Northeast
Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5000

December 13, 1996
Docket No. 50-245
50-336
50-423
B16030

US Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Millstone Nuclear Power Station Unit Nos. 1, 2 and 3
10 CFR 21 Report Concerning Cracked Fuse Ferrule Defects (NRC Event # 31371)

In conformance with 10CFR21, Northeast Nuclear Energy Company (NNECO) provides notification of a Substantial Safety Hazard (SSH) at the Millstone Nuclear Power Station. NNECO's commitments associated with this letter are provided in Attachment 1.

The NRC Operations Center was notified by facsimile on November 22, 1996, (see Attachment 2) that during testing of electrical fuses initiated by NNECO, the ferrules separated from the fuse cartridges. Testing was initiated to assist NNECO in evaluating longitudinal cracks found in the fuse ferrules.

The following information applicable to this SSH is provided, as outlined by 10CFR21.21(d)(4)(i) through (viii)

(i) Name and Address of Individual Informing the Commission

Jay K. Thayer
Recovery Officer - Engineering and Support Services
Northeast Nuclear Energy Company
Millstone Nuclear Station
P.O. Box 128
Waterford, CT 06385

1/1

Je19

(ii) Basic Component(s) Affected

a) The basic components which contain defects are electrical fuses where the ferrule separated from the fuse cartridge during short circuit testing.

Gould-Shawmut Model No.	Bussmann Model No.
A6Y2 Type II, 10KA IR [1]	FRN12, 200KA IR
A6Y5, 200KA IR *	FRN-R25, 200KA IR
TRM25, 10KA IR	FRN-R30, 200KA IR
A4J10, 200KA IR (2 fuses)	FRN-R35, 200KA IR
	FRS-R60, 200KA IR

(*) designates a QA Fuse.

(1) also identified as Type 2 or 2B in the manufacturer's literature.

b) In order to determine the extent of the issue involving these fuses, personnel first identified those fuses at our facility which showed signs of cracking in the ferrules. These were identified as both QA and non-QA fuses at our facilities, and are designated as such below (* designates a QA Fuse). However, these fuses could be dedicated for QA use through procedural guidelines and thus each fuse with a crack had to be considered in our original sample. Additionally, these fuses may be designated as QA components at other utilities. The following is a list of fuses found to be cracked and subsequently tested. Those that did not meet the test requirements were designated in section (ii)(a) above.

Gould-Shawmut Model No.

A2Y10	A2Y40 *	A6Y3 Type II[1]	TRM10	A2K100R
A2Y15	A2Y60 *	ATM3	TRM25	A2K150R *
A2Y20	A6Y2 *	ATM10	A4J3 *	TRS4R
A2Y25 *	A6Y3 *	GFN-3	A4J10	TRS80R
A2Y30	A6Y5 *	TRM7	OT15	TRS125R
A2Y35	A6Y2 Type II[1]	TRM8	A2K60R *	TRS61/4

Bussmann Model No.

FRN-8/10	FRN-R-30[2]	FRS-1	FRS 3-1/2	FRS-R-60[2]
FRN-12	FRN-R-35	FRS 1-1/4	FRS-30[2]	ECS 1-1/4
FRN-R-25				

CEFCON Model No.

CRS 1-1/4
CRS-50[2]

(1) Also identified as Type 2 or 2B in the manufacturer's literature.

(2) Were not tested for clearing time current test. (Only one fuse available to test.)

(iii) Manufacturer Supplying Components

Gould Electronics Incorporated
374 Merrimac Street
Newburyport, MA 01950-1998
Telephone: (508) 462-3131

Cooper Industries
Bussmann Division
P.O. Box 14460
St. Louis, MO 63178-4460
Telephone: (314) 394-2877

GEC Alsthom, Inc.
4-T Skyline Drive
Hawthorne, NY 10532
Telephone: (201) 869-7777
(note: Formally CEFCON and NU no longer buys these fuses)

(iv) Nature of the Defect

On September 11, 1996, Millstone Unit 3 identified stocked safety-related fuses (Shawmut Amptrap Cat No. A2Y10) that were issued from the storeroom for installation, had cracked (split) ferrules in the longitudinal direction. Further investigation revealed numerous fuses, both safety and non-safety related, with this defect. The fuses were not manufactured as safety-related but were either bought commercial grade and dedicated as safety-related by Northeast Utilities, or purchased safety-related from a qualified vendor that dedicates them. Due to the nature of the cracks and the number of fuses found susceptible, functional and metallurgical evaluations were initiated.

Gould Electronics Inc. and Cooper Industries (Bussmann Division) provided information indicating that this defect has been present within the fuse industry for a number of years and that fuses manufactured with brass ferrule material are susceptible to this defect. This condition is a result of stress corrosion cracking (SCC) that occurs as a result of the brass ferrule material relieving internal stresses built up during the forming and crimping process, with a corrosive chemical contaminant acting as the catalyst. The corrosive chemical contaminant could be credited to, but not limited to, solder-flux, a manufacturing surface-prep residue, cleaners, or other airborne contaminants.

Gould Electronics changed the ferrule material for their fuses from brass to copper by 1994. Cooper Industries indicated that they changed the ferrule material in the fuses from brass (70% copper - 30% zinc) to bronze (90% copper - 10% zinc) by 1985. The new materials are more malleable than brass, so it is not as susceptible to stress corrosion cracking.

After initiating our own independent testing of the fuses in section (ii)(b), our analysis found that this defect does not degrade the electrical continuity or the interrupting ability of the fuse. The testing and acceptance requirements were taken from UL Specifications for fuses. Testing completed on the fuses included:

1) Resistance Measurements
2) Current Carrying Capacity
3) Clearing Time - Current Test (200% and 500% for time delay fuses)
4) Interrupting Ability Test (Short Circuit)

Each of the fuses tested, passed the above functional tests except for the interrupting ability test. Original interrupting ability test put the required UL design interrupting current rating (IR) through the fuse. All of the fuses interrupted the electrical current, however the fuses in section (ii)(a) of this report had ferrules physically separate from the fuse cartridge. A second set of tests was performed on each of the fuses that had their ferrules come off, however at a lower amperage, which still encompassed our design criteria. Test results were similar to the first test with ferrules again separating. Consequently, the cracks could result in a loss of safety-related equipment due to the ferrule coming off of the fuse, which could then short out or damage other safety-related electrical distribution components.

(v) Date on Which Defect Was Identified

On September 11, 1996, an Adverse Condition Report (ACR) was issued by Millstone Unit 3 which identified safety-related fuses (Shawmut Amptrap Cat. No. A2Y10) that were issued from the storeroom with cracks (splits) in the ferrules. During a separate routine surveillance of the ACR process, the Oversight organization identified that the investigation associated with this particular ACR did not adequately identify all fuses and the possible plant effects. A second ACR was issued on September 25, 1996 addressing this concern. Personnel assigned to address the more global issue drafted an action plan which included the initiation of a Substantial Safety Hazard evaluation and the corrective actions defined in section (vii) of this report.

(vi) Number and Locations of Components

This problem has been found in a wide variety of fuses (see section (ii) of this report). Attachment 3 to this report contains a listing of affected fuses and their known location for Millstone Units 1 and 2. None of the affected fuses were found in Millstone Unit 3. A listing of safety-related distribution fuses and their known locations will be prepared as part of our planned corrective actions (see section(vii)(b) of this report).

(vii) Corrective Actions

(a) Completed

1. The Procurement and Warehouse groups completed inspecting fuses in the warehouse for cracked ferrules and then segregated Gould-Shawmut and Bussmann cartridge fuses on November 22, 1996.

2. A metallurgical analysis was completed on October 15, 1996 by our Component Engineering Services. The failure mode was a result of intergranular fracture caused by local residual stresses which were created by the forming and crimping process of the ferrule. The cracks propagated from relieving forces due to the residual tensile stresses in the ferrule in the presence of a probable corrosive environment. This analysis concurred with industry data.

3. Design Engineering and Procurement Engineering determined the need for independent functional testing of these fuses. The results from the testing indicated that the fuses met their intended function of maintaining electrical continuity and interrupting the current during an overload and electrical fault. However, during the interrupting ability test some fuses had ferrules physically separate from the fuse cartridges. Testing was completed on November 14, 1996.

4. Procurement Engineering added two items on December 4, 1996, to the RMSL (Restricted Material Suppliers List) to ensure that fuses being ordered were not manufactured using brass ferrules. Suppliers will be required to provide the following documents:

   a) Certificate of Conformance stating that the fuses were manufactured after 1994 for Gould-Shawmut.

b) Certificate of Conformance stating that the fuses were manufactured after 1985 for Bussmann.

5. Procurement Engineering provided initial notification to both Gould Electronics Inc. and Cooper Industries (Bussmann Division), concerning this issue on October 1 & 2, 1996, respectively Both manufacturers indicated that this defect has been present within the fuse industry for many years and that fuses manufactured with brass ferrule material are susceptible to this defect. Corrective actions were taken by both manufacturers to address this issue, by changing the design to a bronze or pure copper material.

6. Operability Determinations were completed by the Millstone Unit's during the week of December 9, 1996. Each evaluation concluded the fuses are operable.

(b) Planned

1. Millstone Design Engineering Departments will prepare a listing of safety-related distribution fuses which are affected by this issue, along with their locations, by May 31, 1997.

2. Millstone Design Engineering Departments are developing a process to check and replace the cracked fuses delineated in section (ii)(a) of this report. This process will be developed by January 31, 1997.

3. Procurement Engineering will issue Purchase orders by January 31, 1997 to order replacement fuses for the warehouse stock.

4. The Units were notified on October 2, 1996, to address field storage locations which may have these fuses. Fuses were requested to be sent back to the warehouse for inspection. Damaged fuses will be pulled from these field storage locations by January 31, 1997. Seabrook and Connecticut Yankee were also provided notification

(viii) Other Advice For Purchasers or Licensees

Although the Manufacturers changed to a bronze/copper material for ferrules, the older type fuses are still being received from fuse suppliers and may be held in stock or installed by other licensees.

It should be noted that the fuse clips used during the testing were an open ended type to assist the test lab in determination whether the ferrule had moved during the test. This should be a factor that should be considered when evaluating specific applications since this may vary from the particular design installation at each unit.

Should you have any questions regarding this submittal, please contact Mr. James M. Peschel at (860) 437-5840.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Jay K. Thayer
Recovery Officer
Engineering and Support Services

cc: H. J. Miller, Region 1 Administrator
W. D. Travers, Dr., Director Special Projects
A.C. Cerne, Senior Resident Inspector, Millstone Unit No. 3
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3

Docket No. 50-245
50-336
50-423
B16030

Attachment 1

Millstone Nuclear Power Station Nos. 1, 2, and 3

December 1996

Enclosure
List of Regulatory Commitments

The following table identifies those actions committed to by NNECO in this document. Any other actions discussed in the submittal represent intended or planned actions by NNECO. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager - Nuclear Licensing at the Millstone Nuclear Power Station Unit No. 3 of any questions regarding this document or any associated regulatory commitments.

Commitment		Committed Date or Outage
B16030-1	A listing of safety related distribution fuses affected by this issue, and their locations, will be prepared.	May 31, 1997
B16030-2	A plan to check and replace cracked fuses as delineated in Section (ii)(b) will be developed for each Millstone Unit.	January 31, 1997
B16030-3	Issue Purchase Orders for replacement fuses	January 31, 1997
B16030-4	A verification of field storage locations will be completed to determine if fuses have been returned to the warehouse.	January 31, 1997

Docket No. 50-245
50-336
50-423
B16030

Attachment 2

Millstone Nuclear Power Station Nos. 1, 2 and 3

December 1996

Northeast Nuclear Energy Company
SUBSTANTIAL SAFETY HAZARD REPORT
November 22, 1996

In accordance with 10 CFR 21.21(d)(3)(i), Northeast Nuclear Energy Company (NNECO) is providing notification to the NRC via this facsimile and concurrent telephone conversation, regarding a potential Significant Safety Hazard (SSH) identified at Millstone Station.

- Fifteen different fuse types from three different manufactures (Gould-Shawmut, Bussmann, and CEFCO) were found to have axial cracks. The cracks occurred as a result of the brass ferrule relieving internal stress.

- During communications with manufacturers, it was determined that these defects have been present within the fuse industry for many years and that fuses manufactured with brass are susceptible to this defect.

- NNECO determined that functional testing should be performed on a sample of the fuses. The results from the testing indicated that the fuses met their intended function of interrupting the current, however ten out of forty six fuses had ferrules physically blow off the end. The following is a list of those fuses that the ferrule(s) came off the end.

Gould-Shawmut	Bussmann
A6Y2 Type II, 10KA IR	FRN12, 200KA IR
A6Y5, 200KA IR	FRN-R25, 200KA IR
TRM25, 10KA IR	FRN-R30, 200KA IR
A4J10, 200KA IR (2)	FRN-R35, 200KA IR
	FRS-R60, 200KA IR

Conclusion

The cracks could result in a loss of safety-related equipment due to the ferrule coming off of the fuse, which could then short out or damage other safety-related electrical distribution. This could be a SSH concern that should be reported through 10CFR21, with notification to other utilities due to the generic nature of the basic component.

