

INDIANA & MICHIGAN ELECTRIC COMPANY

DONALD C. COOK NUCLEAR PLANT

PROCEDURE COVER SHEET

Procedure No. ****1 THP 6030 IMP.305**

Revision No. **0**

TITLE APPENDIX R POST-FIRE REPOWERING OF
IN-CONTAINMENT VALVES

SCOPE OF REVISION

**UNCONTROLLED
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PLANT NUCLEAR SAFETY COMMITTEE	<i>Me #1911</i>	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> 8606130117 860606 PDR ADDOCK 05000315 F PDR </div>		
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INDIANA & MICHIGAN ELECTRIC COMPANY
DONALD C. COOK NUCLEAR PLANT

APPENDIX R POST FIRE REPOWERING OF
IN-CONTAINMENT VALVES, U-1

1.0 OBJECTIVE

- 1.1 Provision of a repair procedure for inside containment motor-operated valves requiring post-fire operation in the event of a loss of control from the Unit 1 Control Room. This procedure allows the alternative operation of these valves from outside of the containment and eliminates the need for plant personnel to enter the containment to manually operate these valves.

1.2 DISCUSSION

Sequence of events for repair and operation of a containment valve.

- 1.2.1 Maintenance will disconnect the power source from the motor control center (MCC) containing the motor starter for the valve to be repaired. An alternate power feed from a previously de-energized circuit, will be connected to the MCC by maintenance.
- 1.2.2 C&I will disconnect the external wiring from the applicable motor starter, and will connect a temporary valve control and indicating panel to the motor starter circuit.
- 1.2.3 Operations will then turn on the alternate power source, and operate the valve.
- 1.2.4 Operations turns off alternate power to the MCC.
- 1.2.5 C&I disconnects the temporary control and indicating panel from the motor starter circuit.

Step 1.2.2 will be repeated for the motor starter in the same MCC, for the next valve to be operated, followed by steps 1.2.3, 1.2.4 and 1.2.5, until all valves powered from the MCC have been operated.

- 1.2.6 Motor Control Centers may be de-energized and motor starters modified in any convenient order. One, or any number, of motor starters in an MCC may be modified as deemed necessary.

- 1.2.7 This post-fire repair procedure is intended to provide the plant operators with an alternative method of aligning the following inside-containment motor-operated valves from their associated motor control centers located in the engineered safety system and MCC Room at elevation 609 Ft. in the Auxiliary Building:

<u>Valve No.</u>	<u>Containment Valve Description</u>	<u>MCC</u>
IMO-110	Accumulator Isolation Valve	1-EZC-C
IMO-120	Accumulator Isolation Valve	1-EZC-B
IMO-130	Accumulator Isolation Valve	1-EZC-D
IMO-140	Accumulator Isolation Valve	1-EZC-A
IMO-128	RHR Inlet Isolation Valve	1-EZC-B
ICM-129	RHR Inlet Isolation Valve	1-EZC-C
NMO-151	Pressurizer PORV Block Valve	1-EZC-A
NMO-152	Pressurizer PORV Block Valve	1-EZC-B
NMO-153	Pressurizer PORV Block Valve	1-EZC-D
ICM-111	RHR Outlet Isolation Valve	1-EZC-C

- 1.2.8 This procedure is referenced in and should be used to supplement 12 OHP 4023.100.001, "Unit #1 Emergency Remote Shutdown" procedure.

1.3 ASSUMPTIONS

- 1.3.1 A loss of total plant off-site power for 72 hours.
- 1.3.2 A fire in any one of the following plant areas:
- (a) Control Room, or
 - (b) Control Room Cable Vault, or
 - (c) Auxiliary Cable Vault, or
 - (d) Switchgear Room Cable Vault

NOTE: As indicated in the "Objective" section of this procedure, the primary concern is loss of control from the Control Room. However, it is not the intent of this procedure to limit Control Room use. This procedure may be used for any fire which occurs outside of the fire areas containing the valves, motor control centers, electrical penetrations and valve cables (routed from a motor control center to a valve) as specified by this procedure.

2.0 REFERENCES

- 2.1 10 CFR 50, Appendix R, Section III L.
- 2.2 PMI-2270, Fire Protection.
- 2.3 PMI-2140, Temporary Modifications.
- 2.4 AEPSC Plant Drawings 1-97331, 1-97332, 1-1316, 1-1315.
- 2.5 **12 OHP 4023.100.001, Unit #1 Emergency Remote Shutdown.
- 2.6 **1 MHP 2140.082.005, Maintenance Procedure for Repowering Containment Valves.

3.0 PRECAUTIONS

- 3.1 When routing temporary cables, do not obstruct walkways. Cables shall be routed off to the side or overhead when possible.
- 3.2 Though the circuits being worked on are de-energized, other circuits in close proximity may have voltages present; observe all electrical safety precautions while working on or near energized equipment.
- 3.3 Ensure that all connections are clean and tight.
- 3.4 It is assumed that the equipment required by this procedure is available. Additionally, use of equipment required from the opposite (unaffected) unit should not impair safe continued operation or shutdown of that unit.

4.0 PREREQUISITES

- 4.1 This procedure is to interface with Maintenance Department procedure **1 MHP 2140.082.005, "Maintenance Procedure for Repowering Containment Valves", which is the controlling procedure for containment valve repair.
- 4.2 Striped-tag clearances must be transferred to C&I from Maintenance Department prior to working on valve motor controls or associated circuitry.
 - 4.2.1 When the temporary valve control panel has been connected, Operations is to be informed that power may be turned on and the valve may be operated.

- 4.3 Verify that all terminals are de-energized prior to lifting or landing wires.

5.0 CONTAINMENT VALVE REPAIR PROCEDURE

- 5.1 Coordinate with Maintenance Department to determine which MCC has been de-energized and which motor starters will be modified.

5.1.1 Motor Starters may be modified in any order required, providing the MCC feeding the starters has been de-energized.

5.1.2 Any number, or all, valve motor starters in an MCC may be modified as deemed necessary.

5.1.3 Verification of lifted wire signatures will document which motor starters are modified.

- 5.2 Verify that a clearance has been taken on the MCC feeding the selected motor starters, and that the associated circuit breaker is open.

- 5.3 Open the Breaker compartment front door.

CAUTION: Verify that all terminals are de-energized prior to lifting or landing wires.

- 5.4 Lift the external wires listed, from their associated terminal points. This will disconnect the "low side" of the red and green indicating lights on panel "SIS" or "RHR". Independently verify lifted leads.

5.4.1 Verify MCC 1-EZC-A has been de-energized.

MAINT.

C&I

For IMO-140 and/or NMO-151 located in 1-EZC-A, disconnect the following external wires:

MCC-1EZC-A

VALVE	TERM POINT NO.	WIRE NO.	VERIFY LIFTED WIRE		EXT. CABLE NO
			TECH 1	TECH 2	
IMO-140	12	12	_____	_____	9102R-1
	13	13	_____	_____	9102R-1
NMO-151	12	12	_____	_____	8676R-1
	13	13	_____	_____	8676R-1

5.4.2 Verify MCC 1-EZC-B has been de-energized.

MAINT.

C&I

For IMO-120, IMO-128 and NMO-152 located in 1-EZC-B, disconnect the following external wires:

VALVE	TERM POINT NO.	WIRE NO.	VERIFY LIFTED WIRE		EXT. CABLE NO
			TECH 1	TECH 2	
IMO-120	12	12			8870R-1
	13	13			8870R-1
IMO-128	1	11			8871R-1
NMO-152	12	12			8677R-1
	13	13			8677R-1

5.4.3 Verify MCC 1-EZC-C has been de-energized.

MAINT.

C&I

For IMO-110, ICM-129 and ICM-111 located in 1-EZC-C, disconnect the following external wires:

VALVE	TERM POINT NO.	WIRE NO.	VERIFY LIFTED WIRE		EXT. CABLE NO
			TECH 1	TECH 2	
IMO-110	12	12			8898G-1
	13	13			8898G-1
ICM-129	1	11			9082G-1
ICM-111	1	11			9083G-1

5.4.4 Verify MCC 1-EZC-D has been de-energized.

MAINT.

C&I



For IMO-130 and IMO-153 located in 1-EZC-D,
disconnect the following external wires:

VALVE	TERM POINT NO.	WIRE NO.	VERIFY LIFTED WIRE		EXT. CABLE NO
			TECH 1	TECH 2	
IMO-130	12	12	_____	_____	8624G-1
	13	13	_____	_____	8624G-1
IMO-153	12	12	_____	_____	8931G-1
	13	13	_____	_____	8931G-1

5.5 Connect wiring from the temporary control panel terminal points to MCC terminal points. Independently verify correct connections.

5.5.1 MCC 1-EZC-A

Valve IMO-140

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" s contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" s contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green light
12	_____	_____	10	_____	_____	"Low" side of red light.

Valve NMO-151

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" : contact opening circuit
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit
8A	_____	_____	8	_____	_____	Control Switch - "Low" : contact closing circuit
13	_____	_____	9	_____	_____	"Low" side of green lig
12	_____	_____	10	_____	_____	"Low" side of red light
5.5.2		<u>MCC 1-EZC-B</u>				

Valve IMO-120

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" : contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit
8A	_____	_____	8	_____	_____	Control Switch - "Low" : contact closing circuit
13	_____	_____	9	_____	_____	"Low" side of green lig
12	_____	_____	10	_____	_____	"Low" side of red light

Valve IMO-128

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" ; contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" ; contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green light
12	_____	_____	10	_____	_____	"Low" side of red light

Valve IMO-152

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" ; contact opening circuit
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" ; contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green light
12	_____	_____	10	_____	_____	"Low" side of red light

5.5.3 MCC 1-EZC-C

Valve IMO-110

<u>To Breaker Terminal Point Nos.</u>	<u>Verify Connections</u>		<u>From Temporary Control Panel Terminal Point Nos.</u>	<u>Verify Connections</u>		<u>Temporary Control Panel Function</u>
	<u>TECH 1</u>	<u>TECH 2</u>		<u>TECH 1</u>	<u>TECH 2</u>	
3	_____	_____	3	_____	_____	Control Switch - "Low" s contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" s contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green light
12	_____	_____	10	_____	_____	"Low" side of red light.

Valve ICM-129

<u>To Breaker Terminal Point Nos.</u>	<u>Verify Connections</u>		<u>From Temporary Control Panel Terminal Point Nos.</u>	<u>Verify Connections</u>		<u>Temporary Control Panel Function</u>
	<u>TECH 1</u>	<u>TECH 2</u>		<u>TECH 1</u>	<u>TECH 2</u>	
3	_____	_____	3	_____	_____	Control Switch - "Low" s contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" s contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green light
12	_____	_____	10	_____	_____	"Low" side of red light.

Valve ICM-111

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" & contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" & contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green light
12	_____	_____	10	_____	_____	"Low" side of red light.
5.5.4		<u>MCC 1-EZC-D</u>				

Valve IMO-130

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" & contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" & contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green light
12	_____	_____	10	_____	_____	"Low" side of red light.

