phase 2 Master Listing of equipment utilized a 2000 series of equipment item identification numbers in order to segregate new or replacement equipment changes from the original plant equipment items in the plant's qualification record keeping system.

IV. MASTER LIST OF EQUIPMENT
REQUIRING QUALIFICATION

MASTER LIST PHASE 1
OF EQUIPMENT REQUIRING
QUALIFICATION

MAY 1983

DUQUESNE LIGHT COMPANY
HARSH AREA REPORT

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PAGE 1

EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
1	POWER CABLE	KERITE	NFB-16
2	POWER CABLE	CERRO WIRE	NFB-65
3	POWER CABLE	OKONITE	VARIOUS
4	CNTRL CABLE	OKONITE	VARIOUS
5	INSTRUMENT CBL	CONTINENTAL W&C	VARIOUS
6	PENE. TYPE I	VIKING	NONE
6	PENE. TYPE III	VIKING	NONE
6	PENE. TYPE II	VIKING	NONE
6	PENE. TYPE VIII	VIKING	NONE
6	PENE. TYPE V	VIKING	NONE
6	PENE. TYPE IX	VIKING	NONE
6	PENE. TYPE IV	VIKING	NONE
7	TERMINAL BLKS	BUCHANAN	VARIOUS
8	TERMINAL BLKS	PENN UNION	VARIOUS
9	SIS WIRE	ROCKBESTOS	VARIOUS
10	SOLENOID	ASCO	SOV-CC-103A1
10	SOLENOID	ASCO	SOV-CC-103B1
10	SOLENOID	ASCO	SOV-CC-103C1
10	SOLENOID	ASCO	SOV-CC-105D1
10	SOLENOID	ASCO	SOV-CC-105E1
10	SOLENOID	ASCO	SOV-CC-107D1
10	SOLENOID	ASCO	SOV-CC-107E1
10	SOLENOID	ASCO	SOV-CC-110D
10	SOLENOID	ASCO	SOV-CC-110E3
10	SOLENOID	ASCO	SOV-CC-111A2
10	SOLENOID	ASCO	SOV-CC-111D1
10	SOLENOID	ASCO	SOV-CH-200A1
10	SOLENOID	ASCO	SOV-CH-200B1
10	SOLENOID	ASCO	SOV-CH-200C1
10	SOLENOID	ASCO	SOV-CV-102-1
10	SOLENOID	ASCO	SOV-DA-100A
10	SOLENOID	ASCO	SOV-DG-108A
10	SOLENOID	ASCO	SOV-DG-109A2
10	SOLENOID	ASCO	SOV-LM-101A
10	SOLENOID	ASCO	SOV-LM-101B
10	SOLENOID	ASCO	SOV-RC-455C1
10	SOLENOID	ASCO	SOV-RC-455C2
10	SOLENOID	ASCO	SOV-RC-455D1
10	SOLENOID	ASCO	SOV-RC-455D2
10	SOLENOID	ASCO	SOV-RC-456-1
10	SOLENOID	ASCO	SOV-RC-456-2
10	SOLENOID	ASCO	SOV-SI-101-2
10	SOLENOID	ASCO	SOV-SS-000A
11	LIMIT SWITCH	NAMCO	LMS-CC-105D1
11	LIMIT SWITCH	NAMCO	LMS-CC-111D
11	LIMIT SWITCH	NAMCO	LMS-CH-200A
11	LIMIT SWITCH	NAMCO	LMS-CH-200B
11	LIMIT SWITCH	NAMCO	LMS-CH-200C
11	LIMIT SWITCH	NAMCO	LMS-RC-455C
11	LIMIT SWITCH	NAMCO	LMS-RC-455D
11	LIMIT SWITCH	NAMCO	LMS-RC-456
11	LIMIT SWITCH	NAMCO	LMS-SI-101-2