If you have any questions regarding this information, please contact Mr. James M. Peschel at (860) 437-5840. In accordance with 10CFR 21.21(d)(3)(ii), a written report will be provided within 30 days.

Docket No. 50-245
50-336
50-423
B16030

Attachment 3

Millstone Nuclear Power Station Nos. 1, 2 and 3

December 1996

Millstone Unit 1 Locations of Fuse Types Where Cracked Ferrules Separated During Testing

Fuse Location (Panel)	Fuse Manufacturer	Model	Amps	System
CD4B-1H	Gould	A4J	10	Liquid Radwaste
CD4B-1H	Gould	A4J	10	Liquid Radwaste
E3-3D	Gould	A4J	10	LPCI
E3-3D	Gould	A4J	10	LPCI
E3-4D	Gould	A4J	10	Core Spray
E3-4E	Gould	A4J	10	Core Spray
F-E3-2B	Gould	A4J	10	LPCI
M7-26B DISC SW	Bussmann	FRS-R	60	Well Water Pump
M7-26B DISC SW	Bussmann	FRS-R	60	Well Water Pump
M7-26B DISC SW	Bussmann	FRS-R	60	Well Water Pump

Millstone Unit 2 Locations of Fuse Types
Where Cracked Ferrules Separated During Testing

(See Attached Fuse Listing)

MP2 FUSE LIST

MCC B11

(30011/1,2,3,4,5) TURB BLDG 31'-6" (A19)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN)
AF2 B1125	S.G.F.P. TURB TURNING GEAR (45A) NO.1 ML205A 32012/1	N	10	A4J10	6/10	FRN-6/10
AF4 B1102	COND. VACUUM PUMP NO.1 MF5A 32033/1	N	10		2½	FRN-2½
BF1A B1174	BORIC ACID INJECTION PUMP MP68B 32035/19	N	10		6/10	FRN-6/10
BF1B B1168	CHILLED WATER PUMP NO.1 149A 32023/77	N	10		6/10	↓
BF1C B1167	CHILLER X196A 32023/74	N	10	↓	6	FRN-6
BF2 B1166	WELDING OUTLETS 31'-6" & 54'-6" EAST PR01B	N	—	—	—	—
CF1 B1103	MOISTURE/SEP REHTR NO.1B 1ST STAGE INLET-MOV HV4186 32020/5	N	10	A4J10	16/10	FRN-16/10
CF2 B1104	MAIN STEAM TO 2ND STAGE REHTR 1B HV4187 32020/6	N	10		16/10	
CF3 B1105	MOISTURE/SEP REHTR NO.1B 2ND STAGE INLET-MOV HV4542 32020/37	N	10		16/10	
CF4 B1146	STEAM EXTRACTION MOV STOP VALVE HV4495 32010/4	N	10		16/10	
DF1 B1147	STEAM EXTRACTION MOV STOP VALVE HV4497 32010/6	N	10		16/10	↓
DF2 B1109	AUX STEAM DEAERATOR FEED PUMP NO.1 MP91A 32028/5	N	10		6/10	FRN-6/10
DF3 B1156	CHILLED WATER PUMP MP123 32023/46	N	10		6/10	↓
DF4 B1150	ACCESS CONTROL A/C SYSTEM MF116 32023/36	N	10		16/10	FRN-16/10
EF1 B1111	ACCESS CONTROL AREA EXHAUST FAN MF124 32023/51	N	10	↓	6/10	FRN-6/10

MP2 FUSE LIST

MCC B11
(30011/1,2,3,4,5) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
EF2 B1108	MAKE-UP WTR DEAERATOR VACUUM PUMP MF35 32034/3	N	10	A4J10	6/10	FRN-6/10
EF3 B1112	BORIC ACID INJ PUMP MP68A 32035/18	N	10		6/10	
EF4 B1113	NH4OH F.W. CHEM INJ PUMP NO.1 MP69A 32035/16	N	10		6/10	
EF5 B1114	SECONDARY HYDRAZINE CHEM. INJ PUMP NO.1 MP70A 32035/21	N	10		6/10	
EF6 B1115	DEAERATED WTR TRANSFER PUMP MP90 32034/5	N	10		6/10	
FF1 B1117	EHC HYDRAULIC PWR UNIT HTRS & FANS H1 & H2 32006/23	N	10		6/10	↓
FF2 B1116	SAMPLING SYS FUME HOOD BLOWER MF126 32027/5	N	10		6/10	FRN-6/10
FF3 B1118	LUBE OIL ROOM SUMP PUMP NO.1 MP95A 32006/39	N	10		6/10	FRN-6/10
FF4 B1119	HYDRAULIC FLUID HP PUMP NO.1 MP81A 32006/26	N	10	↓	2½	FRN-2½
NS FF5 B1155	SAMPLING STATION NO.2 CHILLER SYS C71A	N	—	—	—	—
GF1 B1120	BRG OIL VAPOR EXTRACT PUMP MF08 32006/14	N	10	A4J10	6/10	FRN-6/10
GF4 B1122	MAIN TURBINE MTR SUCTION PUMP MP61 32006/9	N	10	↓	2½	FRN-2½
HF1 B1106A	SEC ALARM STA. COMPUTER HVAC 39129/1 F144A/X210A 32023/83	N	—	—	—	—
HF5A B1151	CHLORINE SAMPLE PUMP NO.1 MP26A 32035/1	N	—	—	—	—
HF5B B1152	CHLORINE SAMPLE PUMP NO.3 MP26C 32035/2	N	—	—	—	—

MP2 FUSE LIST

MCC B11

(30011/1,2,3,4,5) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
AR1 B1173	LIGHTING TRANSFORMER FDR 50A UL101 30025	N	—	—	—	—
AR2A B1165	LIGHTING TRANSFORMER FDR 30A UL19 30025	N	—	—	—	—
AR2C B1166	TURBINE CRANE DOOR FDR	N	—	—	—	—
AR3 B1126	TURB BLDG SUPPLY FAN NO.5 MF101E 32023/19	N	10	AAJ10	1	FRN-1
AR4 B1127	TURB BLDG SUPPLY FAN NO.6 MF101F 32023/20	N	10	↓	1	↓
BR1 B1170	SCAVENGING STEAM FOR 1ST STAGE (REHTR "B" HV4602B) HV4602B 32020/56	N	10	↓	1 6/10	FRN-1 6/10
BR2 B1128	TURB BLDG ROOF VENT FAN NO.6 MF111F 32023/27	N	10	↓	6/10	FRN-6/10
BR3 B1129	TURB BLDG ROOF VENT FAN NO.7 MF111G 32023/28	N	10	↓	6/10	↓
BR4 B1130	TURB BLDG ROOF VENT FAN NO.8 MF111H 32023/29	N	10	↓	6/10	↓
CR1 B1171	SCAVENGING STEAM FOR 2ND STAGE REHTR "B" HV4604B) HV4604B 32020/58	N	10	↓	1 6/10	FRN-1 6/10
CR2 B1172	LIGHTING TRANSFORMER 20A UL100 30025	N	—	—	—	—
CR3 B1131	CIRC WTR COND XBA XOVER MOV HV6561 32013/14	N	10	AAJ10	1 6/10	FRN-1 6/10
CR4 B1132	CIRC WTR COND XBA XOVER MOV HV6577 32013/29	N	10	↓	1 6/10	↓
DR1 B1145	STEAM EXTRACTION MOV STOP VALVE HV4493 32010/2	N	10	↓	1 6/10	↓
DR2 B1133	CIRC WTR COND XBB INLET MOV HV6547 32013/24	N	10	↓	1 6/10	↓

NS

MP2 FUSE LIST

MCC B11
(30011/1,2,3,4,5) TURB BLDG 31'-6"

	LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE
	DR3 B1134	CIRC WTR COND XBA INLET MOV HV6538 32013/12	N	10	A4J10	1 6/10	FRN-1 6/10
	DR4 B1135	CIRC WTR COND XBA OUTLET MOV HV6575 32013/13	N	10	↓	1 6/10	↓
	ER1 B1153	CHILLER X170 32023/60	N	10	↓	3	FRN-3
	ER2 B1136	INSTRUMENT AIR DRYER HEATER T52 32017/5	N	—	—	—	—
	ER3 B1137	CIRC WTR COND XBB OUTLET MOV HV6608 32013/27	N	10	A4J10	1 6/10	FRN-1 6/10
	ER4 B1124	SGFP TURB "A" MOP OIL PUMP NO.2 MP172A 32006/33	N	10	↓	2 1/2	FRN-2 1/2
NS	FR1 B1138	WELDING RECEPTACLE EL 14'-6" (A-19) PROD1	N	—	—	—	—
	FR3 B1139	COND WTR BOX PRIMING PUMP NO.1 MF6A 32033/3	N	10	A4J10	2 1/2	FRN-2 1/2
NS	GR1 B1140	WELDING RECEPTACLE EL 31'-6"(A-19) EL 54'-6"(A-19) PROD2	N	—	—	—	—
	GR2 B1141	LIGHTING TRANSFORMER FEEDER 50A UL38 30025	N	—	—	—	—
NS	GR3 B1143	HTR DISTRIBUTION PANEL LH11	N	—	—	—	—
NS	GR4 B1144	HTR TRANSFORMER	N	—	—	—	—
	HR1 B1149	LIGHTING TRANSFORMER FEEDER 50A UL15 30025	N	—	—	—	—
	HR2 B1157	STEAM GEN. BLOWDOWN & SAMPLE PUMP MP129 32027/6	N	10	A4J10	6/10	FRN-6/10
	HR3 B1142	LIGHTING TRANSFORMER FEEDER 20A UL34 30025	N	—	—	—	—

MP2 FUSE LIST

MCC B11

(30011/1,2,3,4,5 TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
HR4 B1158	STATION NO.2 CONDENSATE PUMP MP133 32027/7	N	10	A4J10	6/10	FRN 6/10
HR5A B1175	BORIC ACID TREATMENT SKID BATS	N	—	—	—	—
B1160	MN GUARDHOUSE HVAC CIRC FAN MF130 SPARE 32023/65	N	10	A4J10	6/10	FRN 6/10
B1121	MN GUARDHOUSE A/C SYS AIR COOL CONDENSER FAN MF129 SPARE 32023/64	N	10	↓	6/10	↓
B1159	MN GUARD HOUSE A/C SYS COMPRESSOR F132 SPARE 32023/63	N	—	—	—	—

MP2 FUSE LIST

MCC B12

(30011/6,7,8,9) TURB BLDG 31'-6" A25

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN LITTELFUSE)
A02	ISOPHASE BUS HEATERS 60	N	—	—	—	—
B1238	MH 119A 32005/38					
A03	ISOPHASE BUS COOLER FAN NO. 1	N	10	A4J10	2½	FRN 2½
B1202	MF 119A 32005/36					
A04	GEN STATOR WDG COOLING WTR PP NO. 1	N	10		2½	
B1203	MP 6SA 32005/10					
B02	SGFP TURBINE "B" MOP OIL PUMP NO. 1	N	10		2½	↓
B1221	MP 171B 32006/69					
C01	MAIN HYDROGEN SEAL OIL PUMP	N	10		6/10	FRN-6/10
B1233	MP 66 32005/1					
C02	TURBINE BLDG ROOF VENT FAN NO. 1	N	10		6/10	
B1204	MF 111A 32023/22					
C03	TURBINE BLDG ROOF VENT FAN NO. 2	N	10		6/10	
B1205	MF 111B 32023/23					
C04	TURBINE BLDG ROOF VENT FAN NO. 3	N	10		6/10	↓
B1206	MF 111C 32023/24					
D01	ELEC EQUIP RM SUPPLY FAN	N	10		2½	FRN-2½
B1209	MF 102 32023/14					
D02	TURB BLDG SUPPLY FAN NO. 1	N	10		1	FRN-1
B1207	MF 101A 32023/15					
D03	TURB BLDG SUPPLY FAN NO. 2	N	10	↓	1	↓
B1208	MF 101B 32023/16					
D05	MN GUARD HOUSE LIGHTING KFMR SDA	N	—	—	—	—
B1240	UL 3B UL5B✓ 30025					
E01	MN GUARD HOUSE LIGHTING KFMR 20	N	—	—	—	—
B1239	UL 57 30025					
E02	CDSW DISCHARGE ISO-VALVE 26213-32202/1 12552-ESK-6ABW	N	10	AAJ10	1 6/10	FRN-1 6/10
B1242	2SWP-MOV25 31530					
E03	MN STEAM F.W. PUMP PIA DISC MOV	N	10	A4J10	1 6/10	FRN-1 6/10
B1210	HV 5245 32012/19					

