

SOUTH CAROLINA ELECTRIC & GAS COMPANY
 VIRGIL C. SUMMER NUCLEAR STATION
 NUCLEAR OPERATIONS

INFORMATION ONLY

FIRE EMERGENCY PROCEDURE

FEP-4.0

CONTROL ROOM EVACUATION DUE TO FIRE

REVISION 2

SAFETY RELATED

Robert T. Lindle

 DISCIPLINE SUPERVISOR

7-19-95

 DATE

[Signature]

 APPROVAL AUTHORITY

7/19/95

 DATE

RECORD OF CHANGES

CHANGE LETTER	TYPE CHANGE	APPROVAL DATE	CANCELLATION DATE	CHANGE LETTER	TYPE CHANGE	APPROVAL DATE	CANCELLATION DATE
A	P	9-18-96		E	10/22/97		
B	P	12-17-96					
C	P	11-21-96					
D	P	1-17-97					

CONTINUOUS USE

Continuous Use of Procedure Required.
 Read Each Step Prior to Performing.

NUCLEAR OPERATIONS

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ATTACHMENT IV
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REVISION 17

PROCEDURE DEVELOPMENT FORM - A

I. DATE: 8-21-97 PROC. # FEP-4.0 REV. # 2 CHG. E COMM. # _____
 TITLE: CONTROL ROOM EVACUATION DUE TO FIRE

NEW PROC _____ CHANGE PERMANENT
 REVISION _____ RESTRICTED _____ FROM _____ TO _____ SAFETY RELATED
 QUALITY RELATED _____
 NON-SAFETY RELATED _____

II. DESCRIPTION: Incorporate Power Lockouts for XV6-8133A and XV6-8133B

REASON FOR CHANGE: ECR-5004

Originator: [Signature] Sign/Print: STANLEY LATHREN

III. WILL THIS REVISION/CHANGE/NEW PROCEDURE:

	YES	NO	N/A
1. Result in significant increased personnel radiation exposure? (ALARA review)	_____	<input checked="" type="checkbox"/>	_____
2. Result in a release of effluents to the Environment?	_____	<input checked="" type="checkbox"/>	_____
3. Degrade the effectiveness of the Radiation Emergency Plan?	_____	<input checked="" type="checkbox"/>	_____
4. Degrade the safeguards effectiveness of the Physical Security, Safeguards Contingency or Training and Qualification Plans?	_____	<input checked="" type="checkbox"/>	_____

* If any question 1 through 4 is answered "YES", refer to appropriate section of procedure for direction.

REQUIRED REVIEW AND COMMENT: _____ REQUESTED REVIEWS: _____

<input checked="" type="checkbox"/> QROB	<input type="checkbox"/> NL&OE	<input type="checkbox"/> CHS	<input type="checkbox"/> GMNPO	<input type="checkbox"/> _____	<input checked="" type="checkbox"/> Rod Brimo	<u>[Signature]</u>	<u>9/16/97</u>
<input type="checkbox"/> OPS	<input type="checkbox"/> MNTS	<input type="checkbox"/> HPS	<input type="checkbox"/> GMES	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<u>[Signature]</u>	
<input type="checkbox"/> QA	<input type="checkbox"/> NPS	<input type="checkbox"/> SCE	<input type="checkbox"/> GMN55	<input type="checkbox"/> _____	<input checked="" type="checkbox"/> Simon Shaly	Discipline Supervisor	
<input type="checkbox"/> QC	<input type="checkbox"/> TU	<input type="checkbox"/> DE	<input type="checkbox"/> _____	<input type="checkbox"/> _____			

IV. 10CFR50.59 SCREENING REVIEW/SAFETY EVALUATION

REQUIRED EXEMPT PSRC SUPPORTING DOCUMENT: ECR5004

Discipline Supervisor concurrence: [Signature]

V. TEMPORARY APPROVAL:

QUALIFIED REVIEWER _____ DATE _____ QA REVIEW _____ DATE _____
 TELECON BY _____ TELECON BY _____
 SHIFT SUPERVISOR _____ DATE _____ FINAL APPROVAL REQUIRED BY: DATE _____

VI. DISCIPLINE SUPERVISOR FINAL REVIEW:

PSRC REVIEW PRIOR TO IMPLEMENTATION? YES _____ NO

TRAINING REQUIRED? YES _____ NO

IF YES, PRIOR TO PROCEDURE IMPLEMENTATION? YES _____ NO

P/CAP AFFECTED? YES _____ NO

COMMENTS RESOLVED: [Signature] 10/9/97
 Discipline Supervisor Date

TRAINING COMPLETED: NA 10/16/97
 Discipline Supervisor Date

VII. P/CAP ACCEPTABLE?

C. YES _____ NO NL&OE _____ Date _____

N. YES _____ NO RESP. MGR. _____ Date _____

VIII. FINAL QA REVIEW (As Applicable)

QA Concurrence: NA 10/9/97
 Date _____

IX. APPROVAL AUTHORITY:

[Signature] 10/22/97
 Approval/Concurrence Date

X. PSRC REVIEW:

A REVIEWED BY: _____ PSRC Chairman Date _____

COMMENTS: YES _____ NO _____

B PSRC COMMENTS RESOLVED: _____ Responsible Manager Date _____

PSRC Chairman Date _____

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PROCEDURE DEVELOPMENT FORM - A

I. DATE: 12-23-96 PROC. # FEP 4.0 REV. # 2 CHG. D COMM. # _____
 TITLE: CONTROL ROOM EVACUATION DUE TO FIRE

NEW PROC CHANGE PERMANENT SAFETY RELATED
 REVISION RESTRICTED FROM _____ TO _____ QUALITY RELATED
 NON-SAFETY RELATED

II. DESCRIPTION: modify steps for starting and preparation of Component Cooling Pump C to incorporate use of Fire Switch.
 REASON FOR CHANGE: Addition of Appendix R switch per MRF 22594 Q
 Originator: R. Perrin Sign/Print: R. Perrin

III. WILL THIS REVISION/CHANGE/NEW PROCEDURE:

	* YES	NO	N/A
1. Result in significant increased personnel radiation exposure? (ALARA review)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Result in a release of effluents to the Environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Degrade the effectiveness of the Radiation Emergency Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Degrade the safeguards effectiveness of the Physical Security, Safeguards Contingency or Training and Qualification Plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* If any question 1 through 4 is answered "YES", refer to appropriate section of procedure for direction.

REQUIRED REVIEW AND COMMENT: OROPS NL&OE CHS GMNPO STEVE (MRF 22594 Q)
 OPS MNTS HPS GMES
 QA NPS SCE GMNSS
 QC TU DE FEP

REQUESTED REVIEWS: Steve Lindler 12/30/96
 Discipline Supervisor Date

IV. 10CFR50.59 SCREENING REVIEW/SAFETY EVALUATION
 REQUIRED EXEMPT PSRC SUPPORTING DOCUMENT: MRF 22594 Q
Steve Lindler
 Discipline Supervisor concurrence

V. TEMPORARY APPROVAL:
 QUALIFIED REVIEWER _____ DATE _____ QA REVIEW _____ DATE _____
 TELECON BY _____ TELECON BY _____
 SHIFT SUPERVISOR _____ DATE _____ FINAL APPROVAL REQUIRED BY: DATE _____

VI. DISCIPLINE SUPERVISOR FINAL REVIEW:
 PSRC REVIEW PRIOR TO IMPLEMENTATION? YES _____ NO
 TRAINING REQUIRED? YES _____ NO
 IF YES, PRIOR TO PROCEDURE IMPLEMENTATION? YES _____ NO _____
 P/CAP AFFECTED? YES _____ NO
 COMMENTS RESOLVED: Steve Lindler 1/10/97
 Discipline Supervisor Date
 TRAINING COMPLETED: N/A
 Discipline Supervisor Date

VII. P/CAP ACCEPTABLE?
 C. YES _____ NO _____ NL&OE N/A Date _____
 N. YES _____ NO _____ RESP. MGR. _____ Date _____

VIII. FINAL QA REVIEW (As Applicable)
N/A
 QA Concurrence _____ Date _____

IX. APPROVAL AUTHORITY:
R.M. Swisher 1-17-97
 Approval/Concurrence Date

X. PSRC REVIEW:
 A. REVIEWED BY: _____ PSRC Chairman Date _____
 COMMENTS: YES _____ NO _____
 B. PSRC COMMENTS RESOLVED: _____ Responsible Manager Date _____
 _____ PSRC Chairman Date _____

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PROCEDURE DEVELOPMENT FORM - A

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REVISION 16
CHANGE F

I. DATE: 10-26-96 PROC. # FSP-4.0 REV. # 2 CHG. C COMM. # _____
 TITLE: CONTROL ROOM EVACUATION DUE TO FIRE
 NEW PROC CHANGE PERMANENT SAFETY RELATED
 REVISION RESTRICTED FROM _____ TO _____ QUALITY RELATED
 NON-SAFETY RELATED

II. DESCRIPTION: Add step to ensure XVS0885-SF is closed prior to charging / SE pump start.

REASON FOR CHANGE:
NCN 96-0301, Potential for hot start and spurious operation of XVS0885-SF

R Perrill
Originator

III. WILL THIS REVISION/CHANGE/NEW PROCEDURE:

	* YES	NO	N/A
1. Result in significant increased personnel radiation exposure? (ALARA review)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Result in a release of effluents to the Environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Degrade the effectiveness of the Radiation Emergency Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Degrade the safeguards effectiveness of the Physical Security, Safeguards Contingency or Training and Qualification Plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* If any question 1 through 4 is answered "YES", refer to appropriate section of procedure for direction.

REQUIRED REVIEW AND COMMENT:

<input type="checkbox"/> OPS	<input type="checkbox"/> NL&OE	<input type="checkbox"/> CHS	<input type="checkbox"/> GMNPO	<u>GEN. SRV. (RAME)</u> <u>P. GATLIN</u> <u>L. J. JUDGE</u> <u>RCOR (OPS)</u>	<u>[Signature]</u> Discipline Supervisor	<u>10/21/96</u> Date
<input type="checkbox"/> MNTS	<input type="checkbox"/> P&S	<input type="checkbox"/> HPS	<input type="checkbox"/> GMES			
<input type="checkbox"/> QA	<input type="checkbox"/> NPS	<input type="checkbox"/> MNT	<input type="checkbox"/> GMNS			
<input type="checkbox"/> QC	<input type="checkbox"/> TS	<input type="checkbox"/> DE				

IV. 10CFR50.59 SCREENING REVIEW/SAFETY EVALUATION

REQUIRED EXEMPT PSRC SUPPORTING DOCUMENT: 960301

[Signature]
Discipline Supervisor concurrence

V. TEMPORARY APPROVAL:

QUALIFIED REVIEWER WR Charles : 10-26-96
 TELECON BY _____
 SHIFT SUPERVISOR McIntyre DATE 10-26-96

QA REVIEW _____ DATE _____
 TELECON BY _____
 FINAL APPROVAL REQUIRED BY: DATE 11-25-96

VI. DISCIPLINE SUPERVISOR FINAL REVIEW:

TRAINING REQUIRED? YES NO

IF YES, PRIOR TO PROCEDURE IMPLEMENTATION? YES NO

P/CAP AFFECTED? YES NO

COMMENTS RESOLVED: [Signature] 11/21/96
 Discipline Supervisor Date

VII. P/CAP ACCEPTABLE?

C. YES NO NL&OE N/A Date _____
 N. YES NO RESP. MGR. _____ Date _____

VIII. FINAL QA REVIEW (As Applicable)

N/A
 QA Concurrence _____ Date _____

IX. APPROVAL AUTHORITY:

[Signature] 11/21/96
 Approval/Concurrence Date

X. PSRC REVIEW:

A. REVIEWED BY: _____
 PSRC Chairman Date _____

COMMENTS: YES NO

B. PSRC COMMENTS RESOLVED: _____
 Responsible Manager Date _____

PSRC Chairman Date _____

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PROCEDURE DEVELOPMENT FORM - A

