



COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

OPERATIONS JPM

TRAINING PROGRAM TITLE

INITIAL LICENSE TRAINING

TIME:

10 MINUTES

NUMBER AND TITLE:

NRC 2016-SIM01
Perform Emergency Boration During ATWS (ALT)

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

OPERATIONS JPM

REFERENCES/NRC KA/TASKS

Procedure: 1-OHP-4023-FR-S.1

Response to Nuclear Power
Generation/ATWS

K/A Number: APE 024 A1.17 {3.9/3.9}
SYS 004 A2.14 {3.8/3.9}

K/A Imp.: RO: SRO: (See K/A Number)

Task Number: EOP0870501

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

Task Briefing
Copy of 1-OHP-4023-FR-S.1 procedure

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 1 Simulator

EVALUATION METHOD:	PERFORM: <input checked="" type="checkbox"/>	SIMULATE: <input type="checkbox"/>
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OPERATIONS JPM

SIMULATOR/LAB SETUP

1. Initialize simulator to IC-740 (MODE 1 IC with the following Actions taken).
2. Insert MALF RP03A and RP03B, Fail Reactor Trip Breakers CLOSED

U1_RP03A

U1_RP03B

3. Insert MALF RP10A and RP10B; Fail AUTO SI actuation

U1_RP10A

U1_RP10B

4. Manually trip the Main Turbine
5. Perform Steps 1 – 4 of 01 OHP 4023-FR-S.1 and place rod control in MANUAL
6. Insert Override - **ZGI43BAP2S_U1** to **SLOW** (Maintains #2 BAP speed in SLOW)

ZGI43BAP2S_U1

7. Insert Override - **ZGIRU20_U1** to **IN** (Maintains continuous rod motion in MANUAL)

ZGIRU20_U1

8. Insert Malf – **U1_101BAP1** (Failure of the #1 BAP)

U1_101BAP1

9. Freeze simulator.

OPERATIONS JPM

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

You are the Reactor Operator. The crew has entered 1-OHP-4023-FR-S.1, Response to Power Generation/ATWS, due to a failure of the reactor to automatically or manually trip. The Balance Of Plant Operator is monitoring Rod Insertion.

INITIATING CUE

The Unit Supervisor directs you to initiate Emergency Boration to the RCS in accordance with Step 5 of 1-OHP-4023-FR-S.1.

GENERAL STANDARDS/PRECAUTIONS

Operator establishes the Emergency Boration flow from the Charging pumps aligned to the RWST.

NRC 2016-SIM01 Perform Emergency Boration During ATWS (ALT)	Revision: 0
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OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("CS" Indicates Critical Standard)																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">Number: 1-GHP-4023 FR-S.1</td> <td style="width: 40%; padding: 2px; text-align: center;">RESPONSE TO NUCLEAR POWER GENERATION / ATWS</td> <td style="width: 30%; padding: 2px;">Revision Number: 11</td> </tr> </table>		Number: 1-GHP-4023 FR-S.1	RESPONSE TO NUCLEAR POWER GENERATION / ATWS	Revision Number: 11																					
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Page 4 of 13																									

OPERATIONS JPM

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TASK BRIEFING

You are the Reactor Operator. The crew has entered 1-OHP-4023-FR-S.1, Response to Power Generation/ATWS, due to a failure of the reactor to automatically or manually trip. The Balance Of Plant Operator is monitoring Rod Insertion.

The Unit Supervisor directs you to initiate Emergency Boration to the RCS in accordance with Step 5 of 1-OHP-4023-FR-S.1.



COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

OPERATIONS JPM

TRAINING PROGRAM TITLE

INITIAL LICENSE TRAINING

TIME:

15 MINUTES

NUMBER AND TITLE:

NRC2016-Sim02
Establish Letdown In Accordance With 1-OHP-4023-SUP-015
(Alternate Path)

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

OPERATIONS JPM

REFERENCES/NRC KA/TASKS

Procedure: 1-OHP-4023-SUP-015, R

OPERATION OF NORMAL AND EXCESS LETDOWN

K/A Number: SYS 004 A2.07

Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

(CFR: 41.5/ 43/5 / 45/3 / 45/5)

Isolation of letdown/makeup

K/A Imp.: RO: 3.4 SRO: 3.7

Task Number: 0030020101

Place Letdown in Service

0030240101

Place Excess Letdown in Service

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

Task Briefing

Copy of 1-OHP-4023-SUP-015 procedure

NRC 2016-Sim02 Establish Letdown In Accordance With 1-OHP-4023-SUP-015	Revision: 0
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OPERATIONS JPM

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 1 Simulator

EVALUATION METHOD:	PERFORM: <input checked="" type="checkbox"/>	SIMULATE: <input type="checkbox"/>
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SIMULATOR/LAB SETUP

1. Reset to **IC 739** (IC 102 with an SI with ES-1.1 performed through Step 14)
2. Verify **ZGI101QRV111** override to **CLOSE** **ZGI101QRV111_U1**

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

You are the RO on Unit 1.

NRC 2016-Sim02 Establish Letdown In Accordance With 1-OHP-4023-SUP-015	Revision: 0
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The unit has experienced a spurious Safety Injection. The crew has transitioned from E-0, Reactor Trip or Safety Injection, to ES-1.1, SI Termination.

The Unit Supervisor has requested that you place letdown in service in accordance with the 1-OHP-4023-SUP-015, OPERATION OF NORMAL AND EXCESS LETDOWN, per current procedure directions.

GENERAL STANDARDS/PRECAUTIONS

Place CVCS letdown in service in accordance with 1-OHP-4023-SUP-015. Recognize that normal letdown cannot be established and place Excess Letdown in service (Alternate Path).

NRC 2016-Sim02 Establish Letdown In Accordance With 1-OHP-4023-SUP-015	Revision: 0
NRC 2016-SIM02.doc	Page 4 of 8

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("CS" Indicates Critical Standard)												
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Number: 1-OHP-4023 SUP-015	Title: OPERATION OF NORMAL AND EXCESS LETDOWN	Revision Number: 1											
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OPERATIONS JPM

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OPERATIONS JPM

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(Attachment A, page 2 of 2)																		

Task Briefing

You are the RO on Unit 1.

The unit has experienced a spurious Safety Injection. The crew has transitioned from E-0, Reactor Trip or Safety Injection, to ES-1.1, SI Termination.

The Unit Supervisor has requested that you place letdown in service in accordance with the 1-OHP-4023-SUP-015, OPERATION OF NORMAL AND EXCESS LETDOWN, per current procedure directions.

	Revision: 0
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COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

OPERATIONS JPM

TRAINING PROGRAM TITLE

INITIAL LICENSE TRAINING

TIME:

15 MINUTES

NUMBER AND TITLE:

NRC 2016-SIM03
Depressurize the RCS to Minimize Backflow/Refill the Pressurizer during SGTR (ALT)

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

OPERATIONS JPM

REFERENCES/NRC KA/TASKS

Procedure: 2-OHP-4023-E-3
K/A Number: EPE 038 EA1.04

Steam Generator Tube Rupture
Ability to operate and monitor the following as they apply to a SGTR:
PZR spray, to reduce coolant system pressure

K/A Imp.: RO: 4.3 SRO: 4.1

Task Number: EOP0070501

Control RCS Pressure and Inventory following a SGTR

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

Task Briefing
Copy of 2-OHP-4023-E-3, Steam Generator Tube Rupture - Steps 17-20 and Attachment B

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 2 Simulator

EVALUATION METHOD:	PERFORM: <input checked="" type="checkbox"/>	SIMULATE: <input type="checkbox"/>
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OPERATIONS JPM

SIMULATOR/LAB SETUP

- Initialize simulator to IC-737 (MODE 1 IC with the following Actions taken).
 1. Ensure Aux Steam Loads are being supplied by Unit 1
 2. IMF RC23B @ 40 causing a #22 SGTR of 400gpm. **U2_RC23B**
 3. A SGTR in progress and ready to depressurize RCS
 4. Perform actions of E-0 and E-3 through step 16 as appropriate.
 5. Trigger NRV-163/164 to 5% open when either Red Light is lit.
 - a. TRG 2 PZR Spray Open (ZLONRV163_U2(2) == 1 or ZLONRV164_U2(2) == 1),
U2_PZR_Spray_op
 - b. MF RC15A & RC15B to 5% on Trigger 2
U2_RC15A **U2_RC15B**
 6. Close PRZ PORV Block Valves NMO151 & NMO153, PORV NRV-151, Caution Tag NRV 151 & Block Closed for Leakage, Clearance Tag NRV-153 & NMO153
 7. Insert Malfunction RC17B to 0% to fail NRV-152 closed & Global Malfunction101NMO153
U2_RC17B **U2_EDPR25G**

Trg 1 – NMO151 to Open (ZGI101NMO151_U2 == 3), MF 101NMO151
U2 NMO151 to Open **Power off to 2-NMO-151**

 - OOS Tag NRV & NMO 153, Caution Tag NRV & NMO 151
 - Freeze simulator.

OPERATIONS JPM

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

You are the RO in Unit 2.

Unit 2 is responding to a SG Tube Rupture on SG 22. The cooldown is complete. The Unit Supervisor has requested that you implement Step 17 of 2-OHP-4023-E-3 to Depressurize the RCS to Minimize Break Flow and Refill the Pressurizer.