MP2 FUSE LIST

MCC B12

(30011/6,7,8,9) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN ET.TC.)
E04 B1211	STEAM GEN X25 F.W. INLET MOV HV5263 32012/17	N	10	A4J10	16/10	FRN-16/10
E05 B1244	DRAIN PUMP MP15MF 32022/99	N	10		16/10	
F01 B1215	STEAM EXTRACTION MOV HV4499 32010/8	N	10		16/10	
F02 B1234	HYDROGEN SEAL OIL VACUUM PUMP MF11 32005/9	N	10		6/10	FRN-6/10
F03 B1212	HYDRAZINE TK RECIRC PUMP MP100 32035/23	N	10		6/10	
F04 B1213	PHOSPHATE TK RECIRC PUMP MP101 32035/20	N	10		6/10	
G01 B1235	WASTE NEUT. TK XFER PUMP NO.1 MP104A 32034/12	N	10		6/10	
G02 B1231	STEAM PACKING GLAND EXHAUST MOV HV4338 32016/3	N	10		16/10	FRN-16/10
G03A B1241	SGFPT H5A TURNING GEAR ENGAGING SOL. 51 TD73 32012/41	N	—	—	—	—
G04 B1214	STEAM PACKING EXHAUST FAN NO.1 MF7A 32016/1	N	10	A4J10	1	FRN-1
H01 B1245	UNIT 2 S.T.A. TRAILER TRANSFORMER UL105 30025	N	—	—	—	—
H02 B1219	WEST COND. PIT SUMP PUMP NO.1 MP73A 32033/10	N	10	A4J10	6/10	FRN-16/10
H04 B1237	NH_4OH RECIRC PUMP MP103 32035/15	N	10		6/10	
H05 B1216	AUX SGFW PUMP ROOM SUMP PUMP NO.1 MP72A 32033/8	N	10		6/10	
H06A B1246	UNIT 1 S.T.A. TRAILER XFMR 100A UL104 30025	N	—	—	—	—

MP2 FUSE LIST

MCC B12

(30011/6,7,8,9) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN EQUIV.)
J02 B1232	RECIRC SEAL OIL PUMP MP79 32005/8	N	10	A4J10	6/10	FRN-6/10
J03 B1218	EAST COND PIT SUMP PUMP NO.1 MP39A 32033/6	N	10	↓	6/10	↓
J04 B1220	DOMESTIC WATER BOOSTER PUMP NO.1 MP77A 32019/1	N	10	↓	1	FRN-6/10
J05 B1217	REBOILER FEEDWTR PUMP NO.1 MP52A 32028/7	N	10	↓	1	↓
K02 B1223	NORM. STA. SERV TRANS COOLING EQUIP NO.1 U02 7604-E-2	N	—	—	—	—
K03 B1222	LIGHTING TRANSFORMER FEEDER 50A UL32 30025	N	—	—	—	—
K04 B1224	RES. STA. SERV TRANS COOLING EQUIP. NO.1 U03 7604-E1A-3	N	—	—	—	—
K05 B1225	WELDING RECEPTACLE EL 14'-6" (A-23) PR003	N	—	—	—	—
K06 B1226	WELDING RECEPTACLE EL 31'-6" (A-23) EL 54'-6" (A-23) PR004	N	—	—	—	—
L01 B1227	LIGHTING XFMR FEEDER 50A UL39 30025	N	—	—	—	—
L02 B1228	LIGHTING XFMR FEEDER 50A UL37 30025	N	—	—	—	—
L03 B1229	SPACE HTR DISTR PNL LH12	N	—	—	—	—
L04 B1230	SPACE HTR XFMR	N	—	—	—	—

MP2 FUSE LIST

MCC B13
(30011/10, 11) INTAKE STRUCT (NE)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
AF3 B1302	SCREEN WASH PUMP NO.1 MP8A 32013/8	N	10	A4J10	2½	FRN-2½
BF1 B1316	CDSW INTAKE ISOLATION VALVE 25213-32203/2 ZSWP-MOV21 12552-ESK-6ABY	N	10		16/10	FRN-16/10
BF3 B1303	TRAVELING SCREEN DRIVE NO.1 MH15A 32013/32	N	10		16/10	
BF4 B1304	TRAVELING SCREEN DRIVE MH15C 32013/34	N	10		16/10	
AR1A B1312	CATHODIC PROTECTION FEEDER FOR MH15A PO25 7604-E26	N	—	—	—	—
AR1B B1313	CATHODIC PROTECTION FEEDER FOR MH15C PO27 7604-E26	N	—	—	—	—
AR2 B1314	INTAKE STRUCTURE UNIT HTR HTR5 32013/55	N	10	A4J10	6/10	FRN-6/10
AR3 B1305	UNIT HEATER NO.1 HTR1 32013/49	N	10		1	FRN-1
AR4 B1306	UNIT HEATER NO.3 HTR3 32013/50	N	10		1	
AR5 B1307	INTAKE STRUCT ROOF EXHAUST FAN NO.1 MF114A 32023/10	N	10		6/10	FRN-6/10
AR6 B1308	INTAKE STRUCT ROOF EXHAUST FAN NO.3 MF114C 32023/12	N	10		6/10	
BR1A B1317	STRAINER BLDG SPACE HTR	N	—	—	—	—
BR1B B1318	STRAINER BLDG HOISTS	N	—	—	—	—
BR2 B1315	INTAKE STRUCT UNIT HTR HTR6 32013/56	N	10	A4J10	6/10	FRN-6/10
BR3 B1309	LIGHTING XFMR FEEDER 70A UL31 30025	N	—	—	—	—

MP2 FUSE LIST

MCC B13

(30011/10,11) INTAKE STRUCT

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY		SECONDARY	
			FUSE	TYPE	FUSE	TYPE
BR4 B1310	SPACE HTR DISTR PNL LH13	N	—	—	—	—
BR5 B1311	SPACE HTR XFRM XH10	N	—	—	—	—

MP2 FUSE LIST

MCC B21

(30011/12,13,14,15,16) TURB BLDG 31'-6" E18

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
AF2 B2102	CONDENSATE XFER PUMP MP71 32012/23	N	10	A4J10	6/10	FRN-6/10
AF3 B2170	FEEDWTR PUMP BYPASS MOV MOV51 25213-32065/2 12552-ESK-6ACP	N	10	-	16/10	FRN-16/10
AF4 B2103	CONDENSER VACUUM PUMP NO. 1B MF5B 32033/2	N	10		2½	FRN-2½
BF1 B2104	STEAM EXTRACTION MOV STOP VALVE HV4492 32010/1	N	10		1 6/10	FRN-1 6/10
BF2 B2171	HEATER TRAIN 1A ISOL VALVE 2CNM-MOV11A 25213-32065/3 12552-ESK-6ACQ	N	10	↓	1 6/10	↓
BF3 B2153	REC. & LUNCH AREA DUCT HTR X90 32023/61	N	—	—	—	—
BF4 B2154	DOCTORS OFFICE DUCT HTR X91 32023/61	N	—	—	—	—
BF5 B2155	LOCKER AREA DUCT HTR X92A 32023/62	N	—	—	—	—
CF1 B2147	MOISTURE SEP/REHTR NO.1A 2ND STAGE INLET MOV HV4541 32020/38	N	10	A4J10	1 6/10	FRN-1 6/10
BF6 B2156	LOCKER AREA DUCT HTR X92B 32023/62	N	—	—	—	—
CF2 B2106	MAIN STEAM TO 2ND STAGE REHTR 1A HV4534 32020/3	N	10	A4J10	1 6/10	FRN-1 6/10
BF7 B2157	LOCKER AREA DUCT HTR X92C 32023/62	N	—	—	—	—
CF3 B2107	MOISTURE SEP/REHTR NO.1A 1ST STAGE INLET MOV HV4535 32020/4	N	10	A4J10	1 6/10	FRN-1 6/10
BF8 B2158	DOMESTIC WTR HOT WTR TK T2B CONTROL RM CB2 32019/25	N	—	—	—	—
CF4 B2180	SGFP SEAL INJECTION BOOSTER PUMP MP150 32012/43	N	10	A4J10	1	FRN-1

MP2 FUSE LIST

MCC B21

(30011/12,13,14,15,16) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSS MIDAL FUSE TRAN)
DF1 B2172	HEATER TRAIN 1B ISO VALVE 2CNM-MOV118 — 25213-32065/4, 12552-ESK-6ACR	N	10	A4J10	1 6/10	FRN-1 6/10
DF2 B2109	STEAM SEAL FEED MOV HV4322 — 32016/7	N	10		1 6/10	
DF3 B2110	STEAM SEAL FEED BYPASS MOV HV4323 — 32016/5	N	10		1 6/10	
DF4 B2111	STEAM SEAL FEED UNLOADING MOV HV4324 — 32016/6	N	10		1 6/10	
EF1 B2168	HEATER 1A ISOLATION VALVE 2FWS-MOV2A — 25213-32120/1, 12552-ESK-6ACM	N	10		1 6/10	
EF2 B2169	HEATER 1B ISOLATION VALVE 2FWS-MOV2B — 25213-32120/2, 12552-ESK-6ACN	N	10		1 6/10	
EF3 B2113	MAIN STEAM FEED WTR PUMP P1B DISC MOV HV5247 — 32012/20	N	10		1 6/10	
EF4 B2114	STEAM GEN X26 FEED WTR INLET MOV HV5264 — 32012/18	N	10		1 6/10	
FF1 B2116	AUX STEAM DEAERATOR FEED PUMP NO.2 MP91B — 32028/6	N	10		6/10	FRN-6/10
FF2 B2115	WASTE NEUT TK XFER PUMP NO.2 MP104B — 32034/13	N	10		6/10	
FF4 B2118	SGFP TURB TURNING GEAR (H5B) NO.2 ML205B — 32012/2	N	10		6/10	
GF3 B2120	DOMESTIC WATER RECIRC PUMP MP134 — 32019/22	N	10		6/10	
GF5 B2122	NH_4OH FW CHEM INJ PUMP NO.2 MP69B — 32035/17	N	10		6/10	
GF6 B2123	SECONDARY HYDRAZINE CHEM INJ PUMP NO.2 MP70B — 32035/22	N	10		6/10	
HF1 B2167	FEEDWTR RECIRC LINE ISO VALVE 2FWS-MOV21 — 25213-32120/3, 12552-ESK-6ACS	N	10		1 6/10	FRN-1 6/10

MP2 FUSE LIST

MCC B21

(30011/12,13,14,15,16) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN EQUIV.)
HF2 B2124	TURB BLDG ROOF VENT FAN NO. 9 MF 111I 32023/30	N	10	A4J10	6/10	FRN-6/10
HF3 B2125	TURB BLDG ROOF VENT FAN NO. 10 MF 111J 32023/31	N	10	↓	6/10	↓
HF4 B2126	TURB BLDG SUPPLY FAN NO. 7 MF 101G 32023/21	N	10	↓	1	FRN-1
AR1A B2151	CHLORINE SAMPLE PUMP NO. 2 MP26B 32035/1	N	—	—	—	—
AR1B B2152	CHLORINE SAMPLE PUMP NO. 4 MP26D 32035/2	N	—	—	—	—
AR2B B2175	CHILLED WATER PUMP P-149C 32023/78	N	10	A4J10	6/10	FRN-6/10
AR3 B2177	WELDING OUTLETS 54'-6" & 31'-6" EAST	N	—	—	—	—
AR2C B2174	CHILLER X-196B 32023/75	N	10	A4J10	6	FRN-6
BR1 B2178	SCAVENGING STEAM FOR 2ND STAGE REHTR A HV4604A 32020/57	N	10	↓	1 6/10	FRN-1 6/10
BR2 B2127	LUBE OIL SUMP PUMP NO. 2 MP95B 32006/40	N	10	↓	6/10	FRN-6/10
BR3 B2128	LUBE OIL RM XFER PUMP MP57 32006/37	N	10	↓	6/10	↓
BR4 B2129	EHC HYDRAULIC FLUID PUMP NO. 2 MP81B 32006/27	N	10	↓	2 1/2	FRN-2 1/2
CR1 B2176	CHILLED WATER PUMP P149B 32023/79	N	10	↓	6/10	FRN-6/10
CR2 B2131	EHC FILTER & XFER PUMP MP83 32006/24	N	10	↓	6/10	↓
CR3 B2132	LUBE OIL POLISHING FILTER PUMP MP5B 32006/38	N	10	↓	6/10	↓