Valve NMO-153

To Breaker Terminal Point Nos.	Verify Connections		From Temporary Control Panel Terminal Point Nos.	Verify Connections		Temporary Control Panel Function
	TECH 1	TECH 2		TECH 1	TECH 2	
3	_____	_____	3	_____	_____	Control Switch - "Low" s contact opening circuit.
5	_____	_____	2	_____	_____	Control Switch - "High" contact opening circuit.
10	_____	_____	6	_____	_____	Control Switch - "High" contact closing circuit.
8A	_____	_____	8	_____	_____	Control Switch - "Low" s contact closing circuit.
13	_____	_____	9	_____	_____	"Low" side of green ligh
12	_____	_____	10	_____	_____	"Low" side of red light.

5.6 The following external MCC wiring previously disconnected at the Breaker control wiring terminal points is to be spliced to wires from the temporary control panel:

5.6.1

MCC 1-EZC-A

Valve IM0-140

Brekaer External Wiring To Be Spliced - Wire No.	Spliced Wire Connections at the Temporary Control Panel-Terminal Point Nos.	Verify Correct Wires Spliced		Temporary Control Panel Function
		TECH 1	TECH 2	
4 (Previously dis- connected from Terminal No. 6)	1	_____	_____	Control Switch - "High" side contact opening circuit
10 (previously dis- connected from Terminal No. 2)	4	_____	_____	Control Switch - "Low" side contact opening circuit
3A (previously dis- connected from Terminal No. 11)	5	_____	_____	Control Switch - "High" side contact closing circuit
7 (previously dis- connected from Terminal No. 7)	7	_____	_____	Control Switch - "Low" side contact closing circuit
2 (previously dis- connected from Terminal No. 8)	11	_____	_____	Indicating Lights - "High" side

Valve NMO-151

Breaker External Wiring To Be Spliced - Wire No.	Spliced Wire Connections at the Temporary Control Panel-Terminal Point Nos.	Verify Correct Wires Spliced		Temporary Control Panel Function
		TECH 1	TECH 2	
4 (Previously dis- connected from Terminal No. 6)	1	_____	_____	Control Switch - "High side contact opening circuit
10 (previously dis- connected from Terminal No. 2)	4	_____	_____	Control Switch - "Low" side contact opening circuit
3A (previously dis- connected from Terminal No. 11)	5	_____	_____	Control Switch - "High side contact closing circuit
7 (previously dis- connected from Terminal No. 7)	7	_____	_____	Control Switch - "Low" side contact closing circuit
2 (previously dis- connected from Terminal No. 8)	11	_____	_____	Indicating Lights - "High" side

5.6.2

MCC 1-EZC-B

Valve IMO-120

Breaker External Wiring To Be Spliced - Wire No.	Spliced Wire Connections at the Temporary Control Panel-Terminal Point Nos.	Verify Correct Wires Spliced		Temporary Control Panel Function
		TECH 1	TECH 2	
4 (Previously dis- connected from Terminal No. 6)	1	_____	_____	Control Switch - "High" side contact opening circuit
10 (previously dis- connected from Terminal No. 2)	4	_____	_____	Control Switch - "Low" side contact opening circuit
3A (previously dis- connected from Terminal No. 11)	5	_____	_____	Control Switch - "High" side contact closing circuit
7 (previously dis- connected from Terminal No. 7)	7	_____	_____	Control Switch - "Low" side contact closing circuit
2 (previously dis- connected from Terminal No. 8)	11	_____	_____	Indicating Lights - "High" side

Valve IMO-128

Breaker External Wiring To Be Spliced - Wire No.	Spliced Wire Connections at the Temporary Control Panel-Terminal Point Nos.	Verify Correct Wires Spliced		Temporary Control Panel Function
		TECH 1	TECH 2	
4 (Previously dis- connected from Terminal No. 6)	1	_____	_____	Control Switch - "High side contact opening circuit
10 (previously dis- connected from Terminal No. 2)	4	_____	_____	Control Switch - "Low" side contact opening circuit
3A (previously dis- connected from Terminal No. 11)	5	_____	_____	Control Switch - "High side contact closing circuit
7 (previously dis- connected from Terminal No. 7)	7	_____	_____	Control Switch - "Low" side contact closing circuit
2 (previously dis- connected from Terminal No. 8)	11	_____	_____	Indicating Lights - "High" side



5.6.3

MCC 1-EZC-D

Valve IMO-130

Breaker External Wiring To Be Spliced - Wire No.	Spliced Wire Connections at the Temporary Control Panel-Terminal Point Nos.	Verify Correct Wires Spliced		Temporary Control Panel Function
		TECH 1	TECH 2	
4 (Previously dis- connected from Terminal No. 6)	1	_____	_____	Control Switch - "High side contact opening circuit
10 (previously dis- connected from Terminal No. 2)	4	_____	_____	Control Switch - "Low" side contact opening circuit
3A (previously dis- connected from Terminal No. 11)	5	_____	_____	Control Switch - "High side contact closing circuit
7 (previously dis- connected from Terminal No. 7)	7	_____	_____	Control Switch - "Low" side contact closing circuit
2 (previously dis- connected from Terminal No. 8)	11	_____	_____	Indicating Lights - "High" side

Valve NMO-153

Breaker External Wiring To Be Spliced - Wire No.	Spliced Wire Connections at the Temporary Control Panel-Terminal. Point Nos.	Verify Correct Wires Spliced		Temporary Control Panel Function
		TECH 1	TECH 2	
4 (Previously dis- connected from Terminal No. 6)	1	_____	_____	Control Switch - "High" side contact opening circuit
10 (previously dis- connected from Terminal No. 2)	4	_____	_____	Control Switch - "Low" side contact opening circuit
3A (previously dis- connected from Terminal No. 11)	5	_____	_____	Control Switch - "High" side contact closing circuit
7 (previously dis- connected from Terminal No. 7)	7	_____	_____	Control Switch - "Low" side contact closing circuit
2 (previously dis- connected from Terminal No. 8)	11	_____	_____	Indicating Lights - "High" side

6.0 When Operations has operated a valve by use of the temporary control panel, its MCC may be de-energized.

6.1 After verification of de-energization, the temporary control panel is disconnected from the compartment.

6.2 The temporary control panel may now be connected into another compartment after it has been de-energized.

6.3 The above sequence, steps 6.1 and 6.2, is repeated until all valves required to be operated have been operated.

6.4 Removal of the temporary control panel's wiring from the compartment does not require verification.

7.0 Restoration

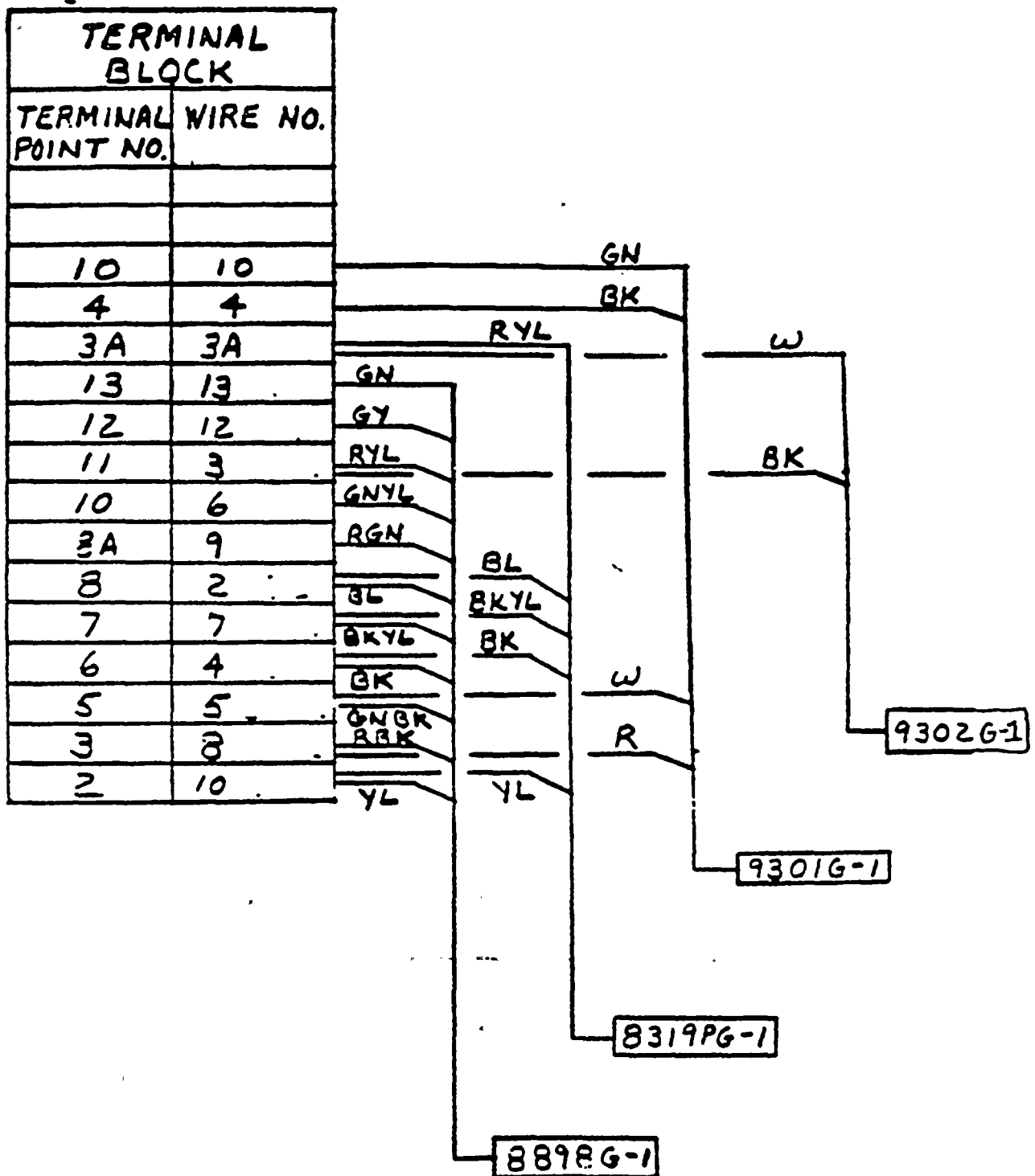
7.1 Restoration of Containment valves will be documented by job orders which restore the valves to their normal operational status, after mitigation of the fire.