GENERAL STANDARDS/PRECAUTIONS

Operator performs RCS Depressurization to Minimize Break Flow and Refill the Pressurizer using Aux Spray.

NRC 2016-SIM03	Revision: 0
Depress. the RCS to Minimize Backflow/Refill the Pressurizer during SGTR	
NRC 2016-SIM03.doc	Page 4 of 13

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OPERATIONS JPM

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Number: 2-OHP-4023 E-3	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21							
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h.	Open charging line to cold leg valves: <ul style="list-style-type: none"> • 2-QRV-61 • 2-QRV-62 																							
i.	Close 2-QRV-51, aux spray valve																							
Page 23 of 46																								

NRC 2016-SIM03	Revision: 0
Depress. the RCS to Minimize Backflow/Refill the Pressurizer during SGTR	
NRC 2016-SIM03.doc	Page 12 of 13

Task Briefing

You are the RO in Unit 2.

Unit 2 is responding to a SG Tube Rupture on SG 22.
The cooldown is complete.

The Unit Supervisor has requested that you implement Step 17 of 2-OHP-4023-E-3 to Depressurize the RCS to Minimize Break Flow and Refill the Pressurizer.



COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

OPERATIONS JPM

TRAINING PROGRAM TITLE

NRC 2016-SIM04

TIME:

20 MINUTES

TITLE:

Isolate ruptured steam generator (Alt)

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

OPERATIONS JPM

REFERENCES/NRC KA/TASKS

Procedure: 2-OHP-4023-E-3 STEAM GENERATOR TUBE RUPTURE
K/A Number: EPE.038.EA1.32 Isolation of a ruptured S/G
K/A Imp.: RO: 4.6 SRO: 4.7
Task Number: EOP0020501 Isolate ruptured Steam Generator(s).

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

Task Briefing
Copy of 2-OHP-4023-E-3, Steam Generator Tube Rupture, Step 3
Copy of 2-OHP-4023-E-3, Steam Generator Tube Rupture, Attachment A (**HOLD UNTIL REQUESTED**)

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 2 Simulator

NRC 2016-SIM04 Isolate ruptured steam generator	Revision: 0
NRC 2016-SIM04.doc	Page 2 of 10

OPERATIONS JPM

SIMULATOR/LAB SETUP

Reset to IC-736, with the following setup complete:

1. Initialize simulator to MODE 1 IC.
2. Ensure Aux Steam Loads are being supplied by Unit 1
3. IMF MS22B @ 100 to Fail 2-MRV-220 OPEN:
4. IMF RC23B @ 40 causing a #22 SGTR of 400gpm.
5. Perform actions of E-0 and E-3 through step 2 as appropriate.
6. Close SG #22 FMOs if SG Level is >14%
7. Freeze simulator.

U2_MS22B

U2_RC23B

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

- You are an extra RO
- A reactor trip with SI occurred due to a Steam Generator Tube Rupture. 2-OHP-4023-E-0 and 2-OHP-4023-E-3 have been implemented. 2-OHP-4023-E-3 is still in progress. Steam Generator #22 has been identified as the ONLY ruptured SG.
- Auxiliary Feedwater has been isolated to SG #22 per 2-OHP-4023-E-0.
- The Unit Supervisor directs you to perform Step 3 of 2-OHP-4023-E-3 “Isolate Flow From Ruptured SG(s).”

GENERAL STANDARDS/PRECAUTIONS

Examinee will perform E-3 step to isolate a ruptured SG including RNO actions for failure of ruptured SG stop valve to close (Alternate path)

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("CS" Indicates Critical Standard)						
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 20%; padding: 2px;">Number: 2-OHP-4023 E-3</td> <td style="width: 60%; padding: 2px; text-align: center;">Title: STEAM GENERATOR TUBE RUPTURE</td> <td style="width: 20%; padding: 2px;">Revision Number: 21</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 15%; padding: 2px; text-align: center;">STEP</td> <td style="width: 65%; padding: 2px; text-align: center;">ACTION/EXPECTED RESPONSE</td> <td style="width: 20%; padding: 2px; text-align: center;">RESPONSE NOT OBTAINED</td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">CAUTION</p> <ul style="list-style-type: none"> • If the TDAFP is the only available source of feed flow, steam supply to the TDAFP must be maintained from at least one SG to prevent loss of heat sink. • At least one SG must be maintained available for RCS cooldown to prevent loss of heat sink. • If offsite power is lost after SI reset, LOAD CONSERVATION will NOT automatically actuate. </div> <p>3. Isolate Flow From Ruptured SG(s):</p> <p>a. Adjust ruptured SG(s) PORV controller setpoint to 1040 psig</p> <p>b. Check ruptured SG(s) PORV - CLOSED</p> <ul style="list-style-type: none"> • 2-MRV-213 (SG 21) • 2-MRV-223 (SG 22) • 2-MRV-233 (SG 23) • 2-MRV-243 (SG 24) <p style="margin-left: 100px;">b. WHEN ruptured SG pressure is less than 1040 psig, THEN verify SG PORV closed.</p> <p style="margin-left: 100px;">IF PORV can NOT be closed, THEN locally close PORV or associated isolation valve:</p> <ul style="list-style-type: none"> • 2-MSV-101-1 (2-MRV-213) • 2-MSV-101-2 (2-MRV-223) • 2-MSV-101-3 (2-MRV-233) • 2-MSV-101-4 (2-MRV-243) <p style="margin-top: 20px;"><i>(Step 3 Continued On Next Page)</i></p>	Number: 2-OHP-4023 E-3	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21	STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED	<p>STANDARD: CS Adjusts MRV-223 controller setpoint to 1040 psig SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Operator checks MRV-223 CLOSED SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p>
Number: 2-OHP-4023 E-3	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21					
STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED					
Page 4 of 46							

OPERATIONS JPM

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Page 5 of 46	Revision: 0																								

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("CS" Indicates Critical Standard)																								
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Number: 2-OHP-4023	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21																							
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Page 6 of 46	Revision: 0																								

OPERATIONS JPM

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Number: 2-OHP-4023 E-3	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21																	
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g.	Check 2-DRV-407 - CLOSED	g. Locally close 2-MS-141, main steam leads drain DR-86 to condenser A shutoff valve (591' condenser A drip receiver in overhead).																	
h.	Check steam line warming valves - CLOSED <ul style="list-style-type: none">• 2-MS-148 (SG 21)• 2-MS-147 (SG 24)	h. IF any steam line warming valve is known to be open, THEN locally close valve(s).																	
i.	Trip ruptured SG(s) stop valve closed: <ul style="list-style-type: none">• 2-MRV-210 (SG 21)• 2-MRV-220 (SG 22)• 2-MRV-230 (SG 23)• 2-MRV-240 (SG 24)	i. Perform the following: <ol style="list-style-type: none">1) Trip close all remaining SG stop valves.2) Verify SG stop valve dump valves - CLOSED <ul style="list-style-type: none">• 2-MRV-211 and 2-MRV-212 (SG 21)• 2-MRV-221 and 2-MRV-222 (SG 22)• 2-MRV-231 and 2-MRV-232 (SG 23)• 2-MRV-241 and 2-MRV-242 (SG 24)3) Place steam dumps in OFF.4) Implement Attachment A (Page 43) while continuing with this procedure.5) Use intact SG(s) PORV for steam dump.																	
Page 6 of 46	Revision: 0																		

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("CS" Indicates Critical Standard)						
<table border="1" data-bbox="178 248 1045 349"> <tr> <td data-bbox="178 248 317 289">Number: 2-OHP-4023</td> <td data-bbox="317 248 886 289">Title: STEAM GENERATOR TUBE RUPTURE</td> <td data-bbox="886 248 1045 289">Revision Number: 21</td> </tr> <tr> <td data-bbox="178 289 317 349">E-3</td> <td colspan="2" data-bbox="317 289 1045 349"></td> </tr> </table> <div data-bbox="178 391 1045 1404" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Attachment A Ruptured SG Isolation With Failed SG Stop Valve</p> <div data-bbox="212 483 1020 605" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE</p> <p>Completion of this Attachment is NOT required prior to initiating RCS cooldown and subsequent recovery steps of the main procedure.</p> </div> <ol style="list-style-type: none"> 1. Verify aux steam loads are supplied from UNIT 1 or the Plant Heating Boiler 2. Verify the following valves - CLOSED <ul style="list-style-type: none"> • Main feed pump main steam isolation valves: <ul style="list-style-type: none"> • 2-ARV-11 (East MFP) • 2-ARV-13 (East MFP) • 2-ARV-12 (West MFP) • 2-ARV-14 (West MFP) • SG lead drain pot isolation valve <ul style="list-style-type: none"> • 2-DRV-407 • Main feed preheating steam supply valves to HP heaters: <ul style="list-style-type: none"> • 2-MRV-501 • 2-MRV-502 • 2-MRV-601 • 2-MRV-602 • Unit reheater isolation valves from main steam: <ul style="list-style-type: none"> • 2-MMO-431 • 2-MMO-432 • 2-MRV-411 • 2-MRV-412 <p style="margin-top: 10px;">(Step 2 Continued On Next Page)</p> <p style="text-align: right; margin-top: 10px;">(Attachment A, page 1 of 2)</p> </div> <p style="text-align: center; margin-top: 10px;">Page 43 of 46</p>	Number: 2-OHP-4023	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21	E-3			<p>STANDARD: Verifies that Aux Steam is supplied by Unit 1. CUE: Inform examinee that Unit 1 has taken over the Aux Steam Headers. SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Verify Main FW pump Steam Isolations ARV-11, ARV-12, ARV-13, and ARV-14 are CLOSED SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Verify SG Lead Drain Pot Isolation valve DRV-407 is CLOSED SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Verifies Feed Preheating Steam Supply valves – CLOSED • MRV-501 and 502 • MRV-601 and 602 SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Verifies Reheater Isolation valves – CLOSED • MMO-431 and 432 • MRV-411 and 412 SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p>
Number: 2-OHP-4023	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21					
E-3							
<p>isolate ruptured steam generator</p>	<table border="1" data-bbox="1459 1421 1654 1487"> <tr> <td data-bbox="1459 1421 1654 1487">Revision: 0</td> </tr> </table>	Revision: 0					
Revision: 0							