MP2 FUSE LIST

MCC B21

(30011/12,13,14,15,16) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
CR4 B2133	2-CW-12C COND. C/D INLET CROSS-TIE HV6593 32013/30	N	10	A4J10	1 6/10	FRN 1 6/10
CR5 B2134	2-CW-12B COND. C/D OUTLET CROSS-TIE HV6618 32013/31	N	10	↓	1 6/10	↓
DR1 B2179	SCAVENGING FOR 1ST STAGE REHEATER A HV4602A 32020/55	N	10		1 6/10	
DR2 B2135	2-CW-11E "D" CONDENSER INLET STOP HV6551 32013/25	N	10		1 6/10	FRN-1 6/10
DR3 B2136	2-CW-11G "B" CONDENSER INLET STOP HV6542 32013/23	N	10		1 6/10	↓
DR4 B2137	2-CW-11D "D" CONDENSER OUTLET STOP HV6619 32013/28	N	10	↓	1 6/10	
ER1A B2160	CONDENSER XBB NORTH CATHODIC PROT. RECT A P035	N	—	—	—	—
ER1B B2161	CONDENSER XBB SOUTH CATHODIC PROT. RECT B P036	N	—	—	—	—
ER1C B2162	CONDENSER XBA SOUTH CATHODIC PROT RECT A. P037	N	—	—	—	—
ER1D B2163	CONDENSER XBA NORTH CATHODIC PROT. RECT B P038	N	—	—	—	—
ER3 B2105	STEAM EXTRACTION MOV HV4494 32010/3	N	10	A4J10	1 6/10	FRN-1 6/10
ER2B B2130	LTG XFMR FEED 30A UL62 30025	N	—	—	—	—
ER4 B2138	CIRC WTR COND 1A OUTLET MOV HV6586 32013/26	N	10	A4J10	1 6/10	FRN-1 6/10
FR1 B2159	LTG XFMR FDR 40A UL60 30025	N	—	—	—	—
FR2 B2166	LTG XFMR FDR 30A UL20 30025	N	—	—	—	—

MP2 FUSE LIST

MCC B21

(30011/12,13,14,15,16) TURB BLDG 31-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
FR3 B2173	FOLISHER BY-PASS VALVE ZCNM MOV20 25213-32065/1 12355-ESK-6ACB	N	10	A4J10	1 6/10	FRN-1 6/10
FR4 B2117	SGFP TURB "B" AUX OIL PUMP NO. 2 MP172B 32006/B4	N	10	↓	2 1/2	FRN-2 1/2
GR1 B2139	WELDING RECT EL 14'-6" (E-18) PR005	N	—	—	—	—
GR2 B2140	WELDING RECT EL 31'-6" (E-19) EL 54'-6" (E-19) PR006	N	—	—	—	—
GR3 B2141	DEICING RECIRC LINE MOV HV6620 32013/15	N	10	A4J10	1 6/10	FRN-1 6/10
GR4 B2142	COND WTR BOX PRIMING PUMP NO. 2 MF6B 32033/4	N	10	↓	2 1/2	FRN-2 1/2
GR5 B2165	LIGHTING XFMR FDR 30A UL21 30025	N	—	—	—	—
HR1 B2143	LIGHTING XFMR FDR 50A UL23 30025	N	—	—	—	—
HR2 B2144	LIGHTING XFMR FDR 20A UL24 30025	N	—	—	—	—
HR3 B2145	MOTOR HTR DISTR PNL LH21	N	—	—	—	—
HR4 B2146	MOTOR HTR XFMR	N	—	—	—	—

MP2 FUSE LIST

MCC B22

(30011/17,18,19) TURB BLDG 31'-6" E25

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (SOURCE SIDE EQUIPMENT)	SECONDARY FUSE	SECONDARY TYPE (BUS SIDE EQUIPMENT)
A02 B2226	COND. STORAGE TK RECIRC PUMP MP76 32012/24	N	10	A4J10	6/10	FRN-6/10
A03 B2202	ISOPHASE BUS COOLER FAN NO. 2 MF 119B 32005/37	N	10		2½	FRN-2½
A04 B2203	GENERATOR STATOR WDG COOL WTR PP NO. 2 MP65B 32005/11	N	10		2½	↓
B02 B2229	NH4OH XFER PUMP MP102 32035/14	N	10	↓	6/10	FRN-6/10
B03 B2206	COND. STORAGE & SURGE TK SUMP PP MP138 32033/15	N	10		6/10	↓
B04 B2204	SGFP TURB "A" MOP OIL PUMP NO. 1 MP171A 32006/68	N	10	↓	2½	FRN-2½
C01 B2231	ISOPHASE BUS HEATERS 60 MH119B 32005/38	N	—	—	—	—
C02A B2233	RSST MOD AIR COMPRESSOR F04A 31040	N	—	—	—	—
C02B B2234	COND AIR EJ RAD MON FAN MF46 32033/12	N	—	—	—	—
C03 B2207	REBOILER FEED WTR PUMP NO. 2 MP52B 32028/8	N	10	A4J10	1	FRN-1
C04 B2208	HEATER DRAIN PUMP MOTOR COOLING FAN (RM5099) MF 143 32023/81	N	10		6/10	FRN-6/10
C05 B2209	STEAM PACKING EXH FAN NO. 2 MF 7B 32016/2	N	10		1	FRN-1
D01 B2227	STEAM EXTRACTION MOV STOP VALVE HV4496 32010/5	N	10		1 6/10	FRN-1 6/10
D02 B2210	EAST CONDENSER PIT SUMP PUMP NO. 2 MP39B 32033/7	N	10		6/10	FRN-6/10
D04 B2212	WEST COND. PIT SUMP PUMP NO. 2 MP73B 32033/11	N	10	↓	6/10	↓

MP2 FUSE LIST

MCC B22

(30011/17, 18, 19) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN EQUIV.)
D05 B2232	COND SURGE TK CIRC PUMP MP111 32012/37	N	10	A4J10	6/10	FRN-6/10
E01 B2213	STEAM PACKING GLAND EXH MOV HV4339 32016/4	N	10		1 6/10	FRN-1 6/10
E02 B2214	TURB BLDG VENT FAN NO. 4 MF111D 32023/25	N	10		6/10	FRN-6/10
E03 B2215	TURB BLDG VENT FAN NO. 5 MF111E 32023/26	N	10		6/10	↓
E04 B2216	TURB BLDG SUPPLY FAN NO. 3 MF101C 32023/17	N	10		1	FRN-1
F01 B2228	STEAM EXTRACTION MOV STOP VALVE HV4498 32010/7	N	10	↓	1 6/10	FRN 1 6/10
F02 B2220	WELDING RECTS EL 31'-6" (E-23) EL 54'-6" (E-23) PR008	N	—	—	—	—
F05 B2217	TURB BLDG SUPPLY FAN NO. 4 MF101D 32023/18	N	10	A4J10	1	FRN-1
G01A B2238	SGFPT TURNING GEAR H5B ENGAGING SOL 51 TD77 32012/41	N	—	—	—	—
G01C B2237	TURB BLDG RAIL & TRUCK EQUIP HOIST L337	N	—	—	—	—
G03 B2219	WELDING RECEPTACLE EL 14'-6" (E-23) PR007	N	—	—	—	—
G04 B2221	DOMESTIC WTR BOOSTER PUMP NO. 2 MP77B 32019/2	N	10	A4J10	1	FRN-1
G05 B2236	STRIP HTR PNL CONDST TK LTG PNL UL5A	N	—	—	—	—
H01 B2230	TURB GEN AREA NEAR (E-25) DOOR 155 —	N	—	—	—	—
H02 B2222	LTG XFMR FDR UL35 30025	N	—	—	—	—

MP2 FUSE LIST

MCC B22

(30011/17, 18, 19) TURB BLDG 31'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY		SECONDARY	
			FUSE	TYPE (SOLID STATE MT)	FUSE	TYPE
H03 B2223	LTG XFMR FDR UL36 30025	N	—	—	—	—
H04 B2225	SPACE HTR DISTR PNL LH22	N	—	—	—	—
H05 B2224	SPACE HTR XFMR	N	—	—	—	—

MP2 FUSE LIST

MCC B31A

(30011/20, 21) AUX BLDG -5' (L5)

LOCATION SCHEME	SERVICE SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SYMBOL)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
A02 B31A25	B.A. EVAP. VACUUM PUMP NO. 1 MF42A 32025/45	N	10	AAJ10	6/10	FRN-6/10
A03 B31A02	AERATED WASTE DRAIN TK PUMP NO. 1 MP31A 32026/11	N	10		1	FRN=1
A04 B31A03	WASTE GAS COMPRESSOR NO. 1 MF1A 32026/3	N	10		2½	FRN-2½
B02 B31A04	AERATED WASTE MONITOR TK PUMP MP32 32026/17	N	10		6/10	FRN-6/10
B03 B31A05	AERATED WASTE EVAPORATION CONCENTRATES TK PUMP MP93 32026/21	N	10		6/10	
B04 B31A29	SPARE 32026/35	N	10		6/10	
B05 B31A28	B.A. EVAP DISTILLATE PUMP NO. 1 MP85A 32025/43	N	10		6/10	
B06 B31A27	B.A. EVAP CONCENTRATE PUMP NO. 1 MP86A 32025/47	N	10		1 6/10	FRN-1 6/10
C01 B31A12	REFUEL WTR PURIFICATION PUMP NO. 1 MP14A 32029/3	N	10		1	FRN-1
C02 B31A06	COOLANT WASTE RECEIVER TK PUMP MP29 32025/4	N	10		6/10	FRN-6/10
C03 B31A07	COOLANT WASTE MONITOR TK PUMP MP30 32025/5	N	10		6/10	
C04A B31A33	WASTE GAS FILTER REMOVAL HOIST NHL 306 –	N	—	—	—	—
C04B B31A36	HOIST L307 –	N	—	—	—	—
C04C B31A35	A.W. PREDEMIN & COOL WASTE FILTER REM. HOIST. L30B 37005/41	N	—	—	—	—
C05 B31A09	PRIMARY WTR XFER PUMP NO. 1 MP22A 32034/1	N	10	AAJ10	1	FRN-1

MP2 FUSE LIST

MCC B31A (30011/20,21) AUX BLDG -5'

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
D01 B31A10	SPARE 32026/29	N	10	A4J10	6/10	FRN-6/10
D02 B31A11	PRIMARY HYDRAZINE CHEM INJ PUMP NO. 1 MP10A 32035/24	N	10		6/10	
D03 B31A26	SPARE 32026/33	N	10		6/10	
D04 B31A13	RB CCW SUMP PUMP NO. 1 MP38A 32030/13	N	10		6/10	
D05 B31A14	AUX BLDG AREA SUMP PUMP NO. 1 MP37A 32030/11	N	10		6/10	
E01 B31A15	HPSI PUMP ROOM 1 SUMP PUMP NO. 1 MP34A 32030/5	N	10		6/10	
E02 B31A16	HPSI PUMP ROOM 2 SUMP PUMP NO. 2 MP36A 32030/9	N	10		6/10	
E03 B31A17	HPSI PUMP ROOM 3 SUMP PUMP NO. 3 MP35A 32030/7	N	10		6/10	
F02 B31A30	BA EVAP BOTTOM CIRC PUMP NO. 1 MP99A 32025/41	N	10	↓	6/10	↓
F03A B31A18	WELDING RECT EL-45'-6" PR009 —	N	—	—	—	—
F03B B31A08	DEGASIFIER PUMP NO. 1 PANEL NP16A1 32025/32	N	—	—	—	—
F04 B31A24	CONDENSATE RECOVERY PUMP NO. 1 MP84A 32028/1	N	10	A4J10 ↓	6/10	FRN-6/10 ↓
F05 B31A19	EQUIP DRAIN SUMP PUMP NO. 1 MP94A 32025/1	N	10	↓	6/10	↓
G01 B31A32	ULTRA-SONIC TRANSDUCER CABINET C66 39311	N	—	—	—	—
G02 B31A37	LTG XFMR FDR UL107 30025	N	—	—	—	—

MP2 FUSE LIST

MCC B31A
(30011/20,21)

AUX BLDG -5'

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
G03 B31A21	AERATED WASTE MONITOR TANK MIXER MT21 32026/60	N	10	A4J10	6/10	FRN-6/10
G04 B31A22	SPACE HTR DISTR PNL LH 31A —	N	—	—	—	—
G05 B31A23	SPACE HTR XFMR —	N	—	—	—	—
F01 B31A31	SPARE 32026/31	N	10	A4J10	16/10	FRN-16/10
~~?~~ ~~B31A32~~	~~SPARE 32026/31~~	N	10	↓	~~6/10~~	~~FNM-6/10~~

MP2 FUSE LIST

MCC B31B (30011/22,23) AUX BLDG 14'-6" (L6)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN OR EQUIV)
AF2 B31B02	CONTAINMENT RECIRC COOL FAN NO. 1 MF37A 32022/19	N	10	A4J10	1 6/10	FRN-1 6/10
AF3 B31B03	CONTAINMENT AUX CIRC FAN NO. 1 MF24A 32022/8	N	10	↓	1 6/10	↓
AF4 B31B28	WELDING RECEPTACLES IN CONTAINMENT PR017 37005/41	N	—	—	—	—
BF1 B31B04	CONTAINMENT SUMP PUMP NO. 1 MP33A 32030/1	N	10	A4J10	6/10	FRN-6/10
BF2 B31B34	SG BLOWDOWN TREATMENT SYS PP162 32020/63	N	10		6/10	↓
BF3 B31B35	SG BLDN TREATMT SYS PS4245A TS4245A, PS4246A PP161A 32020/62	N	10		2 1/2	FRN-2 1/2
CF1 B31B19	SPENT RESIN SHIP CASK DEWTR PUMP MP108 32026/46	N	10		6/10	FRN-6/10
CF2 B31B30	PRESSURIZER AUX VENT FAN F141 32022/101	N	10		6/10	↓
CF3 B31B05	PRIMARY DRAIN TK PUMP NO. 1 MP15A 32025/30	N	10	↓	6/10	↓
CF4A B31B26	AUX R.R. ACCESS STORAGE AREA L110 30025	N	—	—	—	—
CF4B B31B31	XFMR UNIT 2 HP MODULAR UL102 30025	N	—	—	—	—
CF4C B31B33	STM GEN PUMP DOWN PUMP RECEP PR020	N	—	—	—	—
AR1 B31B17	REFUEL MACHINE BRIDGE & TROLLEY T052 7604-M-700	N	—	—	—	—
AR2 B31B07	LTG XFMR FDR UL07 30025	N	—	—	—	—
AR3 B31B08	LTG XFMR FDR UL08 30025	N	—	—	—	—