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
11	LIMIT SWITCH	NAMCO	LMS-SI-865A
11	LIMIT SWITCH	NAMCO	LMS-SI-865B
11	LIMIT SWITCH	NAMCO	LMS-SI-865C
13	LIMIT SWITCH	NAMCO	LMS-CC-103A1
13	LIMIT SWITCH	NAMCO	LMS-CC-103B1
13	LIMIT SWITCH	NAMCO	LMS-CC-103C1
13	LIMIT SWITCH	NAMCO	LMS-CC-105E1
13	LIMIT SWITCH	NAMCO	LMS-CC-107D1
13	LIMIT SWITCH	NAMCO	LMS-CC-107E1
13	LIMIT SWITCH	NAMCO	LMS-CC-110D
13	LIMIT SWITCH	NAMCO	LMS-CC-110E3
13	LIMIT SWITCH	NAMCO	LMS-CC-111A2
13	LIMIT SWITCH	NAMCO	LMS-CV-102-1
13	LIMIT SWITCH	NAMCO	LMS-DA-100A
13	LIMIT SWITCH	NAMCO	LMS-DG-108A
13	LIMIT SWITCH	NAMCO	LMS-DG-109A-2
14	FLOW TRANS	FISCHER PORTER	FT-MS-474
14	FLOW TRANS	FISCHER PORTER	FT-MS-475
14	FLOW TRANS	FISCHER PORTER	FT-MS-484
14	FLOW TRANS	FISCHER PORTER	FT-MS-485
14	FLOW TRANS	FISCHER PORTER	FT-MS-494
14	FLOW TRANS	FISCHER PORTER	FT-MS-495
15	FLOW TRANS	BARTON	FT-SI-961
15	FLOW TRANS	BARTON	FT-SI-962
15	FLOW TRANS	BARTON	FT-SI-963
16	LEVEL TRANS	BARTON	LT-FW-474
16	LEVEL TRANS	BARTON	LT-FW-475
16	LEVEL TRANS	BARTON	LT-FW-476
16	LEVEL TRANS	BARTON	LT-FW-484
16	LEVEL TRANS	BARTON	LT-FW-485
16	LEVEL TRANS	BARTON	LT-FW-486
16	LEVEL TRANS	BARTON	LT-FW-494
16	LEVEL TRANS	BARTON	LT-FW-495
16	LEVEL TRANS	BARTON	LT-FW-496
16	LEVEL TRANS	BARTON	LT-RC-459
16	LEVEL TRANS	BARTON	LT-RC-460
16	LEVEL TRANS	BARTON	LT-RC-461
17	LEVEL TRANS	GEMS	LT-RS-151A
17	LEVEL TRANS	GEMS	LT-RS-151B
18	LEVEL TRANS	MASON-NEILAN	LT-RC-470
19	PRESS TRANS	FISCHER PORTER	PT-RC-472
19	PRESS TRANS	FISCHER PORTER	PT-RS-152A
19	PRESS TRANS	FISCHER PORTER	PT-RS-152B
20	PRESS TRANS	BARTON	PT-RC-402
20	PRESS TRANS	BARTON	PT-RC-403
20	PRESS TRANS	BARTON	PT-RC-455
20	PRESS TRANS	BARTON	PT-RC-456
20	PRESS TRANS	BARTON	PT-RC-457
21	LEVEL TRANS	BARTON	LT-FW-477
21	LEVEL TRANS	BARTON	LT-FW-487
21	LEVEL TRANS	BARTON	LT-FW-497
22	TEMP RES BULB	SOSTMAN	TRB-RC-410

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
22	TEMP RES BULB	SOSTMAN	TRB-RC-412B
22	TEMP RES BULB	SOSTMAN	TRB-RC-412D
22	TEMP RES BULB	SOSTMAN	TRB-RC-413
22	TEMP RES BULB	SOSTMAN	TRB-RC-420
22	TEMP RES BULB	SOSTMAN	TRB-RC-422B
22	TEMP RES BULB	SOSTMAN	TRB-RC-422D
22	TEMP RES BULB	SOSTMAN	TRB-RC-423
22	TEMP RES BULB	SOSTMAN	TRB-RC-430
22	TEMP RES BULB	SOSTMAN	TRB-RC-432B
22	TEMP RES BULB	SOSTMAN	TRB-RC-432D
22	TEMP RES BULB	SOSTMAN	TRB-RC-433
24	DAMPER MOTOR	LIMITORQUE	VS-D-5-3B
24	DAMPER MOTOR	LIMITORQUE	VS-D-5-5B
25	MOTOR OP VALVE	LIMITORQUE	MOV-CH-310
25	MOTOR OP VALVE	LIMITORQUE	MOV-CH-378
25	MOTOR OP VALVE	LIMITORQUE	MOV-RC-535
25	MOTOR OP VALVE	LIMITORQUE	MOV-RC-536
25	MOTOR OP VALVE	LIMITORQUE	MOV-RC-537
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-842
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-856B
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-863A
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-865C
26	PUMP MOTOR	GENERAL ELEC	RS-P-1A
26	PUMP MOTOR	GENERAL ELEC	RS-P-1B
27	ACCELEROMETER	ENDEVCO	FE-RC-100A-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100A-2-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100B-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100B-2
27	ACCELEROMETER	ENDEVCO	FE-RC-100C-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100C-2
27	ACCELEROMETER	ENDEVCO	FE-RC-101A-1
27	ACCELEROMETER	ENDEVCO	FE-RC-101A-2
27	ACCELEROMETER	ENDEVCO	FE-RC-101B-1
27	ACCELEROMETER	ENDEVCO	FE-RC-101B-2
27	ACCELEROMETER	ENDEVCO	FE-RC-101C-1
27	ACCELEROMETER	ENDEVCO	FE-RC-101C-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100A-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100A-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100B-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100B-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100C-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100C-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101A-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101A-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101B-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101B-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101C-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101C-2
30	600V CBL SPLICE	OKONITE	NONE
32	SIS WIRE	GENERAL ELEC	NONE
33	SIS WIRE	GENERAL ELEC	NONE
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E12