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REVISION 16
CHANGE F

I. DATE: <u>8-26-96</u> PROC. # <u>FEP-4.0</u> REV. # <u>2</u> CHG. <u>B</u> COMM. # _____						
TITLE: <u>CONTROL ROOM EVACUATION DUE TO FIRE</u>						
NEW PROC <input type="checkbox"/>	CHANGE <input checked="" type="checkbox"/> FERMANTENT <input checked="" type="checkbox"/>	SAFETY RELATED <input checked="" type="checkbox"/>				
REVISION <input type="checkbox"/>	RESTRICTED <input type="checkbox"/> FROM _____ TO _____	QUALITY RELATED <input type="checkbox"/>				
		NON-SAFETY RELATED <input type="checkbox"/>				
II. DESCRIPTION: ① Changed Step 3. B to refer to starting the Component Cooling Water Pump using the local START/STOP Appendix R switch. ② Changed Attachment II to refer to the Appendix R switches for CCW pumps. REASON FOR CHANGE: Addition of Appendix R switches for CCW pumps per MRF 22594 Q. <p style="text-align: right;"><u>Reneo</u> Originator</p>						
III. WILL THIS REVISION/CHANGE/NEW PROCEDURE:		* YES NO N/A				
1. Result in significant increased personnel radiation exposure? (ALARA review)		___ <input checked="" type="checkbox"/> ___				
2. Result in a release of effluents to the Environment?		___ <input checked="" type="checkbox"/> ___				
3. Degrade the effectiveness of the Radiation Emergency Plan?		___ ___ <input checked="" type="checkbox"/>				
4. Degrade the safeguards effectiveness of the Physical Security, Safeguards Contingency or Training and Qualification Plans?		___ ___ <input checked="" type="checkbox"/>				
* If any question through 4 is answered "YES", refer to appropriate section of procedure for direction.						
REQUIRED REVIEW AND COMMENT:						
<input type="checkbox"/> OPS	<input type="checkbox"/> NL&OE	<input type="checkbox"/> CHS	<input type="checkbox"/> GMNPO	<u>STEVE KECKENSON</u>	<u>J. Linder</u>	<u>8-27-96</u>
<input type="checkbox"/> MNTS	<input type="checkbox"/> P&S	<input type="checkbox"/> HPS	<input type="checkbox"/> GMES	<u>GREG CROXTON</u>	Discipline Supervisor	Date
<input type="checkbox"/> QA	<input type="checkbox"/> NPS	<input type="checkbox"/> MNT	<input type="checkbox"/> GMNSS	<u>STEVE CARROLL</u>		
<input type="checkbox"/> QC	<input type="checkbox"/> TS	<input type="checkbox"/> DE	<input checked="" type="checkbox"/> OR (OPS)	<u>LAND KASNER - R.C.E</u>		
IV. 10CFR50.59 SCREENING REVIEW/SAFETY EVALUATION						
<input checked="" type="checkbox"/> REQUIRED <input type="checkbox"/> EXEMPT <input checked="" type="checkbox"/> PSRC		SUPPORTING DOCUMENT: <u>MRF 22594 Q</u>		<u>J. Linder</u> Discipline Supervisor concurrence		
V. TEMPORARY APPROVAL:		QUALIFIED REVIEWER _____ DATE _____		QA REVIEW _____ DATE _____		
TELECON BY _____		SHIFT SUPERVISOR _____ DATE _____		TELECON BY _____		
				FINAL APPROVAL REQUIRED BY: DATE _____		
VI. DISCIPLINE SUPERVISOR FINAL REVIEW:		TRAINING REQUIRED? YES ___ NO <input checked="" type="checkbox"/>		VII. P/CAP ACCEPTABLE?		
IF YES, PRIOR TO PROCEDURE IMPLEMENTATION? YES ___ NO ___		P/CAP AFFECTED? YES ___ NO <input checked="" type="checkbox"/>		C. YES ___ NO ___ NL&OE <u>N/A</u> Date		
COMMENTS RESOLVED: <u>J. Linder</u> <u>10/8/96</u> Discipline Supervisor Date				N. YES ___ NO ___ RESP. MGR. Date		
				VIII. FINAL QA REVIEW (As Applicable)		
				QA Concurrence <u>N/A</u> Date		
				IX. APPROVAL AUTHORITY:		
				<u>Ray E. Wue</u> <u>12/17/96</u> Approval/Concurrence Date		
X. PSRC REVIEW:		A. REVIEWED BY:		B. PSRC COMMENTS RESOLVED:		
PSRC Chairman _____ Date		COMMENTS: YES ___ NO ___		Responsible Manager _____ Date		
				PSRC Chairman _____ Date		

NUCLEAR OPERATIONS

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PROCEDURE DEVELOPMENT FORM - A

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ATTACHMENT IV
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REVISION 16
CHANGE F

I. DATE: 4-29-96 PROC. # FEP-4.D REV. # 2 CHG. A COMM. # _____
 TITLE: CONTROL ROOM EVACUATION ONE TO FIRE
 NEW PROC CHANGE PERMANENT SAFETY RELATED
 REVISION _____ RESTRICTED _____ FROM _____ TO _____ QUALITY RELATED _____
 NON-SAFETY RELATED _____

II. DESCRIPTION: DELETED STEPS 3.14.b. ON Pg. 5 OF 10 AND 8. ON ATT. III Pg. 11 OF 11 @ CREATED STEP 6.5. ON ATT. V Pg. 4 OF 4 FROM DELETED DATA ABOVE.

REASON FOR CHANGE:
MRF 22594P

[Signature]
Originator

III. WILL THIS REVISION/CHANGE/NEW PROCEDURE:

	* YES	NO	N/A
1. Result in significant increased personnel radiation exposure? (ALARA review)	_____	<input checked="" type="checkbox"/>	_____
2. Result in a release of effluents to the Environment?	_____	<input checked="" type="checkbox"/>	_____
3. Degrade the effectiveness of the Radiation Emergency Plan?	_____	_____	<input checked="" type="checkbox"/>
4. Degrade the safeguards effectiveness of the Physical Security, Safeguards Contingency or Training and Qualification Plans?	_____	_____	<input checked="" type="checkbox"/>

* If any question 1 through 4 is answered "YES", refer to appropriate section of procedure for direction.

REQUIRED REVIEW AND COMMENT:

<input type="checkbox"/> OPS	<input type="checkbox"/> NL&OE	<input type="checkbox"/> CHS	<input type="checkbox"/> GMNPO	<input checked="" type="checkbox"/> <u>STEVE CARROLL</u>
<input type="checkbox"/> MNTS	<input type="checkbox"/> P&S	<input type="checkbox"/> HPS	<input type="checkbox"/> GMES	<input checked="" type="checkbox"/> <u>TOM KECKEISEN</u>
<input type="checkbox"/> QA	<input type="checkbox"/> NPS	<input type="checkbox"/> MNT	<input type="checkbox"/> GMNSS	<input checked="" type="checkbox"/> <u>ANDY LINDLER</u>
<input type="checkbox"/> QC	<input type="checkbox"/> TS	<input type="checkbox"/> DE	<input checked="" type="checkbox"/> <u>OR OPS</u>	

[Signature] 4/29/96
Discipline Supervisor Date

IV. 10CFR50.59 SCREENING REVIEW/SAFETY EVALUATION
 REQUIRED EXEMPT PSRC SUPPORTING DOCUMENT: MRF 22594P [Signature]
 Discipline Supervisor concurrence

V. TEMPORARY APPROVAL:

QUALIFIED REVIEWER _____ DATE _____	QA REVIEW _____ DATE _____
TELECON BY _____	TELECON BY _____
SHIFT SUPERVISOR _____ DATE _____	FINAL APPROVAL REQUIRED BY: DATE _____

VI. DISCIPLINE SUPERVISOR FINAL REVIEW:

TRAINING REQUIRED? YES ___ NO

IF YES, PRIOR TO PROCEDURE IMPLEMENTATION? YES ___ NO ___

P/CAP AFFECTED? YES ___ NO

COMMENTS RESOLVED: [Signature] 5-7-96
 Discipline Supervisor Date

VII. P/CAP ACCEPTABLE?

C. YES ___ NO ___ NL&OE N/A Date _____

N. YES ___ NO ___ RESP. MGR. _____ Date _____

VIII. FINAL QA REVIEW (As Applicable)
N/A
 QA Concurrence _____ Date _____

IX. APPROVAL AUTHORITY:
[Signature] 9-18-96
 Approval/Concurrence Date

X. PSRC REVIEW:

A. REVIEWED BY:	B. PSRC COMMENTS RESOLVED:
PSRC Chairman _____ Date _____	Responsible Manager _____ Date _____
COMMENTS: YES ___ NO ___	PSRC Chairman _____ Date _____

1.0 PURPOSE

This procedure provides instructions for plant shutdown from outside the Control Room when fire has made the Control Room uninhabitable or fire in the Control Building has made control and indication unreliable. This procedure assumes a loss of offsite power and no load sequencer action.

2.0 INITIAL CONDITIONS

- 2.1 The Control Room must be evacuated due to uncontrollable fire in any of the following areas:
 - a. Control Room zones CB-17.1, 17.2 or 17.3.
 - b. Cable Spreading Rooms zones CB-4 or CB-15.
 - c. Relay Room zone CB-6.
- 2.2 This procedure is implemented from FEP-1.0.

CAUTION 3.0

- a. In the event of an emergency not covered by an approved written procedure, operating personnel have the authority to take action to minimize personnel injury or damage to the facility, and to protect the public health and safety. Such actions shall be documented by the operating personnel.
- b. When a fire is located in the Control Building complex, indications may indicate incorrectly, equipment may operate unintentionally and automatic control may not be possible. Due to cable routing and design, Train B equipment will be operable from outside the Control Room after electrical isolation has been achieved.

NOTE 3.0

If any electrical component will not operate from the specified location, attempts should be made to control it per Attachment VIII, IX, X, or XI.

CHG
E

3.0 OPERATOR ACTIONS

NOTE 3.1 through 3.6

Steps 3.1 through 3.6 are Immediate Actions.

- 3.1 The Shift Supervisor shall perform the following:
 - a. Direct implementation of this procedure.
 - b. Implement the Emergency plan, Alert condition, per EPP-001, Activation and Implementation of Emergency Plan.
- 3.2 Direct the Control Room Supervisor to implement Attachment I.
- 3.3 Direct the Nuclear Reactor Operator At The Controls to implement Attachment II.
- 3.4 Direct the A Nuclear Reactor Operator to implement Attachment III.
- 3.5 Direct the Intermediate Building Operator to implement Attachment IV.
- 3.6 Direct the Auxiliary Building Upper Operator to implement Attachment V.