7.2 REVIEWED BY _____ DATE _____

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-C			
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	REMARKS
9302G-1	3A(W) 3(BK)	3A 11	
9301G-1	4(BK) 5(W) 10(GN) 8(R)	4 5 10 3	
8319PG-1	2(BL) 3A(RYL) 4(BK) 7(BKYL) 10(YL)	8 3A 6 7 2	WIRES 2, 3A, 4, 7, AND 10 CONTAINED IN CABLE 8319PG-1 MUST BE DIS- CONNECTED AND THEN SPliced TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 11, 5, 1, 7 AND 4 RESPECTIVELY.
8898G-1	2(BL) 3(RYL) 4(BK) 5(GNBK) 6(GNYL) 7(BKYL) 8(RBK) 9(RGN) 10(YL) 12(GY) 13(GN)	8 11 6 5 10 7 3 8A 2 12 13	

WIRING TABULATION FOR SI ACCUMULATOR VALVE IMO-110



WIRING TO BE DISCONNECTED AT MCC 1-EZC-C

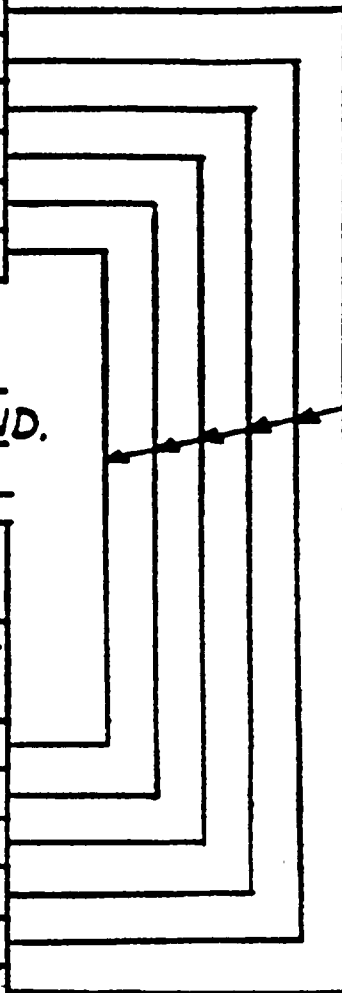
VALVE IMO-110

MCC 1-E2C-C

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
13	-
12	-
10	-
8A	-
5	-
3	-

TEMPORARY CONTROL & IND. PANEL

TERMINAL POINTS	
TERMINAL POINT NO.	WIRE NO.
3	-
2	-
8	-
6	-
10	-
9	-
11	2
5	3A
1	4
7	7
4	10



TEMPORARY JUMPERS

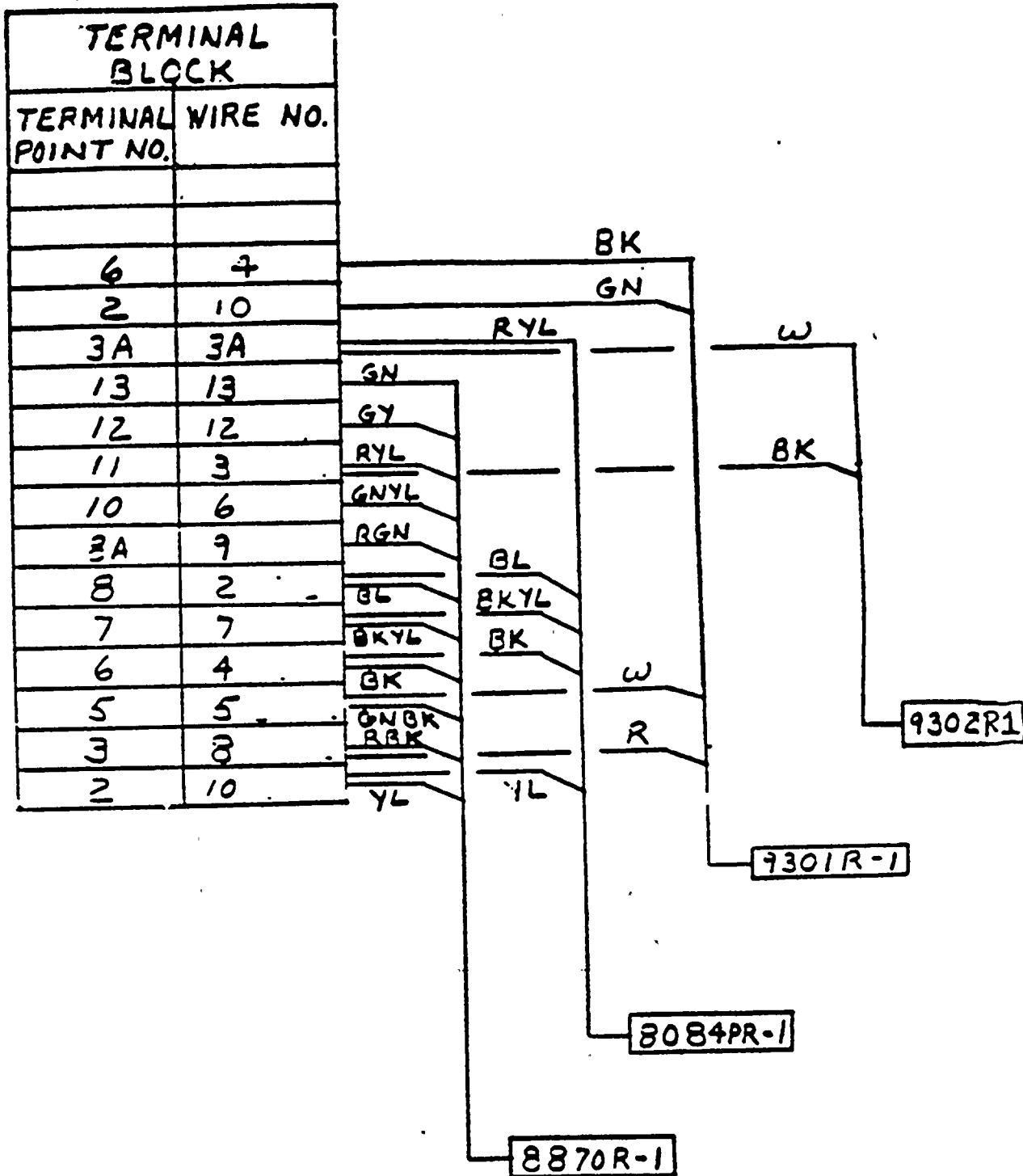
SPLICE (TYPICAL)



WIRING TO BE CONNECTED

VALVE IMO-110

8319PG-1



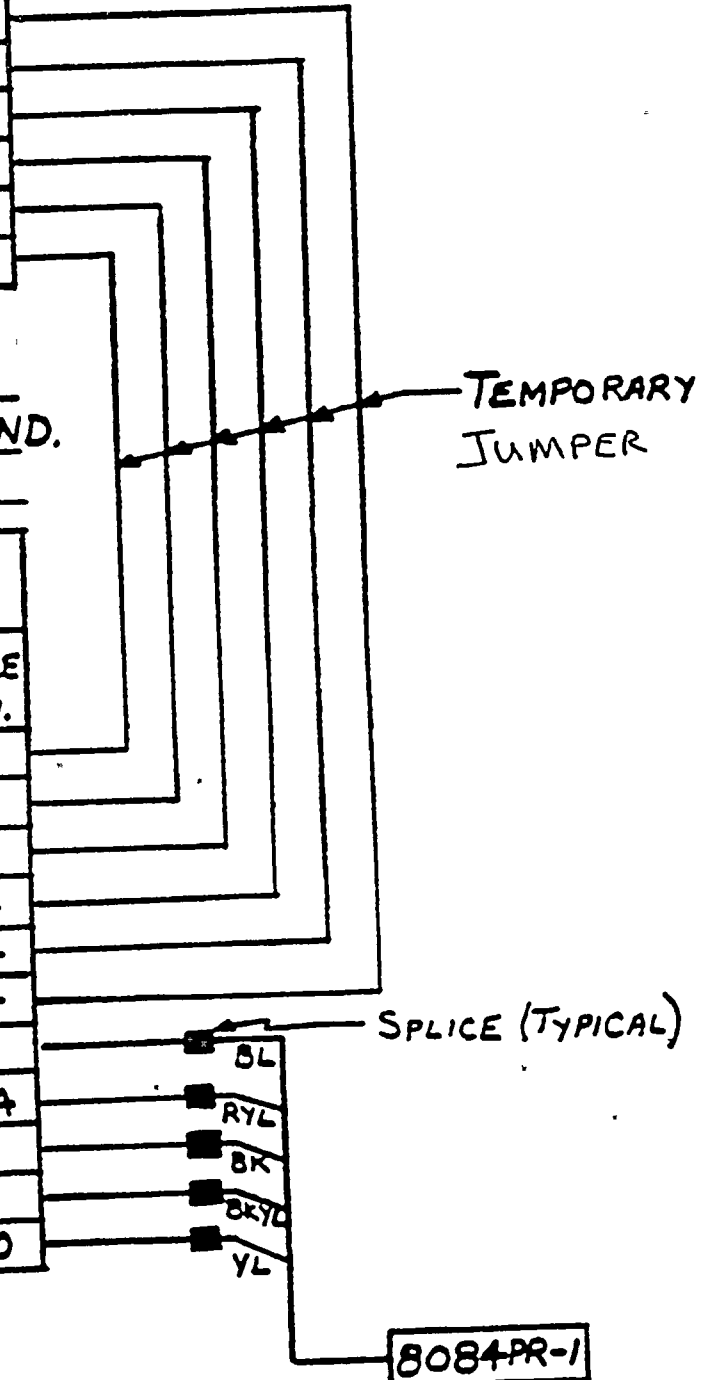
WIRING TO BE DISCONNECTED AT MCC 1-EZC-B

VALVE IMO-120

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
13	-
12	-
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT NO	WIRE NO.
3	-
2	-
8	-
6	-
10	-
9	-
11	2
5	3A
1	4
7	7
4	10