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ED ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E3
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E4
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E5
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E6
39	LIMIT SWITCH	NAMCO	LMS-FW-103A
39	LIMIT SWITCH	NAMCO	LMS-FW-103B
40	FLOW TRANS	FISCHER PORTER	FT-FW-100A
40	FLOW TRANS	FISCHER PORTER	FT-FW-100B
40	FLOW TRANS	FISCHER PORTER	FT-FW-100C
40	FLOW TRANS	FISCHER PORTER	FT-RW-102A
40	FLOW TRANS	FISCHER PORTER	FT-RW-102B
41	PRESS TRANS	FISCHER PORTER	PT-LM-100A
41	PRESS TRANS	FISCHER PORTER	PT-LM-100B
41	PRESS TRANS	FISCHER PORTER	PT-LM-100C
41	PRESS TRANS	FISCHER PORTER	PT-LM-100D
41	PRESS TRANS	FISCHER PORTER	PT-RS-156A
41	PRESS TRANS	FISCHER PORTER	PT-RS-156B
42	PRESS TRANS	FISCHER PORTER	PT-MS-474
42	PRESS TRANS	FISCHER PORTER	PT-MS-475
42	PRESS TRANS	FISCHER PORTER	PT-MS-476
42	PRESS TRANS	FISCHER PORTER	PT-MS-484
42	PRESS TRANS	FISCHER PORTER	PT-MS-485
42	PRESS TRANS	FISCHER PORTER	PT-MS-486
42	PRESS TRANS	FISCHER PORTER	PT-MS-494
42	PRESS TRANS	FISCHER PORTER	PT-MS-495
42	PRESS TRANS	FISCHER PORTER	PT-MS-496
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151A
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151B
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151C
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151D
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151E
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151F
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-156A
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-156B
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-156C
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-155A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-155B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-156A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-156B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103C
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103D
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104C
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104D
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-105A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-105B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-105C
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-105D

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-106A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-106B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-114A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-114B
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-863A
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-863B
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-864A
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-864B
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-885A
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-885B
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-885C
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-885D
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-890A
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-890B
44	MOTOR OP VALVE	LIMITORQUE	MOV-SI-890C
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-115B
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-115C
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-115D
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-115E
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-275A
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-275B
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-275C
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-289
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-370
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-373
45	MOTOR OP VALVE	LIMITORQUE	MOV-CH-381
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-836
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-860A
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-860B
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-862A
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-862B
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-867A
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-867B
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-867C
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-867D
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-869A
45	MOTOR OP VALVE	LIMITORQUE	MOV-SI-869B
46	PUMP MOTOR	LOUIS ALLIS	FW-P-3A
46	PUMP MOTOR	LOUIS ALLIS	FW-P-3B
47	PUMP MOTOR	WESTINGHOUSE	SI-P-1A
47	PUMP MOTOR	WESTINGHOUSE	SI-P-1B
48	PUMP MOTOR	WESTINGHOUSE	CH-P-1A
48	PUMP MOTOR	WESTINGHOUSE	CH-P-1B
48	PUMP MOTOR	WESTINGHOUSE	CH-P-1C

MASTER LIST PHASE 2
OF EQUIPMENT REQUIRING
QUALIFICATION

MAY 1983

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Q ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
2008	SOLENOID	ASCO	SOV-BD-100A
2008	SOLENOID	ASCO	SOV-BD-100B
2008	SOLENOID	ASCO	SOV-BD-100C
2008	SOLENOID	ASCO	SOV-FW-102
2008	SOLENOID	ASCO	SOV-FW-103A
2008	SOLENOID	ASCO	SOV-FW-103B
2009	PUMP MOTOR	SEIMENS ALLIS	RS-F-2A
2009	PUMP MOTOR	SEIMENS ALLIS	RS-F-2B
2010	SOLENOID	VALCOR	SOV-FW-478A
2010	SOLENOID	VALCOR	SOV-FW-478B
2010	SOLENOID	VALCOR	SOV-FW-488A
2010	SOLENOID	VALCOR	SOV-FW-488B
2010	SOLENOID	VALCOR	SOV-FW-498A
2010	SOLENOID	VALCOR	SOV-FW-498B
2015	RAD MONITOR	VICTOREEN	RM-RM-219A
2015	RAD MONITOR	VICTOREEN	RM-RM-219B
2018	SOLENOID	VALCOR	TV-CV-150-A
2018	SOLENOID	VALCOR	TV-CV-150-B
2018	SOLENOID	VALCOR	TV-SS-102-A1
2018	SOLENOID	VALCOR	TV-SS-102-A2
2018	SOLENOID	VALCOR	TV-SS-105A1
2018	SOLENOID	VALCOR	TV-SS-105A2
2019	FLOW TRANS	ROSEMOUNT	FT-MS-102A
2019	FLOW TRANS	ROSEMOUNT	FT-MS-102B
2019	FLOW TRANS	ROSEMOUNT	FT-MS-102C
2020	LIMIT SWITCH	NAMCO	LMS-CC-103A
2020	LIMIT SWITCH	NAMCO	LMS-CC-103B
2020	LIMIT SWITCH	NAMCO	LMS-CC-103C
2020	LIMIT SWITCH	NAMCO	LMS-CC-110D
2020	LIMIT SWITCH	NAMCO	LMS-CC-111A2
2020	LIMIT SWITCH	NAMCO	LMS-DA-100A
2020	LIMIT SWITCH	NAMCO	LMS-DG-108A
2020	LIMIT SWITCH	NAMCO	LMS-FP-105
2020	LIMIT SWITCH	NAMCO	LMS-FP-106
2020	LIMIT SWITCH	NAMCO	LMS-FP-107
2021	LIMIT SWITCH	NAMCO	LMS-BD-100A
2021	LIMIT SWITCH	NAMCO	LMS-BD-100B
2021	LIMIT SWITCH	NAMCO	LMS-BD-100C
2021	LIMIT SWITCH	NAMCO	LMS-BD-101A1
2021	LIMIT SWITCH	NAMCO	LMS-BD-101A2
2021	LIMIT SWITCH	NAMCO	LMS-BD-101B1
2021	LIMIT SWITCH	NAMCO	LMS-BD-101B2
2021	LIMIT SWITCH	NAMCO	LMS-BD-101C1
2021	LIMIT SWITCH	NAMCO	LMS-BD-101C2
2021	LIMIT SWITCH	NAMCO	LMS-MS-105A
2021	LIMIT SWITCH	NAMCO	LMS-MS-105B
2022	SOLENOID	ASCO	SOV-FP-105
2022	SOLENOID	ASCO	SOV-FP-106
2022	SOLENOID	ASCO	SOV-FP-107
2024	REST. TEMP DET.	CONAX	TRB-RS-150A
2024	REST. TEMP DET.	CONAX	TRB-RS-150B
2025	CABLE SPLICE	KERITE COMPANY	NONE