NOTE 3.7 through 3.12

Steps 3.7 through 3.12 must be completed within 30 minutes of implementation of this procedure.

- 3.7 Direct the Shift Engineer to implement Attachment VI.
- 3.8 Direct the Electrical Maintenance personnel to implement Attachment VII.

NOTE 3.9 through 3.24

- a. The remainder of this procedure should be coordinated from the CREP.
- b. Primary reliance should be placed on Steam Generator C and its associated CREP instrumentation, LI-497B and IPI2020A-MS.

- 3.9 Maintain Steam Generator pressure between 1000 psig and 1100 psig by throttling the following:
 - a. IPV02000-MS, MAIN STEAM HEADER A POWER RELIEF VALVE (AB-436 W. Pen.).
 - b. IPV02010-MS, MAIN STEAM HEADER B POWER RELIEF VALVE (IB-436).
 - c. IPV02020-MS, MAIN STEAM HEADER C POWER RELIEF VALVE (IB-436 E. Pen.).

NOTE 3.10

If Natural Circulation is not indicated, increased dumping of steam should restore Natural Circulation.

- 3.10 Verify Natural Circulation as follows:
 - a. RCS subcooling is greater than 30°F as determined by the following:
 - 1) TI-433A, RCS HOT LEG C WR TEMP.
 - 2) PI-402D, RCS PRESS.
 - 3) Steam Tables.
 - b. Steam Generator pressure is stable or decreasing as indicated on PI-2020A, SG-C PRESS.
 - c. Reactor Coolant System TH is stable or decreasing as indicated on TI-433A, RCS HOT LEG C WR TEMP.

- d. Reactor Coolant System TC is at saturation temperature for Steam Generator pressure as determined by the following:
 - 1) TI-430A, RCS COLD LEG C WR TEMP.
 - 2) PI-2020A, SG-C PRESS.
 - 3) Steam Tables.

NOTE 3.11

- a. If the Turbine Driven Emergency Feed Pump is inoperable, the Motor Driven Emergency Feed Pump should be started per Steps 3.18 through 3.20.
- b. Primary reliance should be placed on Steam Generator C and its associated instrumentation.

- 3.11 Coordinate with the Shift Engineer to maintain Steam Generator wide range levels 50% to 60%.
- 3.12 When the NROATC reports Diesel Generator B ready for loading, start one of the following from the CREP:
 - a. XPP-0039B, SW PUMP B.
 - b. XPP-0039C, SW PUMP C TRAIN B.

NOTE 3.13 through 3.16

Steps 3.13 through 3.16 must be completed within 90 minutes of implementation of this procedure.

- 3.13 Establish Component Cooling Pump Operation.
 - a. Start one of the following (XSW1DB):
 - 1) XPP0001B, COMPONENT COOLING PUMP B, using SS-CC02, UNIT 13. | CHG B
 - 2) XPP0001C, COMPONENT COOLING PUMP C, using SS-CC04, UNIT 11. | CHG D
 - b. Verify pump discharge pressure is between 60 psig and 70 psig (IB-412).

- 3.14 When the Auxiliary Building Operator Upper reports Charging Pump B(C) ready to start, have the NROATC start one of the following:
- a. The Charging Pump B using SS-CS06, UNIT 15 (XSW1DB 15).
 - b. The Charging Pump C using SS-CS08, UNIT 14 (XSW1DB 14).
- 3.15 Start HVAC Chiller B(C) as follows:
- a. Verify the A Nuclear Reactor Operator has XSW1DB1 ready for load.
 - b. Verify the Shift Engineer has HVAC Chiller B(C) ready for starting.
 - c. Have the NROATC start one of the following:
 - 1) The Chilled Water pump B and Chiller B using SS-VU06 (XSW1DB2).
 - 2) The Chilled Water pump C and Chiller C using SS-VU08 (XSW1DB2).

CHG
A

CAUTION 3.16

- a. Seal injection should be restored slowly to avoid thermal shock to the Reactor Coolant Pump seals.
- b. Cooldown should be slow enough to prevent losing control of Pressurizer level.
- c. PI-121A and FI-122B indication and FCV-122 control from the CREP may be unreliable due to fire.
- d. Only ILI00990A-SF, RWST REMOTE LEVEL INDICATOR, (AB-388) will give reliable indication of RWST level.

- 3.16 Maintain Pressurizer level between 25% and 50% as follows:
- a. Have the Auxiliary Bldg Operator Upper throttle open XVT08389-CS, SEAL INJECTION HEADER FLOW BYPASS VALVE (AB-436).
 - b. Maintain LI-459B, PZR WR LEVEL (CREP), using seal injection flow and cooldown.
 - c. If more charging flow is needed perform one of the following:
 - 1) Restore normal charging.
 - 2) Open XVG08801A-SI, HI HEAD INJ VALVE (FB-412).

- 3.17 Maintain RCS subcooling greater than 30°F as determined by TI-433A, RCS HOT LEG C WR TEMP, PI-402D, RCS PRESS, and Steam Tables as follows:
- a. Utilize a very slow cooldown.
 - b. Maintain Reactor Coolant System pressure 2200 psig to 2300 psig by having the NROATC cycle the Pressurizer heaters at XSW1DB 05 per Attachment IX.
 - c. Log temperature on Attachment XII at least once per 30 minutes when cooldown is in progress.

NOTE 3.18

Step 3.18 should be completed within 120 minutes of implementation of this procedure.

- 3.18 Initiate Reactor Building cooling as follows:
- a. Verify the A Nuclear Reactor Operator has Service Water aligned to the RBCU's.
 - b. Verify Electrical Maintenance has Service Water aligned to the RBCU's.
 - c. Verify the Shift Engineer has reported Service Water Booster Pump suction pressure greater than 20 psig.
 - d. Have the A Nuclear Reactor Operator start the following at XSW1DB1:
 - 1) Start Service Water Booster Pump B by placing SS-SW07, UNIT 5A, in START.
 - 2) Start XFN-64B in slow speed by placing SS-AH275X, UNIT 6D, in START.
 - 3) Start XFN-65B in slow speed by placing SS-AH279, UNIT 6C, in START.

NOTE 3.19 through 3.25

The following steps are not required for safe shutdown and may be impossible for some fire locations. Transition to FEP-4.1 may be made at any time. If manpower is available and the decision has been made to stay in Hot Standby, the following steps should be performed.

- 3.19 Have the NROATC close XSW1DB 03, EMERG FD WTR PUMP XPP0021B-EF, per Attachment IX.

- 3.20 Establish flow from Emergency Feedwater Pump B to the Steam Generators as follows:
- a. Throttle IFV-3531, MDEFP TO SG A.
 - b. Throttle IFV-3541, MDEFP TO SG B.
 - c. Throttle IFV-3551, MDEFP TO SG C.
- 3.21 If flow cannot be established, direct the Shift Engineer to manually throttle the feed control valves as follows:
- a. Close the Instrument Air Supply Isolation Valve (AV-1) to the affected positioner.
 - b. Vent air from the positioner by opening the regulator vent.
 - c. Manually operate the handwheel to achieve the desired flow.
- 3.22 Establish Component Cooling flow as follows:
- a. Close the following valves:
 - 1) XVB09503B-CC, RH HEAT EXCHANGER B CC INLET VALVE (AB-412).
 - 2) XVB09524A-CC, NON-ESS EQUIP SUPPLY HDR XCONN VALVE (AB-412).
 - 3) XVB09525A-CC, NON-ESS EQUIP SUPPLY HDR XCONN VALVE (AB-412).
 - 4) XVB09526A-CC, NON-ESS EQUIP CC RETURN HDR XCONN VLV (IB-436).
 - 5) XVB09687A-CC, NON-ESS EQUIP CC RETURN HDR XCONN VLV (IB-436).
 - b. Open the following valves:
 - 1) XVB09524B-CC, NON-ESS EQUIP SUPPLY HDR XCONN VALVE (AB-412).
 - 2) XVB09525R-CC, NON-ESS EQUIP SUPPLY HDR XCONN VALVE (AB-412).
 - 3) XVG09625-CC, RB CC INLET HEADER ISOLATION VALVE (AB-412).
 - 4) XVG09626-CC, RB CC INLET HEADER ISOLATION VALVE (AB-412).
 - 5) XVG09568-CC, EXCESS LTDN HX INLET CC HEADER ISOL VLV (AB-436 West Pen.).

- 6) XVG09606-CC, RB CC RETURN HEADER VALVE
(AB-436 West Pen.).
- 7) XVB09687B-CC, NON-ESS EQUIP CC RETURN HDR XCONN
VLV (IB-412).
- 8) XVB09526B-CC, NON-ESS EQUIP CC RETURN HDR XCONN
VLV (IB-412).
- 9) XVG09600-CC, RB CC SUPPLY HEADER ISOLATION VALVE
(IB-436 East Pen.).

3.23 Establish Instrument Air as follows:

- a. Close XSW1DB1 08B, SUPPLEMENTAL INSTR AIR COMPR
XAC0012A-IA, per Attachment VIII.
- b. Install jumpers around the solenoids to open the following valves:
 - 1) XVA02659-IA, RB INSTRUMENT AIR BACK-UP SUP ISOL
VLV (AB-436 West Pen.).
 - 2) T02660-IA, RB INSTRUMENT AIR SUPPLY ISOL VLV
(RC) (AB-436 West Pen.).

3.24 Establish Normal Letdown as follows:

- a. Open ITV00144-CC, LETDOWN HX CC OUTLET CONTROL VALVE,
by closing ITV00144-AV1-CC, IA ISOLATION VALVE FOR
ITV0144-CC, and venting air off the valve.
- b. Open XVT-8152, LTDN ISOL (CREP).
- c. Close XVG08408A-CS, LTDN HDR PRESS CONT VLV INLET ISOL
VLV (AB-424).
- d. Throttle open XVT08409-CS, LTDN HDR PRESS CONT VLV BYPASS
VALVE, three turns (AB-424).
- e. Open the following valves (CREP):
 - 1) LCV-459, LTDN LINE ISOL.
 - 2) LCV-460, LTDN LINE ISOL.
 - 3) PVT-8149A, LTDN ORIFICE A ISOL.
- f. Cycle PVT-8149A, LTDN ORIFICE A ISOL, as necessary to maintain
Pressurizer level between 25% and 50%.

- g. Isolate and vent air from the following valves:
 - 1) LCV00115A-CS, VOLUME CONTROL TANK LEVEL CONTROL (AB-436, Filter Gallery).
 - 2) TCV00381B-CS, LETDOWN REHEAT HT EXCH TEMP CONTROL VLV (AB-424).
- h. Direct Chemistry to sample the Reactor Coolant System for boron concentration.

3.25 If offsite power has been lost, perform the following:

NOTE 3.24.a

Some breakers, like the Circulating Water Pump breakers, may have to be opened locally from their respective switchgear.

- a. Open all 7.2 KV breakers on the following busses:
 - 1) XSW1A, BUS 1A.
 - 2) XSW1B, BUS 1B.
 - 3) XSW1C, BUS 1C.
 - b. If offsite power is available, verify OCB 8902, MAIN XFMR FEED, is closed.
 - c. Close the following breakers:
 - 1) XSW1A 05, BUS 1A NORMAL INCOMING BKR.
 - 2) XSW1B 05, BUS 1B NORMAL INCOMING BKR.
 - 3) XSW1C 09, BUS 1C NORMAL INCOMING BKR.
 - d. Energize selected busses and loads at the discretion of the Shift Supervisor.
- 3.26 Management decision will be made to proceed to FEP-4.1, Plant Shutdown From Hot Standby To Cold Shutdown Due To Fire In Control Building, or to re-enter the Control Room and proceed to FEP-3.1, Train B Shutdown From Hot Standby To Cold Shutdown Due To Fire.

