

TECHNICAL REQUIREMENT 4.1 (continued)TABLE 4.1.1b (continued)UNIT 2CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICES

<u>DEVICE NUMBER AND LOCATION</u>	<u>SYSTEM POWERED</u>	
**2.2	Device Location - 480V Switchgear 2EB4	Containment Polar Crane
a.	Primary Breaker - 2SCCP1	
b.	Backup Breaker 2EB4-1 and BT-2EB24	
	1) Long Time Delay Relay	
	<u>51</u> 2SCCP1	
	2) Time Delay and Instantaneous Relays*	
	<u>62</u> (2EB4-1 and <u>62X</u> (2SCCP1) 2SCCP1 BT-2EB24) 2SCCP1	
3.	480VAC from Motor Control Centers	
3.1	Device Location - MCC 2EB1-2 Compartment Numbers listed below.	
	Primary and Backup Breakers - Both primary and backup breakers have identical trip ratings and are in the same MCC Compt. These breakers are General Electric type THED with thermal- magnetic trip elements.	
* Associated circuit breaker(s) shown in parentheses; e.g., 2EB4-1 and BT-2EB24 are backup breakers for 2SCCP1.		
** These devices are being replaced by devices listed in Section 4.3 of Table 4.1.1b per Design Modification DM-93-056. The individual devices are no longer containment penetration conductor overcurrent protective devices once the conductor is de-terminated from its power source outside the containment. At that time, the devices associated with that conductor are no longer required to be OPERABLE.		

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1b (continued)

UNIT 2

CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER  
AND LOCATION

3. 480VAC from Motor Control Centers (continued)

MCC 2EB1-2  
COMPT. NO.

G.E.  
BKR. TYPE

SYSTEM POWERED

4G	THED	Motor Operated Valve 2-TV-4691
4M	THED	Motor Operated Valve 2-TV-4693
3F	THED	Containment Drain Tank Pump-03
9H	THED	Reactor Cavity Sump Pump-01
9M	THED	Reactor Cavity Sump Pump-02
7H	THED	Containment Sump #1 Pump-01
7M	THED	Containment Sump #1 Pump-02
6H	THED	RCP #21 Motor Space Heater-01
6M	THED	RCP #23 Motor Space Heater-03
8B	THED	Incore Detector Drive "A"
8D	THED	Incore Detector Drive "B"
7B	THED	Incore Detector Drive "F"
3B	THED	Stud Tensioner Hoist Outlet-01
7D	THED	Hydraulic Deck Lift-01
4B	THED	Reactor Coolant Pump Motor
		Hoist Receptacle-42
8H	THED	RC Pipe Penetration Cooling
		Unit-01
8M	THED	RC Pipe Penetration Cooling
		Unit-02
5H	THED	RCP #21 Oil Lift Pump-01
5M	THED	RCP #23 Oil Lift Pump-03
10B	THED	Preaccess Filter Train Package
		Receptacle-17
*5B	THED	Containment Ltg. XFMR-14
		(PNL 2LPC3)
10F	THED	S.G. Wet Layup Circ. Pump 01
		(CP2-CFAPRP-01)
12M	THED	S.G. Wet Layup Circ. Pump 03
		(CP2-CFAPRP-03)
12H	THED	Containment Ltg. XFMR-28
		(PNL 2C11 & 2C12)
12B	THED	Personnel Air Lock Hydraulic
		Unit #2

\* These devices are being replaced by devices listed in Section 4.3 of Table 4.1.1b per Design Modification DM-93-056. The individual devices are no longer containment penetration conductor overcurrent protective devices once the conductor is de-terminated from its power source outside the containment. At that time, the devices associated with that conductor are no longer required to be OPERABLE.