WIRING TO BE CONNECTED

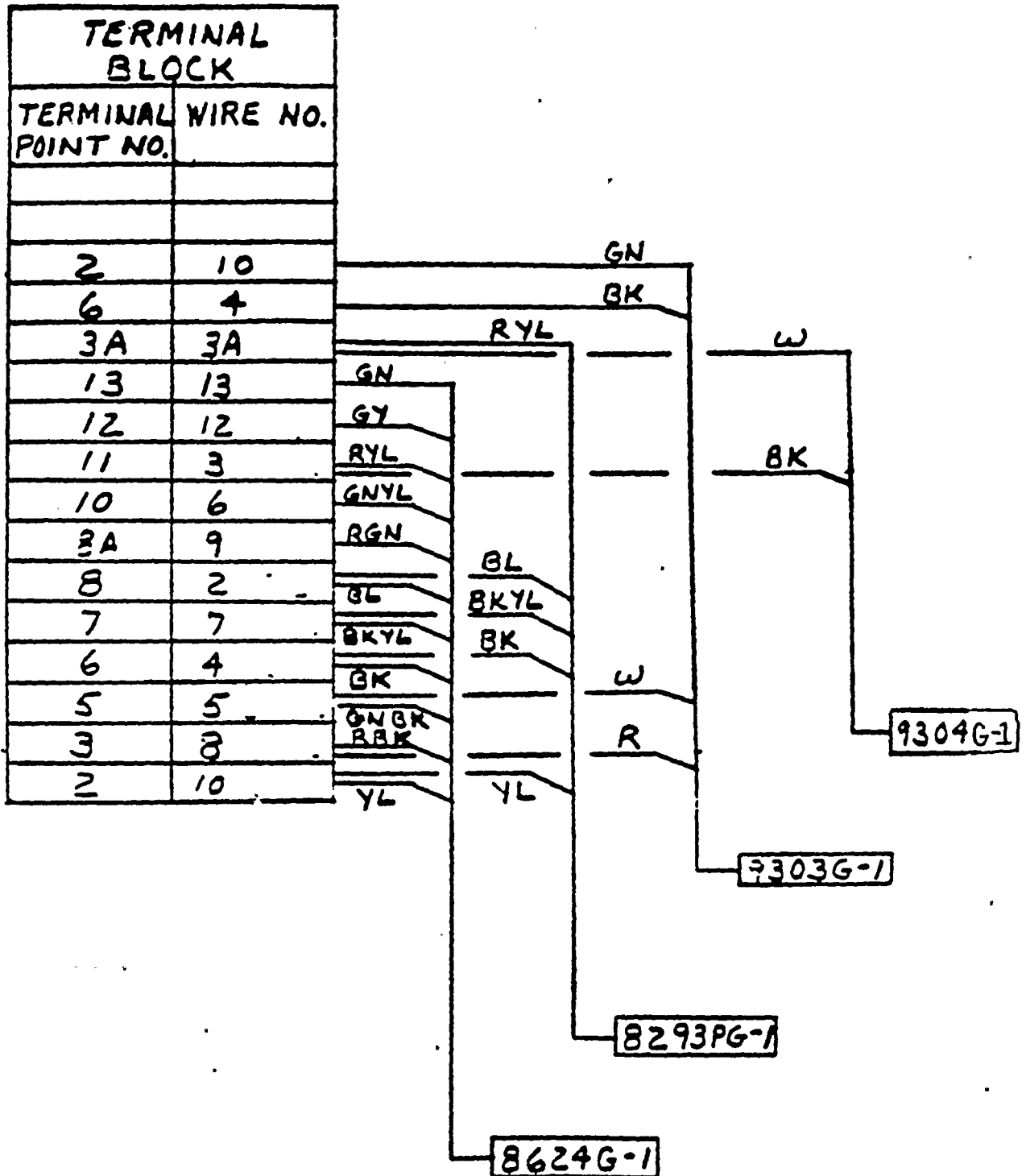
VALVE IMO-120



CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-D			REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	
9304G-1	3A(W) 3(BK)	3A 11	
9303G-1	4(BK) 5(W) 10(GN) 8(R)	6 5 2 3	
8293PG-1	2(BL) 3A(RYL) 4(BK) 7(BKYL) 10(YL)	8 3A 6 7 2	WIRES 2, 3A, 4, 7, AND 10 CONTAINED IN CABLE 8293PG-1 MUST BE DIS- CONNECTED AND THEN SPliced TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 11, 5, 1, 7 AND 4 RESPECTIVELY.
8624G-1	2(BL) 3(RYL) 4(BK) 5(GNBK) 6(GNYL) 7(BKYL) 8(RBK) 9(RGN) 10(YL) 12(GY) 13(GN)	8 11 6 5 10 7 3 8A 2 12 13	

WIRING TABULATION FOR SI ACCUMULATOR VALVE IMO-130



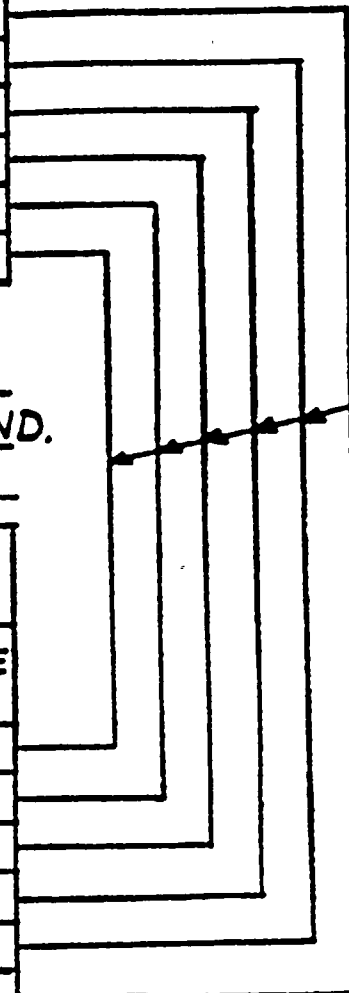
WIRING TO BE DISCONNECTED AT MCC 1-EZC-D

VALVE IMO-130

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
13	-
12	-
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT NO.	WIRE NO.
3	-
2	-
8	-
6	-
10	-
9	-
11	2
5	3A
1	4
7	7
4	10



TEMPORARY
JUMPER

SPLICE (TYPICAL)

3L
RYL
BK
BKYL
YL

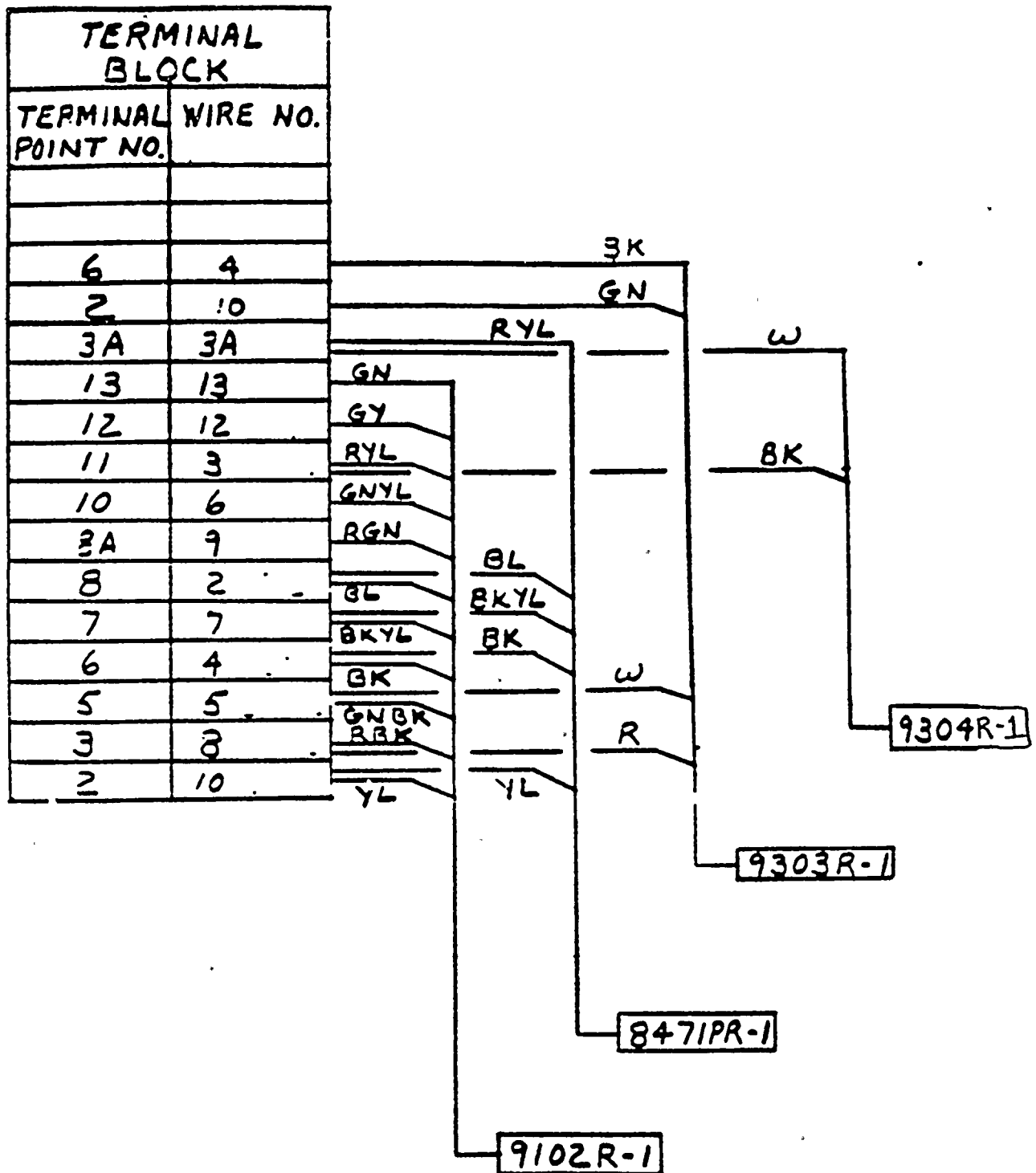
8293PG-1

VALVE IMO-130

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-A			REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	
9304R-1	3A(W) 3(BK)	3A 11	
9303R-1	4(BK) 5(W) 10(GN) 8(R)	6 5 2 3	
8471PR-1	2(BL) 3A(RYL) 4(BK) 7(BKYL) 10(YL)	8 3A 6 7 2	WIRES 2, 3A, 4, 7, AND 10 CONTAINED IN CABLE 8471PR-1 MUST BE DIS- CONNECTED AND THEN SPliced TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 11, 5, 1, 7 AND 4 RESPECTIVELY.
9102R-1	2(BL) 3(RYL) 4(BK) 5(GNBK) 6(GNYL) 7(BKYL) 8(RBK) 9(RGN) 10(YL) 12(GY) 13(GN)	8 11 6 5 10 7 3 8A 2 12 13	