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
2027	SOLENOID	TARGET ROCK	SOV-RC-102A
2027	SOLENOID	TARGET ROCK	SOV-RC-102B
2027	SOLENOID	TARGET ROCK	SOV-RC-103A
2027	SOLENOID	TARGET ROCK	SOV-RC-103B
2027	SOLENOID	TARGET ROCK	SOV-RC-104
2027	SOLENOID	TARGET ROCK	SOV-RC-105
2031	PRESS TRANS	GOULD	PT-RC-104
2036	TRANSFORMER	HEVI DUTY	TRF-PWR-29
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-101A
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-101B
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-102A
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-102B
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-103A
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-103B
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-104
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-105
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-106
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-107
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-108
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-109
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-110
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-111
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-112
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-113
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-114
2038	TEMP SWITCH	FLUID COMPONENT	TS-BD-100A
2038	TEMP SWITCH	FLUID COMPONENT	TS-BD-100B
2042	SOLENOID	VALCOR	SOV-HY102A1
2042	SOLENOID	VALCOR	SOV-HY102A2
2042	SOLENOID	VALCOR	SOV-HY102B1
2042	SOLENOID	VALCOR	SOV-HY102B2
2042	SOLENOID	VALCOR	SOV-HY103A1
2042	SOLENOID	VALCOR	SOV-HY103A2
2042	SOLENOID	VALCOR	SOV-HY103B1
2042	SOLENOID	VALCOR	SOV-HY103B2
2042	SOLENOID	VALCOR	SOV-HY104A1
2042	SOLENOID	VALCOR	SOV-HY104A2
2042	SOLENOID	VALCOR	SOV-HY104B1
2042	SOLENOID	VALCOR	SOV-HY104B2
2042	SOLENOID	VALCOR	TV-CV-102
2042	SOLENOID	VALCOR	TV-CV-102-1
2044	SOLENOID	ASCO	SOV-CH-204
2044	SOLENOID	ASCO	SOV-SI-884A
2044	SOLENOID	ASCO	SOV-SI-884B
2044	SOLENOID	ASCO	SOV-SI-884C
2045	CABLE SPLICE	RAYCHEM	NONE
2046	TERMINAL BLK	PENN UNION	NONE
2046	TERMINAL BLK	PENN UNION	NONE
2047	CABLE SPLICE	RAYCHEM	NONE
2051	RELAY	AMERACE CORP	NONE
2051	RELAY	AMERACE CORP	NONE
2051	RELAY	AMERACE CORP	NONE

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REPORT SORTED ON EQUIPMENT ITEM

V. FUTURE UPDATING OF THE
MASTER LIST

V. FUTURE UPDATING OF THE MASTER LIST

Duquesne Light Company maintains a current record of the equipment items for which qualification is required within its overall qualification program. All of the safety-related electrical equipment is listed and maintained current in the Equipment Qualification file. As equipment items are added or replaced, changes to the file and to the Master List are made accordingly. Unless specifically requested by the NRC through future submittal requests, Duquesne Light Company will not re-transmit the Master List, but rather keep it current and on file at the plant.

