

Catawba Nuclear Station

JPM A

Dec. 2010 NRC Exam

JPM A

**Perform Controlled Restart of NV pump 1A
per AP/1/A/5500/021 Encl. 6**

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EVALUATION SHEET

Task: Complete AP/1/A/5500/021 Encl. 6 (NV Pump 1A Controlled Restart)

Alternate Path: None

Facility JPM #: New

Safety Function: 1 **Title:** Chemical and Volume Control System

K/A 004 A4.08 Ability to manually operate and/or monitor in the control room: Charging

Rating(s): 3.8 / 3.4 **CFR:** 41.7/45.5 to 45.8

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator In-Plant _____ Perform Simulate _____

References: AP/1/A/5500/021 (Loss of Component Cooling) Encl. 6

Task Standard: Applicant manually starts 1A NV pump and establishes 32 gpm total sealwater flow.

Validation Time: 10 minutes

Time Critical: Yes _____ No

Applicant:

NAME

Docket #

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time _____

Examiner: _____

NAME

SIGNATURE

DATE

COMMENTS

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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 168.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	VLV-KC001F KC1A AUX BLDG NONESS RTN HDR FAIL TO POSITION	0				
	VLV-KC003F KC3A RX BLDG NONESS RTN HDR FAIL TO POSITION	0				
	VLV-KC002F KC2B AUX BLDG NONESS RTN HDR FAIL TO POSITION	1				
	VLV-KC004F KC18B RX BLDG NONESS RTN HDR FAIL TO POSITION	1				
	VLV-KC012F KC230A TRAIN 1A SPLY TO RX BLDG FAIL TO POSITION	0				
	VLV-KC005F KC50A TRN A SUP TO AUX BLDG NON FAIL TO POSITION	0				
	VLV-KC011F KC228B TRAIN 1B SPLY TO RX BLDG FAIL TO POSITION	1				
	VLV-KC007F KC53B TRN B SUP TO AUX BLDG NON FAIL TO POSITION	1				
	MAL-KC001A KC PUMP 1A1 FAILURE	Both				
	MAL-KC001B KC PUMP 1A2 FAILURE	Both				
	Place red tag sticker on 1B NV pump.					

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INITIAL CONDITIONS:

1. Unit 1 is operating at 100% power.
2. 1B NV pump has been tagged out for seal maintenance.
3. AP/1/A/5500/021 (Loss of Component Cooling) has been entered. During performance of AP/21 both 'A' train KC pumps failed to start. NV pump 1A was secured due to increasing bearing temperatures while YD (Drinking Water) was being aligned. YD to NV pump 1A lineup is complete per Encl. 4.

INITIATING CUES:

1. The CRS has directed you to restart NV pump 1A and establish proper sealwater flow by completing Encl. 6 (NV pump 1A Controlled Restart) of AP/1/A/5500/021 (Loss of Component Cooling).

EXAMINER NOTE: After reading Initiating Cue, provide the applicant with a copy of AP/1/A/5500/021 Encl. 6.