4.0 FINAL CONDITIONS

- 4.1 Reactor conditions are as follows:
 - a. All Rods are inserted.
 - b. The Reactor is subcritical.
 - c. Shutdown Margin is satisfied.
- 4.2 Reactor Coolant System conditions are as follows:
 - a. Seal Injection is established.
 - b. Natural Circulation is established.
 - c. RCS subcooling is greater than 30°F.
- 4.3 Plant systems in service are as follows:
 - a. Diesel Generator B is supplying XSW1DB loads.
 - b. Train B CVCS is supplying Reactor Coolant Pump seals.
 - c. The Turbine Driven Emergency Feedwater Pump is running.
 - d. Steam Dumps or one or more PORV's are supplying secondary heat removal.
 - e. Train B Service Water System is running.
 - f. Train B HVAC Chilled Water System is running.
 - g. Train B Reactor Building Cooling System is in service.
 - h. Train B Component Cooling System is in service.
- 4.4 Additional plant systems that may be in service are as follows:
 - a. BOP electrical busses may be energized.
 - b. Backup Instrument Air may be supplying the Instrument Air system.
 - c. CVCS Letdown may be controlling Pressurizer level between 25% and 50%.
 - d. Pressurizer heaters may be controlling Pressurizer pressure between 2200 psig and 2300 psig.
 - e. Motor Driven Emergency Feedwater Pump B may be in service.
- 4.5 The plant is in a safe shutdown condition with temperature and inventory being controlled.

DUTIES OF THE CONTROL ROOM SUPERVISOR

1. Take plant keys, portable radios, station log book and a flashlight to the IB-436 (CREP).
2. At the CREP perform the following switch alignments within 30 minutes:
 - a. At XPN-7200A, perform the following:
 - 1) Place TSC BYPASS to ON.
 - 2) Transfer the following to LOCAL:
 - a) PZR HTRS BU GROUP 1 XFER.
 - b) CHG FLOW CNTRL XFER FCV-122.
 - c) SW PUMP A XFER XPP-0039A.
 - d) SW PUMP C TRAIN A XFER XPP-0039C.
 - e) TD EFP FD VLV XFER.
 - f) LTDN LINE ISOL XFER LCV-459.
 - g) LTDN LINE ISOL XFER LCV-460.
 - h) LTDN LINE A ISOL XFER PVT-8149A.
 - i) LTDN LINE B ISOL XFER PVT-8149B.
 - j) LTDN LINE C ISOL XFER PVT-8149C.
 - k) PORV XFER PCV-445A (Auxiliary Panel 7200A)
 - 3) Ensure the following are closed:
 - a) LTDN LINE ISOL LCV-459.
 - b) LTDN LINE ISOL LCV-460.
 - c) LTDN ORIFICE A ISOL PVT-8149A.
 - d) LTDN ORIFICE B ISOL PVT-8149B.
 - e) LTDN ORIFICE C ISOL PVT-8149C.
 - f) PORV PCV-445A (Auxiliary Panel 7200A).

- b. At XPN-7200B, perform the following:
 - 1) Place on TSC BYPASS to ON.
 - 2) Transfer the following to LOCAL:
 - a) PZR HTRS BU GROUP 2 XFER.
 - b) EMERG BA FLOW CNTRL XFER MVT-8104.
 - c) SW PUMP B XFER XPP-0039B.
 - d) SW PUMP C TRAIN B XFER XPP-0039C.
 - e) MD EFP FEED VALVES XFER.
 - f) BA PUMP B XFER XPP-13B.
 - g) PORV PCV-444B (Auxiliary Panel 7200B).
 - h) LTDN ISOL XFER XVT-8152.
 - i) STEAM TO TD EFP XFER PVG-2030.
 - j) TD EFP SPEED CNTRL XFER HC-2034B.
 - 3) Ensure the following in their correct position:
 - a) BA XFER PUMP B XPP-13B is off.
 - b) PORV PCV-444B is closed (Auxiliary Panel 7200B).
 - c) LTDN ISOL XVT-8152 is closed.
 - d) STEAM TO TD EFP PVG-2030 is open.
3. Within 30 minutes, evaluate radio and page communications.
4. After 15 minutes but within 30 minutes, energize N-33 detector high voltage.
5. Verify Reactor power is decreasing or stable in the source range.
6. If power is not decreasing or stable in the source range, do not cool down below 550°F.

DUTIES OF THE NUCLEAR REACTOR OPERATOR
AT THE CONTROLS

NOTE 1 through 3

Steps 1 through 3 are Immediate Actions.

1. Manually trip the Reactor from the Main Control Board and ensure the following:
 - a. Reactor Trip and Bypass breakers are open.
 - b. All rod bottom lights are lit.
 - c. Reactor power level is decreasing.
2. Ensure Turbine trip as follows:
 - a. Turbine MAIN STOP VLVS are closed.
 - b. Generator trip after a 30 second time delay.
 - c. Trip the EXC FIELD BKR.
3. Trip all Reactor Coolant Pumps.

NOTE 4

If any valve fails to operate from the Main Control Board, this procedure should be continued.

4. Align the following valves as specified:
 - a. Open LCV-115B, RWST TO CHG PP SUCT.
 - b. Open LCV-115D, RWST TO CHG PP SUCT.
 - c. Close MVT-8100 SEAL WTR RTN ISOL.
 - d. Close MVG-3001A, RWST TO SPRAY PUMP A SUCT.
 - e. Close MVG-3001B, RWST TO SPRAY PUMP B SUCT.

NOTE 5

If the Reactor did not trip from Main Control Board, it should be tripped from the Rod Drive MG sets (IB-463) prior to proceeding to XSW1DB switchgear.

5. Obtain keys, radio and STA tool kit and proceed to XSW1DB switchgear room (IB-436).
6. Within 30 minutes, perform the following (IB-436):
 - a. At XSW1DB 15, CHARGING INJ PUMP B XPP0043B-CS, perform the following:
 - 1) Place 43-CS06, XFER UNIT 15, to LOCAL.
 - 2) Momentarily place SS-CS06, UNIT 15, to STOP.
 - b. At XSW1DB 14, CHARGING INJ PUMP C XPP0043C-CS, perform the following:
 - 1) Place 43-CS08, XFER UNIT 14, to LOCAL.
 - 2) Momentarily place SS-CS08, UNIT 14, to STOP.
 - c. At XSW1DB2 03A, perform the following:
 - 1) Place 43-VU06, XFER UNIT 6C, to LOCAL.
 - 2) Momentarily place SS-VU06, UNIT 6C, to STOP.
 - 3) Place 43-VU08, XFER UNIT 5A, to LOCAL.
 - 4) Momentarily place SS-VU08, UNIT 5A, to STOP.
 - d. At XSW1DB 13, CC PUMP B XPP0001B-CC.
 - 1) Place 43-CC02, XFER UNIT 13, to LOCAL.
 - 2) Momentarily place SS-CC02, UNIT 13, to STOP.
 - e. At XSW1DB 11, CC PUMP C XPP0001C-CC.
 - 1) Place 43-CC04, XFER UNIT 11, to LOCAL.
 - 2) Momentarily place SS-CC04, UNIT 11, to STOP.

CHG
B

CHG
D

- f. At XSW1DB 07, TRANSF 1DB1 & 1DB2, perform the following:
 - 1) Place 43-ES19, XFER UNIT 7, to LOCAL.
 - 2) Momentarily place SS-ES19, UNIT 7, to CLOSE.
- g. At XSW1DB 06, RB SPRAY PUMP XPP0038B-SP, perform the following:
 - 1) Open XSW1DB 06 CCP, CLOSING CNTRL PWR XPP0038B-SP (RRP).
 - 2) Open XSW1DB 06 TCP, TRIPPING CNTRL PWR XPP0038B-SP (TCP).
 - 3) Push the MANUAL TRIP lever on the 7.2 KV breaker.
- h. At XSW1DB 05, PZR HTR BKUP GRP-2 XTF4102-RC, perform the following:
 - 1) Open XSW1DB 05 CCP, CLOSING CNTRL PWR XTF-4102-RC (RRP).
 - 2) Open XSW1DB 05 TCP, TRIPPING CNTRL PWR XTF4102-RC (RRT).
 - 3) Push the MANUAL TRIP lever on the 7.2 KV breaker.
- i. At XSW1DB 04, XSW1EB FDR BKR, perform the following:
 - 1) Place 43-ES23, XFER UNIT 4, to LOCAL.
 - 2) Momentarily place SS-ES23, UNIT 4, to CLOSE.
- j. At XSW1DB 03, EMERG FD WTR PUMP XPP0021B-EF, perform the following:
 - 1) Open XSW1DB 03 CCP, CLOSING CNTRL PWR XPP0021B-EF (RRP).
 - 2) Open XSW1DB 03 TCP, TRIPPING CNTRL PWR XPP0021B-EF (RRT).
 - 3) Push the MANUAL TRIP lever on the 7.2 KV Breaker.
- k. At XSW1DB2 03A, perform the following:
 - 1) Place 43-ES37, XFER UNIT 4B, to LOCAL.
 - 2) Momentarily place SS-ES37, UNIT 4B, to CLOSE.
- l. Open the following indicated (non-shaded) breakers on XMC1DB2X:

436' IB

MCC1DB2X

	<u>XMC1DB2X 02AD</u> RCP B SEAL INJECTION ISO ORC XVT8102B-CS	<u>XMC1DB2X 03AD</u> SER WTR TO EF PUMP B SUCTION XVG1001B-EF	<u>XMC1DB2X 04AD</u> CHEM FEED TO EF HDR B ISO XVK1633B-FW	
<u>XMC1DB2X 01DG</u> COMP COOLING WTR ISO NON-ESS EQUIPMENT XVB9526B-CC	<u>XMC1DB2X 02EH</u> RCP C SEAL INJECTION ISO ORC XVT8102C-CS	<u>XMC1DB2X 03EH</u> SER WTR TO TURB DRVN EF PUMP SUCTION XVG1002-EF	<u>XMC1DB2X 04EH</u> SW INLET TO HVAC CHILLER B XVB3126B-SW	<u>XMC1DB2X 05EH</u> B TRAIN SW INLET TO HVAC CHILLER C XVB3128C-SW
<u>XMC1DB2X 01HK</u> COMP COOLING WTR ISO NON-ESS EQUIPMENT XVB9687A-CC				

436' IB

MCC1DB2X

XMCC1DB2X 06ABL
PGST ACCIDENT
ANLZR SYS
XPN7215B-HR

XMCC1DB2X 07AD
CRDM
CLG WTR
OUTLET VLV
XVG7504-AC

XMCC1DB2X 07EH
VLV SEPV WTR
LOOP B ISOLATION
XVG10378-EF

XMCC1DB2X 07IM
CRDM
CLG WTR
INLET VLV
--XVG7502-AC

XMCC1DB2X 08DH
PRESSURIZER PRESS
RELIEF ISO
XVGR000C-RC

XMCC1DB2X 08IM
MAIN STEAM TO
EFWPT DRAIN
STOP VALVE
XVT2813-MS

- m. If the IB operator has placed Diesel Generator B in LOCAL, perform the following at XSW1DB 16, BUS 1DB NORMAL INCOMING BKR:
 - 1) Open XSW1DB 16, NORMAL INCM BKR CLOSING CNTRL PWR.
 - 2) Open XSW1DB 16, NORMAL INCM BKR TRIPPING CNTRL PWR.
 - 3) Push the MANUAL TRIP lever on the 7.2 KV breaker.
 - n. At XSW1DB 01, BUS 1DB EMERG INCOMING BKR, perform the following:
 - 1) Open XSW1DB 01, CLOSING CNTRL PWR EMERG INCM BKR (RRP).
 - 2) Open XSW1DB 01, TRIPPING CNTRL PWR EMERG INCM BKR (RRT).
 - 3) Push the MANUAL TRIP lever on the 7.2 KV breaker.
 - o. Verify XSW1DB 10, DIESEL GEN B XEG0001B-DG, breaker closes.
 - p. Report to the Control Room Supervisor that Diesel Generator B is ready for loading.
7. Stand by in XSW1DB switchgear room to start additional loads.