VI. REFERENCES

VI. REFERENCES

Duquesne Light Company has provided several submittals to the NRC that summarized the status of the Beaver Valley Power Station Unit 1 electrical equipment for which environmental qualification was required. These submittals also defined the various aspects of the overall program that are currently being implemented. The following is a list identifying the previous Duquesne Light Company submittals:

<u>Submittal</u>	<u>Date</u>
Environmental Qualification Documentation Report for the NRC I.E. Bulletin 79-01B	December 31, 1980
Response to SER for Environmental Qualification of Safety-Related Electrical Equipment	October 15, 1981
Environmental Qualification Documentation Report for NRC SER 90 Day Response 1983	March 24, 1983

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
1	POWER CABLE	KERITE	NFB-16
2	POWER CABLE	CERRO WIRE	NFB-65
3	POWER CABLE	OKONITE	VARIOUS
4	CNTRL CABLE	OKONITE	VARIOUS
5	INSTRUMENT CBL	CONTINENTAL W&C	VARIOUS
6	PENE. TYPE I	VIKING	NONE
6	PENE. TYPE III	VIKING	NONE
6	PENE. TYPE II	VIKING	NONE
6	PENE. TYPE VIII	VIKING	NONE
6	PENE. TYPE V	VIKING	NONE
6	PENE. TYPE IX	VIKING	NONE
6	PENE. TYPE IV	VIKING	NONE
7	TERMINAL BLKS	BUCHANAN	VARIOUS
8	TERMINAL BLKS	PENN UNION	VARIOUS
9	SIS WIRE	ROCKBESTOS	VARIOUS
10	SOLENOID	ASCO	SOV-CC-103A1
10	SOLENOID	ASCO	SOV-CC-103B1
10	SOLENOID	ASCO	SOV-CC-103C1
10	SOLENOID	ASCO	SOV-CC-105D1
10	SOLENOID	ASCO	SOV-CC-105E1
10	SOLENOID	ASCO	SOV-CC-107D1
10	SOLENOID	ASCO	SOV-CC-107E1
10	SOLENOID	ASCO	SOV-CC-110D
10	SOLENOID	ASCO	SOV-CC-110E3
10	SOLENOID	ASCO	SOV-CC-111A2
10	SOLENOID	ASCO	SOV-CC-111D1
10	SOLENOID	ASCO	SOV-CH-200A1
10	SOLENOID	ASCO	SOV-CH-200B1
10	SOLENOID	ASCO	SOV-CH-200C1
10	SOLENOID	ASCO	SOV-CV-102-1
10	SOLENOID	ASCO	SOV-DA-100A
10	SOLENOID	ASCO	SOV-DG-108A
10	SOLENOID	ASCO	SOV-DG-109A2
10	SOLENOID	ASCO	SOV-LM-101A
10	SOLENOID	ASCO	SOV-LM-101B
10	SOLENOID	ASCO	SOV-RC-455C1
10	SOLENOID	ASCO	SOV-RC-455C2
10	SOLENOID	ASCO	SOV-RC-455D1
10	SOLENOID	ASCO	SOV-RC-455D2
10	SOLENOID	ASCO	SOV-RC-456-1
10	SOLENOID	ASCO	SOV-RC-456-2
10	SOLENOID	ASCO	SOV-SI-101-2
10	SOLENOID	ASCO	SOV-SS-000A
11	LIMIT SWITCH	NAMCO	LMS-CC-105D1
11	LIMIT SWITCH	NAMCO	LMS-CC-111D
11	LIMIT SWITCH	NAMCO	LMS-CH-200A
11	LIMIT SWITCH	NAMCO	LMS-CH-200B
11	LIMIT SWITCH	NAMCO	LMS-CH-200C
11	LIMIT SWITCH	NAMCO	LMS-RC-455C
11	LIMIT SWITCH	NAMCO	LMS-RC-455D
11	LIMIT SWITCH	NAMCO	LMS-RC-456
11	LIMIT SWITCH	NAMCO	LMS-SI-101-2