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("CS" Indicates Critical Standard)			
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 30%; padding: 2px;">Number: 2-OHP-4023 E-3</td> <td style="width: 40%; padding: 2px;">Title: STEAM GENERATOR TUBE RUPTURE</td> <td style="width: 30%; padding: 2px;">Revision Number: 21</td> </tr> </table> <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p style="text-align: center;">Attachment A Ruptured SG Isolation With Failed SG Stop Valve (Step 2 Continued From Previous Page)</p> <ul style="list-style-type: none"> • Steam dump valves: <ul style="list-style-type: none"> • 2-URV-110 • 2-URV-120 • 2-URV-130 • 2-URV-111 • 2-URV-112 • 2-URV-124 • 2-URV-125 • 2-URV-135 • 2-URV-136 • Startup air ejectors steam supply valve: <ul style="list-style-type: none"> • 2-SMO-401 • Main turbine sealing steam supply valves: <ul style="list-style-type: none"> • 2-SRV-26 • 2-SRV-27 • Main steam lead drain valves: <ul style="list-style-type: none"> • 2-DMO-425 • 2-DMO-426 • 2-DMO-427 • 2-DMO-428 • 2-DMO-450 • 2-DMO-451 • Turbine bypass header drain valves: <ul style="list-style-type: none"> • 2-DRV-405 • 2-DRV-406 <p style="text-align: center;">-END OF ATTACHMENT-</p> <p style="text-align: right; font-size: small;">(Attachment A, page 2 of 2)</p> <p style="text-align: center; font-size: x-small;">Page 44 of 46</p> </div>	Number: 2-OHP-4023 E-3	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21	<p>STANDARD: Verifies Steam Dump valves – CLOSED:</p> <ul style="list-style-type: none"> • URV-110, 120 and 130 • URV-111, 124 and 135 • URV-112, 125 and 136 <p>SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Verifies Startup Air Ejectors Steam supply valve SMO-401 - CLOSED</p> <p>SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD CS: Places Turbine Sealing Steam Supply valves – CLOSED:</p> <ul style="list-style-type: none"> • SRV-26 • SRV-27 <p>SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Verifies Main Steam Lead Drain valves – CLOSED:</p> <ul style="list-style-type: none"> • DMO-425, 426, 427 and 428 • DMO-450 and 451 <p>SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Verifies Turbine Bypass Drain valves – CLOSED:</p> <ul style="list-style-type: none"> • DRV-405 • DRV-406 <p>SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>Examinee reports completion of Attachment A</p> <p>EVALUATOR: JPM is COMPLETE</p>
Number: 2-OHP-4023 E-3	Title: STEAM GENERATOR TUBE RUPTURE	Revision Number: 21		

TASK BRIEFING:

- You are an extra RO
- A reactor trip with SI occurred due to a Steam Generator Tube Rupture. 2-OHP-4023-E-0 and 2-OHP-4023-E-3 have been implemented. 2-OHP-4023-E-3 is still in progress. Steam Generator #22 has been identified as the ONLY ruptured SG.
- Auxiliary Feedwater has been isolated to SG #22 per 2-OHP-4023-E-0.
- The Unit Supervisor directs you to perform Step 3 of 2-OHP-4023-E-3 “Isolate Flow From Ruptured SG(s).”



COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

OPERATIONS JPM

TRAINING PROGRAM TITLE

INITIAL LICENSE TRAINING

TIME:

10 MINUTES

NUMBER AND TITLE:

NRC 2016-SIM05
Place the West Main FW Pump In Service

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

OPERATIONS JPM

REFERENCES/NRC KA/TASKS

Procedure: 1-OHP-4021-055-003 PLACING A MAIN FEED PUMP IN SERVICE

K/A Number: SYS 059 K4.05 {2.5/2.8}
SYS 059 A4.03 {2.9/2.9}

K/A Imp.: RO: SRO: (See K/A Number)

Task Number: 0550110101 Start a second Main Feedwater Pump

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

Task Briefing
Copy of 1-OHP-4021-055-003 Attachment 4

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 1 Simulator

EVALUATION METHOD:	PERFORM: <input checked="" type="checkbox"/>	SIMULATE: <input type="checkbox"/>
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SIMULATOR/LAB SETUP

1. Initialize simulator to IC-741 (MODE 1 IC with the following Actions taken).
2. Mode 1 IC around 55% power, with East MFP feeding the SGs and the West MFP rolling around 3650 RPM
3. Verify AC Auxiliary Oil Pump is running and that 2 control fluid pumps are running.

Sign off Attachment 4 through step 4.6.1

NRC 2016-SIM05 Place the West Main FW Pump In Service	Revision: 0
NRC 2016-SIM05.doc	Page 2 of 6

OPERATIONS JPM

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

You are the Reactor Operator. The Unit supervisor has directed you to continue placing the West Main FW pump in Service from 1-OHP-4021-055-003 Attachment 4 step 4.6.2

GENERAL STANDARDS/PRECAUTIONS

Operator places West Main FW Pump in DP control sharing load with the East Main FW Pump.

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("CS" Indicates Critical Standard)														
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 25%; text-align: center;">Reference</td> <td style="width: 25%; text-align: center;">1-OHP-4021-055-003</td> <td style="width: 25%; text-align: center;">Rev. 49</td> <td style="width: 25%; text-align: center;">Page 93 of 169</td> </tr> <tr> <td colspan="4" style="text-align: center;">Placing A Main Feed Pump In Service</td> </tr> <tr> <td style="text-align: center;">Attachment 4</td> <td style="text-align: center;">West Feed Pump Startup As Second Feed Pump</td> <td colspan="2" style="text-align: center;">Pages: 78 - 95</td> </tr> </table> <p>4.6 At approximately 3650 rpm to 4000 rpm AND before feeding SGs, perform the following:</p> <p>4.6.1 Record the time of day signifying the exit of the 4 hour interval allowed by TS 3.3.2, Condition H Note.</p> <div style="text-align: center; margin: 10px 0;"> <table border="1" style="width: 100px; height: 30px; border-collapse: collapse;"> <tr> <td style="text-align: center; vertical-align: middle;"><i>New</i></td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Time</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: The following step will cause Annunciator Panel 115, Drop 81, West FPT AC Aux Oil Pp Running, to clear</p> </div> <p>4.6.2 To verify proper operation of shaft driven oil pump perform the following: .,</p> <p style="margin-left: 20px;">a. Stop AC Auxiliary Oil Pump AND place in - AUTO</p> <p style="margin-left: 20px;">b. Check the following oil pressures stable:</p> <ul style="list-style-type: none"> • West FPT bearing oil pressure (LPP-65 on HMI, West MFP Transmitter Disable/Enable" Screen): ≈ 10 psig • Pump bearing oil pressure (locally at PG-9): ≈ 15 psig <p style="margin-left: 20px;">c. Check Ann. Panel 115, Drop 81, West FPT AC Aux Oil Pp Running - NOT LIT.</p> <p>4.6.3 Check lube oil and bearing temperatures within limits of Step 3.7.</p> <p>4.7 Place MFP in DP control and Load Share as follows:</p> <p>4.7.1 Raise speed until West MFP is feeding S/G's.</p> <p>4.7.2 Press 'West DP Control' Pushbutton on Main Display HMI.</p> <p>4.7.3 Verify 'Load Sharing Active' light lit. (This is expected when the second MFP is placed in DP control.)</p>	Reference	1-OHP-4021-055-003	Rev. 49	Page 93 of 169	Placing A Main Feed Pump In Service				Attachment 4	West Feed Pump Startup As Second Feed Pump	Pages: 78 - 95		<i>New</i>	Time	<p>STANDARD: Operator stops West AC Auxiliary Pump 1-QT-301W and places in Auto SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Operator Checks oil Pressures Stable and Alarm Clear CUE: Local pump bearing oil pressure (at PG-9) is 16 Psig SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Operator Checks Temperatures within Limits SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/> CUE: If Asked, Local temperatures are as expected.</p> <p>Normal oil temperature at outlet of coolers: 110-120°F</p> <ul style="list-style-type: none"> • Max. allowable oil temperature at outlet of coolers: 135°F (1-SG-6, point 14; LTR-11) • Maximum allowable oil temperature at bearing outlet: 185°F • Maximum allowable turbine thrust bearing metal temperature (front/back): 230°F (1-SG-6, point 3-4; TC-2-1) • Maximum allowable turbine journal bearing metal temperature (HP/LP): 250°F (1-SG-6, point 9-10; TC-13-14) • Maximum allowable pump outboard-inboard radial bearing metal temperature: 200°F (1-SG-6, point 23-24; TTR-162-163) • Maximum allowable pump thrust bearing oil drain temperature: 170°F (1-SG-6, point 22; TTR-161) • Maximum allowable pump journal bearing drain temperature: 190°F (1-SG-6, point 11/12; TTR-TC-C/A-W) • Maximum oil temperature rise through any Main Feed Pump or Turbine journal bearing: <50°F <p>STANDARD: (CS) Operator enters a target speed and ramp rate and depresses GO on the HMI SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: (CS) Operator places the WEST DP Control Pushbutton on HMI. SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Operator "Load Sharing Active" LIT on HMI. SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p>
Reference	1-OHP-4021-055-003	Rev. 49	Page 93 of 169												
Placing A Main Feed Pump In Service															
Attachment 4	West Feed Pump Startup As Second Feed Pump	Pages: 78 - 95													
<i>New</i>															
Time															