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> 1. Manually open 1NV-309 (Seal Water Injection Flow) to full open.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant depresses the [M] button on controller for 1NV-309, and depresses the increase on the controller to 100 percent to fully open the valve.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> 2. Manually close 1NV-294 (NV Pmps A&B Disch Flow Ctrl).</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant depresses the [M] button on controller for 1NV-294, and depresses the decrease demand button on the controller to 0 percent to fully close the valve.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 3:</u> 3. Start NV pump 1A aux oil pump.</p> <p><u>STANDARD:</u></p> <p>Applicant starts the 1A NV pump aux oil pump by depressing the red ON pushbutton and determining the red ON light is lit and the green OFF light is dark.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> 4. Start NV pump 1A.</p> <p><u>STANDARD:</u></p> <p>Applicant starts the 1A NV pump by depressing the red ON pushbutton and determining the red ON light is lit and the green OFF light is dark.</p> <p>Step is critical since it must be performed to establish normal charging system lineup. This is the only NV pump available to be started at this time.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> 5. Stop NV pump 1A aux oil pump.</p> <p><u>STANDARD:</u></p> <p>Applicant stops the 1A NV pump aux oil pump by depressing the green OFF pushbutton and verifying the green OFF light lit and red ON light dark.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 6:</u> 6. Verify charging header is aligned to NC loop as follows:</p> <ul style="list-style-type: none"> <input type="checkbox"/> a. 1NV-312A (Chrg Line Cont Isol) - OPEN <input type="checkbox"/> b. 1NV-314B (Chrg Line Cont Isol) - OPEN <input type="checkbox"/> c. Verify one of the following valves - OPEN <ul style="list-style-type: none"> <input type="checkbox"/> 1NV-32B (NV Supply To Loop A Isol) OR <input type="checkbox"/> 1NV-39A (NV Supply To Loop D Isol). <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant determines valves 1NV-312A and 1NV-314B red OPEN lights are lit, and green CLSD lights are dark. Applicant also determines that 1NV-32B red OPEN light is lit and green CLSD light is dark.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 7:</u> 7. Throttle 1NV-294 (NV Pmps A&B Disch Flow Ctrl) to establish greater than 32 GPM "N/R CHRГ LN FLOW".</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant increases the valve demand on the controller for 1NV-294 to establish greater than 32 gpm on the N/R CHRГ LN FLOW meter.</p> <p>This step is critical because unless the applicant establishes greater than 32 gpm charging line flow, establishing 32 gpm sealwater flow would not be possible.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p>STEP 8: 8. Verify the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> "TOTAL SEAL WTR FLOW" - GREATER THAN 32 GPM <input type="checkbox"/> 1NV-309 (Seal Water Injection Flow) - IN AUTO. <p>STANDARD:</p> <div style="background-color: #e0e0e0; padding: 5px; border: 1px solid #ccc;"> Applicant determines that TOTAL SEAL WTR FLOW is less than 32 gpm and transitions to the RNO. </div> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 9: 8 RNO: Perform the following:</p> <ul style="list-style-type: none"> *a. Slowly throttle 1NV-309 (Seal Water Injection Flow) to establish 32 GPM "TOTAL SEAL WTR FLOW". b. Place 1NV-309 in auto. <p>STANDARD:</p> <div style="background-color: #e0e0e0; padding: 5px; border: 1px solid #ccc;"> Applicant decreases demand on controller for 1NV-309 to throttle closed the valve to increase TOTAL SEAL WTR FLOW to 32 gpm. Once 32 gpm is established then applicant depresses the A pushbutton on the controller for 1NV-309 to place it in automatic. </div> <p>EXAMINER NOTE: The only critical element of this step is to establish seal flow. It is <u>not</u> critical to place 1NV-309 in manual.</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 10:</u> 9. Verify Pzr level - GREATER THAN 17%.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that pressurizer level on 1NCP5164 <u>OR</u> 1NCP5153 <u>OR</u> 1NCP5174 is reading greater than 17%.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 11:</u> 10. Control charging to stabilize Pzr level greater than 17%.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant manually throttles 1NV-294 as necessary to maintain pressurizer level greater than 17%.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 12:</u> 11. Return this enclosure to the Control Room Supervisor.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant returns the enclosure to the CRS. JPM complete.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

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INITIAL CONDITIONS:

1. Unit 1 is operating at 100% power.
2. 1B NV pump has been tagged out for seal maintenance.
3. AP/1/A/5500/021 (Loss of Component Cooling) has been entered. During performance of AP/21 both 'A' train KC pumps failed to start. NV pump 1A was secured due to increasing bearing temperatures while YD (Drinking Water) was being aligned. YD to NV pump 1A lineup is complete per Encl. 4.

INITIATING CUES:

The CRS has directed you to restart NV pump 1A and establish proper sealwater flow by completing Encl. 6 (NV pump 1A Controlled Restart) of AP/1/A/5500/021 (Loss of Component Cooling).

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Transfer ECCS to Cold Leg Recirc

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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 169.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	VLV-NI037F NI184B CNMT SUMP LINE 1B ISOL (STEM) FAIL TO POSITION	0				
	MAL-NC013A NC COLD LEG A LEAK	27.5				
	VLV-FW006A FW55B ND PUMP B SUCT FROM FWST FAIL AUTO ACTIONS	Active				
	VLV-NI037F NI184B CNMT SUMP LINE 1B ISOL (STEM) FAIL TO POSITION	0				3
	VLV-NI037A NI184B CNMT SUMP LINE 1B ISOL (STEM) FAIL AUTO ACTIONS	Active				
	MAL-ND001 ND PUMP A FAILURE	BOTH				
	Set Event 3 x11O395g					3

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INITIAL CONDITIONS:

1. A LOCA has occurred on Unit 1.
2. 1AD-9 D/8 (FWST 2/4 LO LEVEL) has just alarmed.

INITIATING CUE:

1. The CRS has directed you, as the BOP, to transfer ECCS to Cold Leg Recirculation by performing EP/1/A/5000/ES-1.3 (Transfer to Cold Leg Recirculation) steps 1 through 5.