DUTIES OF THE A NUCLEAR REACTOR OPERATOR

NOTE 1 and 2

Steps 1 and 2 are Immediate Actions.

1. De-energize the following by opening their respective Disconnect Switches located inside the Main Control Board:

- a. At Sub Panel-19A (XCP-6112):

	<u>Switch</u>	<u>Valve Number</u>
1)	DS-1	ILV-459 XVT-8146
2)	DS-2	ILV-460 XVT-8147
3)	DS-3	1-XVM-2801A 1-XVM-2801B 1-XVM-2801C A-XVT-2869A A-XVT-2869B A-XVT-2869C
4)	DS-4	PCV-2000A
5)	DS-5	PCV-2010A
6)	DS-6	PCV-2020A
7)	DS-32	IPV-445A
8)	DS-33	IPV-445B

- b. At Sub Panel-19B (XCP-6113):

	<u>Switch</u>	<u>Valve Number</u>
1)	DS-7	PCV-2000B
2)	DS-8	PCV-2010B
3)	DS-9	PCV-2020B
4)	DS-10	XVT-8153
5)	DS-11	XVT-8154

	<u>Switch</u>	<u>Valve Number</u>
6)	DS-12	2-XVM-2801A 2-XVM-2801B 2-XVM-2801C B-XVT-2869A B-XVT-2869B B-XVT-2869C
7)	DS-13	XVT-8145
8)	DS-31	IPV-444B

2. If the Main Control Board is inaccessible, open the disconnects in the following Termination Cabinets (448CB):

a. At XPN-7106:

	<u>Switch</u>	<u>Valve Number</u>
1)	DS-15	ILV-459 IPV-445A IPV-445B XVT-8146
2)	DS-16	ILV-460 XVT-8147
3)	DS-17	1-XVM-2801A 1-XVM-2801B 1-XVM-2801C 1-XVT-2869A 1-XVT-2869B 1-XVT-2869C
4)	DS-18	PCV-2000A
5)	DS-19	PCV-2010A
6)	DS-20	PCV-2020A

b. At XPN-7109:

	<u>Switch</u>	<u>Valve Number</u>
1)	DS-27	XVT-8145

c. At XPN-7112:

	<u>Switch</u>	<u>Valve Number</u>
1)	DS-28	IPV-445A
2)	DS-29	IPV-445B

d. At XPN-7122:

	<u>Switch</u>	<u>Valve Number</u>
1)	DS-30	IPV-444B

e. At XPN-7130:

	<u>Switch</u>	<u>Valve Number</u>
1)	DS-21	PCV-2000B
2)	DS-22	PCV-2010B
3)	DS-23	PCV-2020B
4)	DS-24	IPV-444B XVT-8153
5)	DS-25	XVT-8154
6)	DS-26	2-XVM-2801A 2-XVM-2801B 2-XVM-2801C B-XVT-2869A B-XVT-2869B B-XVT-2869C

3. Obtain keys, radio and ELECT tool kit and proceed to XSW1DA switchgear room (IB-463).
4. Within 30 minutes, perform the following (IB-463):
 - a. At XSW1DA 03, EMERG DIESEL GEN A XEG0001A-DG, perform the following:
 - 1) Open XSW1DA 03 CCP, CLOSING CNTRL PWR XEG0001A-DG (RRP).
 - 2) Open XSW1DA 03 TCP, TRIPPING CNTRL PWR XEG0001A-DG (RRT).
 - 3) Push the MANUAL TRIP lever on the 7.2 KV breaker.
 - b. At XSW1DA 15, BUS 1DA EMERG INCOMING BKR, perform the following:
 - 1) Open XSW1DA 15 CCP, CLOSING CNTRL PWR EMERG INCM BKR (RRP).
 - 2) Open XSW1DA 15 TCP, TRIPPING CNTRL PWR EMERG INCM BKR (RRT).
 - 3) Push the MANUAL TRIP lever on the 7.2 KV breaker.

- c. At XSW1DA 01, BUS 1DA NORMAL INCOMING BKR, perform the following:
 - 1) Open XSW 1DA 01 CCP, NORMAL INCM BKR CLOSING CNTRL PWR.
 - 2) Open XSW 1DA 01 TCP, NORMAL INCM BKR TRIPPING CNTRL PWR.
 - 3) Push the MANUAL TRIP lever on the 7.2 KV breaker.
- 5. Prepare XSW1DB1 for load as follows (AB-463):
 - a. At XSW1DB1-ES, place all LOCAL/REMOTE switches to LOCAL.

CAUTION 5.b

SS-ES36, UNIT 4B (1DB1 FDR. BRKR. UNIT 4B), should not be tripped.

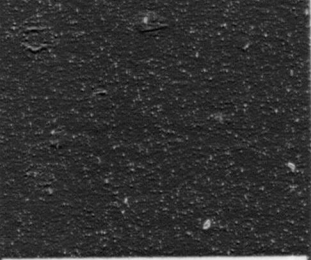
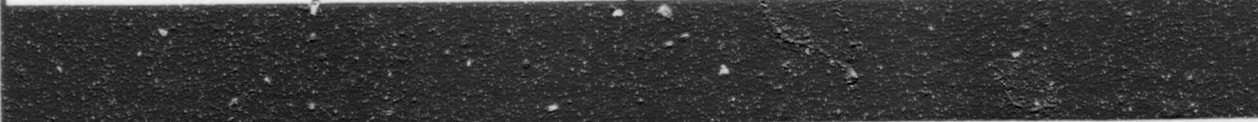
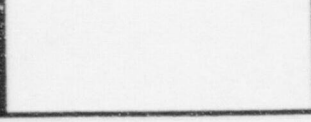
- b. Momentarily place the following switches to STOP/TRIP:
 - 1) SS-ES48, UNIT 4C (1B3-1DB1 Tie Brkr. Unit 4C).
 - 2) SS-SW07, UNIT 5A (XPP45B Unit 5A).
 - 3) SS-AH279, UNIT 6C (MFN97D Unit 6C).
 - 4) SS-AH275, UNIT 6D (MFN97B Unit 6D).
 - 5) SS-AH280, UNIT 7C (MFN96D Unit 7C).
 - 6) SS-AH276, UNIT 7B (MFN96B Unit 7B).
 - c. At XSW1DB1 05D, RESIDUAL HEAT REMOVAL PUMP B XPP0031B-RH, perform the following:
 - 1) Position the CHARGING POWER switch on the breaker front to OFF.
 - 2) Depress the left TRIP pushbutton.
 - 3) Verify the breaker trips.
 - d. At XSW1DB1-ES, momentarily place SS-ES36, UNIT 4B, (1DB1 Fdr. Brkr. Unit 4B) to CLOSE.
 - e. Report to the Control Room Supervisor that XSW1DB1 is ready for load.
5. Within 30 minutes, open the following indicated (non-shaded) breakers on XMC1DB2Y (AB-463):

463' AB

MCC1DB2Y				
	<u>XMC1DB2Y 02AD</u> RWST TO RB SPRAY PUMP B SUCTION XVG3001B-SP	<u>XMC1DB2Y 03AD</u> RHR TO CHARGING PUMP VALVE XVG8706B-RH	<u>XMC1DB2Y 04AE</u> RHR INLET FROM LOOP A XVG8702A-RH	
<u>XMC1DB2Y 01EH</u> RB SPRAY HDR B LOOP ISOL ORC XVG3003B-SP	<u>XMC1DB2Y 02EH</u> NAOH TK TO RB SPRAY PP B SUCTION XVG3002B-SP	<u>XMC1DB2Y 03EH</u> RHR PUMP B MINIFLOW FCV-602B XVT0602B-RH	<u>XMC1DB2Y 04FJ</u> RHR INLET FROM LOOP C XVG8702B-RH	<u>XMC1DB2Y 05EH</u> EMERG FEEDWATER PUMP MAIN STEAM BLOCK XVG2802B-MS
<u>XMC1DB2Y 01IJL</u> NAOH SPRAY HEAT TRACE CONTR PNL B X:PN2010-ET	<u>XMC1DB2Y 02IM</u> RB SUMP ISOL IRC XVG3004B-SP	<u>XMC1DB2Y 03IM</u> PRESSURIZER PRESSURE RELIEF ISOL XVG8000A-RC		
<u>XMC1DB2Y 01KL</u> IRMA011-RM RADIATION MONITORING AUX BUILDING VENTS				

463' AB

MCC1DB2Y

<p><u>XMC1DB2Y 06AD</u> CHARGING PUMP DISCHARGE HEADER ISOLATION VALVE XVG8132B-CS</p>	<p><u>XMC1DB2Y 07AD</u> CHG PUMP C MINIFLOW ISOL XVT8109C-CS</p>	<p><u>XMC1DB2Y 08AD</u> RCS CHARGING LINE VALVE XVG8108-CS</p>	<p><u>XMC1DB2Y 09AD</u> SEAL WTR RETURN HDR ISOL ORC XVT8100-CS</p>	<p><u>XMC1DB2Y 10AD</u> NON ESSENTIAL LOOP TO COMP CLG BSTR PUMP ISOL XVG9626-CC</p>
<p><u>XMC1DB2Y 06EH</u> CHG PUMPS B & C DISCHG HDR CROSSOVER VALVE XVG8133B-CS</p>	<p><u>XMC1DB2Y 07EH</u> CHG PUMP SUCTION HDR ISOL XVG8130B-CS</p>	<p><u>XMC1DB2Y 08EH</u> CHARGING PUMP A MINIFLOW ISOL XVT8109A-CS</p>	<p><u>XMC1DB2Y 09EH</u> B.A.T. TO CHARGING PUMP SUCTION PUMP XVT8104-CS</p>	
<p><u>XMC1DB2Y 06IL</u> VLV RCP A SEAL INJECTION ISOLATION XVT8102A-CS</p>	<p><u>XMC1DB2Y 07IL</u> CHG PUMP SUCTION HDR ISOL XVG8131B-CS</p>	<p><u>XMC1DB2Y 08IL</u> CHG PUMP B MINIFLOW ISOL XVT8109B-CS</p>	<p><u>XMC1DB2Y 09IL</u> SEAL WATER INJECT VALVE XVT8105-CS</p>	<p><u>XMC1DB2Y 10JM</u> VCT TO CHARGING PUMP ISOLATION VALVE LCV-115E XVG0115E-CS</p>
				