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS (“CS” Indicates Critical Standard)												
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 25%; text-align: center;">Reference</td> <td style="width: 25%; text-align: center;">1-OHP-4021-055-003</td> <td style="width: 25%; text-align: center;">Rev. 49</td> <td style="width: 25%; text-align: center;">Page 94 of 169</td> </tr> <tr> <td colspan="4" style="text-align: center;">Placing A Main Feed Pump In Service</td> </tr> <tr> <td style="text-align: center;">Attachment 4</td> <td style="text-align: center;">West Feed Pump Startup As Second Feed Pump</td> <td colspan="2" style="text-align: center;">Pages: 78 - 95</td> </tr> </table> <p>NOTE: DP Output (rpm) + 'Bias' = East MFP Target speed. DP Output (rpm) - 'Bias' = West MFP Target speed. Each manual bias manipulation adjusts bias 3 rpm.</p> <p>4.7.4 IF Auto Bias operation is desired THEN:</p> <ol style="list-style-type: none"> a. Verify Auto bias selected. _____ b. Observe Loadsharing adjusts Bias value and both MFP speeds until suction flows are matched. _____ <p>4.7.5 IF Manual Bias operation is desired THEN:</p> <ol style="list-style-type: none"> a. Select Manual bias. _____ b. Adjust Bias value until both MFP suction flows are matched. _____ <p>NOTE: The control valve throttling to < 30% open does not occur until the feed pump has transferred to the reheat steam supply. This transfer will occur somewhere above 50% power. The valve is closed to prevent steam blow through in the drain line.</p> <p>4.7.6 WHEN FPT Control Valve position indicates less than 30% open, THEN close 1-HPD-104W, West MFPT LP Stop Valve Chest Drain Isolation Valve. _____</p> <p>4.7.7 Close the following West FPT Stop Valve Drains AND return control switch to - AUTO: _____</p> <ul style="list-style-type: none"> • 1-DRV-411, HP Before Seat • 1-DRV-415, LP Before Seat • 1-DRV-417, LP After Seat <p>4.7.8 IF desired to realign seal water, THEN perform the following:</p> <ol style="list-style-type: none"> a. Stop the Feed Pump Seal Water Pump. _____ b. Place the Feed Pump Seal Water Pump in - AUTO. _____ 	Reference	1-OHP-4021-055-003	Rev. 49	Page 94 of 169	Placing A Main Feed Pump In Service				Attachment 4	West Feed Pump Startup As Second Feed Pump	Pages: 78 - 95		<p><i>CUE: If Required, “Auto Bias is Desired”</i></p> <p>STANDARD: Operator verifies Auto Bias in service and verifies suction flows are matched SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>TERMINATION CUE: This JPM is complete.</p>
Reference	1-OHP-4021-055-003	Rev. 49	Page 94 of 169										
Placing A Main Feed Pump In Service													
Attachment 4	West Feed Pump Startup As Second Feed Pump	Pages: 78 - 95											

TASK BRIEFING

You are the Reactor Operator. The Unit supervisor has directed you to continue placing the West Main FW pump in Service from 1-OHP-4021-055-003 Attachment 4 step 4.6.2



COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

OPERATIONS JPM

TRAINING PROGRAM TITLE

INITIAL LICENSE TRAINING

TIME:

15 MINUTES

NUMBER AND TITLE:

NRC 2016 – SIM06
Verify Containment Isolation Phase B IAW
OHP-4023-E-0 Att. A (Alt. Path with OHP-4023-SUP-004

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

OPERATIONS JPM

REFERENCES/NRC KA/TASKS

Procedure: 1-OHP-4023-E-0 Reactor Trip or Safety Injection
1-OHP-4023-SUP-004 Phase B Isolation Checklist

K/A Number: SYS 103 A2.03 Ability to (a) predict the impacts of a Phase A and B isolation on the containment system and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations

K/A Imp.: RO: 3.5 SRO 3.8
:

Task Number: 0340030501 Verify Containment Isolation Phase B.

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

Task Briefing
Copy of 1-OHP-4023-E-0 Reactor Trip or Safety Injection
Copy of 1-OHP-4023-SUP-004 Phase B Isolation Checklist (HOLD)

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 1 Simulator – Cover PPC Screen With “**2016-Sim06 Screen.**”

NRC 2016-SIM06 Verify Containment Isolation Phase B IAW OHP-4023-E-0 Att. A	Revision: 0
NRC 2016-SIM06.doc	Page 2 of 9

OPERATIONS JPM

SIMULATOR/LAB SETUP

Reset to IC 738 with large break LOCA and loss of bus 1-AM-A and the following:
Insert Malfunctions **RP16A & RP17A** to cause a failure of Train A Auto/Manual Phase B Isolation

U1_RP16A

U1_RP17A

Turn Power Off to 1-AM-A

U1_ED0820

Set RF for WCR 902 and WCR-941 to Fail the valves open

U1_SWR19

U1_SWR37

ZLO101WCR941_U1[GRN]

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

Unit 1 has experienced a Large break LOCA with a loss of bus 1-AM-A

You are the BOP.

The Unit Supervisor has requested that you verify Containment Isolation Phase B in accordance with E-0, Attachment A, Step 16.

GENERAL STANDARDS/PRECAUTIONS

Verify completion of Containment Isolation Phase B

NRC 2016-SIM06 Verify Containment Isolation Phase B IAW OHP-4023-E-0 Att. A	Revision: 0
NRC 2016-SIM06.doc	Page 3 of 9

OPERATIONS JPM

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

<small>Number:</small> 1-OHP-4023	<small>Title:</small> REACTOR TRIP OR SAFETY INJECTION	<small>Revision Number:</small> 39
E-0		

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
Attachment A		
Verification Of Balance Of Plant		
16.	Check Containment Isolation Phase B Status: a. Containment isolation Phase B - ACTUATED	a. Go to Step 17 (Next Page). <hr/> b. Manually close valve(s) as necessary: <ul style="list-style-type: none"> • Implement SUP-004, Phase B Isolation Checklist. <li style="text-align: center;">-OR- • Use the plant computer to determine valve(s) required to be closed. If at least one valve in the following flowpaths can NOT be manually closed, THEN locally close one valve for affected flowpath(s): <ul style="list-style-type: none"> • CCW to RCP coolers valves: <ul style="list-style-type: none"> • 1-CCM-458 • 1-CCM-459 • CCW from RCP oil coolers: <ul style="list-style-type: none"> • 1-CCM-451 • 1-CCM-452 • CCW from RCP thermal barriers: <ul style="list-style-type: none"> • 1-CCM-453 • 1-CCM-454
	b. Phase B - COMPLETED ON BOTH TRAINS	

(Attachment A, page 13 of 14)

Page 40 of 43

Operator recognizes that Containment Isolation Phase B is actuated.
SAT: UNSAT:

CS: Operator recognizes that Containment Isolation Phase B, Train A is Not Completed (valves are still open) and performs the RNO
SAT: UNSAT:

Note: Five valves (CCM-452, CCM-454, CCM-459, WCR 902, and WCR-941) for Containment Isolation Phase B, Train B are also still open and will need to be isolated in SUP-004.

CUE: *The PPC Containment Isolation Screen function is NOT available – The Screen is frozen as indicated.*

CS: Operator Implements SUP-004.
SAT: UNSAT:

OPERATIONS JPM

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-004	Title: PHASE B ISOLATION CHECKLIST	Revision Number: 2
--	---	------------------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
------	--------------------------	-----------------------

NOTE

- Some penetrations may be open in accordance with EOP directions and are **NOT** required to be closed.
- Valves denoted by asterisks (*) may **NOT** remain fully closed due to pressure binding. Containment isolation is satisfied if at least one valve in each penetration is closed.