WIRING TABULATION FOR SI ACCUMULATOR VALVE IMO-140



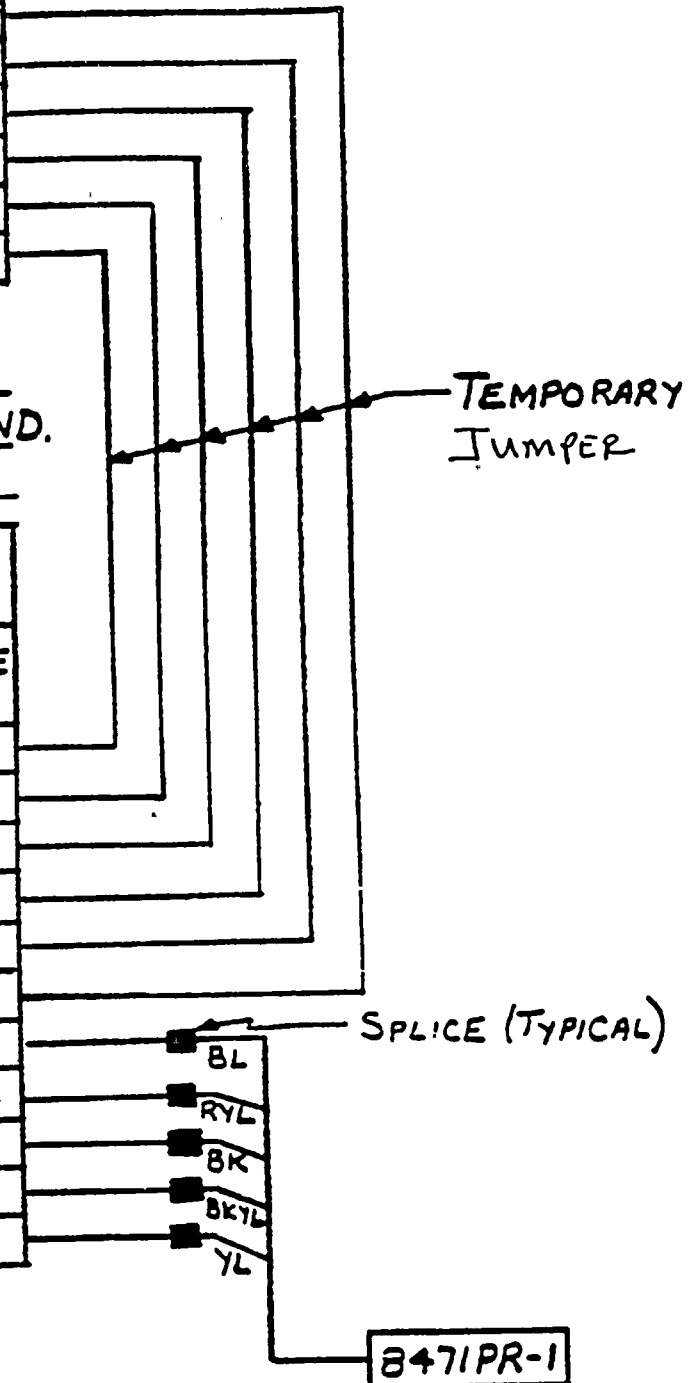
WIRING TO BE DISCONNECTED AT MCC 1-EZC-A

VALVE IMO-140

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
13	-
12	-
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT NO	WIRE NO.
3	-
2	-
8	-
6	-
10	-
9	-
11	2
5	3A
1	4
7	7
4	10



WIRING TO BE CONNECTED

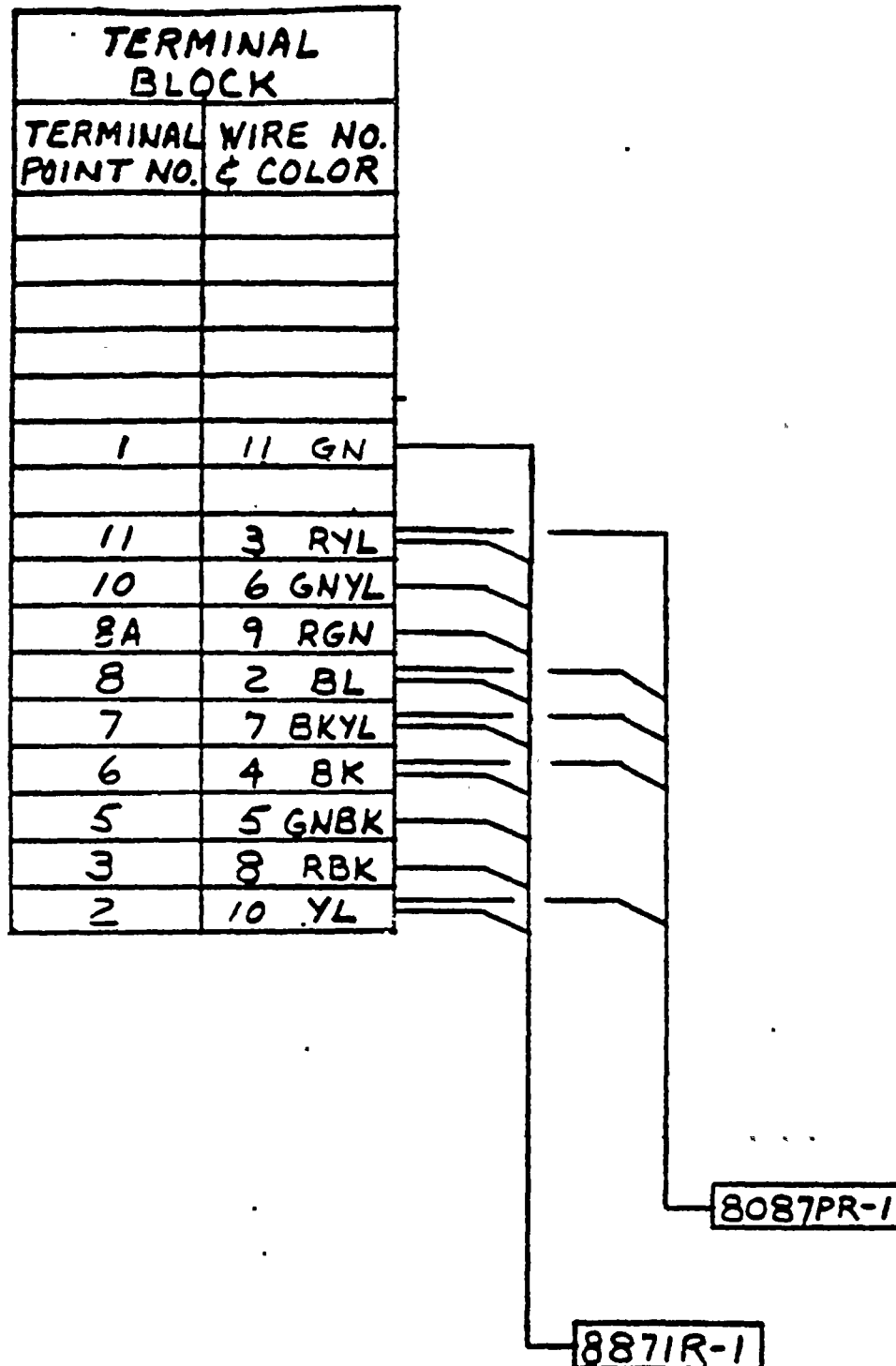
VALVE IMO-140

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-B			REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	
8087PR-1	2(BL)	8	WIRES 3, 4, 7 AND 10 CONTAINED IN CABLE 8087PR-1 MUST BE DIS- CONNECTED AND THEN SPLICED TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 5, 1, 7 AND 4 RESPECTIVELY.
	3(RYL)	11	
	4(BK)	6	
	7(BKYL)	7	
	10(YL)	2	
8871R-1	2(BL)	8	
	3(RYL)	11	
	4(BK)	6	
	5(GNBK)	5	
	6(GNYL)	10	
	7(BKYL)	7	
	8(RBK)	3	
	9(RGN)	8A	
	10(YL)	2	
	11(GN)	1	

WIRING TABULATION FOR RHR INLET ISOLATION VALVE IMO-128

WIRING TABULATION FOR RHR INLET ISOLATION VALVE IMO-128



WIRING TO BE DISCONNECTED AT MCC 1-EZC-B

VALVE IMO-128

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT NO.	WIRE NO.
3	-
2	-
8	-
6	-
5	3.
1	4
7	7
4	10

TEMPORARY
JUMPER

SPLICE (TYPICAL)

RYL
BK
BKYL
YL

8087PR-1

WIRING TO BE CONNECTED

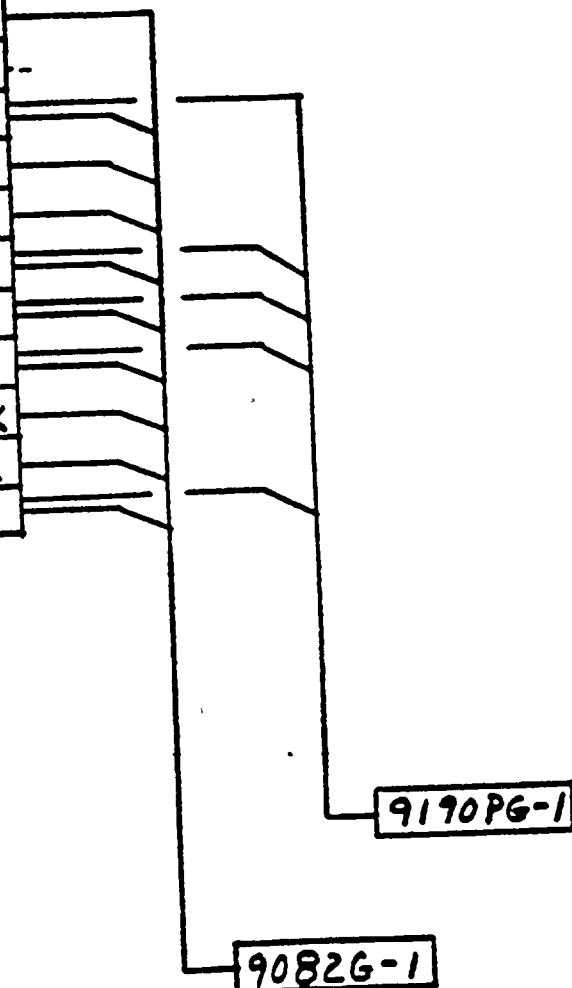
VALVE IMO-128

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-C			REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	
9190PG-1	2(BL)	8	WIRES 3, 4, 7 AND 10 CONTAINED IN CABLE 9190PG-1 MUST BE DIS- CONNECTED AND THEN SPliced TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 5, 1, 7, AND 4 RESPECTIVELY.
	3(RYL)	11	
	4(BK)	6	
	7(BKYL)	7	
	10(YL)	2	
9082G-1	2(BL)	8	
	3(RYL)	11	
	4(BK)	6	
	5(GNBK)	5	
	6(GNYL)	10	
	7(BKYL)	7	
	8(RBK)	3	
	9(RGN)	8A	
	10(YL)	2	
	11(GN)	1	

WIRING TABULATION FOR RHR INLET ISOLATION VALVE ICM-129

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO. & COLOR
1	11 GN
12	
11	3 RYL
10	6 GNYL
8A	9 RGN
8	2 BL
7	7 BKYL
6	4 BK
5	5 GNBK
3	8 RBK
2	10 YL



WIRING TO BE DISCONNECTED AT MCC 1-EZC-C

VALVE ICM-129

MCC 1-EZC-C

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
10	-
8A	-
5	-
3	-

TEMPORARY CONTROL & IND. PANEL

TERMINAL POINTS	
TERMINAL POINT NO.	WIRE NO.
3	-
2	-
8	-
6	-
5	3
1	4
7	7
4	10



TEMPORARY JUMPER

SPLICE (TYPICAL)