MP2 FUSE LIST

MCC B31B

(30011/22,23) AUX BLDG 14'-6" (L6)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
AR4 B31B09	LTG XFMR FDR UL09 30025	N	—	—	—	—
AR5 B31B10	WELDING RECT EL 14'-6" PR010	N	—	—	—	—
AR6 B31B27	LTG XFMR UL18 30025	N	—	—	—	—
BR1 B31B22	LTG XFMR UL17 30025	N	—	—	—	—
BR2 B31B12	LTG XFMR FDR UL03 30025	N	—	—	—	—
BR3 B31B13	LTG XFMR FDR UL04 30025	N	—	—	—	—
BR4 B31B14	LTG XFMR FDR UL11 30025	N	—	—	—	—
BR5 B31B15	LTG XFMR FDR UL05 30025	N	—	—	—	—
BR6 B31B16	LTG XFMR FDR UL06	N	—	—	—	—
CR1 B31B24	RCP MOTOR SPACE HTR HP40A 32007/26	N	10	A4J10	6/10	FRN-6/10
CR2 B31B25	RCP MOTOR SPACE HTR HP40C 32007/26	N	10	↓	6/10	↓
CR3 B31B18	FUEL TRANSFER MACHINE C32 7604-M-700	N	—	—	—	—
CR4 B31B20	STM GEN BLOWDOWN QUENCH TK PUMP MP117 32020/26	N	10	A4J10	6/10	FRN-6/10
CR5 B31B21	HYDRAZINE TK RECIRC PUMP MP107 32035/26	N	10	↓	6/10	↓
CR6 B31B06	PRIMARY DRAIN TK & QUENCH TANK COOL P.P. MP28 32025/3	N	10	↓	6/10	↓

MP2 FUSE LIST

MCC B32 (30011/24,25) AUX BLDG 14'-6" (M7)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
A01 B3230	LTG XFMR UL40 34056	N	—	—	—	—
A02A B3231	RADWASTE SOLID. SYS MONORAIL HOIST/TROLLEY L312	N	—	—	—	—
A02B B3232	RV HEAD DECON. SYS FILTER REMOVAL HOIST L342 37005/41	N	—	—	—	—
A02C B3233	REFUEL POOL SKIMMER REMOVAL HOIST L343 37005/41	N	—	—	—	—
A03B B3241	SPENT FUEL POOL SKIMMER REMOVAL HOIST L344 28123/12 28406/109	N	—	—	—	—
A03A B3240	OFF GAS PIPE & DIESEL TK CATHODIC PROT. RECT. PO29A PO29B 35028 39023/1-4	N	—	—	—	—
A04 B3244	DISCH FAN (SJAI) MF55A 32022/98	N	10	A4J10	6/10	FRN-6/10
A03C B3246	REGULATING XFMR FOR (EMERG) UAC1 32061/1	N	—	—	—	—
NS B01 B3228	NEW FUEL ELEVATOR C73 7604-MB8-501	N	—	—	—	—
B01A B3203	MAINTANCE SHOP LTG PNL UL55	N	—	—	—	—
B02 B3205	DIESEL GEN RM HEV UNIT FAN MF27 32023/9	N	10	A4J10	6/10	FRN-6/10
B03 B3202	SPENT RESIN TRANSFER CART T509/L227 32026/58	N	10	↓	1 6/10	FRN-1 6/10
B04 B3219	RAILROAD AND TRUCK ACCESS NEAR S-19.5 DOOR 100 —	N	—	—	—	—
B05 B3220	RAILROAD AND TRUCK ACCESS NEAR Q-18.5 DOOR 101 —	N	—	—	—	—
B06 B3221	WAREHOUSE NEAR S-16.6 DOOR 102 —	N	—	—	—	—

MP2 FUSE LIST

MCC B32
(30011/24,25) AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
B07 B3222	RAILROAD & TRUCK ACCESS NEAR S-18.9 DOOR 104 –	N	—	—	—	—
B08 B3226	UNIT 2 STACK SAMPLE FAN (RM8137) MF41B 32022/75	N	—	—	—	—
C01 B3207	MAINT. SHOP PWR PNL LP 97 –	N	—	—	—	—
C02B B3245	CASK LAYDOWN AREA SUMP PUMP 33/16 P151 32021/28	N	—	—	—	—
C02A B3236	CTMT PEDESTAL CRANE ON PZR BLOCKHOUSE H47 32022/75	N	—	—	—	—
C02C B3242	FUEL HANDLING AREA A/C DISC SW RX191 32021/28	N	—	—	—	—
C03 B3208	MAIN EXHAUST FAN NO.1 MF 34A 32022/11	N	10	A4J10	2½	FRN-2½
D01 B3248	S.G. BLOWDOWN TREATMENT SYS PS4245B, PS4246B & TS4245B Pp 161B 32020/65	N	10	↓	2½	↓
E03A B3247	AIR CONT UNIT - IBM RM 40/30 X-199 32021/29	N	—	—	—	—
E01A B3238	RAD WASTE AREA VENT EXH RAD. MON. FAN MF128 RM B997 32021/25	N	—	—	—	—
E02 B3234	RR & TK ACCESS AREA SUMP PUMP MP124A 32029/12	N	10	A4J10	6/10	FRN-6/10
E02A B3235	PIPEWAY SUMP PUMP MP126 32029/14	N	10	↓	6/10	↓
E03 B3243	MAINT AREA HEATER X187 31165/75	N	—	—	—	—
E04 B3216	SPENT FUEL SKIMMER PUMP MP21 32029/5	N	10	A4J10	6/10	FRN-6/10
F01 B3218	BA EVAPORATOR HTR MH26 32025/49	N	10	↓	6/10	↓

MP2 FUSE LIST

MCC B32 (30011/24,25) AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
F02 B3225	STEAM JET AIR EJECTION FAN MF55B 32022/69	N	10	A4J10	6/10	FRN-6/10
F03 B3212	PRIMARY WTR STORAGE TK CIRC PUMP MP46 32034/4	N	10	↓	6/10	↓
F04 B3213	REFUEL WTR STORAGE TK CIRC PUMP MP45 32008/62	N	10	↓	6/10	↓
F05A B3214	SPENT FUEL POOL BRIDGE CRANE MH10 7604-M-89	N	—	—	—	—
F05B B3215	FUEL TRANS & CEA CHANGE MACHINE CONSOLE C31A 7604-M-700	N	—	—	—	—
F06A B3223	RAILROAD AND TRUCK ACCESS NEAR R-18.9 DOOR 109	N	—	—	—	—
F06B B3224	RBCCW HEATER EXCHG CATH PROT. RECT. P040 7604-E26	N	—	—	—	—
G02 B3227	SAMPLING SYS FUME HOOD BLOWER MF117 32027/4	N	10	A4J10	6/10	FRN-6/10
G02A B3237	FUEL INSPECTION STAND H42	N	—	—	—	—
G03 B3211	FILT SPENT FUEL POOL EXH AIR MONIT. (RM8145B) MF120 32021/17	N	—	—	—	—
G04	SPACE HTR DISTR PNL LH32	N	—	—	—	—
G05	SPACE HTR XFMR	N	—	—	—	—

MP2 FUSE LIST

MCC B33 (30011/26) — AUX BOILER RM

LOCATION SCHEME	SERVICE SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
A02 B3310	AUX BOILER FUEL OIL XFER PUMP NO. 1 MP47C 32018/7	N	10	A4J10	6/10	FRN-6/10
A03 B3308	AUX STEAM DEAERATOR FEED PUMP NO. 1 MP98A 32028/9	N	10	↓	6/10	↓
A04 B3302	AUX BOILER FEEDWTR PUMP NO. 1 MP54A 32028/3	N	10	↓	6/10	↓
A05 B3303	AUX BOILER FEEDWTR PUMP NO. 2 MP54B 32028/4	N	10	↓	6/10	↓
A06 B3311	FUEL OIL TK CATH. PROT. RECT. P030 7604-E26	N	—	—	—	—
B01 B3309	AUX STEAM DEAERATOR FEED PUMP NO. 2 MP98B 32028/10	N	10	A4J10	6/10	FRN-6/10
B03 B3304	AUX BOILER FUEL OIL PUMP MP55 32028/13	N	—	—	—	—
B04 B3305	AUX BOILER FUEL OIL XFER PUMP NO. 1 MP47D 32018/8	N	10	A4J10	6/10	FRN-6/10
B05 B3306	AUX BOILER FEEDER C97 32028/13	N	—	—	—	—

MP2 FUSE LIST

MCC B41A

(30011/27, 28, 29) AUX BLDG 14'-6" (F8)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE
A02 B41A07	AUX BLDG NON-RADIOACTIVE H&V UNIT FAN MF17 32021/3	N	10	A4J10	2½	FRN-2½
A03 B41A53	DC SWGR RM. FLOOR DRAIN SUMP PUMP MP135 32033/14	N	10	↓	6/10	FRN-6/10
B02 B41A48	AERATED WASTE FILTER REMOVAL HOIST L709 37005/41	N	—	—	—	—
B03 B41A46	CONT. MIXING TK HTR HT95 32029/10	N	10	A4J10	2½	FRN-2½
B04 B41A03	AUX BLDG RADWASTE H&V UNIT FAN MF16 32021/7	N	10		2½	↓
C02 B41A05	B.A. EVAP BOTTOM CIRC PUMP NO. 2 MP99B 32025/42	N	10		6/10	FRN-6/10
C03 B41A02	AUX BUILDING CABLE VAULT RECIRC FAN MF19 32021/5	N	10	↓	1	FRN-1
D01A B41A52	RADWASTE AREA VENT EXH RAD MON. FAN MF129 (RM 899B) 32021/27	N	—	—	—	—
D01C B41A54	REGULATING XFMR FDR (EMERG) UAC-2 32061/2	N	—	—	—	—
D02 B41A04	COOLANT TK MIXER MT15A 32025/59	N	10	A4J10	6/10	FRN-6/10
D03 B41A47	CONT. MIXING TK MIXER MT95 32029/11	N	10		6/10	↓
E01 B41A11	NON-RADIOACTIVE VENT FAN MF26 32021/4	N	10		2½	FRN-2½
E03 B41A13	WASTE GAS COMPRESSOR NO. 2 MF1B 32026/4	N	10		2½	↓
F02 B41A34	B.A. EVAP. VACUUM PUMP NO. 2 MF42B 32025/46	N	10		6/10	FRN-6/10
F01 B41A37	SPARE 32026/36	N	10	↓	6/10	↓

MP2 FUSE LIST

MCC B41A
(30011/27.28.29) AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN EQUIV.)
F03 B41A06	COOLANT TK MIXER MT 15B 32025/60	N	10	A4J10	6/10	FRN-6/10
F04 B41A14	AERATED WASTE DRAIN TK P P NO. 2 MP 31B 32026/14	N	10		6/10	
G01 B41A12	RECOVERED B.A. TK PUMP MP 92 32025/6	N	10		6/10	
G02 B41A32	REFUEL WATER PURIFICATION PUMP NO. 2 MP 14B 32029/4	N	10		1	FRN-1
G03 B41A15	PRIMARY WTR TRANSFER PUMP NO. 2 MP 22B 32034/2	N	10		1	
G04 B41A51	RR & TK ACCESS AREA SUMP PUMP MP 124B 32029/13	N	10		6/10	FRN-6/10
H01 B41A35	SPARE 32026/34	N	10		6/10	
H02 B41A17	HPSI PUMP RM 1 SUMP PUMP NO. 2 MP 34B 32030/6	N	10		6/10	
H03 B41A18	HPSI PUMP RM 2 SUMP PUMP NO. 2 MP 36B 32030/10	N	10		6/10	
H04 B41A19	HPSI PUMP RM 3 SUMP PUMP NO. 2 MP 35B 32030/8	N	10		6/10	
H05 B41A20	RBCCW SUMP PUMP NO. 2 MP 38B 32030/14	N	10		6/10	
H06 B41A21	AUX BLDG AREA SUMP PUMP NO. 2 MP 37B 32030/12	N	10		6/10	
J01 B41A38	B.A. EVAP. DISTILLATE PUMP NO. 2 MP 85B 32025/44	N	10		6/10	
J02 B41A39	SPARE 32026/32	N	10		16/10	FRN-16/10
J03 B41A22	SPARE 32026/30	N	10		6/10	FRN-6/10