1. Check Containment Isolation Phase B Valves - CLOSED Manually close valves **NOT** in required position.

IV Panel		
Train A	Train B	Flowpath Description
1-CCM-458	1-CCM-459	CCW to RCP Coolers
1-CCM-451	1-CCM-452	CCW from RCP Oil Coolers
1-CCM-453	1-CCM-454	CCW from RCP Therm Barriers
1-ECR-31	1-ECR-32	Lower CNTMT Air Smpl to ERS-2300
1-WCR-901		NESW to Lower CNTMT VTU 1
1-WCR-925		NESW to Upper CNTMT VTU 2
1-WCR-951		NESW to RCP 1 Motor Air CLR
*1-WCR-920		NESW to HV-CUV-1 & HV-CFT-1 F.P.
1-WCR-922		NESW from Upper CNTMT VTU 1
1-WCR-961		NESW to East INSTN RM VTU
1-WCR-903		NESW from Lower CNTMT VTU 1
*1-WCR-927		NESW from Upper CNTMT VTU 2
*1-WCR-955		NESW from RCP 1 Motor Air CLR
*1-WCR-932		NESW to Upper CNTMT VTU 4
1-WCR-934		NESW from Upper CNTMT VTU 4

(Step 1 Continued On Next Page)

Operator closes all Containment Isolation Phase B, Train A valves on the IV panel.

SAT: UNSAT:

NOTE: Only five valves are Critical Tasks associated with isolating containment due to Train B valves failing to close and Train A failure to actuate.

NOTE: CCM-452, CCM-454, CCM-459 have lost power due to 1-AM-A Loss and valves remain Open.

CUE: If requested, An AEO has been dispatched to locally close CCM-452, 454 & 459

CS: Operator closes CCM-458

SAT: UNSAT:

CS: Operator closes CCM-451

SAT: UNSAT:

CS: Operator closes CCM-453

SAT: UNSAT:

CS: Operator closes WCR-951

SAT: UNSAT:

CS: Operator closes WCR-903

SAT: UNSAT:

OPERATIONS JPM

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-004	PHASE B ISOLATION CHECKLIST	Revision Number: 2
---	------------------------------------	-----------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
------	--------------------------	-----------------------

(Step 1 Continued From Previous Page)

IV Panel (Continued)		
Train A	Train B	Flowpath Description
— 1-WCR-963		NESW from East INSTN RM VTU
— 1-WCR-909		NESW to LWR CNTMT VTU 3 & RCP F.P.
— 1-WCR-929		NESW to HV-CUV-3 & HV-CFT-2 F.P.
— 1-WCR-953		NESW to RCP 3 Motor Air CLR
— *1-WCR-942		NESW to RCP 2 Motor Air CLR
— 1-WCR-946		NESW from RCP 2 Motor Air CLR
— *1-WCR-904		NESW to Lower CNTMT VTU 2
— *1-WCR-906		NESW from Lower CNTMT VTU 2
— 1-ECR-35		LWR CNTMT Air Smpl to RMS/PASS
— *1-WCR-964		NESW to West INSTN RM VTU
— *1-WCR-966		NESW from West INSTN RM VTU
— 1-WCR-911		NESW from Lower CNTMT VTU 3
— *1-WCR-931		NESW from Upper CNTMT VTU 3
— *1-WCR-957		NESW from RCP 3 Motor Air CLR
— *1-WCR-944		NESW to RCP 4 Motor Air CLR
— 1-WCR-948		NESW from RCP 4 Motor Air CLR
— *1-WCR-912		NESW to LWR CNTMT VTU 4 & RCP F.P.
— *1-WCR-914		NESW from Lower CNTMT VTU 4
— 1-WCR-905		NESW to Lower CNTMT VTU 2
— 1-WCR-921		NESW to HV-CUV-1 & HV-CFT-1 F.P.
— 1-WCR-952		NESW to RCP 2 Motor Air CLR
— *1-WCR-941		NESW to RCP 1 Motor Air CLR
— 1-WCR-945		NESW from RCP 1 Motor Air CLR
— *1-WCR-924		NESW to Upper CNTMT VTU 2
— 1-WCR-926		NESW from Upper CNTMT VTU 2
— 1-ECR-36		Common Return from RMS/PASS

(Step 1 Continued On Next Page)

Operator closes all Containment Isolation Phase A, Train B valves on the IV panel.

SAT: UNSAT:

Operator attempts to close WCR-941.

SAT: UNSAT:

NOTE: WCR-951 closure will isolate WCR-941 flowpath. Operator Should verify that WCR-951 is closed (Closed on Page 5)

NOTE: Only five valves are Critical Tasks associated with isolating containment due to Train B valves failing to close and Train A failure to actuate.

OPERATIONS JPM

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-004	PHASE B ISOLATION CHECKLIST	Revision Number: 2
---	------------------------------------	---------------------------

STEP ACTION/EXPECTED RESPONSE RESPONSE NOT OBTAINED

(Step 1 Continued From Previous Page)

IV Panel (Continued)		
Train A	Train B	Flowpath Description
—	1-WCR-965	NESW to West INSTN RM VTU
—	1-WCR-907	NESW from Lower CNTMT VTU 2
—	*1-WCR-923	NESW from Upper CNTMT VTU 1
—	*1-WCR-956	NESW from RCP 2 Motor Air CLR
—	*1-WCR-943	NESW to RCP 3 Motor Air CLR
—	1-WCR-947	NESW from RCP 3 Motor Air CLR
—	*1-WCR-928	NESW to HV-COV-3 & HV-CFT-2 F.P.
—	1-WCR-930	NESW from Upper CNTMT VTU 3
—	1-WCR-967	NESW from West INSTN RM VTU
—	1-WCR-913	NESW to LWR CNTMT VTU 4 & RCP F.P.
—	1-WCR-933	NESW to Upper CNTMT VTU 4
—	1-WCR-954	NESW to RCP 4 Motor Air CLR
—	*1-WCR-900	NESW to Lower CNTMT VTU 1
—	*1-WCR-902	NESW from Lower CNTMT VTU 1
—	1-ECR-33	LWR CNTMT Air Smpl to RMS/PASS
—	*1-WCR-960	NESW to East INSTN RM VTU
—	*1-WCR-962	NESW from East INSTN RM VTU
—	1-WCR-915	NESW from Lower CNTMT VTU 4
—	*1-WCR-935	NESW from Upper CNTMT VTU 4
—	*1-WCR-958	NESW from RCP 4 Motor Air CLR
—	*1-WCR-908	NESW to LWR CNTMT VTU 3 & RCP F.P.
—	*1-WCR-910	NESW from Lower CNTMT VTU 3

Operator attempts to close WCR-902.

SAT: UNSAT:

NOTE: WCR-903 closure will isolate WCR-902 flowpath. Operator Should verify that WCR-903 is closed (Closed on Page 5)

NOTE: Only five valves are Critical Tasks associated with isolating containment due to Train B valves failing to close and Train A failure to actuate.

OPERATIONS JPM

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-004	Title: PHASE B ISOLATION CHECKLIST	Revision Number: 2
---	--	---------------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
2. Check Flowpaths With Motor Operated Valves <ul style="list-style-type: none"> • Check CCW to RCP coolers valves - CLOSED <ul style="list-style-type: none"> • 1-CCM-458 • 1-CCM-459 • Check CCW from RCP oil coolers - CLOSED <ul style="list-style-type: none"> • 1-CCM-451 • 1-CCM-452 • Check CCW from RCP thermal barriers - CLOSED <ul style="list-style-type: none"> • 1-CCM-453 • 1-CCM-454 	IF at least ONE valve is NOT closed for each flowpath required to be isolated, THEN locally close ONE containment isolation valve for that path.	
3. Return To Procedure And Step In Effect		
-END-		

Page 5 of 5

NOTE: CCM-452, CCM-454, CCM-459 have lost power due to T11A Loss and valves remain Open. CCM-451, CCM-453, CCM-458 Should have been previously Closed to complete this isolation.

CUE: If Asked, AEO reports that CCM-452, 454 & 459 valve closure is still in progress.

Operator verifies at least 1 VALVE in each Flowpath has been closed.

SAT: UNSAT:

NOTE: Only five valves are Critical Tasks associated with isolating containment due to Train B valves failing to close and Train A failure to actuate.

EVALUATOR: "JPM IS COMPLETE."

6	Revision: 0
---	-------------

Task Briefing

Unit 1 has experienced a Large break LOCA with a loss of bus 1-AM-A

You are the BOP.

The Unit Supervisor has requested that you verify Containment Isolation Phase B in accordance with E-0, Attachment A, Step 16.

R*TIME Data Viewer - [CISMENU.dis]

File Edit View Display Viewer Security Window Help

cismenu

SIM1-A **HLTH** **ALM** **MODE 1 - POWER OPERATION** 2/20/16

REDU_A 1-SPPC-PC-SPDS UNIT 1 CISMENU **SPDS** **S4** **C4** **P4** **R4** 11:29:18

The main display area is enclosed in a blue frame and contains the following elements:

- SPDS**: A single box at the top center.
- VENTILATION**: A section containing a **CISV** box on the left and a status table on the right.

TRAIN A	ACTUATED
TRAIN B	ACTUATED
COMPLETED	
- PHASE A**: A section containing four boxes (**CISPA1**, **CISPA2**, **CISPA3**, **CISPA4**) on the left and a status table on the right.

TRAIN A	ACTUATED
TRAIN B	ACTUATED
NOT COMPLETED	
- PHASE B**: A section containing two boxes (**CISPB1**, **CISPB2**) on the left and a status table on the right.