RYL
BK
BKYL
YL

7190PG-1

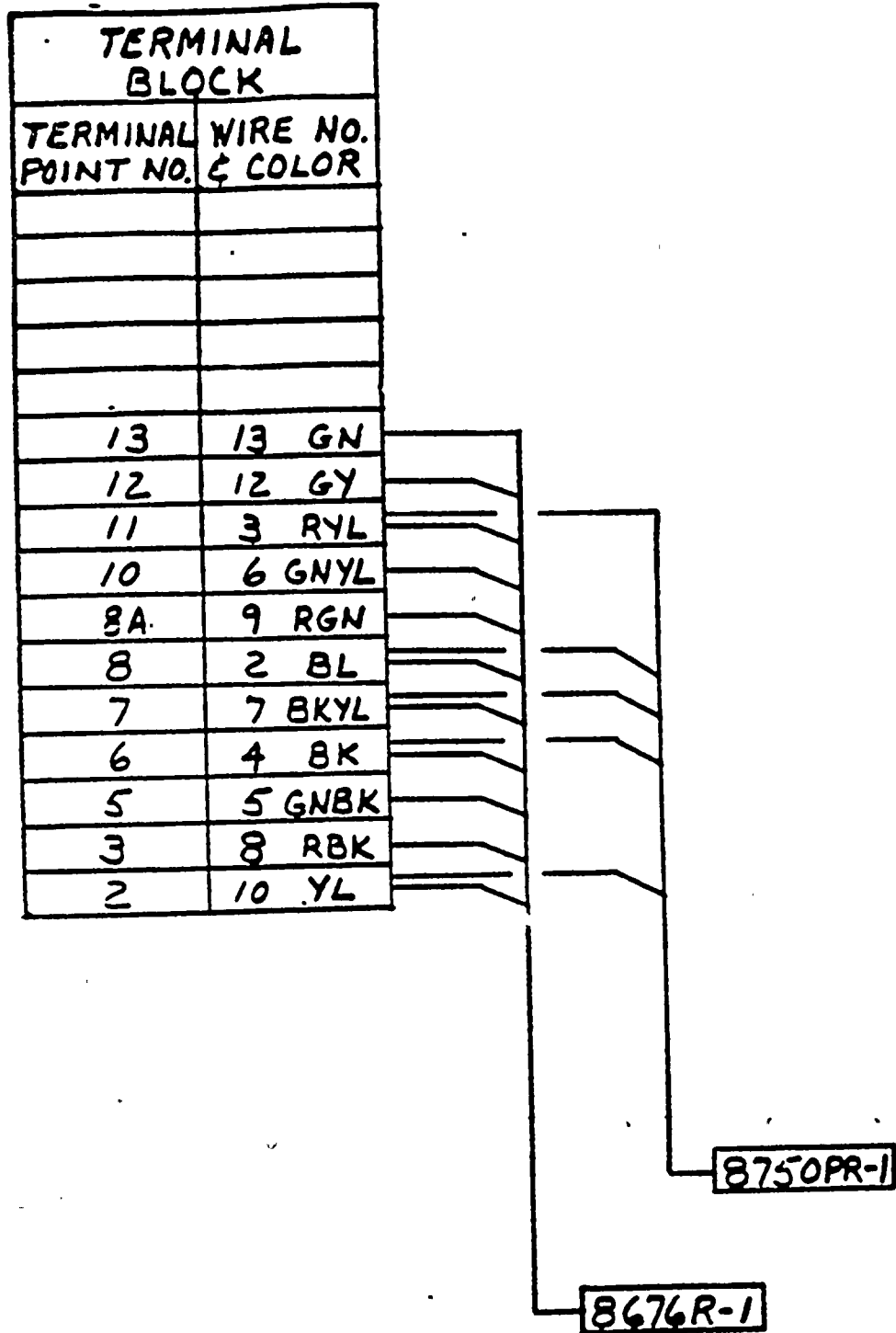
WIRING TO BE CONNECTED

VALVE ICM-129

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-A		REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	
8750PR-1	2(BL)	8
	3(RYL)	11
	4(BK)	6
	7(BKYL)	7
	10(YL)	2
8676R-1	2(BL)	8
	3(RYL)	11
	4(BK)	6
	5(GNBK)	5
	6(GNYL)	10
	7(BKYL)	7
	8(RBK)	3
	9(RGN)	8A
	10(YL)	2
	12(GY)	12
	13(GN)	13

WIRING TABULATION FOR PRESSURIZER PORV BLOCK VALVE NMO-151



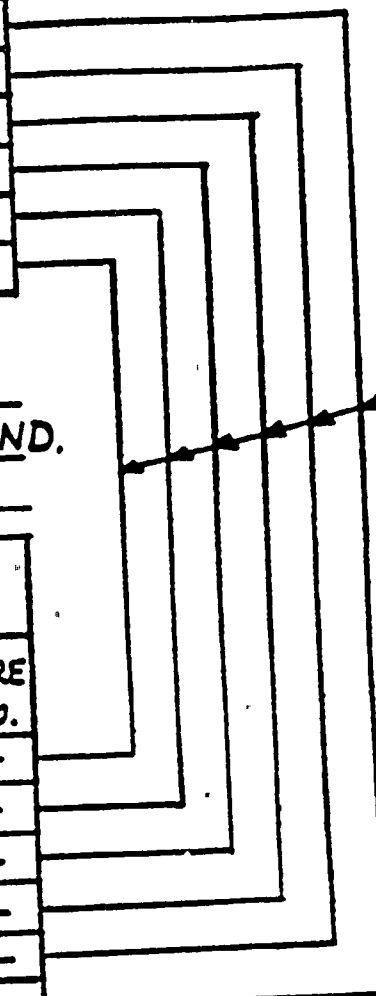
WIRING TO BE DISCONNECTED AT MCC 1-EZC-A

VALVE NMO-151

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
13	-
12	-
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT NO.	WIRE NO.
3	-
2	-
8	-
6	-
10	-
9	-
11	2
5	3
1	4
7	7
4	10



TEMPORARY:
JUMPER

SPLICE (TYPICAL)

EL
RYL
BK
BKYL
YL

8750PR-1

WIRING TO BE CONNECTED

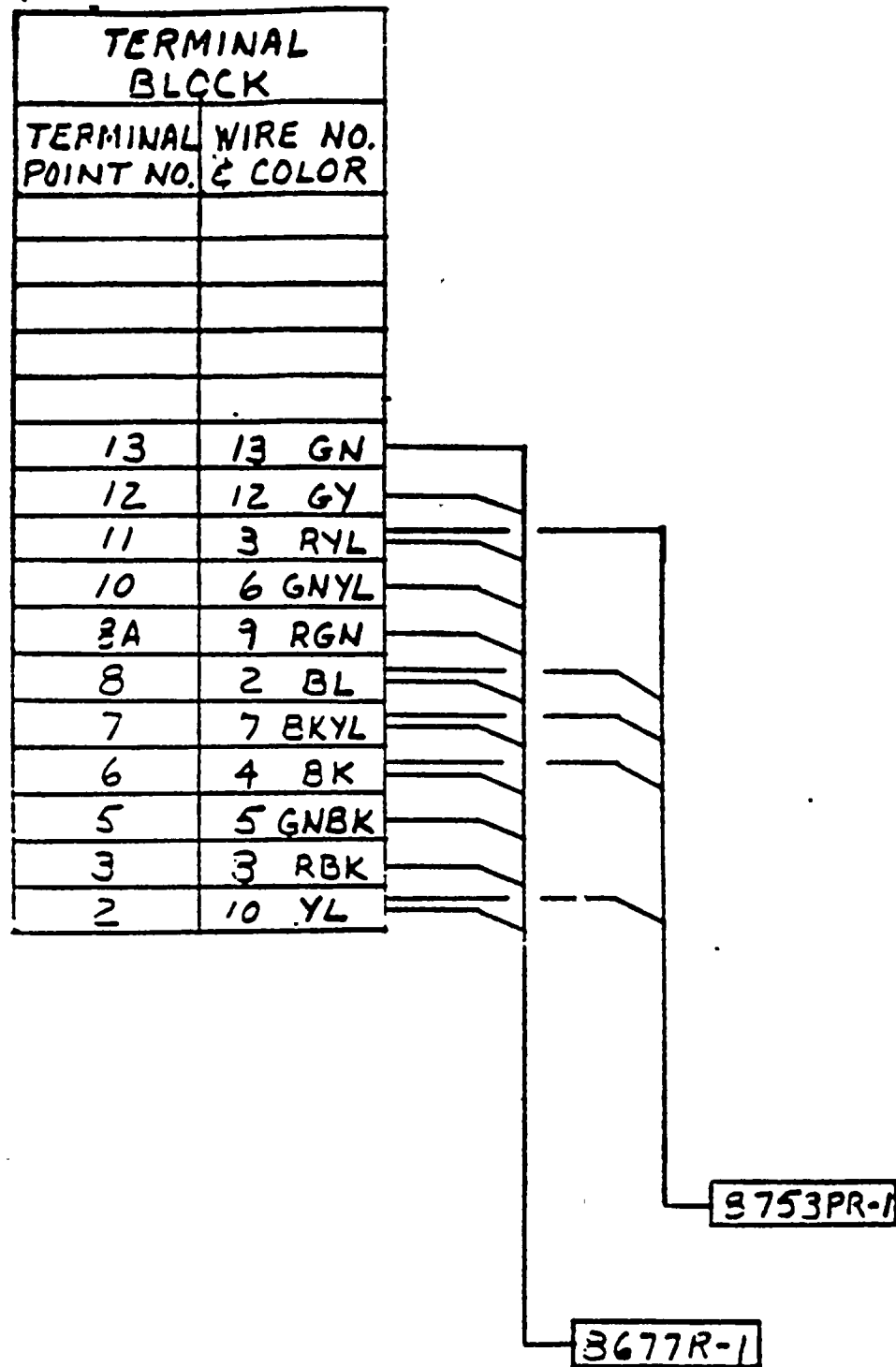
VALVE NMO-151

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-B			REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	
8753PR-1	2(BL)	8	WIRES 2, 3, 4, 7 AND 10 CONTAINED IN CABLE 8750PR-1 MUST BE DIS- CONNECTED AND THEN SPliced TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 11, 5, 1, 7 AND 4 RESPECTIVELY.
	3(RYL)	11	
	4(BK)	6	
	7(BKYL)	7	
	10(YL)	2	
8677R-1	2(BL)	8	
	3(RYL)	11	
	4(BK)	6	
	5(GNBK)	5	
	6(GNYL)	10	
	7(BKYL)	7	
	8(RBK)	3	
	9(RGN)	8A	
	10(YL)	2	
	12(GY)	12	
	13(GN)	13	