TECHNICAL REQUIREMENT 4.1 (continued)TABLE 4.1.1b (continued)UNIT 2CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICESDEVICE NUMBER  
AND LOCATION

## 3. 480VAC from Motor Control Centers (continued)

MCC 2EB1-2  
COMPT. NO.G.E.  
BKR. TYPESYSTEM POWERED

*6D	THED	Refueling Machine (Manipulator Crane-01)
2M	THED	RC Drain Tank Pump No. 1
2F	THED	Containment Ltg. XFMR-16 (PNL 2C7 & 2C9)
1M	THED	Containment Ltg. XFMR-12 (PNL 2LPC1 & 2LPC5)
3M	THED	Preaccess Fan No. 11
*5D	THED	Fuel Transfer System Reactor Side Cont. Pnl. for TCX-FHSTTS-01

3.2 Device Location - MCC 2EB2-2 Compartment Numbers listed below.

Primary and Backup Breakers - Both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK\* with thermal-magnetic trip elements.

MCC 2EB2-2  
COMPT. NO.G.E.  
BKR. TYPESYSTEM POWERED

4G	THED	Motor Operated Valve 2-TV-4692
4M	THED	Motor Operated Valve 2-TV-4694
3F	THED	Containment Drain Tank Pump-04
7H	THED	Containment Sump No. 2 Pump-03
7M	THED	Containment Sump No. 2 Pump-04
6H	THED	RCP #22 Motor Space Heater-02
6M	THED	RCP #24 Motor Space Heater-04
5B	THED	Incore Detector Drive "C"
2B	THED	Incore Detector Drive "D"
7B	THED	Incore Detector Drive "E"
5D	THED	Containment Fuel Storage Crane-01
3B	THED	Stud Tensioner Hoist Outlet-02

\* These devices are being replaced by devices listed in Section 4.3 of Table 4.1.1b per Design Modification DM-93-056. The individual devices are no longer containment penetration conductor overcurrent protective devices; once the conductor is de-terminated from its power source outside the containment. At that time, the devices associated with that conductor are no longer required to be OPERABLE.

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1b (continued)

UNIT 2

CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER  
AND LOCATION

3. 480VAC from Motor Control Centers (continued)

<u>MCC 2EB2-2 COMPT. NO.</u>	<u>G.E. BKR. TYPE</u>	<u>SYSTEM POWERED</u>	
10B	THED	RCC Change Fixture Hoist Drive-01	8
10F	THED	Refueling Cavity Skimmer Pump-01	8
12B	THED	Power Receptacles (Cont. E1. 841')	8
1M	THED	S.G. Wet Layup Circ. Pump 02 (CP2-CFAPRP-02)	8
12M	THED	S.G. Wet Layup Circ. Pump 04 (CP2-CFAPRP-04)	8
8H	THED	RC Pipe Penetration Fan-03	8
8M	THED	RC Pipe Penetration Fan-04	8
5H	THED	RCP #22 Oil Lift Pump-02	8
5M	THED	RCP #24 Oil Lift Pump-04	8
12H	THED	Preaccess Filter Train Package Receptacles - 18	8
6D	THED	Containment Auxiliary Upper Crane-01	8
2F	THED	Containment Ltg. XFMR-13 (PNL 2LPC2)	8
*7D	THED	Containment Elevator-01	16
2D	THED	Containment Access Rotating Platform-01	8
2M	THED	Reactor Coolant Drain Tank Pump-02	8
9F	THED	Containment Ltg. XFMR-17 (PNL 2C8 & 2C10)	8
9M	THED	Containment Ltg. XFMR-15 (PNL 2LPC4 & 2LPC6)	8
3M	THED	Preaccess Fan-12	8
*1C	THFK	Containment Welding Receptacles	10 16

- \* These devices are being replaced by devices listed in Section 4.3 of Table 4.1.1b per Design Modification DM-93-056. The individual devices are no longer containment penetration conductor overcurrent protective devices once the conductor is de-terminated. At that time, the devices associated with that conductor are no longer required to be OPERABLE.

TECHNICAL REQUIREMENTS (continued)

8

TABLE 4.1.1b (continued)

8

UNIT 2

8

CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICES

8

8

DEVICE NUMBER  
AND LOCATION

## 3. 480VAC from Motor Control Centers (continued)

8

3.3 Device Location -MCC 2EB3-2 Compartment numbers  
listed below.

12

8

Primary and Backup -Unless noted otherwise, both  
primary and backup breakers have  
identical trip ratings and are  
located in the same MCC compt.  
These breakers are General Electric  
type THED or THFK with thermal-  
magnetic trip elements.