TRAIN A	STANDBY
TRAIN B	ACTUATED
NOT COMPLETED	

USER: OPER \$SERVER: PPC1 NUN



COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

NUMBER;

NRC 2016-SIM07

TIME:

20 MINUTES

TITLE:

Restore RCP Bus 1A Power to Bus T11A

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

REFERENCES/NRC KA/TASKS

Procedure: 1-OHP 4023-SUP-002
K/A Number: SYS 062 A4.07
K/A Imp.: RO: 3.1 SRO: 3.1

Restoration of Reserve Power to 4KV Buses

Task Number: EOP0390501

Restore Offsite Power to all AC buses using SUP 002.

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

- Task Briefing sheet
- Copy of Attachment G of 1-OHP 4023-SUP-002

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 1 Simulator

EVALUATION METHOD:	PERFORM: <input checked="" type="checkbox"/>	SIMULATE: <input type="checkbox"/>
---------------------------	---	---

SIMULATOR/LAB SETUP

1. Reset to an IC.738
2. Verify that T11A and T11B are fed from 1AB EDG.
3. Open CB12AB - TR101AB transformer breaker prior to/following Trip & Then Reclose (Must Also Close Unit 2 Breaker on Soft Panel).

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

You are the extra operator.

The crew is recovering from a LOCA with a station blackout. The AB Emergency Buses are energized by the Emergency Diesel Generators. Offsite power has been restored to the AB RCP Buses.

The US directs you to load the T11A Bus to the RCP bus in accordance with 1-OHP-4023-SUP-002, Attachment G.

TASK STANDARDS

Load the T11A Bus to the RCP Bus in accordance with 1-OHP-4023-SUP-002.

NRC 2016-SIM07 Restore RCP Bus 1A Power to Bus T11A	Revision: 0
NRC 2016-SIM07.doc	Page 3 of 8

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-002	Title: RESTORATION OF RESERVE POWER TO 4KV BUSES	Revision Number: 14
---	--	------------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
Attachment G Energizing Bus T11A From Bus 1A		
1.	Check Bus 1A - ENERGIZED	Return to Supplement Body, Step 5 (Page 4).
2.	Check Bus T11A - ENERGIZED BY DGLAB	<p>IF bus T11A is energized by EP, THEN go to Step 4 (Page 53).</p> <p>IF bus T11A is NOT energized, THEN go to Step 6 (Page 55).</p> <p>IF bus T11A is powered from bus 1A, THEN return to Supplement Body, Step 5 (Page 4).</p>
3.	Perform The Following To Parallel Bus T11A To Bus 1A:	
a.	Place the following voltmeters in OFF:	
	<ul style="list-style-type: none"> • DGLAB START GEN & 69/4KV Voltmeter SEL • POTENTIAL DGLAB RUN & BUS T11A & T11B SELECTOR 	
b.	Place T11A9 synch selector in MANUAL	
c.	Adjust DGLAB (start) voltage 2-3 volts higher than bus 1A (run) voltage	
d.	Adjust DG speed until synchroscope rotates slowly in the fast direction	

(Step 3 Continued On Next Page)

(Attachment G, page 1 of 9)

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STANDARD: Checks for lights, voltage, and/or amps on 4kV Bus 1A.

SAT: UNSAT:

STANDARD: Checks DG1AB running with Output Breaker to T11A closed.

SAT: UNSAT:

STANDARD: Places both Voltmeters to OFF position.

SAT: UNSAT:

STANDARD: **CS**: Places DG1AB 4KV CB T11A9 Synch Selector switch in MANUAL.

SAT: UNSAT:

STANDARD: **CS**: Adjusts DG1AB (START) voltage 2-3 volts higher than Bus 1A (RUN) voltage.

SAT: UNSAT:

NOTE: Must use auto Voltage Adjust POT.

CUE: If Panel 119 Drop 40 alarms, Overvoltage alarm is expected.

STANDARD: **CS**: Adjusts speed so the Synchroscope is rotating SLOWLY in the FAST direction.

SAT: UNSAT:

NRC 2016-SIM07

Revision: 0

Restore RCP Bus 1A Power to Bus T11A

NRC 2016-SIM07.doc

Page 4 of 8

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-002	Title: RESTORATION OF RESERVE POWER TO 4KV BUSES	Revision Number: 14
---	--	------------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
Attachment G Energizing Bus T11A From Bus 1A (Step 3 Continued From Previous Page)		
e.	At 11 o'clock on the synchroscope, place T11A9, bus 1A supply to bus T11A, control switch in CLOSE	
f.	Check "Synch Permissives Met" - LIT	f. Perform the following: 1) Place T11A9 synch selector in OFF. 2) Place T11A9 synch selector in MANUAL. 3) Adjust DG1AB (start) voltage 2-3 volts higher than Bus 1A (run) voltage. 4) Adjust DG speed until synchroscope rotates slowly in the fast direction. 5) At 11 o'clock on the synchroscope, place T11A9, bus 1A supply to bus T11A, control switch in CLOSE. 6) Check "Synch Permissives Met" is lit. IF synch permissive can NOT be met, THEN perform the following: a) Inform Unit Supervisor. b) Place T11A9 synch selector in OFF. c) Return to Supplement Body, Step 5 (Page 4).
(Step 3 Continued On Next Page)		
(Attachment G, page 2 of 9)		

STANDARD: **CS**: Closes DG1AB 4KV CB T11A9 control switch at 11:00.

SAT: UNSAT:

STANDARD: Verifies WHITE light permissive is LIT.

SAT: UNSAT:

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-002	Title: RESTORATION OF RESERVE POWER TO 4KV BUSES	Revision Number: 14
---	--	------------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
Attachment G Energizing Bus T11A From Bus 1A (Step 3 Continued From Previous Page)		
g.	At 11 o'clock on the synchroscope, momentarily place DG1AB synchronize master close switch in CLOSE	
h.	Check T11A9, bus 1A supply to bus T11A - CLOSED	h. At 11 o'clock on the synchroscope, momentarily place DG1AB synchronize master close switch in CLOSE. IF T11A9, bus 1A supply to bus T11A, will NOT close, THEN perform the following: 1) Inform Unit Supervisor. 2) Place T11A9 synch selector in OFF. 3) Return to Supplement Body, Step 5 (Page 4).
i.	Adjust DG load to greater than zero	
j.	Place T11A9 synch selector in OFF	
k.	Adjust DG1AB voltage as necessary	
l.	Open T11A11, DG1AB supply to bus T11A	
(Step 3 Continued On Next Page)		
(Attachment G, page 3 of 9)		

STANDARD: **CS**: Places DG1AB Synchronize Master Close Switch in CLOSE at 11:00.

SAT: UNSAT:

STANDARD: Checks Breaker T11A9 CLOSED.

SAT: UNSAT:

Instructor Note: Ann. 119, Drop 76, 4KV BUS T11A PARALLEL OPERATION, will alarm when both supply breakers are closed.

STANDARD: **CS**: Adjusts DG1AB load to greater than 0 kw.

SAT: UNSAT:

STANDARD: **CS**: Places DG1AB 4KV CB T11A9 Synch Selector switch in OFF.

SAT: UNSAT:

STANDARD: Adjusts DG1AB voltage as required.

SAT: UNSAT:

STANDARD: **CS**: OPENS breaker T11A11.

SAT: UNSAT:

CUE: US acknowledges tripping open the T11A11 breaker.

EXPECTED ACTIONS

CUES/STANDARDS ("CS" Indicates Critical Standard)

Number: 1-OHP-4023 SUP-002	Title: RESTORATION OF RESERVE POWER TO 4KV BUSES	Revision Number: 14
---	--	------------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
Attachment G Energizing Bus T11A From Bus 1A (Step 3 Continued From Previous Page)		
	m. Check T11B - ENERGIZED BY DGLAB	n. WHEN DG has run unloaded for approximately two minutes, THEN stop DGLAB: <ol style="list-style-type: none"> 1) Momentarily place DGLAB Stop-Run control switch in STOP. 2) Verify the following potentiometers are set as indicated on placard: <ul style="list-style-type: none"> • DGLAB Manual Voltage Adjust • DGLAB Auto Voltage Adjust 3) Verify the following lockouts are reset: <ul style="list-style-type: none"> • DGLAB Diff Lockout Relay 87X-DGAB • DGLAB O.C. Lockout Relay 51X-TA11 4) Locally stop jacket water pumps for shutdown DGLAB and place in AUTO.
	n. Return to Supplement Body, Step 5 (Page 4)	
4.	Check Bus T11A - ENERGIZED BY EP	Return to Step 2 (Page 50).
(Attachment G, page 4 of 9)		

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STANDARD: Recognized that Bus T11B is still energized by DG1AB and leaves DG1AB running.

SAT: UNSAT:

CUE: When a transition is made back to Supplement Body, Step 5, "JPM is COMPLETE."

NRC 2016-SIM07

Restore RCP Bus 1A Power to Bus T11A

Revision: 0

NRC 2016-SIM07.doc

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TASK BRIEFING

You are the extra operator.

The crew is recovering from a station blackout. The AB Emergency Buses are energized by the Emergency Diesel Generators. Offsite power has been restored to the AB RCP Buses.

The US directs you to load the T11A Bus to the RCP bus in accordance with 1-OHP-4023-SUP-002, Attachment G.