Examiner Note: After reading Initiating Cue, provide the applicant with a copy of EP/1/A/5000/ES-1.3

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> 1. Monitor Enclosure 1 (Foldout Page).</p> <p><u>STANDARD:</u></p> <p><u>EXAMINER CUE:</u> "The OATC will monitor enclosure 1."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
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CAUTION: S/I recirculation flow to NC System must be maintained at all times.

NOTE: Steps 2 through 8 should be performed without delay. CSF should not be implemented until directed by this procedure.

<p><u>STEP 2:</u> 2. Verify at least one of the following annunciators - LIT:</p> <p style="margin-left: 40px;"><input type="checkbox"/> 1AD-20, B/3 "CONT. SUMP LEVEL >3.3 ft"</p> <p style="margin-left: 40px;">OR</p> <p style="margin-left: 40px;"><input type="checkbox"/> 1AD-21, B/3 "CONT. SUMP LEVEL >3.3 ft"</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; margin-left: 20px;">Applicant determines that at least one of the annunciators are lit.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 3:</u> 3. Verify KC flow to ND heat exchangers - GREATER THAN 5000 GPM.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant verifies KC flow to 1A and 1B ND heat exchangers is greater than 5000 GPM on 1KCP5670 and 1KCP5680.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 4:</u> 4. Ensure S/I - RESET:</p> <p style="margin-left: 40px;">a. ECCS.</p> <p style="margin-left: 40px;">b. D/G load sequencers.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant verifies the ECCS TRN A(B) RESET yellow RESET lights are lit. Applicant verifies the DG 1A(B) LOAD SEQ RESET yellow RESET lights are lit.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 5:</u> 4c. <u>IF AT ANY TIME</u> a B/O occurs, <u>THEN</u> restart S/I equipment previously on.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant acknowledges the IF AT ANY TIME step.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 6:</u> 5. Align S/I system for recirc as follows:</p> <p style="padding-left: 40px;">a. Verify following valves - OPEN:</p> <p style="padding-left: 80px;"><input type="checkbox"/> 1NI-185A (ND Pump 1A Cont Sump Suct).</p> <p style="padding-left: 80px;"><input type="checkbox"/> 1NI-184B (ND Pump 1B Cont Sump Suct).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines the red OPEN light is lit for 1NI-185A. Applicant determines the green CLSD light is lit for 1NI-184B and transitions to the RNO.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 7:</u> 5a. RNO Perform the following:</p> <p style="padding-left: 40px;">1) Manually open affected valve(s).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant depresses the red OPEN pushbutton on 1NI-184B and determines the valve will not open manually.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 8:</u> 5a. RNO 2) IF valve(s) will not open, THEN:</p> <p style="padding-left: 40px;">a) Stop the ND pump(s) associated with a closed containment sump suction valve(s).</p> <p><u>STANDARD:</u></p> <div style="background-color: #e0e0e0; padding: 2px; margin: 5px 0;">Applicant depresses the green OFF pushbutton for 1B ND pump and determines the green OFF light is lit and the red ON light is dark.</div> <p>This step is critical because if the ND pump is not secured now, it will lose its suction source in the next step, and pump damage may occur.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> 5a RNO 2b) : Close the associated ND pump(s) suction valve from the FWST:</p> <p style="padding-left: 40px;"><input type="checkbox"/> 1FW-27A (ND Pump 1A Suct From FWST)</p> <p style="padding-left: 40px;">*<input type="checkbox"/> 1FW-55B (ND Pump 1B Suct From FWST).</p> <p><u>STANDARD:</u></p> <div style="background-color: #e0e0e0; padding: 2px; margin: 5px 0;">Applicant depresses the green CLOSE pushbutton for 1FW-55B and determines the green CLSD light is lit and the red OPEN light is dark.</div> <p><u>EXAMINER NOTE:</u> Only the closure of 1FW-55B is critical because if 1FW-55B is not closed then an interlock will not be met allowing 1NI-184B to be opened in the next step.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p>STEP 10: 5a RNO 2c) WHEN the ND pump(s) suction valve from the FWST is closed, THEN perform the following:</p> <p style="margin-left: 40px;">(1) Attempt to manually open affected containment sump suction valve(s).</p> <p style="margin-left: 80px;"><input type="checkbox"/> 1NI-185A (ND Pump 1A Cont Sump Suct)</p> <p style="margin-left: 80px;">*<input type="checkbox"/> 1NI-184B (ND Pump 1B Cont Sump Suct).</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px; margin-left: 20px;">Applicant depresses the red OPEN pushbutton for 1NI-184B and determines the red OPEN light is lit and the green CLSD light is dark.</p> <p>EXAMINER NOTE: Only 1NI-184B must be opened in order for the 1B ND pump to be restarted later in the procedure.</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 11: 5a RNO 2c) (2) IF affected containment sump suction valve will not open, THEN dispatch two operators to open affected valve(s):</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px; margin-left: 20px;">Applicant determines that this step is N/A. 1NI-184B is now open.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 12:</u> 5a RNO 3) IF both containment sump suction valves are closed, THEN:</p> <p><u>STANDARD:</u></p> <p>Applicant determines that this step is N/A. Both containment sump suction valves are now open.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 13:</u> 5b. Verify following valves - CLOSED:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1FW-27A (ND Pump 1A Suct From FWST) <input type="checkbox"/> 1FW-55B (ND Pump 1B Suct From FWST). <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant verifies green CLSD lights are lit and red OPEN lights are dark on 1FW-27A and 1FW-55B.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> 5c. Verify ND pumps - ON.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that 1A ND pump red ON light is lit and green OFF light is dark, and 1B ND pump green OFF light is lit and red ON light is dark and transitions to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 15:</u> 5c RNO Perform the following:</p> <p style="padding-left: 40px;">1) Start ND pump(s) with suction aligned to an open containment sump suction valve.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines that 1NI-184B is open and depresses the red ON pushbutton for 1B ND pump and verifies the red ON light is lit and the green OFF light is dark.</p> <p><u>EXAMINER NOTE:</u> Only starting the 1B ND pump is critical to provide suction to the other ECCS pumps.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">*CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 16:</u> 5c RNO 2) IF no ND pump can be started OR no ND train can be aligned for recirc, THEN:</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines that this step is N/A. The 1B ND pump is running.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 17:</u> 5d Isolate NI pump miniflow as follows:</p> <p style="padding-left: 40px;">1) Verify NC pressure - LESS THAN 1620 PSIG.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines NC pressure is less than 1620 PSIG.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