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
11	LIMIT SWITCH	NAMCO	LMS-SI-865A
11	LIMIT SWITCH	NAMCO	LMS-SI-865B
11	LIMIT SWITCH	NAMCO	LMS-SI-865C
13	LIMIT SWITCH	NAMCO	LMS-CC-103A1
13	LIMIT SWITCH	NAMCO	LMS-CC-103B1
13	LIMIT SWITCH	NAMCO	LMS-CC-103C1
13	LIMIT SWITCH	NAMCO	LMS-CC-105E1
13	LIMIT SWITCH	NAMCO	LMS-CC-107D1
13	LIMIT SWITCH	NAMCO	LMS-CC-107E1
13	LIMIT SWITCH	NAMCO	LMS-CC-110D
13	LIMIT SWITCH	NAMCO	LMS-CC-110E3
13	LIMIT SWITCH	NAMCO	LMS-CC-111A2
13	LIMIT SWITCH	NAMCO	LMS-CV-102-1
13	LIMIT SWITCH	NAMCO	LMS-DA-100A
13	LIMIT SWITCH	NAMCO	LMS-DG-108A
13	LIMIT SWITCH	NAMCO	LMS-DG-109A-2
14	FLOW TRANS	FISCHER PORTER	FT-MS-474
14	FLOW TRANS	FISCHER PORTER	FT-MS-475
14	FLOW TRANS	FISCHER PORTER	FT-MS-484
14	FLOW TRANS	FISCHER PORTER	FT-MS-485
14	FLOW TRANS	FISCHER PORTER	FT-MS-494
14	FLOW TRANS	FISCHER PORTER	FT-MS-495
15	FLOW TRANS	BARTON	FT-SI-961
15	FLOW TRANS	BARTON	FT-SI-962
15	FLOW TRANS	BARTON	FT-SI-963
16	LEVEL TRANS	BARTON	LT-FW-474
16	LEVEL TRANS	BARTON	LT-FW-475
16	LEVEL TRANS	BARTON	LT-FW-476
16	LEVEL TRANS	BARTON	LT-FW-484
16	LEVEL TRANS	BARTON	LT-FW-485
16	LEVEL TRANS	BARTON	LT-FW-486
16	LEVEL TRANS	BARTON	LT-FW-494
16	LEVEL TRANS	BARTON	LT-FW-495
16	LEVEL TRANS	BARTON	LT-FW-496
16	LEVEL TRANS	BARTON	LT-RC-459
16	LEVEL TRANS	BARTON	LT-RC-460
16	LEVEL TRANS	BARTON	LT-RC-461
17	LEVEL TRANS	MASON-NEILAN	LT-RS-151A
17	LEVEL TRANS	MASON-NEILAN	LT-RS-151B
18	LEVEL TRANS	MASON-NEILAN	LT-RC-470
17	LEVEL TRANS	MASON-NEILAN	LT-RC-470
19	PRESS TRANS	FISCHER PORTER	PT-RC-472
19	PRESS TRANS	FISCHER PORTER	PT-RS-152A
19	PRESS TRANS	FISCHER PORTER	PT-RS-152B
20	PRESS TRANS	BARTON	PT-RC-402
20	PRESS TRANS	BARTON	PT-RC-403
20	PRESS TRANS	BARTON	PT-RC-455
20	PRESS TRANS	BARTON	PT-RC-456
20	PRESS TRANS	BARTON	PT-RC-457
21	LEVEL TRANS	BARTON	LT-FW-477
21	LEVEL TRANS	BARTON	LT-FW-487
21	LEVEL TRANS	BARTON	LT-FW-497

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
22	TEMP RES BULB	SOSTMAN	TRB-RC-410
22	TEMP RES BULB	SOSTMAN	TRB-RC-412B
22	TEMP RES BULB	SOSTMAN	TRB-RC-412D
22	TEMP RES BULB	SOSTMAN	TRB-RC-413
22	TEMP RES BULB	SOSTMAN	TRB-RC-420
22	TEMP RES BULB	SOSTMAN	TRB-RC-422B
22	TEMP RES BULB	SOSTMAN	TRB-RC-422D
22	TEMP RES BULB	SOSTMAN	TRB-RC-423
22	TEMP RES BULB	SOSTMAN	TRB-RC-430
22	TEMP RES BULB	SOSTMAN	TRB-RC-432B
22	TEMP RES BULB	SOSTMAN	TRB-RC-432D
22	TEMP RES BULB	SOSTMAN	TRB-RC-433
24	DAMPER MOTOR	LIMITORQUE	VS-D-5-3B
24	DAMPER MOTOR	LIMITORQUE	VS-D-5-5B
25	MOTOR OP VALVE	LIMITORQUE	MOV-CH-310
25	MOTOR OP VALVE	LIMITORQUE	MOV-CH-378
25	MOTOR OP VALVE	LIMITORQUE	MOV-RC-535
25	MOTOR OP VALVE	LIMITORQUE	MOV-RC-536
25	MOTOR OP VALVE	LIMITORQUE	MOV-RC-537
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-842
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-856B
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-865A
25	MOTOR OP VALVE	LIMITORQUE	MOV-SI-865C
26	PUMP MOTOR	GENERAL ELEC	RS-F-1A
26	PUMP MOTOR	GENERAL ELEC	RS-F-1B
27	ACCELEROMETER	ENDEVCO	FE-RC-100A-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100A-2-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100B-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100B-2
27	ACCELEROMETER	ENDEVCO	FE-RC-100C-1
27	ACCELEROMETER	ENDEVCO	FE-RC-100C-2
27	ACCELEROMETER	ENDEVCO	FE-RC-101A-1
27	ACCELEROMETER	ENDEVCO	FE-RC-101A-2
27	ACCELEROMETER	ENDEVCO	FE-RC-101B-1
27	ACCELEROMETER	ENDEVCO	FE-RC-101B-2
27	ACCELEROMETER	ENDEVCO	FE-RC-101C-1
27	ACCELEROMETER	ENDEVCO	FE-RC-101C-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100A-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100A-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100B-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100B-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100C-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-100C-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101A-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101A-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101B-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101B-2
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101C-1
27	CRG AMPLIFIER	UNHOLTZ-DICKIE	FY-RC-101C-2
30	600V CBL SPLICE	OKONITE	NONE
32	SIS WIRE	GENERAL ELEC	NONE
33	SIS WIRE	GENERAL ELEC	NONE