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8

8

MCC 2EB3-2  
COMPT. NO.G.E.  
BKR. TYPESYSTEM POWERED

8

8

8RF

THED

Altern. Feed to Motor  
Operated Valve 2-8702A

8

8

1G

THED

Motor Operated Valve 2-8112

8

9G

THED

Motor Operated Valve 2-8701A

8

9M

THED

Motor Operated Valve 2-8701B

8

5M

THED

Motor Operated Valve 2-8000A

8

5G

THED

Motor Operated Valve 2-HV-6074

8

4G

THED

Motor Operated Valve 2-HV-6076

8

4M

THED\*

Motor Operated Valve 2-HV-6078

8

2G

THED

Motor Operated Valve 2-HV-4696

8

2M

THED

Motor Operated Valve 2-HV-4701

8

3G

THED

Motor Operated Valve 2-HV-5541

8

3M

THED

Motor Operated Valve 2-HV-5543

8

1M

THED

Motor Operated Valve 2-HV-6083

8

6F

THED

Motor Operated Valve 2-8808A

12

6M

THED

Motor Operated Valve 2-8808C

12

7M

THED

Containment Ltg. XFMR-18  
(PNL 2SC1 & 2SC3)

8

8

8M

THED

Neutron Detector Well Fan-09

8

7F

THFK

Electric H<sub>2</sub> Recombiner Power  
Supply PNL-01

8

8

8RM

THED

Motor Operated Valve 2-HV-4075C

8

15

15

\* Primary protection is provided by Gould Tronic TR5 fusible switch  
with 3.2A fuse.

8





TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR | 8  
OVERCURRENT PROTECTIVE DEVICES | 8

4. 480VAC From Panelboards (continued)

\*4.3 480 VAC From Plant Support Power Systems Panelboards | 16

Both primary and backup breakers have identical trip settings, and are located in the same panelboard. These breakers are Square D type FH, KH, and LH. | 16

a) Panelboard 2B10-1-2 | 16

<u>Device Location</u>	<u>Breaker Type</u>	<u>System Powered</u>
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 | 16

Ckt 2	FH	Containment Elevator CP2-MEELRB-01
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 | 16

Ckt 4	KH	Containment Welding Receptacles
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 | 16

Ckt 6	LH	Containment Polar Crane CP2-MESCCP-01
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 | 16

b) Panelboard 2B10-1-1-1 | 16

<u>Device Location</u>	<u>Breaker Type</u>	<u>System Powered</u>
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 | 16

Ckt 6	FH	Fuel Transfer System Rx Side Cont. Pnl for TCX-FHSTTS-02
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 | 16

Ckt 10	FH	Containment Lighting Xfmr CP2-ELTRNT-14
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 | 16

Ckt 8	FH	Manipulator Crane 1-01 TCX-FHSCMC-01
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 | 16

5. 120V Space Heater Circuits | 8  
from 480V Switchgears | 8  
Containment | 8  
Recirc. Fan | 8  
and CRDM | 8  
Vent Fan Motor | 8  
Space Heaters | 8

\* These devices will become containment penetration conductor overcurrent protective devices as part of Design Modification (DM-93-056). As such, these devices are required to be OPERABLE when the conductors associated with these devices are terminated on the respective panel boards. | 16

TECHNICAL REQUIREMENT 4.1 (continued)TABLE 4.1.1b (continued)UNIT 2CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICES

## 5. 120V Space Heater Circuits from 480V Switchgears (continued)

a. Primary Devices - N/A (Fuse)

b. Backup Breakers

BKR. LOCATION  
& NUMBERWESTINGHOUSE  
BKR. TYPESwgr. 2EB1,  
Cubicle 3A,  
CP2-VAFNAV-01  
Space Heater Bkr.

EB1010

Swgr. 2EB2,  
Cubicle 3A,  
CP2-VAFNAV-02  
Space Heater Bkr.

EB1010

Swgr. 2EB3,  
Cubicle 9A,  
CP2-VAFNAV-03  
Space Heater Bkr.