EXAMINER NOTE: Either step18 OR the completion of BOTH steps 19 and 20 must be correctly performed to meet the following critical step.	
<p><u>STEP 18:</u> 5d 2) Close the following valves:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NI-115A (NI Pump 1A Miniflow Isol) <input type="checkbox"/> 1NI-144A (NI Pump 1B Miniflow Isol). <p><u>STANDARD:</u></p> <div style="background-color: #cccccc; padding: 5px; margin: 5px 0;"> Applicant depresses the green CLOSE pushbuttons on 1NI-115A and 1NI-144A and verifies the green CLSD lights are lit and red OPEN lights are dark. </div> <p>This step is critical to ensure proper valve lineup for cold leg recirc.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 19:</u> 5d 3) Place "PWR DISCON FOR 1NI-147B" switch in "ENABLE".</p> <p><u>STANDARD:</u></p> <div style="background-color: #cccccc; padding: 5px; margin: 5px 0;"> Applicant rotates "PWR DISCON FOR 1NI-147B" switch clockwise to the "ENABLE" position. </div> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 20:</u> 5d 4) Close 1NI-147B (NI Pump Miniflow Hdr To FWST Isol).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the green CLOSE pushbutton and verifies the green CLSD light lit and red OPEN light dark.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u> 5e. Close the following valves:</p> <p style="padding-left: 40px;">* <input type="checkbox"/> 1ND-32A (ND Train 1A Hot Leg Inj Isol)</p> <p style="padding-left: 40px;">* <input type="checkbox"/> 1ND-65B (ND Train 1B Hot Leg Inj Isol).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the green CLOSE pushbutton on 1ND-32A and 1ND-65B and verifies the green CLSD lights are lit and red OPEN lights are dark.</p> <p><u>EXAMINER NOTE:</u> Only one of the valves must be closed to meet the critical step. This step is critical to ensure proper valve lineup for cold leg recirc.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 22:</u> 5f. Verify at least one of the following NV pumps miniflow valves - CLOSED:</p> <p style="padding-left: 40px;"><input type="checkbox"/> 1NV-203A (NV Pumps A&B Recirc Isol)</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> 1NV-202B (NV Pmps A&B Recirc Isol).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant verifies green CLSD lights are lit and red OPEN lights are dark on 1NV-203A or 1NV-202B.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 23:</u> 5g. Align ND train discharges to NI and NV pump suctions as follows:</p> <p style="padding-left: 40px;">1) Open the following valves:</p> <p style="padding-left: 80px;">*<input type="checkbox"/> 1NI-332A (NI Pump Suct X-Over From ND)</p> <p style="padding-left: 80px;">*<input type="checkbox"/> 1NI-333B (NI Pump Suct From ND).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant depresses the red OPEN pushbutton and verifies the red OPEN lights are lit and green CLSD lights are dark on 1NI-332A and 1NI-333B.</p> <p><u>EXAMINER NOTE:</u> Only one valve needs to be open to meet the critical step.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">*CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 24:</u> 5g 2) Ensure 1NI-334B (NI Pump Suct X-Over From ND) - OPEN.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 2px;">Applicant verifies the red OPEN light is lit and green CLSD light is dark.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 25:</u> 5g 3) Open the following valves:</p> <p style="padding-left: 40px;"><input type="checkbox"/> 1ND-28A (ND Supply To NV & 1A NI Pmps)</p> <p style="padding-left: 40px;">*<input type="checkbox"/> 1NI-136B (ND Supply To NI Pump 1B).</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 2px;">Applicant depresses the red OPEN pushbutton on 1ND-28A and 1NI-136B and verifies the red OPEN lights are lit and green CLSD lights are dark.</p> <p><u>EXAMINER NOTE:</u> Only opening 1NI-136B is critical in this step. This step is critical to ensure proper valve lineup for cold leg recirc.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 26:</u> 5h. Isolate FWST from NV and NI pumps as follows:</p> <p style="padding-left: 40px;">1) Place "PWR DISCON FOR 1NI-100B" switch in "ENABLE".</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant rotates "PWR DISCON FOR 1NI-100B" switch clockwise to the "ENABLE" position.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 27:</u> 5h 2) Close 1NI-100B (NI Pmps Suct From FWST).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant depresses the green CLOSE pushbutton on 1NI-100B and verifies the green CLSD light is lit and the red OPEN light is dark.</p> <p>This step is critical to ensure proper valve lineup for cold leg recirc.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 28:</u> 5h 3) Close the following valves:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NV-252A (NV Pumps Suct From FWST) <input type="checkbox"/> 1NV-253B (NV Pumps Suct From FWST). <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the green CLOSE pushbuttons on 1NV-252A and 1NV-253B and verifies the green CLSD lights are lit and the red OPEN lights are dark.</p> <p>This step is critical to ensure proper valve lineup for cold leg recirc.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 29:</u> 5i. Verify proper recirc flow as follows:</p> <ul style="list-style-type: none"> <input type="checkbox"/> "NV S/I FLOW" - INDICATING FLOW <input type="checkbox"/> NI pumps - INDICATING FLOW <input type="checkbox"/> ND pumps - INDICATING FLOW. <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant verifies recirc flow from NV and NI pumps. Determines 1A ND pump has no flow and proceeds to the RNO.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 30:</u> 5i.RNO IF any S/I pump on without a suction flowpath, THEN stop affected pump(s).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines no pumps need to be secured.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A LOCA has occurred on Unit 1.
2. 1AD-9 D/8 (FWST 2/4 LO LEVEL) has just alarmed.