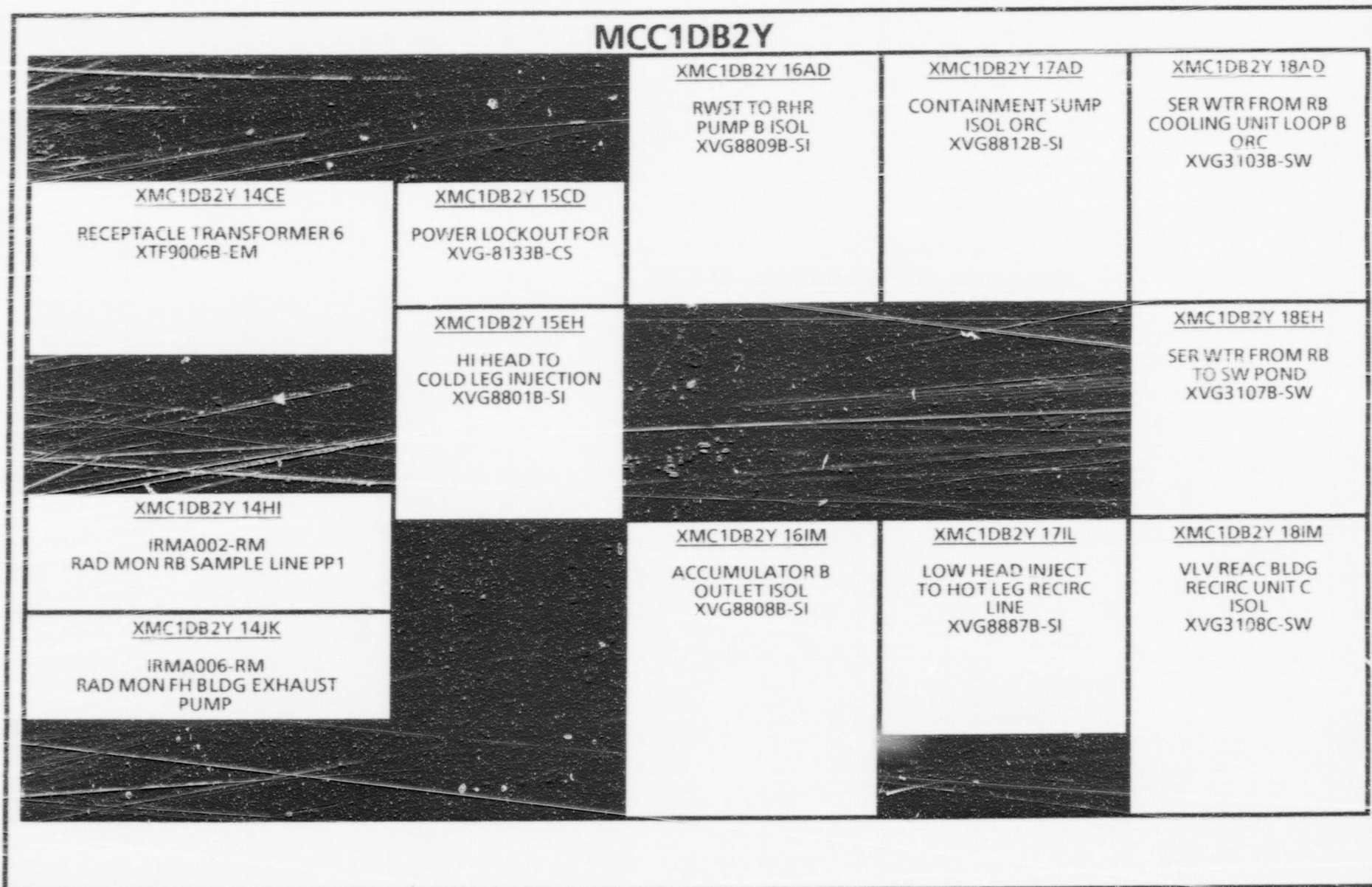
463' AB

MCC1DB2Y

<p><u>XMC1DB2Y 11AD</u> COMP COOLING WTR TO NON-ESS EQUIP LOOP B XVB9524B-CC</p>	<p><u>XMC1DB2Y 12AD</u> CC INLET TO RHR HY EXCH B XVB9503B-CC</p>	<p><u>XMC1DB2Y 13BD</u> CONTROLLED ACCESS EXH FAN B XFN0028B-AH</p>
<p><u>XMC1DB2Y 11EH</u> COMP COOLING WTR TO NON-ESS EQUIP LOOP A XVB9525A-CC</p>	<p><u>XMC1DB2Y 12EF</u> COMPUTER RM SUPPLY FAN B UNIT 1 XFN0041B-AH</p>	
<p><u>XMC1DB2Y 11IL</u> COMP COOLING WTR RTN FROM RB ORC XVG9606-CC</p>	<p><u>XMC1DB2Y 12IM</u> RX HEAD VENT VV TO PZR RLF TK XVT8096B-RC</p>	<p><u>XMC1DB2Y 13JM</u> RB SUMP ISOL ORC XVG3005B-SP</p>

463' AB

MCC1DB2Y



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463' AB

MCC1DB2Y

<p><u>XMC1DB2Y 19AD</u> VLV BLDG SERV INLET B ISOLATION XVB3110B-SW</p>			<p><u>XMC1DB2Y 22AB</u> RW STOR TANK HEAT TRACE CONTROL PI/L B XPN2006-ET</p>	<p><u>XMC1DB2Y 23AD</u> FS TO RB CHARCOAL CLEANUP SYS 4A-4B ORC XVG6797-F5</p>
<p><u>XMC1DB2Y 19EH</u> VLV BLDG SERV OUTLET B ISOL XVG3111B-SW</p>	<p><u>XMC1DB2Y 20EH</u> VLV BLDG SERV OUTLET A ISOLATION XVG3112A-SW</p>	<p><u>XMC1DB2Y 21EH</u> RWST TO CHARGING PUMP VALVE LCV-115D XVG0115D-CS</p>	<p><u>XMC1DB2Y 22CG</u> RECIRC SUMP TO RHR PUMP B ISOL VALVE B XVG8811B-SI</p>	<p><u>XMC1DB2Y 23FJ</u> REACTOR HEAD VENT VLV TO PRESSURIZER RELIEF TANK XVT8095B-RC</p>
<p><u>XMC1DB2Y 19IM</u> VLV REAC BLDG RECIRC UNIT D ISOLATION XVG3108D-SW</p>	<p><u>XMC1DB2Y 20IM</u> VLV REAC BLDG RECIRC UNIT C ISOLATION XVG3109C-SW</p>	<p><u>XMC1DB2Y 21IM</u> VLV REAC BLDG RECIRC UNIT D ISOLATION XVG3109D-SW</p>	<p><u>XMC1DB2Y 22IM</u> VLV ISOL REAC BLDG INLET B XVB3106B-SW</p>	

463'AB

MCC1DB2Y

XMC1DB2Y 24AB

(XTF 5930-EM)
XFMR FOR BACK-UP
MET TOWER AC
DIST PANEL
APN5930

XMC1DB2Y 24CD

CONTROL ROOM
NORMAL SUPPLY FAN B
XFN0032B-AH

XMC1DB2Y
24EFL
MU WTR STG
TK HEAT TRACE
CONTR PNL B
XPN2008-ET

XMC1DB2Y 25IJ
CONTROLLED ACCESS LAB
HOOD EXH FAN B
XFN0087B-AH

7. Within 90 minutes, start the Charging Pump B Room Cooling Fan (AB-463, 1DB2Y Room) as follows:
 - a. At XPN5528-VL (Local Control Station for XFN46B-VL), place 43-VL06 XFER, XMC1DB2Y U20AB, in LOCAL.
 - b. Place 5S-VL06X, XMC1DB2Y U20AB, in START.
8. Within 120 minutes, align Service Water to the Reactor Building Cooling Units by opening the following valves:
 - a. XVB03106B-SW, SW BOOSTER PUMP B DISCHARGE VALVE (FH-463).
 - b. XVG03107B-SW, SW POND RBCU 1B&2B RETURN ISOLATION VLV (FH-463).
 - c. XVG03103B-SW, RBCU 1B&2B RETURN HEADER ISOLATION VLV (FH-463).
 - d. Report to the Control Room Supervisor that Service Water is aligned to the Reactor Building Cooling Units.
9. Proceed to XSW1DB1 (AB-463) and stand by to start equipment as directed.

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DUTIES OF THE INTERMEDIATE BLDG OPERATOR

NOTE 1

Step 1 is an Immediate Action. Steps 2 through 8 must be completed within 30 minutes of implementation of this procedure.

1. Perform the following at Diesel Generator B (DB-436):
 - a. Place the LOCAL/REMOTE/MAINT switch in LOCAL.
 - b. Notify the NROATC.
2. Disable Diesel Generator A as follows:
 - a. If Diesel Generator A is running, actuate the Engine Overspeed Microswitch on the overspeed governor.
 - b. Place the LOCAL/REMOTE/MAINT switch in MAINT.
3. Close the following valves (TB-412, above Blowdown Heat Exchangers):
 - a. XVT00542A-BD, SG A BLOWDOWN HEAT EXCHANGER INLET VLV.
 - b. XVT00542B-BD, SG B BLOWDOWN HEAT EXCHANGER INLET VLV.
 - c. XVT00542C-BD, SG C BLOWDOWN HEAT EXCHANGER INLET VLV.
4. Obtain keys (IB-436 stairwell) and flashlight (CREP) and proceed to the Service Water Pump House:
5. Perform the following (SW-440):
 - a. At XSW1EB1 03A, align the following:
 - 1) Place 43-ES40, XFER UNIT 4B (1EB1 Fdr. Brkr. Unit 4B) in LOCAL.
 - 2) Momentarily place SS-ES40, UNIT 4B, in CLOSE.
 - b. At XSW1EB 03, align the following:
 - 1) Place 43-ES21, XFER UNIT 3, in LOCAL.
 - 2) Momentarily place SS-ES21, UNIT 3, in CLOSE.

- c. Start XFN80B-AH (Behind XSW1EB1) as follows:
 - 1) Place 43-AH327 XFER, XMC1EB1X 04FH, in LOCAL.
 - 2) Place SS-AH327X, XMC1EB1X 04FH, in START.
- d. Reposition Service Water Pump House ventilation dampers by isolating Instrument Air to the Service Water Pump House as follows:
 - 1) Close XVA12969-SA, SW PUMP HOUSE INST AIR HDR SUPPLY VALVE.
 - 2) Open XVT22923-SA, SW SA SUPPLY HEADER LOW POINT DRAIN VLV, to depressurize the header.
6. Proceed to Diesel Generator B and monitor its operation, making frequent trips out of the high noise area to communicate with the Control Room Supervisor at the CREP.
7. If Diesel Generator B is shut down, coordinate with the NROATC and perform the following:
 - a. Depress the EMERG START pushbutton.
 - b. When Diesel Generator B is ready for load, close the Diesel Generator output breaker.
8. At XPN5526-AH (Local Control Station for XFN45A&B-AH), perform the following (DB-436):
 - a. Start XFN-45A as follows:
 - 1) Place 43-AH164 XFER, XMC1DB2Z 03AC, in LOCAL.
 - 2) Place SS-AH164X, XMC1DB2X 03AC, in START.
 - b. Start XFN-45B as follows:
 - 1) Place 43-AH165 XFER, XMC1DB2Z 02AC, in LOCAL.
 - 2) Place SS-AH165X, XMC1DB2Z 02AC, in START.