EB1010

Swgr. 2EB4,  
Cubicle 9A,  
CP2-VAFNAV-04  
Space Heater Bkr.

EB1010

Swgr. 2EB3,  
Cubicle 8A,  
CP2-VAFNCB-01  
Space Heater Bkr.

EB1010

Swgr. 2EB4,  
Cubicle 8A,  
CP2-VAFNCB-02  
Space Heater Bkr.

EB1010



TECHNICAL REQUIREMENT 4.1 (continued)TABLE 4.1.1b (continued)UNIT 2CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICES

<u>DEVICE NUMBER AND LOCATION</u>	<u>SYSTEM POWERED</u>	
6. 125V DC Control Power	Various	
a. Primary Devices - N/A (Fuse)		
b. Backup Breakers		
<u>PANELBOARD NO.</u>	<u>CKT. NO.</u>	<u>GENERAL ELECTRIC BREAKER TYPE</u>
XED1-1	6*	TED
XED2-1	6*	TED
2ED2-1	11,17,16	TED
2ED1-1	11,14	TED
2D2-3	6,10,11	TED
2D2-2	9	TED
2ED2-2	12	TED
2ED3-1	5	TED
2ED1-2	7,8	TED
TBX-WPXILP-01	Main (LBK3)*	FR Westinghouse)
7. 120V AC Control Power from Isolation XFMR TXEC3 & TXEC4		
a. Primary Devices - N/A (Fuse)		
b. Backup Breakers - Square D Type QOB located in Miscellaneous Signal Control Cabinet.		
1) Panel Board A, Ckt. Bkr. connected at TB3-5		
2) Panel Board B, Ckt. Bkr. connected at TB5-1		
8. 120V AC Power for Personnel and Emergency Airlocks		
a. Primary Devices - N/A (Fuse)		
b. Backup Breakers		
<u>PANELBOARD NO.</u>	<u>CKT. NO.</u>	<u>GENERAL ELECTRIC BREAKER TYPE</u>
XEC1	12	TED
XEC2-2	3	TED
*These circuits provide backup protection to both Units 1 and 2. Testing of these breakers is controlled by Unit 1 surveillance program.		

TECHNICAL REQUIREMENT 4.1 (continued)TABLE 4.1.1b (continued)UNIT 2CONTAINMENT PENETRATION CONDUCTOR  
OVERCURRENT PROTECTIVE DEVICESDEVICE NUMBER  
AND LOCATION

## 9. 118V AC Control Power

a. Primary Devices - N/A (Fuse)

b. Backup Breakers

<u>PANELBOARD NO.</u>	<u>CKT. NO.</u>	<u>GENERAL ELECTRIC BREAKER TYPE</u>
2C2	22	TED
2PC1	10,13	TED
2PC4	6,10	TED
2EC1	7	TED
2EC2	4,7	TED
2EC5	8	TED
2EC6	3,8	TED

## 10. Emergency Evacuation System Warning Lights Power

a. Primary Devices - N/A (Fuse)

b. Backup Breakers

<u>PANELBOARD NO.</u>	<u>CKT. NO.</u>	<u>SQUARE D BREAKER TYPE</u>
XEC4-3	9,10	FY

## 11. DRPI Data Cabinet Power Supplies

a. Primary Breakers

<u>PANELBOARD NO.</u>	<u>CKT. NO.</u>	<u>SQUARE D BREAKER TYPE</u>
2C14	1,2	FA

b. Backup Breakers

<u>PANELBOARD NO.</u>	<u>CKT. NO.</u>	<u>SQUARE D BREAKER TYPE</u>
2C14	Main Pnl. Bkrs.	FA

## ELECTRICAL EQUIPMENT PROTECTIVE DEVICES (continued)

### BASES

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#### 4.1 CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

The bases for OPERABILITY and surveillance of these devices are contained in the CPSES Technical Specifications.

All Class 1E motor-operated valves' motor starters are provided with thermal overload protection which is permanently bypassed and provides an alarm function only at Comanche Peak Steam Electric Station. Therefore, there are no OPERABILITY or Surveillance Requirements for these devices, since they will not prevent safety-related valves from performing their function (refer to Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977).

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