INITIATING CUES:

1. The CRS has directed you, as the BOP, to transfer ECCS to Cold Leg Recirculation by performing EP/1/A/5000/ES-1.3 (Transfer to Cold Leg Recirculation) steps 1 through 5.

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JPM C

**Depressurize the NC System During Natural
Circulation**

Catawba Nuclear Station

JPM C

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EVALUATION SHEET

Task: Depressurize the NC system during natural circulation by performing EP/1/A/5000/ES-0.2 (Natural Circulation Cooldown) steps 10 and 11.

Alternate Path: None

Facility JPM #: NC-081

Safety Function: 3 **Title:** Pressurizer Pressure Control System

K/A 010 A4.01 Ability to manually operate and/or monitor in the control room: PZR spray valves.

Rating(s): 4.0 / 3.8 **CFR:** 41.7/45.5 to 45.8

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator In-Plant _____ Perform Simulate _____

References: EP/1/A/5000/ES-0.2 (Natural Circulation Cooldown)

Task Standard: NC system is depressurized to 1905 psig using NV aux. spray. Status lights "MAIN STEAM ISOL TRAIN A/B BLOCKED" and "PZR LO PRESS S/I TRAIN A/B BLOCKED" are lit. Pressure is under the control of the operator between 1800 and 1900 psig.

Validation Time: 12 minutes **Time Critical:** Yes _____ No

Applicant: NAME Docket # Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____ / _____
NAME SIGNATURE DATE

COMMENTS

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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 170.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	Reset to 100% IC, Trip the reactor and all four NC Pumps. Perform applicable actions of E-0, ES-0.1, transition to ES-0.2 and FREEZE sim. Write to snap					

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Plant cooldown is in progress per EP/1/A/5000/ES-0.2 (Natural Circulation Cooldown).
2. NC pressure is approx. 2120 PSIG and NC temperature is approx. 532°F.
3. The OATC is controlling S/G levels and the steam dumps for the cooldown.