COOK NUCLEAR PLANT TRAINING CENTER

Bridgman, Michigan

OPERATIONS JPM

TRAINING PROGRAM TITLE

INITIAL LICENSE TRAINING

TIME:

30 MINUTES

NUMBER AND TITLE:

NRC 2016-SIM08
Perform Containment Pressure Relief

REVISION:

0

Examinee's Name: _____

Evaluator's Name: : _____

Date Performed: : _____

Result (Circle One): SAT / UNSAT

Number of Attempts: : _____

Time to Complete: : _____

Comments: _____

OPERATIONS JPM

REFERENCES/NRC KA/TASKS

Procedure: OHP.4021.028.004

Operation of the Containment Pressure Relief System

K/A Number: SYS029 A1.03

K/A Imp.: RO: SRO
3.0 3.3:

Task Number: 0280080101

Perform a Containment Pressure Relief.

TRAINING AIDS/TOOLS/EQUIPMENT

None

HANDOUTS

Task Briefing
Copy of 1- OHP.4021.028.004 procedure

ATTACHMENTS

None

EVALUATION SETTINGS

Unit 1 Simulator

EVALUATION METHOD:

PERFORM:



SIMULATE:



OPERATIONS JPM

SIMULATOR/LAB SETUP

1. Reset the simulator to IC 741.
2. Place simulator in RUN.
3. MRF U12_CHR16 to 29.4" (barometric pressure)
U12_CHR16
4. Verify Lower Containment pressure at ~ 0.13-..18 psig.
5. Verify Check Source NOT Failed For VRS 1100, VRS 1200, ERS-1300, ERS-1400, VRS-1500 Channels

EVALUATOR INSTRUCTIONS

1. Ensure simulator setup is complete
2. Brief the operator (May be performed by giving out Task Briefing Sheet)
3. Announce start of the JPM
4. Perform evolution
5. At completion of evolution, announce the JPM is complete.
6. Document evaluation performance.

TASK BRIEFING

Unit 1 is operating at 100% power. Containment pressure has risen due to previous problems associated with containment cooling. Pressure is +0.13 psig and the Unit Supervisor directed that containment pressure be reduced in accordance with 1-OHP 4021-028-004, Operation of the Containment Pressure Relief System There are no abnormal RCS leak rates. All radiation monitors are operable. Containment pressure relief system absolute and charcoal filters are operable.

Initiating cue: The Unit Supervisor has directed you to relieve containment pressure to 0.00 psig in accordance with 1-OHP 4021-028-004, Operation of the Containment Pressure Relief System

GENERAL STANDARDS/PRECAUTIONS

CONTAINMENT PRESSURE IS REDUCED

NRC 2016-SIM08 Perform Containment Pressure Relief	Revision: 0
NRC 2016-SIM08.doc	Page 3 of 14

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("Critical Steps in bold-CS")								
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 25%; text-align: center;">Reference</td> <td style="width: 25%; text-align: center;">1-OHP-4021-028-004</td> <td style="width: 25%; text-align: center;">Rev. 24</td> <td style="width: 25%; text-align: center;">Page 2 of 13</td> </tr> <tr> <td colspan="4" style="text-align: center;">Operation of the Containment Pressure Relief System</td> </tr> </table> <p>1 PURPOSE AND SCOPE</p> <p>1.1 To maintain containment pressure within the limits of TS 3.6.4 by the use of the Containment Pressure Relief System.</p> <p>2 PREREQUISITES</p> <p style="text-align: right; margin-right: 100px;">INIT</p> <p>2.1 Containment Pressure Relief System absolute and charcoal filter are OPERABLE.</p> <p>3 PRECAUTIONS AND LIMITATIONS</p> <p>3.1 Containment pressure should be maintained between - 1.0 psig and +0.15 psig during normal operations. [Ref. 7.2.1d]</p> <p>3.2 The TS limit for Containment pressure, including instrument uncertainty, is - 1.4 psig and +0.2 psig. [Ref. 7.2.1d]</p> <p>3.3 It is possible to reset Containment Ventilation Isolation (CVI) even though the initiating signal is still present. This will block CVI from any other signal as long as the original CVI signal is present. [Ref. 7.2.1b.2]</p> <p>3.4 Inoperable channels of Containment radiation monitors ERS-1300 and ERS-1400 may be removed from the Control Terminal (CT), allowing the radiation monitor to remain in NORMAL.</p> <p>3.5 SOURCE CHECKS shall NOT be performed on the following channels when any Containment release is in progress:</p> <ul style="list-style-type: none"> • 1-VRS-1101 • 1-VRS-1201 • 1-ERS-1301 • 1-ERS-1401 • 1-ERS-1305 • 1-ERS-1405 <p>3.6 If both Containment Noble Gas Activity Monitor (Train "A" ERS-1305) and (Train "B" ERS-1405) are INOPERABLE, immediately suspend containment pressure relief (CPR) of radioactive effluents via this pathway.</p> <p>3.7 Refer to TS 3.3.6 for channel operability requirements and provisions for performing a pressure relief with INOPERABLE channels.</p>	Reference	1-OHP-4021-028-004	Rev. 24	Page 2 of 13	Operation of the Containment Pressure Relief System				<p>CUE: Containment pressure relief system absolute and charcoal filters are operable. (per task briefing sheet)</p> <p>Standard: Candidate Reviews Precautions & Limitations SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>CUE: All radiation monitors are operable (per task briefing sheet)</p>
Reference	1-OHP-4021-028-004	Rev. 24	Page 2 of 13						
Operation of the Containment Pressure Relief System									

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS (“Critical Steps in bold-CS”)								
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="font-size: small;">Reference</td> <td style="font-size: small;">1-OHP-4021-028-004</td> <td style="font-size: small;">Rev. 24</td> <td style="font-size: small;">Page 3 of 13</td> </tr> <tr> <td colspan="4" style="text-align: center; padding: 5px;">Operation of the Containment Pressure Relief System</td> </tr> </table> <p>5.8 If an OPERABLE Containment radiation monitor that is required for the pressure relief alarms/fails/or becomes unreliable, Operator action may be necessary to terminate the pressure relief. An evaluation shall be performed of the required radiation monitors prior to re-establishing the pressure relief.</p> <p>4 DETAILS INIT</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: The activities below are defined as “planned evolutions” that are expected to cause, or have the potential to cause, a high alarm on any of the Containment RMS channels (with subsequent CVI). Because the increase in Containment radiation levels (or spurious actuation) associated with these activities is expected, the resultant Containment isolation actuation is not reportable under the requirements of PMP-7030-001-001, Prompt NRC Notification, so long as the actuation is attributed to one of the following:</p> <ul style="list-style-type: none"> • Movement of highly radioactive trash in the vicinity of an area monitor • Startup of Containment ventilation units • Clock synchronization • Transfer of vital power supply sources • Increase in Containment background radiation levels due to ramp increase in Reactor Power <p>Actuations not reported, which are later found to be attributed to causes that were masked by the power escalation, should be reported upon discovery.</p> </div> <p>4.1 Verify proper operation of Radiation Monitoring System (RMS):</p> <p style="margin-left: 20px;">4.1.1 Verify required instruments - OPERABLE [Ref. 7.2.4c, 7.2.4e]</p> <ul style="list-style-type: none"> <li style="width: 48%;">• 1-VRS-1101 <li style="width: 48%;">• 1-VRS-1201 <li style="width: 48%;">• 1-ERS-1301 <li style="width: 48%;">• 1-ERS-1401 <li style="width: 48%;">• 1-ERS-1305 <li style="width: 48%;">• 1-ERS-1405 <li style="width: 48%;">• 1-VRA-1501 <li style="width: 48%;">• 1-VRS-1505 <li style="width: 48%;">• 1-VFR-1510 <li style="width: 48%;">• 1-VFR-315 <li style="width: 48%;">• 1-VFS-1521 	Reference	1-OHP-4021-028-004	Rev. 24	Page 3 of 13	Operation of the Containment Pressure Relief System				<p>Information in this note is typically reviewed and discussed in task briefing.</p> <p>NOTE: Not part of JPM.</p> <p>CUE: <i>None of the planned evolution activities are scheduled during the time we will be performing the pressure relief.</i></p> <p>{NOTE: JPM starts here.}</p> <p>STANDARD: Operator verifies that all listed monitors are functioning properly SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>CUE: <i>If asked, AEO reports that 1-VFS-1521 is operating within the Normal range.</i></p> <p>STANDARD: Operator determines that ALL channels are OPERABLE SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p>
Reference	1-OHP-4021-028-004	Rev. 24	Page 3 of 13						
Operation of the Containment Pressure Relief System									