FUSE LIST

MCC B41A

(30011/27, 28, 21) AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
J04 B41A36	CONDENSATE RECOVERY PUMP NO. 2 MP84B 32028/2	N	10	A4J10	6/10	FRN-6/10
J05A B41A16	DEGASIFIER PUMP NO. 2 PANEL NP16B1 32025/33	N	—	—	—	—
J05B B41A23	COOL WASTE FINAL FILTER REMOVAL HOIST L310 —	N	—	—	—	—
K01 B41A40	B.A. EVAP CONCENTRATE PUMP NO. 2 MP86B 32025/48	N	10	A4J10	16/10	FRN-16/10
K03 B41A24	NORM STA SERV TRANS COOLING EQUIP NO. 2 U02 7604-E-2	N	—	—	—	—
K04 B41A25	RES. STA SERV TRANS COOLING EQUIP NO. 2 U03 7604-E1A-3	N	—	—	—	—
K05 B41A26	WELDING RECTSEL -5'-0" EL -25'-6" T519 P012	N	—	—	—	—
K06 B41A27	WELDING RECTS EL 38'-6" -25'-6" T521 P013	N	—	—	—	—
L02 B41A28	LTG XFMR FDR U113 30025	N	—	—	—	—
L03 B41A29	LTG XFMR FDR U101 30025	N	—	—	—	—
L04 B41A30	SPACE HTR DISTR PANEL	N	—	—	—	—
L05 B41A31	SPACE HTR 5KVA XFMR	N	—	—	—	—

MP2 FUSE LIST

MCC B41B
(30011/30,31) AUX BLDG 14'-6" (F2)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN BUSSMAN)
AF2 B41B17	RCP MOTOR SPACE HTR HP40B 32007/27	N	10	A4J10	6/10	FRN-6/10
AF3 B41B03	CONT AUX CIRC FAN NO.2 MF24B 32022/9	N	10	↓	1 6/10	FRN-1 6/10
AF4 B41B19	WELDING RECP IN CONTAINMENT PR016 37005/41	N	—	—	—	—
BF1 B41B04	PRIMARY DRAIN TK PUMP NO. 2 MP15B 32025/31	N	10	A4J10	6/10	FRN-6/10
BF3 B41B24	MAINT. AREA EXH FAN MF137 32022/95	N	10	↓	6/10	↓
BF4 B41B25	WELDING FUME EXH FAN MF139 32022/96	N	10	↓	6/10	↓
CF1 B41B18	RCP MOTOR SPACE HTR HP40D 32007/27	N	10	↓	6/10	↓
BF5 B41B27	MAINT. OFFICE M2 REHEAT COIL X189 32022/97	N	—	—	—	—
CF2 B41B05	CONT PENET AREA COOLING FAN NO. 2 MF37B 32022/20	N	10	A4J10	1 6/10	FRN-1 6/10
BF6 B41B28	MAINT. OFFICE M1 REHEAT COIL X190 32022/97	N	—	—	—	—
CF3 B41B06	EQUIP. DRAIN TK SUMP PUMP NO. 2 MP94B 32025/2	N	10	A4J10	6/10	FRN-6/10
CF4 B41B07	MAIN EXH FAN NO. 2 MF34C 32022/13	N	10	↓	2 1/2	FRN-2 1/2
AR1 B41B20	AER WASTE & BORON REC. HTR TRACING XFMR UHT4 —	N	-	—	—	—
AR2 B41B08	CONT SUMP PUMP NO. 2 MP33B 32030/2	N	10	A4J10	1 6/10	FRN-1 6/10
AR3 B41B09	PRIMARY HYDRAZINE CHEM INJ PUMP NO. 2 MP10B 32035/25	N	10	↓	6/10	FRN 6/10

MP2 FUSE LIST

MCC B41B (30011/30,31) AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
AR4A B41B02	RAD WASTE VENT TO STACK MON FAN (RM 6434B) MF 121 32021/18	N	—	—	—	—
AR5 B41B11	B.A. BATCH TK HTRS (3) P145(TT) 32009/12	N	10	A4J10	2½	FRN-2½
BR2 B41B12	LTG XFMR FDR U102 30025	N	—	—	—	—
BR3 B41B13	LTG XFMR FDR U110 30025	N	—	—	—	—
BR4 B41B15	REFUELING POOL SKIM PUMP MP96 32029/6	N	10	A4J10	6/10	FRN 6/10
CR1A B41B21	TENDON SURV SYS MONORAIL AEB T910 37005/43	N	1	—	—	—
CR1B B41B22	TENDON SURV SYS HYD. PUMP A T916 37005/43	N	1	—	—	—
CR1C B41B23	TENDON SURV SYS HYD PUMP B T913 37005/43	N	—	—	—	—
CR3 B41B14	MAIN EXH FAN NO. 3 MF34B 32022/12	N	10	A4J10	2½	FRN-2½

MP2 FUSE LIST

MCC B4Z

(30011/32,33) INTAKE STRUCT (SE)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN EQUIV)
AF4 B4207	SCREEN WASH PUMP NO.2 MP8B 32013/9	N	10	A4J10	2½	FRN-2½
BF4 B4204	TRAVEL SCREEN DRIVE NO.2 MH15B 32013/33	N	10	↓	1 6/10	FRN-1 6/10
BF5 B4205	TRAVEL SCREEN DRIVE NO.4 MH15D 32013/35	N	10	↓	1 6/10	↓
CF1A B4217	CATH PROT. FDR/MH15B P026 7604-E26	N	—	—	—	—
CF1B B4218	CATH. PROT FDR/MH15D 7604-E26	N	—	—	—	—
AR2 B4206	WELDING RECT NO.1 PR014	N	—	—	—	—
AR3 B4207	WELDING RECT NO.2 PR015	N	—	—	—	—
AR4 B4208	SPACE HTR DISTR PNL LH42	N	—	—	—	—
AR5 B4209	SPACE HTR XFMR	N	—	—	—	—
BR2 B4211	UNIT HTR NO.2 HTR2 32013/51	N	10	A4J10	1	FRN-1
BR3 B4212	UNIT HTR NO.4 HTR4 32013/52	N	10	↓	1	↓
CR1A B4219	LTG XFMR FDR UL14 30025	N	—	—	—	—
CR1B B4220	WELDING RECT	N	—	—	—	—
CR2 B4213	INTAKE STRUCT EXH FAN NO.2 MF114B 32023/11	N	10	A4J10	6/10	FRN-6/10

MP2 FUSE LIST

MCC B51 (30011/34,35,36) AUX BLDG 14'-6" (M4)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GE/BBC SIEMENS)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN/LITTELFUSE)
AF3 B5102	RCP OIL LIFT PUMP MP51A 32007/11	N	10	A4J10	6/10	FRN-6/10
AF4 Z1 B5103	CHARGING PUMP MP18A 32009/40	Y	10		3 2/10	FRN-3 2/10
BF3 B5104	RCP OIL LIFT PUMP MP51C 32007/13	N	10		6/10	FRN-6/10
BF4 Z1 B5105	CHG PUMP PWR SUPPLY CROSSOVER MP18B 32009/42	Y	10		3 2/10	FRN 3 2/10
CF1 Z1 B5106	H.P.S.I. PUMP DISCH AUX HDR MOV SI656 32008/34	Y	10		4 1/2	FRN 4 1/2
CF2 Z1 B5107	H.P.S.I. PUMP DISCH XOVER MOV SI655 32008/37	Y	10		4 1/2	
CF3 Z1 B5108	H.P.S.I. PUMP SUCTION XOVER MOV SI411 32008/31	Y	10		4 1/2	
CF4 Z1 B5109	SHUTDOWN HTX TO HPSI SUCTION MOV SI663 32008/35	Y	10		4 1/2	
DF1 Z1 B5150	CTMT SPARY STOP MOV HV3021 32008/29	Y	10		4 1/2	
DF2 Z1 B5110	SHUTDOWN COOLING ISOL MOV SI651 32008/11	Y	10		4 1/2	
DF3 Z1 B5111	SAFETY INS TANK ISOL MOV SI614 32008/12	Y	10		4 1/2	
DF4 Z1 B5112	SAFETY INS TANK ISOL MOV SI624 32008/38	Y	10		4 1/2	
EF2 Z1 B5114	AUX HPSI FLOW CONTROL MOV SI617 32008/17	Y	10		4 1/2	
EF3 Z1 B5115	AUX HPSI FLOW CONTROL MOV SI637 32008/19	Y	10		4 1/2	
EF4 Z1 B5116	AUX HPSI FLOW CONTROL MOV SI647 32008/20	Y	10		4 1/2	

MP2 FUSE LIST

MCC B51 (30011/34, 35, 36)

AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMANN FUSETRON)
FF2 Z1 B5117	AUX HPSI FLOW CONTROL MOV SI 627 32008/18	Y	10	A4J10	4½	FRN-4½
FF3 Z1 B5118	LOW PRESS SAFETY INS FLOW CONTROL MOV SI 615 32008/21	Y	10		4½	
FF4 Z1 B5119	LOW PRESS SAFETY INS FLOW CONTROL MOV SI 625 32008/22	Y	10		4½	
GF2 B5158	REFUELING WTR TO CHG PUMP MOV CH 504 32009/7	Y	10		4½	
GF3 B5155	PRESSURIZER REFIEF ISOL MOV RC 430 32007/19	N	10		4½	
GF4 Z1 B5122	CTMT SUMP RECIRC MOV HV 3008 32008/25	Y	10		4½	↓
HF1 Z1 B5160	VITAL SWGR RM COOLING FAN MF51 32023/42	Y	10		2½	FRN-2½
HF2 Z1 B5124	REFUELING WTR STORAGE TANK STOP MOV HV 3010 32008/27	Y	10	↓	4½	FRN-4½
JF3 Z1 B5153	SVR WTR STR MLIB PWR SUP XOVER 32013/36	Y	—	—	—	—
AR1 Z1 B5139	ENG SAFEGUARD RM AIR RECIRC UNIT MF15A 32022/17	Y	10	A4J10	2½	FRN-2½
BR1 B5123	SPENT FUEL POOL COOLING PUMP MP 13A 32029/1	N	10		1	FRN-1
CR1 Z1 B5161	DC SWGR RM COOLING FAN MF 54A 32021/19	Y	10		6/10	FRN-6/10
CR2 B5129	DIESEL FUEL OIL XFER PUMP MP 47A 32018/1	N	10		6/10	
DR1 Z1 B5163	VITAL SWGR RM COOLING FAN MF134 32023/71	Y	10	↓	6/10	↓
DR2 B5167	ACCIDENT RANGE RAD MONIT RM816BA/816BB 32067	N	—	—	—	—

MP2 FUSE LIST

MCC B51 (30011/34,35,36) AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
ER3 Z1 B5137	RBCCW OUTLET HDR "A" ISOL MOV HV6108 32015/24	Y	10	A4J10	4½	FRN-4½
ER4 Z1 B5138	RBCCW INLET HDR "A" ISOL MOV HV6069 32015/20	Y	10	↓	4½	↓
FR1 Z1 B5148	BORIC ACID TK HTR P143 (TBB) 32009/17	Y	10	↓	6/10	FRN-6/10
FR2 Z1 B5140	DIESEL GEN VENT FAN MF38A 32023/7	Y	10	↓	1	FRN-1
GR3 Z1 B5154	SVR WTR STR ML1B PWR SUPPLY XOVER 32013/39	Y	10	↓	6/10	FRN-6/10
HR1 Z1 B5151	BORIC ACID TK BB GRAVITY FEED MOV CH 508 32009/8	Y	10	↓	4½	FRN-4½
HR2 B5143	CONTROL RM VENT RAD MONIT FAN (RM8011) MF47 32023/41	N	—	—	—	—
HR3 B5144	RECOVERED BORIC ACID STORAGE TK HTR PT81A 32025/53	N	10	A4J10	6/10	FRN-6/10
HR4 Z1 B5147	BORIC ACID TK TBA HTR P141 32009/15	Y	10	↓	6/10	↓
HR5 Z1 B5145	VCT DISCHARGE MOV CH 501 32009/6	Y	10	↓	4½	FRN-4½
JR4 Z1 B5149	BORIC ACID TK TBA GRAVITY FEED MOV CH 509 32009/9	Y	10	↓	4½	↓
JF1 B5125	REGULATING XMFR UAC-1 30024	N	—	—	—	—
JF2 B5152	LIGHTING PNL L50 30025	N	—	—	—	—
JF4A B5156	LIGHTING PNL L53 30025	N	—	—	—	—
AR2 Z1 B5139A	ENG SAFEGUARD RM AIR RECIRC UNIT MF15A 32022/89	Y	—	—	—	—

MP2 FUSE LIST

MCC B51 (30011/34, 35, 36)