WIRING TABULATION FOR PRESSURIZER PORV BLOCK VALVE NMO-152





WIRING TO BE DISCONNECTED AT MCC 1-EZC-B

VALVE NMO-152

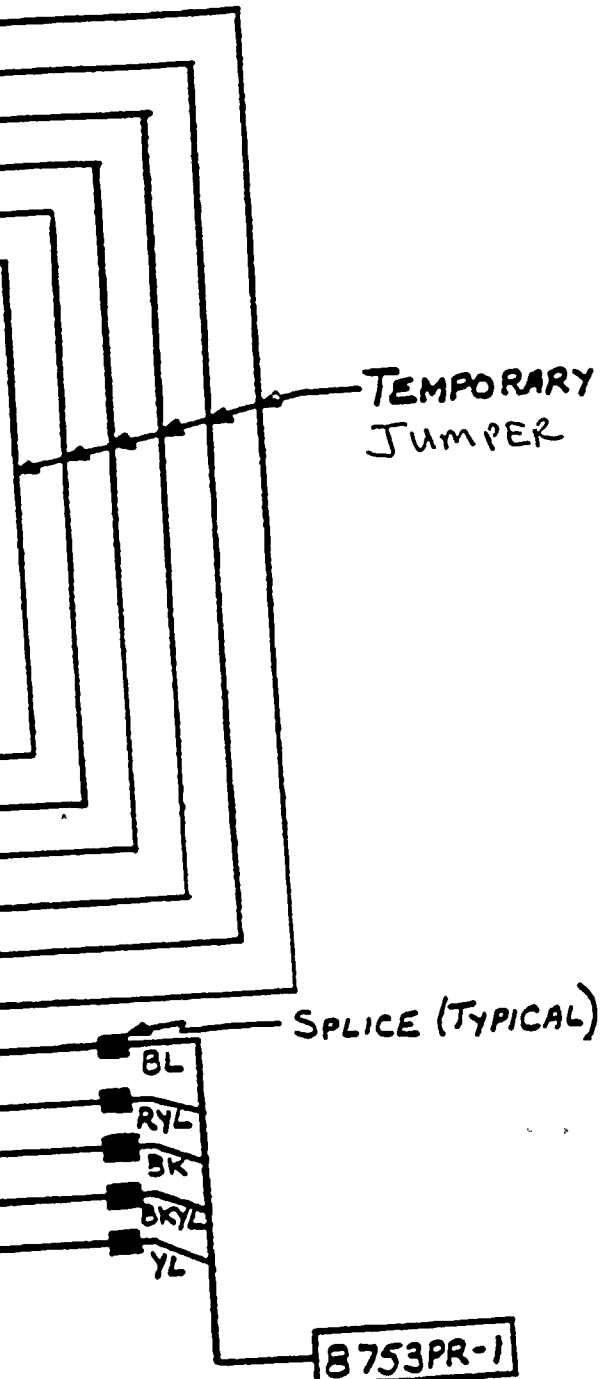
MCC 1-E3C-B

**1 THP 6030 IMP.305
APPENDIX A

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
13	-
12	-
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT No	WIRE No.
3	-
2	-
8	-
6	-
10	-
9	-
11	2
5	3
1	4
7	7
4	10



WIRING TO BE CONNECTED

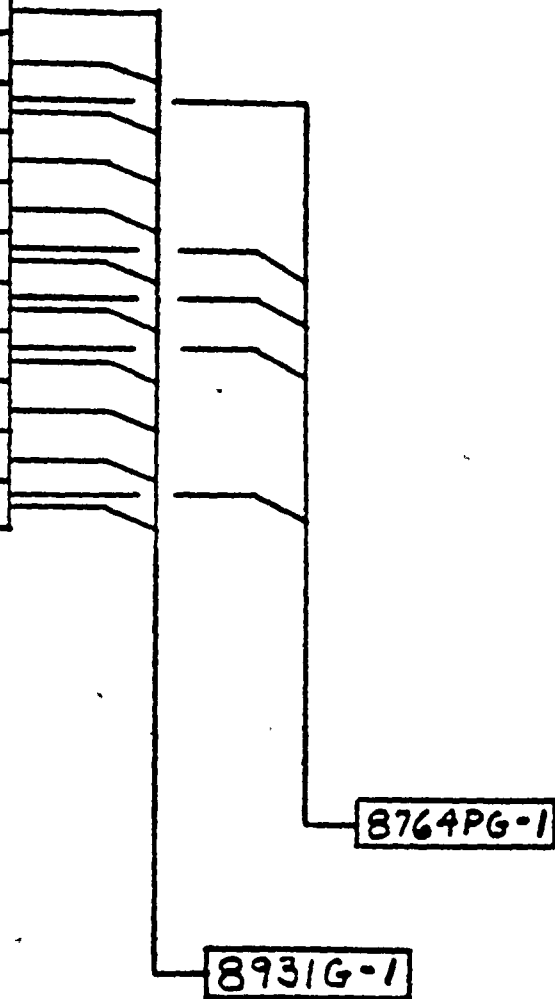
VALVE NMO-152

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-D			REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	
8764PG-1	2(BL)	8	WIRES 2, 3, 4, 7 AND 10 CONTAINED IN CABLE 8764PG-1 MUST BE DIS- CONNECTED AND THEN SPliced TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 11, 5, 1, 7 AND 4 RESPECTIVELY.
	3(RYL)	11	
	4(BK)	6	
	7(BKYL)	7	
	10(YL)	2	
8931G-1	2(BL)	8	
	3(RYL)	11	
	4(BK)	6	
	5(GNBK)	5	
	6(GNYL)	10	
	7(BKYL)	7	
	8(RBK)	3	
	9(RGN)	8A	
	10(YL)	2	
	12(GY)	12	
	13(GN)	13	

WIRING TABULATION FOR PRESSURIZER PORV BLOCK VALVE NMO-153

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO. & COLOR
13	13 GN
12	12 GY
11	3 RYL
10	6 GNYL
8A	9 RGN
8	2 BL
7	7 BKYL
6	4 BK
5	5 GNBK
3	8 RBK
2	10 YL



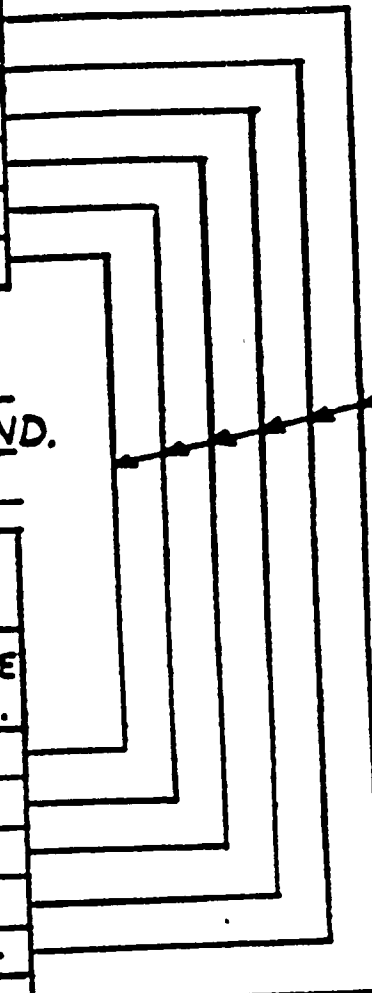
WIRING TO BE DISCONNECTED AT MCC 1-EZC-D

VALVE NMO-153

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
13	-
12	-
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT NO.	WIRE NO.
3	-
2	-
8	-
6	-
10	-
9	-
11	2
5	3
1	4
7	7
4	10



TEMPORARY
JUMPER

SPICE (TYPICAL)

BL
RYL
BK
BKYL
YL

8764P6-1

WIRING TO BE CONNECTED

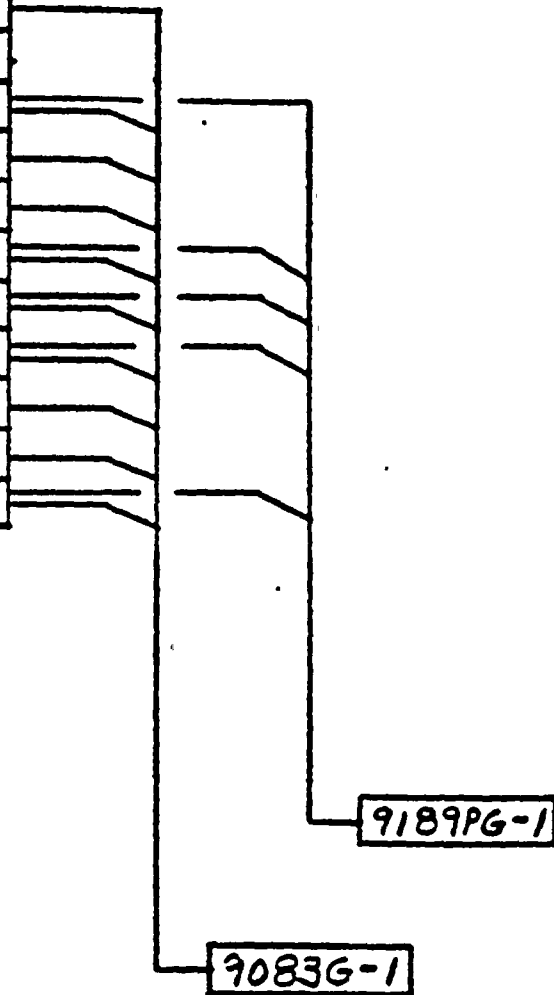
VALVE NMO-153

CONTAINMENT VALVES REPAIR PROCEDURE

WIRES TO BE DISCONNECTED AT MCC 1-EZC-C			REMARKS
CABLE NO.	WIRE NO. (COLOR CODE)	TERMINAL POINT NO.	
9189PG-1	2(BL)	8	WIRES 3, 4, 7 AND 10 CONTAINED IN CABLE 9189PG-1 MUST BE DIS- CONNECTED AND THEN SPliced TO A NEW WIRE FOR CONNECTION TO THE TEMPORARY CONTROL PANEL AT TERMINAL POINTS 5, 1, 7 AND 4 RESPECTIVELY.
	3(RYL)	11	
	4(BK)	6	
	7(BKYL)	7	
	10(YL)	2	
9083G-1	2(BL)	8	
	3(RYL)	11	
	4(BK)	6	
	5(GNBK)	5	
	6(GNYL)	10	
	7(BKYL)	7	
	8(RBK)	3	
	9(RGN)	8A	
	10(YL)	2	
	11(GN)	1	

WIRING TABULATION FOR RHR OUTLET ISOLATION VALVE ICM-111

TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO. & COLOR
1	11 GN
11	3 RYL
10	6 GNYL
8A	9 RGN
8	2 BL
7	7 BKYL
6	4 BK
5	5 GNBK
3	8 RBK
2	10 YL