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS (“Critical Steps in bold-CS”)										
<table border="1" data-bbox="300 266 1016 342"> <tr> <td data-bbox="300 266 478 293">Reference</td> <td data-bbox="478 266 732 293">1-OHP-4021-028-004</td> <td data-bbox="732 266 877 293">Rev. 24</td> <td data-bbox="877 266 1016 293">Page 4 of 13</td> </tr> <tr> <td colspan="4" data-bbox="300 293 1016 342" style="text-align: center;">Operation of the Containment Pressure Relief System</td> </tr> </table> <p data-bbox="363 367 1010 410">4.1.2 IF any required RMS channels are INOPERABLE, THEN refer to PMP-4050-EIS-001, Event Initiated Surveillance Testing. _____</p> <table border="1" data-bbox="300 451 1016 516"> <tr> <td data-bbox="300 451 415 516">NOTE:</td> <td data-bbox="415 451 1016 516">Abnormal leakage is 1 gpm unidentified and 10 gpm identified for Steps 4.1.3 and 4.1.4.</td> </tr> </table> <p data-bbox="363 537 1010 602">4.1.3 IF 1-VRA-1501 is INOPERABLE concurrent with no indication of abnormal leakage, THEN perform the pressure relief without using the Pressure Relief Fan (enter N/A at Step 4.4.2). _____</p> <p data-bbox="363 623 1010 688">4.1.4 IF 1-VRS-1505 is INOPERABLE concurrent with no indication of abnormal RCS leakage, THEN request Chemistry sample vent stack during pressure relief. _____</p> <p data-bbox="363 709 1010 753">4.1.5 IF necessary to reduce the possibility of a spurious CVI, THEN request RP to perform the following: _____</p> <ul style="list-style-type: none"> <li data-bbox="432 774 1010 862">• IF performing Containment pressure relief concurrently with a power ascension, THEN re-evaluate the high alarm setpoint for the applicable channels on OPERABLE radiation monitors. [Ref. 7.2.2a, 7.2.1b] _____ <li data-bbox="432 883 1010 971">• Remove INOPERABLE channels from the CT, which are not required by TS to allow the radiation monitor to be placed in NORMAL. (i.e., 1506 is INOPERABLE and removed to allow 1501 in normal). _____ <li data-bbox="432 992 1010 1079">• Remove INOPERABLE channels from the CT, which are required by TS, to allow the other OPERABLE channels to be placed in NORMAL (i.e., 1301 is INOPERABLE and removed to allow 1305 in normal). _____ 	Reference	1-OHP-4021-028-004	Rev. 24	Page 4 of 13	Operation of the Containment Pressure Relief System				NOTE:	Abnormal leakage is 1 gpm unidentified and 10 gpm identified for Steps 4.1.3 and 4.1.4.	<p data-bbox="1087 464 1142 492">N/A</p> <p data-bbox="1087 578 1142 605">N/A</p> <p data-bbox="1087 732 1885 802">NOTE: This is typically reviewed and discussed as part of the task briefing.</p> <p data-bbox="1087 850 1801 932">CUE: Shift Manager deems NONE of these actions as necessary.”</p>
Reference	1-OHP-4021-028-004	Rev. 24	Page 4 of 13								
Operation of the Containment Pressure Relief System											
NOTE:	Abnormal leakage is 1 gpm unidentified and 10 gpm identified for Steps 4.1.3 and 4.1.4.										

OPERATIONS JPM

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<table border="1" style="width: 100%; margin-bottom: 10px;"> <tr> <td style="font-size: small;">Reference</td> <td style="font-size: small;">1-OHP-4021-028-004</td> <td style="font-size: small;">Rev. 24</td> <td style="font-size: small;">Page 5 of 13</td> </tr> <tr> <td colspan="4" style="text-align: center;">Operation of the Containment Pressure Relief System</td> </tr> </table> <p>4.1.6 Record the following data in Section A of Data Sheet 1, Containment Pressure Relief Release Data:</p> <ul style="list-style-type: none"> • CPR number (reference last completed CPR from Control Room Log search) • Unit vent flow • Instrument used to obtain Unit vent flow • Highest reading on 1-MR-37, Containment Low Range Pressure Recorder • Radiation monitor readings (N/A monitors removed from service) <p>4.1.7 Perform a SOURCE CHECK on the following Containment Radiation Monitors and document completion on Data Sheet 1:</p> <ul style="list-style-type: none"> • 1-ERS-1305, Containment Lower Compt Train A Rad Monitor ERS-1300 Noble Gas Chamber Low Range Beta Rad Detector • 1-ERS-1405, Containment Lower Compt Train B Rad Monitor ERS-1400 Noble Gas Chamber Low Range Beta Rad Detector <div style="border: 2px solid black; padding: 5px; margin: 10px 0;"> <p>CAUTION: Refer to TS 3.3.6 for channel operability requirements and provisions for performing a pressure relief with INOPERABLE channels.</p> </div> <p>4.2 Verify proper TRIP/BLOCK switch positions:</p> <p>4.2.1 IF there are INOPERABLE channels remaining in the CT, THEN verify the applicable RMS monitor TRIP/BLOCK switch(es) in - BLOCK.</p> <p>4.2.2 Verify TRIP/BLOCK switch on OPERABLE RMS monitors in - NORMAL:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • 1-VRS-1101 • 1-ERS-1300 </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • 1-VRS-1201 • 1-ERS-1400 </td> </tr> </table>	Reference	1-OHP-4021-028-004	Rev. 24	Page 5 of 13	Operation of the Containment Pressure Relief System				<ul style="list-style-type: none"> • 1-VRS-1101 • 1-ERS-1300 	<ul style="list-style-type: none"> • 1-VRS-1201 • 1-ERS-1400 	<p>NOTE: Data is recorded on Section A of Data Sheet 1 (FYI Page 13 of JPM)</p> <p>STANDARD: Enter Next CPR number CUE: Next Containment Pressure Relief Number is 16-058</p> <p>SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Record Vent Flow from 1-VFR-1510 or 1-VFR-315 on recorder 1-MR-54 and circles source SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Record Containment Pressure SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Record Radiation Monitor readings SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Perform Source Check on 1-ERS-1305 SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: Perform Source Check on 1-ERS-1405 SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p> <p>STANDARD: CS Verify all Trip block switches in NORMAL SAT: <input type="checkbox"/> UNSAT: <input type="checkbox"/></p>
Reference	1-OHP-4021-028-004	Rev. 24	Page 5 of 13								
Operation of the Containment Pressure Relief System											
<ul style="list-style-type: none"> • 1-VRS-1101 • 1-ERS-1300 	<ul style="list-style-type: none"> • 1-VRS-1201 • 1-ERS-1400 										

OPERATIONS JPM

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Reference	1-OHP-4021-028-004	Rev. 24	Page 6 of 13						
Operation of the Containment Pressure Relief System									

OPERATIONS JPM

EXPECTED ACTIONS	CUES/STANDARDS ("Critical Steps in bold-CS")										
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Reference	1-OHP-4021-028-004	Rev. 24	Page 7 of 13								
Operation of the Containment Pressure Relief System											
NOTE:	Pressure Relief flowrates are limited to less than the design flow rate of 1000 cfm. This is verified by checks of 1-VFC-207 documented in 1-OHL-5030-SOM-005, Unit 1 Tours - Unit 1 Auxiliary Tour. [Ref. 7.2.2c, 7.2.2d]										

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Reference	1-OHP-4021-028-004	Rev. 24	Page 8 of 13						
Operation of the Containment Pressure Relief System									

OPERATIONS JPM

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Reference	1-OHP-4021-028-004	Rev. 24	Page 9 of 13						
Operation of the Containment Pressure Relief System									

OPERATIONS JPM

EXPECTED ACTIONS

CUES/STANDARDS ("Critical Steps in bold-CS")

Reference	1-OHP-4021-028-004	Rev.	24	Page	12 of 13
Operation of the Containment Pressure Relief System					
Data Sheet 1	Containment Pressure Relief Release Data			Pages:	12 - 13

NOTE: Included for information only.

SECTION A - INITIAL DATA					
CPR Release No. _____ Next in sequence					
Vent flow: _____ CFM		Containment Pressure _____ psig <small>High pressure on 1-MR-37</small>			
Vent Flow Instrument used: _____ (1-VFR-1510 OR 1-VFR-515 on 1-MR-54)					
RADIATION MONITORS					
<small>(N/A monitors removed from service)</small>					
Containment Area Monitor:	_____ mR/hr	_____ mR/hr			
	1-VRS-1101	1-VRS-1201			
Containment Air Particulate:	_____ µCi	_____ µCi			
	1-ERS-1301	1-ERS-1401			
Containment Radiogas:	_____ µCi/cc	_____ µCi/cc			
	1-ERS-1305	1-ERS-1405			
Vent Radiogas:	_____ µCi/cc				
	1-VRS-1505				
Source Check completed <small>(N/A if inoperable)</small>	1-ERS-1305 _____	1-ERS-1405 _____			
	INIT	INIT			
All OPERABLE radiation monitors Trip/Block switches verified in - NORMAL. _____					
INIT					

SECTION B - TIME OF RELIEF	
Beginning of Pressure Relief:	Time: _____ Date: ___/___/___
End of Pressure Relief:	Time: _____ Date: ___/___/___

OPERATIONS JPM

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Reference	1-OHP-4021-028-004	Rev. 24	Page 13 of 13																																								
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Control Room Log entries completed (Release #, Start/Stop times, Contmt Press.)	_____ INIT																																										

Unit 1 is operating at 100% power. Containment pressure has risen due to previous problems associated with containment cooling. Pressure is +0.13 psig and the Unit Supervisor directed that containment pressure be reduced in accordance with 1-OHP 4021-028-004, Operation of the Containment Pressure Relief System There are no abnormal RCS leak rates. All radiation monitors are operable. Containment pressure relief system absolute and charcoal filters are operable.

Initiating cue: The Unit Supervisor has directed you to relieve containment pressure to 0.00 psig in accordance with 1-OHP 4021-028-004, Operation of the Containment Pressure Relief System