DUTIES OF THE AUXILIARY BLDG OPERATOR (UPPER)

NOTE 1 and 2

Steps 1 and 2 are Immediate Actions.

1. Secure any radioactive liquid or gaseous releases by closing PVD-6910, LIQUID EFFLUENTS TO FAIRFIELD PENSTOCKS, and HCV-14, WASTE GAS DISCHARGE CONTROL VALVE.
2. Close the following valves (AB-412 Hallway):
 - a. XVD08430-CS, BORIC ACID BLENDER INLET ISOL VALVE.
 - b. XVD08454-CS, CHEMICAL MIXER TANK HDR ISOLATION VLV.
 - c. XVD08441-CS, RMW CHARGING PUMP SUCT HDR ISOL VALVE.
3. Obtain keys and flashlight from the AB-412.
4. Within 30 minutes, place the 1X-2X Battery Charger in service (IB-412) as follows:
 - a. At DPN1HX, perform the following:
 - 1) Open M-2, BATTERY CHARGER 1X, XBC1X-ED.
 - 2) Open M-4, BATTERY CHARGER 1X-2X, XBC1X-2X-ED.
 - b. On XBC1X-2X, perform the following:
 - 1) Close DC OUTPUT NO. 1.
 - 2) Close AC INPUT NO. 1.
 - c. At DPN1HX, close M-4, BATTERY CHARGER 1X-2X, XBC1X-2X-ED.

NOTE 5 through 8

Steps 5 through 8 must be complete within 90 minutes of implementation.

NOTE 5 and 6

Step 6 should only be performed if Step 5 cannot be performed. If Step 5 cannot be performed, the Control Room Supervisor must be informed to provide coordination among affected personnel.

5. Align Charging Pump B for starting as follows:
- a. Open XVT08109B-CS, CHARGING/SI PUMP B MINI FLOW ISOL VALVE (AB-388).
 - b. Open LCV00115D-CS, CHG PUMP B SUCTION HDR RWST ISOL VLV (AB-400).
 - c. Open XVG08106-CS, CHARGING PUMPS MINI FLOW HDR ISOL VALVE (AB-424).
 - d. Close LCV00115E-CS, VOLUME CONTROL TANK OUTLET HDR ISOL VLV (AB-424).
 - e. Close XVG08706B-RH, CHG/SI PUMP SUCT HDR RH HDR B INLET VLV (AB-412, RHR B Hx Room).
 - f. Close XVT08100-CS, RC PUMP SEAL RETURN HDR ISOL VLV (ORC) (AB-412 West Pen.).
 - g. Open XVT08102A-CS, RC PUMP A SEAL SUPPLY ISOL VALVE (ORC) (AB-412 West Pen.).
 - h. Close XVG08107-CS, CHARGING PUMPS DISCHARGE HDR ISOL VALVE (AB-412 West Pen.).
 - i. Close XVG08801A-SI, HI HEAD INJ VALVE (FH-412).
 - j. Close XVG08801B-SI, HI HEAD INJ VALVE (FH-412).
 - k. Open XVT08102B-CS, RC PUMP B SEAL SUPPLY ISOL VALVE (ORC) (IB-412 East Pen.).
 - l. Open XVT08102C-CS, RC PUMP C SEAL SUPPLY ISOL VALVE (ORC) (IB-412 East Pen.).
 - m. Close XVG08885-SI, HI HEAD COLD LEG INJ HEADER ISOL VLV (IB-412 East Pen.).
 - n. Close XVT08105-CS, SEAL INJECTION HEADER ISOLATION VALVE (AB-436, Filter Gallery).
 - o. Close XVT08389-CS, SEAL INJECTION HEADER FLOW BYPASS VALVE (AB-436, Filter Gallery).

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6. If Step 5 cannot be performed, prepare Charging Pump C for starting by ensuring the following valve positions:

- a. Open XVT08109C-CS, CHARGING/SI PUMP C MINI FLOW ISOL VALVE (AB-388).
- b. Open LCV00115D-CS, CHG PUMP B SUCTION HDR RWST ISOL VLV (AB-400).
- c. Open XVG08133B-CS, CHG PUMPS B TO C DISCH XCONN VALVE (AB-400).
- d. Open XVG08133A-CS, CHG PUMPS B TO C DISCH XCONN VALVE (AB-400).
- e. Open XVG08131A-CS, CHG PUMPS B TO C SUCT XCONN VALVE (AB-400).
- f. Open XVG08131B-CS, CHG PUMPS B TO C SUCT XCONN VALVE (AB-400).
- g. Open XVG08106-CS, CHARGING PUMPS MINI FLOW HDR ISOL VALVE (AB-424).
- h. Close LCV00115E-CS, VOLUME CONTROL TANK OUTLET HDR ISOL VLV (AB-424).
- i. Close XVG08706B-RH, CHG/SI PUMP SUCT HDR RH HDR B INLET VLV (AB-412, B RHR Hx Room).
- j. Close XVT08100-CS, RC PUMP SEAL RETURN HDR ISOL VLV (AB-412 West Pen.).
- k. Open XVT08102A-CS, RC PUMP A SEAL SUPPLY ISOL VALVE (AB-412 West Pen.).
- l. Close XVG08107-CS, CHARGING PUMPS DISCHARGE HDR ISOL VALVE (AB-412 West Pen.).
- m. Close XVG08801A-SI, HI HEAD INJ VALVE (FH-412).
- n. Close XVG08801B-SI, HI HEAD INJ VALVE (FH-412).
- o. Open XVT08102B-CS, RC PUMP B SEAL SUPPLY ISOL VALVE (IB-412 East Pen.).
- p. Open XVT08102C-CS, RC PUMP C SEAL SUPPLY ISOL VALVE (IB-412 East Pen.).
- q. Close XVG08885-SI, HI HEAD COLD LEG INJ HEADER ISOL VLV (IB-412 East Pen.).
- r. Close XVT08105-CS, SEAL INJECTION HEADER ISOLATION VALVE (AB-436, Filter Gallery).
- s. Close XVT08389-CS, SEAL INJECTION HEADER FLOW BYPASS VALVE (AB-436, Filter Gallery).

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NOTE 6.t.

Step 6.t. also opens XVG09684C-CC, CHG PP C OIL CLR CCW SUPPLY ISOL VALVE.

- t. Start the Charging Pump C Room Cooling Fan and open XVG09684C-CC, CHG PP C OIL CLR CCW SUPPLY ISOL VALVE, (AB-388, behind Charging Pump C Transfer Switch), as follows:
 - 1) At XPN5529-VL (Local Control Station for XFN47-VL), place 43-VL07, XFER XPN0040 (XFN47), in LOCAL.
 - 2) Place 55-VL07X, XPN0040 (XFN47), in START.
 - u. Locally verify XVG09684C-CC, CHG PP C OIL CLR CCW SUPPLY ISOL VALVE, is open (AB-400).
7. Report to the Control Room Supervisor that Charging Pump B(C) is aligned for starting.
8. When directed by the Control Room Supervisor, slowly throttle XVT08389-CS, SEAL INJECTION HEADER FLOW BYPASS VALVE (AB-436), open to restore seal injection to the seals without thermal shock.

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DUTIES OF THE SHIFT ENGINEER

1. Obtain keys and flashlight from the Control Room or CREP.

NOTE 2 through 4

Steps 2 through 4 must be completed within 30 minutes of implementation.

2. Start the Turbine Driven Emergency Feedwater Pump as follows:
 - a. Open XVG02802B-MS, MS HEADER C EF PUMP TURBINE SUPPLY VLV (IB-436 East Pen.).
 - b. Take the emergency stairs to the IB-412 Turbine Driven Emergency Feedwater Pump Room.
 - c. If necessary, reset the throttle valve XVT02865-MS, EF PUMP TURB MAIN STEAM THROTTLE VALVE.
 - d. Open IFV02030-MS, EF PUMP TURB STEAM SUPPLY FLOW CONT VLV, as follows:
 - 1) Close IFV02030-AV1-MS, IA ISOLATION VALVE FOR IFV2030-MS.
 - 2) Vent IFV02030-PR1-MS, IA SUPPLY PRESS REG FOR IFV2030-MS.
 - e. Ensure full turbine speed as follows:
 - 1) Close ISY02034-AV1-MS, IA ISOLATION VALVE FOR ISY2034.
 - 2) Vent ISY02034-PR1-MS, IA SUPPLY PRESS REG FOR ISY2034.
 - f. Verify Turbine speed increases to greater than 4000 RPM on ISI13505, EF PUMP TURBINE TACHOMETER.
3. Close the following drains:
 - a. XVT02803A-MS, EF PP TURB MS THROTTLE VLV DRAIN VLV A.
 - b. XVT02804A-MS, EF PUMP TURBINE CASING STEAM DRAIN VLV.
 - c. XVT02804B-MS, EF PUMP TURBINE CASING STEAM DRAIN VLV.

4. Feed the Steam Generators as follows:
 - a. Evaluate local instrumentation. The most reliable instrument for all fires is LI-497B, SG C WIDE RANGE LEVEL (CREP).
 - b. Coordinate with the Control Room Supervisor and maintain between 50% and 60% wide range level by throttling the following:
 - 1) IFV03536-EF, SG A TURB DR EF PUMP FLOW CONTROL VALVE.
 - 2) IFV03546-EF, SG B TURB DR EF PUMP FLOW CONTROL VALVE.
 - 3) IFV03556-EF, SG C TURB DR EF PUMP FLOW CONTROL VALVE.

NOTE 5 and 6

Step 6 should only be performed if Step 5 cannot be performed.

5. Within 90 minutes, prepare Chiller B for starting as follows:
 - a. Open XVB03126B-SW, HVAC CHILLER CONDENSER B SW SUPPLY VLV.
 - b. At XPN7207 VU, Chiller Control Panel B, place SS-VU10 in LOCAL.
 - c. Report to the Control Room Supervisor that Chiller B is ready to be started.
6. If Step 5 cannot be performed, within 90 minutes prepare C Chiller for starting as follows:
 - a. Open XVB03128C-SW, HVAC CHILL COND C SW HDR B IN ISOL VLV.
 - b. At XPN7208 VU, C Chiller Control Panel, place SS-VU11 in LOCAL.
 - c. Report to the Control Room Supervisor that Chiller C is ready to start.
7. Verify IPI04540, SW BOOSTER PUMP B SUCTION PRESSURE IND, (IB-412) indicates greater than 20 psig.
8. Report pressure to the Control Room Supervisor.

DUTIES OF ELECTRICAL MAINTENANCE PERSONNEL

1. Report to the Control Room Supervisor at the CREP to obtain a radio, tool kit and keys.

NOTE 2

Valves listed in Steps 2.a and 2.b must be manually closed within 30 minutes of implementation. Valves listed in steps 2.c and 2.d must be manually closed within 90 minutes of implementation.