WIRING TO BE DISCONNECTED AT MCC 1-EZC-C

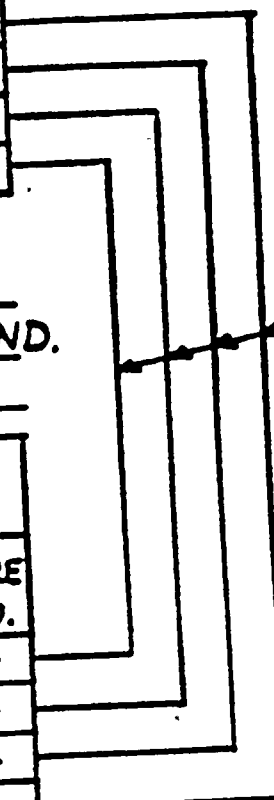
VALVE ICM-111



TERMINAL BLOCK	
TERMINAL POINT NO.	WIRE NO.
10	-
8A	-
5	-
3	-

TEMPORARY
CONTROL & IND.
PANEL

TERMINAL POINTS	
TERMINAL POINT NO	WIRE NO.
3	-
2	-
8	-
6	-
5	3
1	4
7	7
4	10



TEMPORARY
JUMPER

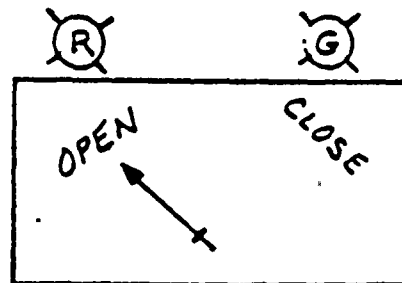
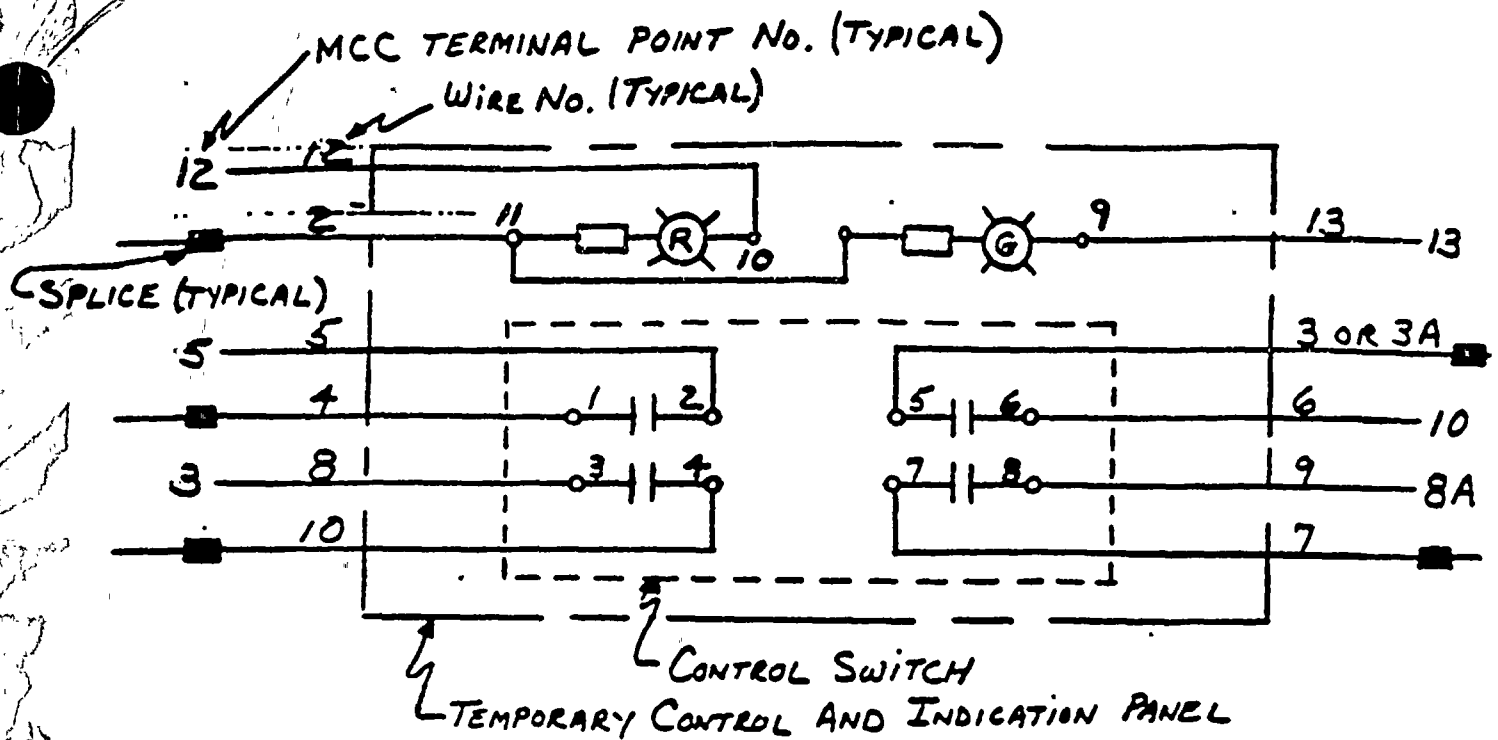
SPLICE (TYPICAL)

RYL
BK
BKYL
YL

9189PG-1

WIRING TO BE CONNECTED

VALVE ICM-111



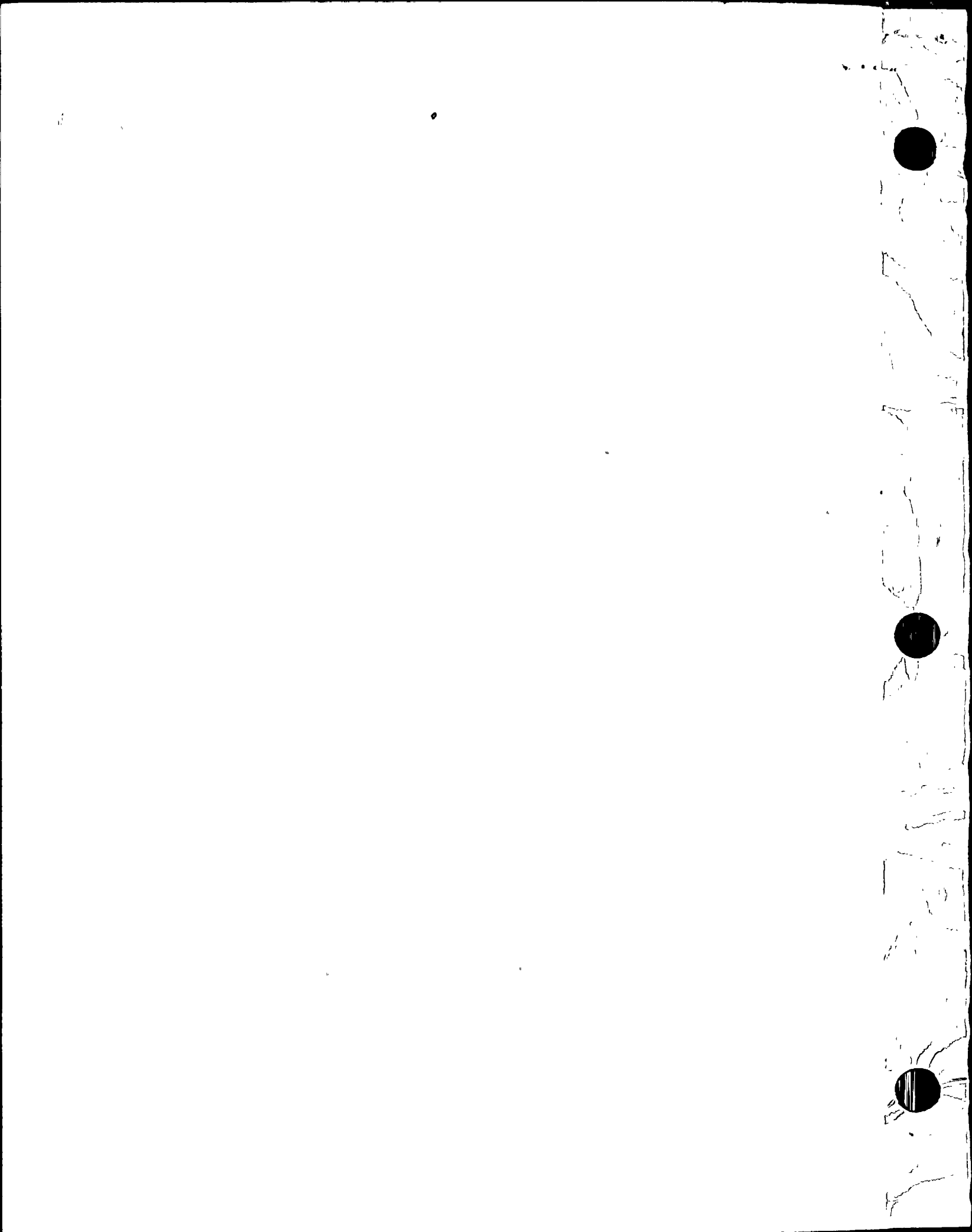
OPEN-CLOSE TYPE SWITCH
WITH MAINTAINED CONTACTS

CONTACT NOS.	SWITCH POSITION		CONTACT FUNCTION
	OPEN	CLOSE	
1-1-2	X		"HIGH" SIDE OPENING CIRCUIT
3-1-4	X		"LOW" SIDE OPENING CIRCUIT
5-1-6		X	"HIGH" SIDE CLOSING CIRCUIT
7-1-8		X	"LOW" SIDE CLOSING CIRCUIT

X - DENOTES CONTACT CLOSED

TEMPORARY CONTROL AND INDICATION PANEL

TYPICAL WIRING AND SWITCH DEVELOPMENT



LIST OF EFFECTIVE PAGESPage Number

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Attachment 1, Page 1 of 1

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Attachment 3, Page 1 of 2

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Attachment 5, Page 1 of 1

Revision Number and Date

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

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Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

Revision 4 - 12/15/82

DCR

DEC 17 1982

Superseded per Temporary Change / to Rev. 4
To App. B dtd 4/13/82

INDIANA AND MICHIGAN ELECTRIC COMPANY
DONALD C. COOK NUCLEAR PLANT

HOSPITAL ASSISTANCE PLAN

1.0 GENERAL

All Company safety policies and procedures applicable to conventional generating plant operations apply to the Donald C. Cook Nuclear Plant. In addition, special rules and procedures govern work involving radioactive material. Although measures have been taken to control radioactive contamination, its presence will require the implementation of special procedures governing the treatment of a person injured in a contaminated area. First, the person must be decontaminated unless the nature and/or extent of the injury makes immediate removal from the area and treatment necessary or requires treatment in the area. Second, if a wound is involved, it may become contaminated with radioactive material and complete decontamination may not be possible without aggravating the injury.

All D. C. Cook Plant Operating Department personnel, appropriate technicians and the staff have a working knowledge of decontamination procedures and all Shift Operating Engineers, Chemical and Radiation Protection Supervisors and Chemical and Radiation Protection Technicians have completed courses of instruction in First Aid. Normally one or more of these employees will be available to administer first aid while decontamination procedures are completed.

In the event the injury endangers life or limb, immediate medical treatment shall always precede decontamination procedures. Consequently, provisions have been made for contamination control at Memorial Hospital in St. Joseph and Mercy Hospital in Benton Harbor.

In cooperation with Indiana & Michigan Electric Company, the participating hospitals will have a staff of physicians and hospital personnel trained to implement the proper methods of contamination control. Indiana & Michigan Electric Company will ensure that training courses are conducted to provide hospital personnel with basic knowledge of radiation and contamination, as well as control methods. Annual conferences and refresher classes will be conducted. Also, periodic tests runs to ensure the operability of the Hospital Assistance Plan will be performed.

Indiana & Michigan Electric Company will ensure the following contamination control supplies will be furnished to the hospitals:

- | | |
|---------------------|---------|
| 1. Disposable Gowns | 24 pair |
| 2. Surgical Gloves | 24 pair |
| 3. Surgeon Caps | 12 |