Aux Bldg 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
CR3 B5159	LIGHTING PNL L50 & L52 30025	N	—	—	—	—
CR4 B5131	LIGHTING PNL L80 30025	N	—	—	—	—
CR5 B5132	LIGHTING PNL L84 30025	N	—	—	—	—
CR6 B5133	LIGHTING PNL L85 30025	N	—	—	—	—
DR3 B5134	MTR HTR DISTR PNL	N	—	—	—	—
DR4 B5135	MTR HTR DSTR PNL	N	—	—	—	—
GR4 B5168	CMPTR RM AIR COND x200 32021/30	N	—	—	—	—
JR1 B5146	B. A. PIPE HEAT TRACE	N	—	—	—	—

MP2 FUSE LIST

MCC B52

(30011/37, 38) AUX BLDG 36'-6" (N3)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
AF1 ZI B5224	CHILLED WTR PUMP MP122A 32023/44	Y	10	A4J10	6/10	FRN-6/10
AF2 B5201	TURB BRG OIL LIFT PUMP UNIT 5, BRG NO. 8 MP80A 32006/28	N	10		6/10	↓
AF3 ZI B5202	STM. GEN AUX F.P. TURB STM SUP MOV HV4191 32020/8	Y	10		4½	FRN-4½
BF2 B5205	TURB. BRG. OIL LIFT PUMP UNIT 2 BRG NO. 4 MP80D 32006/30	N	10		6/10	FRN-6/10
BF3 B5206	TURB. BRG OIL LIFT PUMP UNIT 3-BRG NO. 5 MP80F 32006/32	N	10	↓	6/10	↓
BF4 ZI B5233	DIESEL ENGINE AUX LUBE OIL PUMP MP109A 32018/5 T044/T040 7604-M160-513	N	-	-	-	-
BF5 ZI B5207	MAIN STEAM ISOL. BY-PASS MOV 2MS-65A HV4218 32020/1	Y	10	A4J10	4½	FRN-4½
CF1 B5210	CEDA COOLING UNIT NO. 1 MF13A 32022/5	N	10		2½	FRN-2½
CF2 ZI B5208	ENCLOS BLDG FILTRATION HTR X61A 32022/41	Y	10		16/10	FRN-16/10
CF3 ZI B5209	CONT RM A/C AIR COOL CONDENSER NO. 1 MF36A 32023/55	Y	10		1	FRN-1
DF1 ZI B5211	CONTROL RM EXH FAN NO. 1 MF31A 32023/3	Y	10		16/10	FRN-16/10
EF1 ZI B5228	POST INCIDENT RECIRC FAN NO. 1 MF18A 32022/23	Y	10		2½	FRN-2½
EF2 ZI B5213	CONTROL RM FILTER FAN NO. 1 MF32A 32023/5	Y	10		2½	↓
EF3 ZI B5214	CONTROL RM A/C SYS UNIT NO. 1 MF21A 32023/1	Y	10		2½	↓
EF4 ZI B5215	ENCL BLDG FILTERATION FAN NO. 1 MF25A 32022/21	Y	10	↓	1	FRN-1

MP2 FUSE LIST

MCC B52

(30011/37, 38) AUX BLDG 36'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (SOURCE SIDE-MCC)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN/LITTELFUSE)
FF1 Z1 B5228A	POST INCIDENT RECIRC FAN NO. 1 MF18A 32022/91	Y	—	—	—	—
FF2 Z1 B5216	ELECTRIC DUCT HTR NO. 1 X60A 32023/52	Y	—	—	—	—
FF3 B5217	BATTERY RM EXH FAN NO. 1 MF 112A 32021/1	N	10	A4J10	6/10	FRN-6/10
FF4B Z1 B5218	CONT. RM A/C SYS AIR COMP CONT PNL NO. 1 MF22A X42A 32023/53	Y	—	—	—	—
AR1 Z1 B5234	FUEL HANDLING BUILDING H&V UNIT MF20 32021/6	Y	10	A4J10	1 6/10	FRN-1 6/10
AR2 B5212	CEDA COOLING UNIT NO. 3 MF13C 32022/7	N	10	↓	2 1/2	FRN-2 1/2
BR1 [illegible]237	REGULATING XFMR FDR (ALT SUPPLY) UAC-3 32061/3	N	—	—	—	—
BR3 Z1 B5238	UPS COMPUTER PWR SUPPLY LPC-1 LPC 32003/49A	Y	—	—	—	—
BR4 Z1 B5235	CHILLER X19A 32023/58	Y	10	A4J10	3	FRN-3
BR5A B5236	RADWASTE AREA VENT EXH RAD. MON. FAN MF157 RM8999 32021/26	N	—	—	—	—
CR3 B5221	LTG XFMR FDR UL81 30025	N	—	—	—	—
CR4 B5222	LTG XFMR FDR UL82 30025	N	—	—	—	—
CR5 B5223	LTG XFMR FDR UL86 30025	N	—	—	—	—
DR1A B5219	UNIT 2 STACK SAMPLE FAN NO. 1 (RM B132) MF41A 32022/16	N	—	—	—	—
DR2 Z1 B5225	DIESEL START AIR COMP NO. 1 MF10A 32041/28	Y	10	A4J10	6/10	FRN-6/10

MP2 FUSE LIST

MCC B52

(30011/37,38) AUX BLDG 36'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
DR3 B5226	MOTOR HTR DISTR PNL UH52 —	N	—	—	—	—
DR4 B5227	MOTOR HTR XFMR — —	N	—	—	—	—
FR1 B5239	COMPUTER RM A/C CONDENSER ROOF TOP EL 54'-6" (UNIT A) X-202 32021/33	N	—	—	—	—
DRIB Z1 B5220	CONTAINMENT SAMPLE FAN NO. 1 (RM 8128) MF 39A 32022/14	Y	—	—	—	—
ER1 B5229	INSTRUMENT AIR COMPRESSOR NO. 1 MF 3A 32017/1	N	—	—	—	—

MP2 FUSE LIST

MCC B61

(30011/39,40,41) AUX BLDG 14'-6" (F3)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD TRIPLEMAST)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN/FERRAZ)
AF4 ZZ B6102	CHARGING PUMP NO. 3 MP18C 32009/43	Y	10	A4J10	3.2 3.2	FRN-3.2 ↓
BF1 B6160	HYDROGEN MONIT. A&B EXH FAN (CB7) MF12S 32022/103	N	10		6/10	FRN-3.2
BF2 B6103	REACTOR COOL PUMP OIL LIFT PUMP NO. 2 MP51B 32007/12	N	10		6/10	
BF3 B6104	REACTOR COOL PUMP OIL LIFT PUMP NO. 4 MP51D 32007/14	N	10		6/10	↓
BF4 ZZ B6105	CHARGING PUMP NO. 2 MP18B 32009/42	Y	10 10		3 2/10 3 2/10	FRN-3 2/10 ↓
CF1 ZZ B6138	BORIC ACID PUMP NO. 1 MP19A 32009/4	Y	10		1	FRN-1
CF2 ZZ B6106	H.P.S.I. PUMP DISCH MOV SI654 32008/8	Y	10		4 1/2	FRN-4 1/2
CF3 ZZ B6107	H.P.S.I. PUMP DISCH CROSSOVER MOV SI653 32008/9	Y	10		4 1/2	
CF4 ZZ B6108	H.P.S.I PUMP SUCT CROSSOVER MOV SI412 32008/32	Y	10		4 1/2	↓
DF1 ZZ B6139	BORIC ACID PUMP NO. 2 MP19B 32009/5	Y	10		1	FRN-1
DF2 ZZ B6109	S.I. TK NO. 3 ISOL MOV SI634 32008/39	Y	10		4 1/2	FRN-4 1/2
DF3 ZZ B6110	TANK T39D ISOL VLV SI644 32008/40	Y	10		4 1/2	
DF4 ZZ B6111	L.P.S.I FLOW CONTROL MOV SI645 32008/24	Y	10		4 1/2	↓
EF1 B6131	SPENT FUEL POOL COOLING PUMP NO. 2 MP31B 32029/2	N	10		1	FRN-1
EF2 ZZ B6112	H.P.S.I. FLOW CONTROL MOV SI616 32008/13	Y	10	↓	4 1/2	FRN-4 1/2

MP2 FUSE LIST

MCC B61

(30011/39,40,41 Aux Bldg 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (Gould Shawmut)	SECONDARY FUSE	SECONDARY TYPE (Bussmann)
EF3 ZZ B6113	H.P.S.I. Flow Control MOV SI 836 32008/15	Y	10	A4J10	4½	FRN-4½
EF4 ZZ B6114	H.P.S.I Flow Control MOV SI 646 32008/16	Y	10		4½	
FF2 ZZ B6115	H.P.S.I Flow Control MOV SI 626 32008/14	Y	10		4½	
FF3 ZZ B6116	L.P.S.I. Flow Control MOV SI 635 32008/23	Y	10		4½	
FF4 ZZ B6117	Charging Pump Disch to Regen Hx MOV HV 2524 32009/38	Y	10		4½ / 4½	
GF2 ZZ B6118	Shutdown Heat x H.P.S.I. Suction MOV SI 662 32008/10	Y	10		4½	
GF3 ZZ B6119	Shutdown Cool Isol. MOV SI 652 32008/33	Y	10		4½	
GF4 B6120	Pressurizer Relief Isol. MOV RC 405 32007/20	N	10	↓	4½	↓
HF1 B6121	Regulating xfmr FDR UAC2 30024	N	—	—	—	—
HF2 B6122	Containment Elevator MH17 7604-A5	N	—	—	—	—
HF3 ZZ B6150	Service Water Strainer No. 3 MLIC 32013/37	Y	—	—	—	—
HF4 ZZ B6159	DC Swgr Room Cooling Fan No. 2 MF54B 32021/20	Y	10	A4J10	6/10	FRN-6/10
BR1 ZZ B6124	CTMT Spray Stop MOV HV 3022 32008/30	Y	10		4½	FRN 4½
BR2 ZZ B6125	Refuel Wtr Storage Tk MOV HV 3011 32008/28	Y	10		4½	↓
BR3 ZZ B6137	B.A. Tank No. 1 HTR #2 P142 (TBA) 32009/16	Y	10	↓	6/10	FRN-6/10

MP2 FUSE LIST

MCC B61

(30011/39,40,41) AUX BLDG 14'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD STANDARD)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSE PKG)
BR4 ZZ B6141	B.A. TANK 2 HTR NO. 2 P144 (TB8) 32009/18	Y	10	A4J10	6/10	FRN-6/10
BR5 B6168	AUX TD SGFW PUMP RM SUMP PUMP NO. 2 MP72B 32033/9	N	10	↓	6/10	↓
CR2 ZZ B6127	CTMT SUMP RECIRC MOV HV3009 32008/26	Y	10	↓	4½	FRN-4½
CR3 B6128	LTG XFMR FDR UL90 30025	N	—	—	—	—
CR4 B6129	LTG XFMR FDR UL94 30025	N	—	—	—	—
CR5 B6130	LTG XFMR FDR UL95 30025	N	—	—	—	—
DR1 B6169	AUX MD SGFW PUMP RM SUMP PUMP MP125 32033/13	N	10	A4J10	6/10	FRN-6/10
DR2 ZZ B6162	VITAL SWGR RM. COOLING FAN MF133 32023/70	Y	10	↓	6/10	↓
DR3 B6132	SPACE HTR DISTR PNL LH61 —	N	—	—	—	—
DR4 B6133	SPACE HTR XFMR — —	N	—	—	—	—
ER1 B6134	DIESEL OIL XFER PUMP NO. 2 MP47B 32018/2	N	10	A4J10	6/10	FRN-6/10
ER2 B6158	REC B.A. STORAGE TK HTR PT81B 32025/54	N	10	↓	6/10	↓
ER3 ZZ B6136	SERVICE WTR STRAINER NO. 2 ML1B 32013/39	Y	10	↓	6/10	↓
ER4A B6161	LETDOWN FILTER REMOVAL HOIST NHL302 37005/44	N	—	—	—	—
FR1 B6140	B.A. BY-PASS DISCH MOV UHT2 —	Y	—	—	—	—

MP2 FUSE LIST

MCC B61

(30011/39,40,41) Aux Bldg 141'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FERRAZ)
FR2 ZZ B6145A	ENG SAFEGUARD RM AIR RECIRC UNIT MF15B 32022/90	Y	—	—	—	—
FR3 ZZ B6142	B.A. BY-PASS DISCH MOV CH514 32009/10	Y	10	A4J10	4½	FRN-4½
GR1 B6167	COMPUTER RM A/C COND. ROOF TOP EL 54'-6" UNIT B X203 32021/32	N	—	—	—	—
GR3 ZZ B6144	R.B.C.C.W. HDR B CTMT SUPPLY HV6095 32015/21	Y	10	A4J10	4½	FRN-4½
GR4 ZZ B6145	ENG SAFEGUARD RM AIR RECIRC UNIT MF15B 32022/18	Y	10	↓	2½	FRN-2½
HR1 ZZ B6154	VITAL SWGR COOLING FAN MF52 32023/43	Y	10	↓	2½	↓
HR2 ZZ B6147	DIESEL GEN RM VENT SYS FAN MF38B 32023/8	Y	10	↓	1	FRN-1
HR3 ZZ B6146	R.B.C.C.W. HDR B CTMT RET HV6106 32015/25	Y	10	↓	4½	FRN-4½
HR4 ZZ B6153	CTMT PURGE H&V UNIT SUPPLY FAN MF23 32022/10	Y	10	↓	2½	FRN-2½
ER4B B6166	L63 FDR BKR UL63 35038/66	N	—	—	—	—