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EQ ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E12
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E3
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E4
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E5
35	MTR CNTRL CNTR	ALLIS CHALMERS	MCC-1-E6
39	LIMIT SWITCH	NAMCO	LMS-FW-103A
39	LIMIT SWITCH	NAMCO	LMS-FW-103B
40	FLOW TRANS	FISCHER PORTER	FT-FW-100A
40	FLOW TRANS	FISCHER PORTER	FT-FW-100B
40	FLOW TRANS	FISCHER PORTER	FT-FW-100C
40	FLOW TRANS	FISCHER PORTER	FT-RW-102A
40	FLOW TRANS	FISCHER PORTER	FT-RW-102B
41	PRESS TRANS	FISCHER PORTER	PT-LM-100A
41	PRESS TRANS	FISCHER PORTER	PT-LM-100B
41	PRESS TRANS	FISCHER PORTER	PT-LM-100C
41	PRESS TRANS	FISCHER PORTER	PT-LM-100D
41	PRESS TRANS	FISCHER PORTER	PT-RS-156A
41	PRESS TRANS	FISCHER PORTER	PT-RS-156B
42	PRESS TRANS	FISCHER PORTER	PT-MS-474
42	PRESS TRANS	FISCHER PORTER	PT-MS-475
42	PRESS TRANS	FISCHER PORTER	PT-MS-476
42	PRESS TRANS	FISCHER PORTER	PT-MS-484
42	PRESS TRANS	FISCHER PORTER	PT-MS-485
42	PRESS TRANS	FISCHER PORTER	PT-MS-486
42	PRESS TRANS	FISCHER PORTER	PT-MS-494
42	PRESS TRANS	FISCHER PORTER	PT-MS-495
42	PRESS TRANS	FISCHER PORTER	PT-MS-496
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151A
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151B
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151C
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151D
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151E
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-151F
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-156A
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-156B
43	MOTOR OP VALVE	LIMITORQUE	MOV-FW-156C
43	MOTOR OP VALVE	LIMITORQUE	MOV-MS-105
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-155A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-155B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-156A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RS-156B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103C
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-103D
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104C
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-104D
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-105A
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-105B
43	MOTOR OP VALVE	LIMITORQUE	MOV-RW-105C

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EQ ITEM	DESCRIP	IN	MANUFACTURER	MARK NUMBER
43	MOTOR OP VALVE		LIMITORQUE	MOV-RW-105D
43	MOTOR OP VALVE		LIMITORQUE	MOV-RW-106A
43	MOTOR OP VALVE		LIMITORQUE	MOV-RW-106B
43	MOTOR OP VALVE		LIMITORQUE	MOV-RW-114A
43	MOTOR OP VALVE		LIMITORQUE	MOV-RW-114B
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-863A
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-863B
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-864A
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-864B
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-885A
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-885B
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-885C
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-885D
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-890A
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-890B
44	MOTOR OP VALVE		LIMITORQUE	MOV-SI-890C
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-115B
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-115C
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-115D
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-115E
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-275A
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-275B
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-275C
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-289
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-370
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-373
45	MOTOR OP VALVE		LIMITORQUE	MOV-CH-381
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-836
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-860A
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-860B
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-862A
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-862B
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-867A
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-867B
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-867C
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-867D
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-869A
45	MOTOR OP VALVE		LIMITORQUE	MOV-SI-869B
46	PUMP MOTOR		LOUIS ALLIS	FW-P-3A
46	PUMP MOTOR		LOUIS ALLIS	FW-P-3B
47	PUMP MOTOR		WESTINGHOUSE	SI-P-1A
47	PUMP MOTOR		WESTINGHOUSE	SI-P-1B
48	PUMP MOTOR		WESTINGHOUSE	CH-P-1A
48	PUMP MOTOR		WESTINGHOUSE	CH-P-1B
48	PUMP MOTOR		WESTINGHOUSE	CH-P-1C