INITIATING CUES:

1. The CRS instructs you to depressurize the NC system to 1905 PSIG and to block the low steam pressure Main Steam Isolation signals and the pressurizer low pressure S/I signals per steps 10 and 11 of ES-0.2. The CRS directs you to maintain system pressure in the control band of 1800 to 1900 psig.

Examiner Note: After reading cue, provide the applicant with a copy of EP/1/A/5000/ES-0.2 pages 9-11.

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> 10. Depressurize NC System to 1905 PSIG as follows:</p> <p style="margin-left: 40px;">a. Verify letdown - IN SERVICE.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 2px;">Applicant determines that letdown valves 1NV-1A, 1NV-2A, 1NV-10, and 1NV-849 are open and letdown flow on 1NVP5530 indicates flow.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> 10b. Verify power to 1NV-37A (NV Supply To Pzr Aux Spray) - AVAILABLE.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 2px;">Applicant verifies that indication is available for 1NV-37A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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JPM C
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 3:</u> 10c. Depressurize NC System using NV aux spray as follows:</p> <p>1) Ensure the following valves - CLOSED:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NC-27 (Pzr Spray Ctrl Frm Loop A) <input type="checkbox"/> 1NC-29 (Pzr Spray Ctrl Frm Loop B) <input type="checkbox"/> 1NV-39A (NV Supply To Loop D Isol) *<input type="checkbox"/> 1NV-32B (NV Supply To Loop A Isol). <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant determines that:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NC-27 and 1NC-29 show 0% demand. <input type="checkbox"/> 1NV-39A green CLSD light is lit and red OPEN light is dark. <input type="checkbox"/> 1NV-32B green CLSD light is dark, and depresses the green CLOSE pushbutton and verifies the green CLSD light is lit and red OPEN light is dark. <p>EXAMINER NOTE: The closure of 1NV-32B is the only critical in this step. This step is critical because all the valves listed need to be closed to use NV aux spray.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> 10c. 2) Maintain charging flow less than 180 GPM.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant manually controls 1NV-294 throughout the remainder of the JPM to prevent charging flow from exceeding 180 GPM on 1NVP5630.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p>STEP 5: 10c. 3) Throttle 1NV-37A (NV Supply To Pzr Aux Spray) and charging flow as required to depressurize the NC System to 1905 PSIG.</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 2px;">Applicant depresses the red OPEN and green CLOSE pushbuttons as necessary to throttle 1NV-37A to depressurize the NC system. Applicant monitors pressurizer pressure decreasing toward 1905 PSIG.</p> <p>This step is critical because 1NV-37A must be throttled open in order to decrease primary system pressure.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION If PZR pressure increases to greater than 1955 PSIG, then Main Steam Isolation and PZR low pressure S/I circuits will automatically unblock.</p>	
<p>STEP 6: 11. WHEN "P-11 PZR S/I BLOCK PERMISSIVE" status light (1SI-18) is lit, THEN:</p> <p style="margin-left: 20px;">a. Depress "BLOCK" pushbuttons for both trains of:</p> <ul style="list-style-type: none"> <input type="checkbox"/> ECCS steam pressure <input type="checkbox"/> ECCS Pzr pressure. <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 2px;">After determining that "P-11 PZR S/I BLOCK PERMISSIVE" status light on 1SI-18 is lit, applicant depresses the white BLOCK pushbuttons for ECCS TRN A(B) PZR PRESS and ECCS TRN A(B) STM PRESS and verifies the white BLOCKED lights are lit.</p> <p>This step is critical because subsequent depressurization later in the procedure would cause an unwanted SI signal to be generated.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p>STEP 7: 11b. Verify the following status lights on 1SI-13 - LIT:</p> <p style="padding-left: 40px;"><input type="checkbox"/> Main Steam Isol Train A and B Blocked</p> <p style="padding-left: 40px;"><input type="checkbox"/> Pzr Lo Press S/I Train A and B Blocked.</p> <p>STANDARD:</p> <p style="background-color: #cccccc; padding: 2px;">Applicant determines that the status lights are lit.</p> <p>EXAMINER NOTE: Applicant should attempt to stabilize NC pressure in the control band of 1800-1900 psig per initiating cue.</p> <p>EXAMINER CUE: If asked for a control band, CRS directs you to maintain between 1800 and 1900 psig.</p> <p>COMMENTS:</p> <p style="text-align: center; margin-top: 20px;">END OF TASK</p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Plant cooldown is in progress per EP/1/A/5000/ES-0.2 (Natural Circulation Cooldown).
2. NC pressure is approx. 2120 psig and NC temperature is approx. 532 degrees F.
3. The OATC is controlling S/G levels and the steam dumps for the cooldown.