MP2 FUSE LIST

MCC B62

(30011/42,43) AUX BLDG 36'-6" (F3)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
AF1 ZZ B6238	CHILLED WATER PUMP MP122B 32023/45	Y	10	A4J10	6/10	FRN-6/10
AF2 B6201	TURB BRG OIL LIFT PUMP UNIT 4 BRG 6 MP80B 32006/29	N	10	↓	6/10	↓
AF3 ZZ B6202	AUX F.W. TURB STOP VLV HV4189 32020/7	Y	10	↓	4½	FRN-4½
AF4 ZZ B6203	AUX F.W. TURB DISCH VLV HV5275 32012/13	Y	10	↓	4½	↓
BF2 B6205	TURB BRG OIL LIFT PUMP UNIT 1 – BRG NO. 3 MP 80E 32006/31	N	10	↓	6/10	FRN-6/10
BF3 B6206	AUX BLDG ELEVATOR MH1B 7604-A5	N	—	—	—	—
BF4 ZZ B6239	DIESEL ENGINE AUX LUBE OIL PUMP MP109B 32018/6 TO 45/TO41 7604-M160-513	Y	—	—	—	—
CF1 ZZ B6208	MAIN STREAM ISOL BY-PASS MOV HV4222 32020/2	Y	10	A4J10	4½	FRN-6/10
CF2 B6209	TURB TURNING GEAR ML40 32006/11	N	10	↓	2½	FRN-2½
DF2 ZZ B6241	CHILLER X16AB 32023/54	Y	10	↓	3	FRN-3
DF3 B6210	MTR HTR DISTR PNL LH62 –	N	—	—	—	—
DF4 B6211	LTG XFMR FDR UL33 30025	N	—	—	—	—
DF5 B6212	TURB TURNING GEAR OIL PUMP MP62 32006/12	N	10	A4J10	2½	FRN-2½
EF1A ZZ B6214	POST INCIDENT RECIRC FAN NO. 2 MF18B 32022/24	Y	10	↓	2½	FRN-2½
EF1B ZZ B6214A	POST INCIDENT RECIRC FAN NO. 2 MF18B 32022/92	Y	—	—	—	—

MP2 FUSE LIST

MCC B62 (30011/42,43) AUX BLDG 36'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (BUSSMAN FUSETRON)
EF2 ZZ B6245	COMPUTER UPS — 32003/49A —	Y	—	—	—	—
FF1 ZZ B6216	ENCL BLDG FILTRATION HTR HX61B 32022/42	Y	10	A4J10	16/10	FRN-16/10
FF2A ZZ B6219	CTMT SAMPLE FAN NO.2 MF39B 32022/15	Y	—	—	—	—
FF2B B6242	FEEDER UAC-4 32061/4	N	—	—	—	—
BR2 B6223	BATTERY RM EXH FAN NO. 2 MF112B 32021/2	N	10	A4J10	6/10	FRN-6/10
CR1 B6215	TURB BRG OIL LIFT PUMP UNIT 4 -BRG NO.7 MP80C 32006/29A	N	10	↓	6/10	↓
CR2 ZZ B6224	CONTROL RM FILTER FAN NO. 2 MF32B 32023/6	Y	10	↓	2½	FRN 2½
CR3 B6225	LTG XFMR FDR UL91 30025	N	—	—	—	—
CR4 B6226	LTG XFMR FDR UL92 30025	N	—	—	—	—
CR5 B6227	LTG XFMR FDR UL96 30025	N	—	—	—	—
DR1 B6235	CEDA COOLING UNIT NO. 2 MF13B 32022/6	N	10	A4J10	2½	FRN-2½
DR2 ZZ B6228	CONTROL RM EXH FAN NO. 2 MF31B 32023/4	Y	10	↓	16/10	FRN-16/10
DR3 B6229	MTR HTR XFMR - -	N	—	—	—	—
ER1 ZZ B6230	ENCL BLDG FILTRATION FAN NO. 2 MF25B 32022/22	Y	10	A4J10	1	FRN-1
FR1 ZZ B6232	CONT RM A/C AIR COOL COILS NO. 2 MF36B 32023/56	Y	10	↓	1	↓

MP2 FUSE LIST

MCC B62
(30011/42,43)

Aux Bldg 36'-6"

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (COOLED SYSTEM OF)	SECONDARY FUSE	SECONDARY TYPE (BUSHING FURNISH)
FR2 ZZ B6233	ELECT DUCT HTR NO. 2 X60B 32023/52	Y	—	—	—	—
FR3 ZZ B6243	SWGR RM VENT. FAN MF142 32023/80	Y	10	A4J10	2½	FRN-2½
FR4 B6244	COMPUTER RM A/C UNIT B X201 32021/31	N	—	—	—	—
GR1 ZZ B6234	CONTROL RM A/C SYS UNIT NO. 2 MF21B 32023/2	Y	10	A4J10	2½	FRN-2½
GR3 ZZ B6236	DIESEL STARTING AIR COMP NO. 2 MF10B 32041/30	Y	10	↓	6/10	FRN-6/10
GR4 B6237	INSTR AIR COMP NO. 2 MF3B 32017/2	N	—	—	—	—
ER2B ZZ B6231	CONT RM A/C AIR COMP. CONT PNL NO. 2 X42B 32023/54	Y	—	—	—	—

MP2 FUSE LIST

MCC 1A1
(25213-30001)

WAREHOUSE NO. 5 4'-6" (CPF)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (Cutler-Hammer)	SECONDARY FUSE	SECONDARY TYPE (Cutler-Hammer)
2D	CAUSTIC REGEN. PUMP 2CND-P2A 32810/5	N	2	A6Y2	3	A6Y3
2F	RECOVERED CAUSTIC PUMP 2CND-P4A 32810/7	N	2	↓	3	↓
2H	SLUICING WTR PUMP 2CND-P5A 32810/8	N	2	↓	3	↓
2K	NEUTRALIZATION SUMP PUMP 2CND-P6A 32810/1	N	2	↓	3	↓
2M	NEUTRALIZATION SUMP PUMP 2CND-P6C 32810/2	N	2	↓	3	↓
3B	SPARE SIZE 1	N	—	—	—	—
3F	LIME SLURRY PUMP 2CND-P9A	N	2	A6Y2	3	A6Y3
3H	CAUSTIC NEUT. FEED PUMP 2CND-P10 32810/3	N	2	↓	3	↓
3K	ACID FEED PUMP 2CND-P11A 32810/12	N	2	↓	3	↓
3M	CAUSTIC FEED PUMP 2CND-P12A 32810/13	N	2	↓	3	↓
4B	SPARE SIZE 2	N	—	—	—	—
4F	REGEN. EVAP. BOT. PUMP 2LWC-P3 32507/3	N	2	A6Y2	3	A6Y3
5B	SPARE SIZE 1	N	—	—	—	—
5H	WATER RECOVERY SUMP PUMP 2CND-P7A 32810/11	N	2	A6Y2	3	A6Y3
5K	SPARE SIZE 2	N	—	—	—	—

MP2 FUSE LIST

MCC 1A1 (25213-30001)

WAREHOUSE NO.5 4'-6" (CPF)

LOCATION SCHEME	SERVICE SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE GOULD SHAWMUT	SECONDARY FUSE	SECONDARY TYPE GOULD SHAWMUT
5M	UREA FORALDEHYDE UNLOADING PUMP 2WSC-P7 32501/2	N	2	A6Y2	3	A6Y3
6B	SPARE SIZE 2	N	—	—	—	—
6D	MECH EQPT RM SUPPLY FAN 2HVY-FN2 32342/2	N	2	A6Y2	3	A6Y3
6K	CNDS POL. FACILITY AIR HANDLING UNIT 2HVY-HVU1 32342/1	N	3	A6Y3	5	A6Y5
6M	AUX CNDS PUMP 2CNA-P1A 32088/1	N	2	A6Y2	3	A6Y3
7B	SPENT RESIN FOWARD PUMP 2WSC-P2	N	2	↓	3	↓
7F	REGEN. BOT. HLDG TK IMRS. HTR. 2WSC-E1A 32501/4	N	2	↓	3	↓
7H	ACID REGENERANT FEED PUMP 2CND-P1A 32810/4	N	2	↓	3	↓
7M	RECYCLE PUMP 2CND-P3 32810/6	N	3	A6Y3	5	A6Y5
8F	SPARE SIZE 1	N	—	—	—	—
8M	CNDS DMNRLZR CMPNT CLG PUMP 2CCD-P1 32202/1	N	4	A6Y4	7	A6Y7

MP2 FUSE LIST

MCC 1B1
(25213-30001)

WAREHOUSE No. 5 4'-6" (CPF)

LOCATION SCHEME	SERVICE SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE (GOULD SHAWMUT)	SECONDARY FUSE	SECONDARY TYPE (GOULD SHAWMUT)
2D	CAUSTIC REGEN FEED PUMP 2CND-P2B 32810/5	N	2	A6Y2	3	A6Y3
2F	RECOVERED CAUSTIC PUMP 2CND-P4B 32810/7	N	2		3	
2H	SLUICING WATER PUMP 2CND-P5B 32810/8	N	2		3	
2K	NEUTRALIZATION SUMP PUMP 2CND-P6B 32810/2	N	2		3	
2M	NEUTRALIZATION SUMP PUMP 2CND-P6D 32810/3	N	2		3	
3B	SPARE SIZE 1	N	—	—	—	—
3F	LIME SLURRY PUMP 2CND-P96 32810/9	N	2	A6Y2	3	A6Y3
3H	ACID NEUT FEED PUMP 2CND-P8 32810/3	N	2		3	
3K	ACID FEED PUMP 2CND-P11B 32810/12	N	2		3	
3M	CAUSTIC FEED PUMP 2CND-P12B 32810/13	N	2		3	
4B	RADIATION MONIT PUMP 2LWC-P11 32507/1	N	2		3	
4F	REGEN. EVAP. FEED PUMP 2LWC-P1 32507/1	N	2		3	
4H	REGEN SUMP PUMP 2LWC-P10B 32507/5	N	2		3	
4K	REGEN. BOTTOMS COOLANT PUMP 2LWC-P4 32507/4	N	2		3	
4M	REGEN. DSTLT PUMP 2LWC-P5 32507/4	N	2		3	

MCC 1B1
(25213-30001)

MP2 FUSE LIST

WAREHOUSE NO.5 4'-6" (CPF)

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
5B	CATALYST TANK MIXER 2WSC-MIX 5	N				
5H	WATER RECOVERY SUMP PUMP 2CND-P7B 32870/11	N	2	A6Y2	3	A6Y3
5K	SPENT RESIN XFER PUMP 2WSC-P6 32501/1	N	2	↓	3	↓
5M	REGEN. BOT HLDG TK PUMP 2WSC-P8 32501/3	N	2	↓	3	↓
6B	SPARE SIZE 2	N	—	—	—	—
6D	MECH. EQPT RM EXH. FAN 2HVY-FN3 32342/2	N	2	A6Y2	3	A6Y3
6K	COND. POL. FAC. EXH FAN 2HVY-FN1 32342/1	N	2	↓	3	↓
6M	AUX CNDS PUMP 2CNA-P1B 32088/1	N	2	↓	3	↓
7B	SPARE SIZE 1	N	—	—	—	—
7D	SPARE SIZE 1	N	—	—	—	—
7F	REGEN. BOT. HLDG TK IMRS HTR 2WSC-E11B 32501/4	N	2	A6Y2	3	A6Y3
7H	SPARE SIZE 1	N	—	—	—	—
7M	CAUSTIC WTR HTR 2CND-TK7 32810/10	N	3	A6Y3	5	A6Y5
8B	SPARE SIZE 1	N	—	—	—	—
8D	UREA FORMALDEHYDE 2HVY-FN4 32342/3	N	2	A6Y2	3	A6Y3

LOCATION / SCHEME	SERVICE / SCHEMATIC DWG NO.	QA Y/N	PRIMARY FUSE	PRIMARY TYPE	SECONDARY FUSE	SECONDARY TYPE
8H	ACID REGENERANT FEED PUMP 2CND-P1B 32810/4	N	2	AGY2	3	AGY3
8M	ROTARY AIR BLOWER 2CND-FN1 32810/6	N	4	AGY4	7	AGY7
9C	SPARE SIZE 1	N	—	—	—	—
9F	SPARE SIZE 1	N	—	—	—	—
9H	SPARE SIZE 1	N	—	—	—	—

Millstone Unit 3 Locations of Fuse Types Where Cracked Ferrules Separated During Testing

Fuse Location (Panel)	Fuse Manufacturer	Model	Amps	System
None of the fuses noted in Section (ii)(a) whose ferrules had separated, are known to be installed on Millstone Unit 3.	N/A	N/A	N/A	N/A