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2008	SOLENOID	ASCO	SOV-BD-100A
2008	SOLENOID	ASCO	SOV-BD-100B
2008	SOLENOID	ASCO	SOV-BD-100C
2008	SOLENOID	ASCO	SOV-FW-102
2008	SOLENOID	ASCO	SOV-FW-103A
2008	SOLENOID	ASCO	SOV-FW-103B
2009	PUMP MOTOR	SEIMENS ALLIS	RS-F-2A
2009	PUMP MOTOR	SEIMENS ALLIS	RS-F-2B
2010	SOLENOID	VALCOR	SOV-FW-478A
2010	SOLENOID	VALCOR	SOV-FW-478B
2010	SOLENOID	VALCOR	SOV-FW-488A
2010	SOLENOID	VALCOR	SOV-FW-488B
2010	SOLENOID	VALCOR	SOV-FW-498A
2010	SOLENOID	VALCOR	SOV-FW-498B
2015	RAD MONITOR	VICTOREEN	RM-RM-219A
2015	RAD MONITOR	VICTOREEN	RM-RM-219B
2018	SOLENOID	VALCOR	TV-CV-150-A
2018	SOLENOID	VALCOR	TV-CV-150-B
2018	SOLENOID	VALCOR	TV-SS-102-A1
2018	SOLENOID	VALCOR	TV-SS-102-A2
2018	SOLENOID	VALCOR	TV-SS-105A1
2018	SOLENOID	VALCOR	TV-SS-105A2
2019	FLOW TRANS	ROSEMOUNT	FT-MS-102A
2019	FLOW TRANS	ROSEMOUNT	FT-MS-102B
2019	FLOW TRANS	ROSEMOUNT	FT-MS-102C
2020	LIMIT SWITCH	NAMCO	LMS-CC-103A
2020	LIMIT SWITCH	NAMCO	LMS-CC-103B
2020	LIMIT SWITCH	NAMCO	LMS-CC-103C
2020	LIMIT SWITCH	NAMCO	LMS-CC-110D
2020	LIMIT SWITCH	NAMCO	LMS-CC-111A2
2020	LIMIT SWITCH	NAMCO	LMS-DA-100A
2020	LIMIT SWITCH	NAMCO	LMS-DG-108A
2020	LIMIT SWITCH	NAMCO	LMS-FF-105
2020	LIMIT SWITCH	NAMCO	LMS-FF-106
2020	LIMIT SWITCH	NAMCO	LMS-FF-107
2021	LIMIT SWITCH	NAMCO	LMS-BD-100A
2021	LIMIT SWITCH	NAMCO	LMS-BD-100B
2021	LIMIT SWITCH	NAMCO	LMS-BD-100C
2021	LIMIT SWITCH	NAMCO	LMS-BD-101A1
2021	LIMIT SWITCH	NAMCO	LMS-BD-101A2
2021	LIMIT SWITCH	NAMCO	LMS-BD-101B1
2021	LIMIT SWITCH	NAMCO	LMS-BD-101B2
2021	LIMIT SWITCH	NAMCO	LMS-BD-101C1
2021	LIMIT SWITCH	NAMCO	LMS-BD-101C2
2021	LIMIT SWITCH	NAMCO	LMS-MS-105A
2021	LIMIT SWITCH	NAMCO	LMS-MS-105B
2022	SOLENOID	ASCO	SOV-FF-105
2022	SOLENOID	ASCO	SOV-FF-106
2022	SOLENOID	ASCO	SOV-FF-107
2024	REST. TEMP DET.	CONAX	TRB-RS-150A
2024	REST. TEMP DET.	CONAX	TRB-RS-150B
2025	CABLE SPLICE	KERITE COMPANY	NONE

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Q ITEM	DESCRIPTION	MANUFACTURER	MARK NUMBER
2027	SOLENOID	TARGET ROCK	SOV-RC-102A
2027	SOLENOID	TARGET ROCK	SOV-RC-102B
2027	SOLENOID	TARGET ROCK	SOV-RC-103A
2027	SOLENOID	TARGET ROCK	SOV-RC-103B
2027	SOLENOID	TARGET ROCK	SOV-RC-104
2027	SOLENOID	TARGET ROCK	SOV-RC-105
2031	PRESS TRANS	GOULD	PT-RC-104
2036	TRANSFORMER	HEVI DUTY	TRF-PWR-29
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-101A
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-101B
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-102A
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-102B
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-103A
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-103B
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-104
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-105
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-106
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-107
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-108
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-109
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-110
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-111
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-112
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-113
2038	TEMP SWITCH	FLUID COMPONENT	TS-AS-114
2038	TEMP SWITCH	FLUID COMPONENT	TS-BD-100A
2038	TEMP SWITCH	FLUID COMPONENT	TS-BD-100B
2042	SOLENOID	VALCOR	SOV-HY102A1
2042	SOLENOID	VALCOR	SOV-HY102A2
2042	SOLENOID	VALCOR	SOV-HY102B1
2042	SOLENOID	VALCOR	SOV-HY102B2
2042	SOLENOID	VALCOR	SOV-HY103A1
2042	SOLENOID	VALCOR	SOV-HY103A2
2042	SOLENOID	VALCOR	SOV-HY103B1
2042	SOLENOID	VALCOR	SOV-HY103B2
2042	SOLENOID	VALCOR	SOV-HY104A1
2042	SOLENOID	VALCOR	SOV-HY104A2
2042	SOLENOID	VALCOR	SOV-HY104B1
2042	SOLENOID	VALCOR	SOV-HY104B2
2042	SOLENOID	VALCOR	TV-CV-102
2042	SOLENOID	VALCOR	TV-CV-102-1
2044	SOLENOID	ASCO	SOV-CH-204
2044	SOLENOID	ASCO	SOV-SI-884A
2044	SOLENOID	ASCO	SOV-SI-884B
2044	SOLENOID	ASCO	SOV-SI-884C
2045	CABLE SPLICE	RAYCHEM	NONE
2046	TERMINAL BLK	PENN UNION	NONE
2046	TERMINAL BLK	PENN UNION	NONE
2047	CABLE SPLICE	RAYCHEM	NONE
2051	RELAY	AMERACE CORP	NONE
2051	RELAY	AMERACE CORP	NONE
2051	RELAY	AMERACE CORP	NONE

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