INITIATING CUES:

1. The CRS instructs you to depressurize the NC system to 1905 PSIG and to block the low steam pressure Main Steam Isolation signals and the pressurizer low pressure S/I signals per steps 10 and 11 of ES-0.2. The CRS directs you to maintain system pressure in the control band of 1800 to 1900 psig.

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JPM D

Establish NC System Bleed And Feed

Catawba Nuclear Station

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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 172.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	XMT-NV011 FNV_6080 BORON INJ FLOW TO DCS/MCB/OAC (NVAA6080)	0				
	MAL-CA003A CAPT SA2 FAILS TO START	Active				
	MAL-CA003B CAPT SA5 FAILS TO START	Active				
	MAL-CA004A FAILURE OF CA PUMP A TO START	Both				
	MAL-CA004B FAILURE OF CA PUMP B TO START	Both				
	MAL-NI001B NI PUMP B FAILURE	Auto				
	OVR-ISE043 SAFETY INJECTION INITIATE PB TRN B	Off				

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A reactor trip has occurred on Unit 1 due to a loss of both Main Feedwater pumps. The CA system will not function. Attempts to restart the CFPT's have been unsuccessful.
2. EP/1/A/5000/FR-H.1 (Response to Loss of Secondary Heat Sink) has been entered due to a "RED PATH" for the Heat Sink critical safety function while performing EP/1/A/5000/ES-0.1 (Reactor Trip Response).
3. Bleed and Feed initiation criteria has been met.

INITIATING CUES:

1. The CRS instructs you to initiate NC system bleed and feed per steps 19-24 of EP/1/A/5000/FR-H.1. Inform the CRS when the feed and bleed path has been initiated and verified.

Examiner Note: After reading cue, provide the applicant with a copy of EP/1/A/5000/FR-H.1 pages 27-31.