2. Close the following valves (AB-397):
 - a. XVG03001A-SP, RB SPRAY PP A RWST SUCTION HDR VALVE.
 - b. XVG03001B-SP, RB SPRAY PP B RWST SUCTION HDR VALVE.
 - c. XVG08812A-SI, RH PUMP A SUCTION HEADER VALVE.
 - d. XVG08812B-SI, RH PUMP B SUCTION HEADER VALVE.
3. Within 120 minutes, align Service Water to the RBCU's as follows:
 - a. Open the following valves per Attachment XI (AB-463):
 - 1) XMC1DB2Y 18IM, VLV REAC BLDG RECIRC UNIT C ISOL XVG3108C-SW.
 - 2) XMC1DB2Y 19IM, VLV REAC BLDG RECIRC UNIT D ISOLATION XVG3108D-SW.
 - 3) XMC1DB2Y 20IM, VLV REAC BLDG RECIRC UNIT C ISOLATION XVG3109C-SW.
 - 4) XMC1DB2Y 21IM, VLV REAC BLDG RECIRC UNIT D ISOLATION XVG3109D-SW.
 - b. Report completion to the Control Room Supervisor.
4. Within eight hours, start the following fans per Attachment X:
 - a. XMC1DB2Y 23KL, AB MCC SWGR AIR HDLG UNIT XFN0133-VL.
 - b. XMC1DB2Y 20CD, SPRAY/RHR PUMP RM 2 CLG UNIT FAN XFN0049B-VL.

- c. XMC1DB2X 04IJ, ESF SWGR 1DB CLG UNIT FAN XFN0076-VL.
 - d. XMC1DB2X 05IJ, ICC PUMP SPD SW SWGR RM CLG FAN B XFN0106B-VL.
 - e. XMC1DB2X 06KL, SERVICE WTR BOOSTER PP AREA COOLING FAN XFN0081B-VL.
 - f. XMC1DB2X 06CD, EMERG FW PUMP AREA COOLING FAN XFN0083B-VL.
5. Within eight hours, start the Battery Room Supply Fan as follows:
- a. Reposition Battery Room dampers by opening APN1DB2-EM 16, XFN38B/XDP39B Battery Room.
 - b. Close XMC1DB2X 02IJ, BATT RM SUPPLY FAN B XFN0038B-AH, per Attachment X.

480V BREAKER OPERATION

1. Local opening of breakers is accomplished as follows:
 - a. For electrically operated types, disable the breaker closing ability by positioning the charging power switch on the breaker front to OFF.
 - b. Depress the TRIP pushbutton (left pushbutton where two exist).
 - c. Verify the breaker trips and remains open.
2. Local closing of manual type breakers (large closing handle) is accomplished as follows:
 - a. Pull down the closing handle.
 - b. Verify the breaker closes and remains closed.
 - c. Investigate the cause if the breaker does not remain closed.
3. Local closing of electrically operated type breakers is accomplished as follows:
 - a. Open the panel directly behind the breaker on back of the switchgear.
 - b. Open both the CLOSE CP BRKR and the TRIP CP BRKR for the breaker to be operated.
 - c. Verify the breaker closing springs are charged.
 - d. If the breaker closing springs are discharged, perform Step 1) or 2) for the appropriate size breaker as follows:
 - 1) For 2000 or 3000 amp frame sizes, charge the springs as follows:
 - a) Insert a manual spring charging handle into the slot in the breaker front.
 - b) Pump the handle until the breaker indicates charged.

- 2) For 600 and 1600 amp frame sizes, charge the springs as follows:
 - a) Open the door on the breaker cubicle.
 - b) Engage a manual charging handle into the slots of the pawl carrier.

NOTE 3.d.2).c)

The pawl carrier is located on the breaker, on centerline, between the silver colored charging motor on the right and the black auxiliary switch assembly on the left. Occasionally, the charging motor will coast to a stop in such a position that the driving pawl does not engage the next tooth on the ratchet wheel.

When the driving pawl is not engaged on the ratchet wheel, a screwdriver blade should be inserted along the right side of the pawl carrier against the roller on the charging motor output eccentric and the roller should be pushed to manually rotate it. Afterwards, the charging handle should be inserted.

- c) Operate the handle until the breaker indicates charged.
 - e. Lift (or pull) the manual CLOSE lever.
 - f. Verify the breaker closes and remains closed.

7.2 KV BREAKER OPERATION

1. Perform local opening of breakers as follows:
 - a. Open the door to the appropriate switchgear cubicle.
 - b. Open the Closing Power breaker RRP (located on the right hand side of the cubicle).
 - c. Depress the MANUAL TRIP lever on the breaker.
 - d. Verify the breaker trips and remains open.
2. Perform local closing of breakers as follows:

CAUTION 2.a

If any relay flags are tripped, closing of breaker with no protection could be a personnel hazard.

- a. Verify no relays have tripped on the associated breaker.
- b. Open the door to the appropriate switchgear cubicle.
- c. Verify the closing springs are charged.
- d. If the closing springs are not charged, perform the following:
 - 1) Open the Closing Power breaker RRP (located on the right hand side of the cubicle):
 - 2) Use a ratchet and 5/8" socket to turn the charging motor until the breaker indicates charged.
- e. Depress the MANUAL CLOSE pushbutton on the breaker.
- f. Verify the breaker closes and remains closed.
- g. If the breaker does not close, perform the following:
 - 1) Disconnect and tape all leads at terminals 361, 363 and 364 on terminal board C.
 - 2) Charge the springs per Step 2.d above.
 - 3) Ensure the Trip Power breaker RRT (located on the right hand side of the cubicle) is closed.
 - 4) Depress the MANUAL CLOSE pushbutton on the breaker.
 - 5) Verify the breaker closes and remains closed.

OPERATION OF EQUIPMENT FROM 480 VOLT MOTOR CONTROL CENTERS

NOTE X

The intent of this attachment is to operate pump motors, fan motors, or any continually operating piece of equipment, not motor operated valves.

1. Locate the appropriate cubicle in the Motor Control Center.
2. Position the breaker to OFF (RESET).
3. Open the cubicle door.
4. Remove the fuse from the cubicle.

CAUTION 5

- a. Line side terminals of breaker will be energized and should not be shorted or grounded.
- b. This installation bypasses all equipment protection interlocks except breaker overcurrent protection.

5. Disconnect the existing feed (Wire No. 3) from the contactor coil.
6. Connect one end of a jumper to the hot side of the fuse holder (Wire No. X1).
7. Connect the free end of the jumper to the contactor coil where the feed wire (Wire No. 3) was removed.
8. Close the cubicle door.
9. Use the breaker ON-OFF handle to operate the equipment.

REMOTE OPERATION OF
VALVES FROM 480V MOTOR CONTROL CENTERS

NOTE 1

MVG-8133B is a Power Lockout valve. Power Lockout valves require both Power Lockout and Valve Motor starter relays to be actuated simultaneously for remote operation. MVG-8133B starter relays are located in XMC1DB2Y 06EH and XMC1DB2Y 15CD.

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1. Locate the Motor Control Center Cubicle(s) for the valve to be operated.
2. Position the breaker(s) to OFF(RESET).
3. Open the cubicle door(s).
4. Remove the control power fuse for motor starter with fuse pullers.
5. Locate the two motor starter relays in the appropriate cubicle.
6. Place a clamp-on ammeter around one of the following:
 - a. One heavy wire connected between the top of the motor starter relays and the circuit breaker.
 - b. One field motor lead.
7. Perform Step 7.a for digital ammeters or Step 7.b for analog ammeters as follows:
 - a. When using digital ammeters, perform the following:
 - 1) Ensure switch on face of meter is in C position.
 - 2) Depress and hold the red pushbutton on the meter side.
 - 3) Verify the display lights up.
 - b. When using analog ammeters, perform the following:
 - 1) Ensure meter pointer is unlocked (switch to left).
 - 2) Set Meter Scale to 0-6A.
8. Close the circuit breaker(s).
9. If applicable, actuate the Power Lockout relay contactor and hold.

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NOTE 10

- a. Starting current for large valves may cause the ammeter to indicate full scale. Current should stabilize on scale within one to two seconds at the nominal value of running current listed for the valve on Attachment XIII.
 - b. While the motor is running, the meter will read low.
 - c. When the valve is at the end of its travel, the motor stalls at about five times its running current.
10. Actuate the desired motor starter relay contactor (left contactor to close the valve or right contactor to open the valve) by depressing through the appropriate slot with a screwdriver blade.
 11. Observe current on the ammeter for the following:
 - a. If current remains high, release contactor; valve is in the required position already.
 - b. If low, release contactor when current begins to rise sharply.
 12. If applicable, release the Power Lockout relay contactor.
 13. Re-open the circuit breaker(s).
 4. Remove the ammeter and close the cubicle door(s).

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COOLDOWN DATA SHEET

TIME	COOLDOWN RATE	RCS HOT LEG C WR TEMP TI-433A	RCS COLD LEG C WR TEMP TI-430A	ΔT	$\frac{T_H - T_C}{2}$	STEAMLINE POWER RELIEFS % OPEN			RCS SUBCOOLING
						A	B	C	

NOTE: Data should be logged every 30 minutes while cooling down and once per hour while maintaining stable plant conditions.

NOMINAL RUNNING CURRENT FOR MOTOR OPERATED VALVES

VALVE #	RUNNING CURRENT (AMPS)	VALVE #	RUNNING CURRENT (AMPS)
XVB09503A-CC	0.75	XVG08000A-RC	3.5
XVB09503B-CC	0.75	XVG08000B-RC	3.5
XVB09524A-CC	0.75	XVG08000C-RC	3.5
XVB09524B-CC	0.75	XVG08701A-RH	4.4
XVB09525A-CC	0.75	XVG08701B-RH	3.5
XVB09525B-CC	0.75	XVG08702A-RH	3.8
XVB09526A-CC	0.75	XVG08702B-RH	5.1
XVB09526B-CC	0.75	XVG08706A-RH	3.5
XVG09568-CC	0.80	XVG08706B-RH	3.5
XVG09600-CC	0.39	XVG08801A-SI	3.5
XVG09606-CC	0.95	XVG08801B-SI	3.5
XVG09625-CC	0.80	XVG08812A-SI	13.8*
XVG09626-CC	0.95	XVG08812B-SI	13.8*
XVG08106-CS	3.5	XVG03001A-SP	2.4
XVG08107-CS	3.5	XVG03001B-SP	2.4
XVG08108-CS	3.5	XVB03106A-SW	0.39
XVG08131A-CS	2.4	XVB03106B-SW	0.39
XVG08131B-CS	2.4	XVG03103A-SW	2.3
XVG08132A-CS	3.5	XVG03103B-SW	2.3
XVG08132B-CS	3.5	XVG03107A-SW	2.8
XVG08133A-CS	3.5	XVG03107B-SW	2.8
XVG08133B-CS	3.5	XVG03108A-SW	2.3
XVT08100-CS	2.3	XVG03108B-SW	2.3
XVT08102A-CS	2.3	XVG03108C-SW	2.3
XVT08102B-CS	2.3	XVG03108D-SW	2.3
XVT08102C-CS	2.3	XVG03109A-SW	2.3
XVT08109A-CS	2.3	XVG03109B-SW	2.3
XVT08109B-CS	2.3	XVG03109C-SW	2.3
XVT08109C-CS	2.3	XVG03109D-SW	2.3

* Will require setting ammeter to higher scale.