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> 19. Perform Steps 20 through 24 quickly to establish NC heat removal by NC bleed and feed.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant acknowledges this step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> 20. Ensure all NC pumps - OFF.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant depresses the green OFF pushbuttons for 1A, 1B, 1C, and 1D NC pumps on 1MC-10 and verifies the green OFF lights are lit and red ON lights are dark.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> 21. Initiate S/I.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant depresses the red train 'A' and 'B' "SAFETY INJECTION INITIATE" pushbuttons and verifies the red "SAFETY INJECTION ACTUATED" status light is lit on 1SI-13 or "ECCS TRN A(B)" yellow reset lights are dark on 1MC-11.</p> <p>This step is critical to start the NI pumps and align the valves required to initiate an NC system feed path.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> 22. Verify NC System feed path as follows:</p> <p style="padding-left: 40px;">a. Verify the following pumps - ON:</p> <p style="padding-left: 80px;"><input type="checkbox"/> At least one NV pump</p> <p style="padding-left: 80px;"><input type="checkbox"/> At least one NI pump.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines that at least one NV pump and one NI pump are running.</p> <p><u>EXAMINER NOTE:</u> Applicant may start 1B NI pump and 1B NV pump at this time due to it being a failed auto action. If not, the procedure will direct starting these pumps in the upcoming steps.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 5:</u> 22b. Verify "NV S/I FLOW" – INDICATING FLOW.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines that 1NVP6080 (NV S/I FLOW) on 1MC-3 indicates 0 GPM and transitions to the RNO.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 6:</u> 22b RNO Perform the following:</p> <p style="padding-left: 40px;">1) Ensure the following pumps - ON:</p> <p style="padding-left: 80px;"><input type="checkbox"/> NV Pumps</p> <p style="padding-left: 80px;"><input type="checkbox"/> NI Pumps.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant ensures that all NV pumps and NI pumps are running by depressing the red ON pushbuttons for any non running pump, and verifying the red ON lights are lit and green OFF lights are dark for all pumps.</p> <p><u>EXAMINER NOTE:</u> These pumps may have been previously manually started in earlier step due to it being a failed auto action.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p> <p style="text-align: center;">→ Critical Step</p>
<p><u>STEP 7:</u> 22b RNO 2) IF at least one NV pump in service, THEN perform the following:</p> <p style="padding-left: 40px;">a) Ensure the following valves - OPEN:</p> <p style="padding-left: 80px;"><input type="checkbox"/> 1NV-252A (NV Pumps Suct From FWST)</p> <p style="padding-left: 80px;"><input type="checkbox"/> 1NV-253B (NV Pumps Suct From FWST).</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant verifies the red OPEN lights lit and green CLSD lights dark on 1NV-252A and 1NV-253B.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 8:</u> 22b RNO 2b) Ensure the following valves - CLOSED:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NV-188A (VCT Otlt Isol) <input type="checkbox"/> 1NV-189B (VCT Otlt Isol). <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant determines that the green CLSD light is lit and red OPEN light is dark on 1NV-188A. Applicant determines that the green CLSD light is dark for 1NV-189B, and depresses the green CLOSE pushbutton and verifies the green CLSD light is lit and the red OPEN light is dark.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> 22b RNO 2c) Ensure the following valves - OPEN:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NI-9A (NV Pmp C/L Inj Isol) <input type="checkbox"/> 1NI-10B (NV Pmp C/L Inj Isol). <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant determines the red OPEN light is lit and green CLSD light is dark on 1NI-9A. Applicant determines that the red OPEN light is dark for 1NI-10B, and depresses the red OPEN pushbutton and verifies the red OPEN light is lit and the green CLSD light is dark.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p>STEP 10: 22b RNO 3) <u>IF</u> NI Pump 1A is in service, <u>THEN</u> ensure the following valves - OPEN:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NI-103A (NI Pump 1A Suct) <input type="checkbox"/> 1NI-118A (NI Pump 1A C-Leg Inj Isol) <input type="checkbox"/> 1NI-162A (NI To C-Legs Inj Hdr Isol) <input type="checkbox"/> 1NI-100B (NI Pmps Suct From FWST). <p>STANDARD:</p> <div style="background-color: #e0e0e0; padding: 5px; border: 1px solid #ccc;"> <p>Applicant determines that the red OPEN lights are lit and green CLSD lights are dark on valves 1NI-103A, 1NI-118A, 1NI-162A, and 1NI-100B.</p> </div> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 11: 22b RNO 4) <u>IF</u> NI Pump 1B is in service, <u>THEN</u> ensure the following valves - OPEN:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NI-135B (NI Pump 1B Suct) <input type="checkbox"/> 1NI-150B (NI Pump 1B C-Leg Inj Isol) <input type="checkbox"/> 1NI-162A (NI To C-Legs Inj Hdr Isol) <input type="checkbox"/> 1NI-100B (NI Pmps Suct From FWST). <p>STANDARD:</p> <div style="background-color: #e0e0e0; padding: 5px; border: 1px solid #ccc;"> <p>Applicant verifies that the red OPEN light is lit and green CLSD light is dark on valves 1NI-135B, 1NI-150B, 1NI-162A, and 1NI-100B.</p> </div> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 12:</u> 22b RNO 5) <u>IF</u> no feed path can be aligned, <u>THEN</u>:</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that a feed path does exist and this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> 23. Establish NC System bleed path as follows:</p> <p style="padding-left: 40px;">a. Ensure all PZR PORV isolation valves - OPEN.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines the RED lights are lit and GREEN lights are dark on valves 1NC-31B, 1NC-35B, and 1NC-33A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> 23b. Select "OPEN" on the following PZR PORVs:</p> <p style="padding-left: 40px;"><input type="checkbox"/> 1NC-34A (PZR PORV)</p> <p style="padding-left: 40px;"><input type="checkbox"/> 1NC-32B (PZR PORV).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant rotates switches for 1NC-34A and 1NC-32B, clockwise to the OPEN position and verifies RED lights are lit and GREEN lights are dark on both valves.</p> <p>This step is critical because it establishes an NC system Bleed path.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 15:</u> 23c. Align N2 to the Pzr PORVs by opening the following valves:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1NI-438A (Emer N2 From CLA A To 1NC-34A) <input type="checkbox"/> 1NI-439B (Emer N2 From CLA B To 1NC-32B). <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the red OPEN pushbutton and verifies red OPEN light lit and green CLSD light dark on valves 1NI-438A and 1NI-439B.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> 23d. Verify power to all Pzr PORV isolation valves - AVAILABLE.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant verifies indicating lights lit on 1NC-31B, 1NC-35B, and 1NC-33A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p>STEP 17: 24. Verify the following valves - OPEN:</p> <ul style="list-style-type: none"><input type="checkbox"/> 1NC-31B (PZR PORV Isol)<input type="checkbox"/> 1NC-32B (PZR PORV)<input type="checkbox"/> 1NC-33A (PZR PORV Isol)<input type="checkbox"/> 1NC-34A (PZR PORV).. <p>STANDARD:</p> <p style="background-color: #cccccc; padding: 5px;">Applicant verifies lights on 1NC-31B, 1NC-35B, and 1NC-33A indicate OPEN.</p> <p>COMMENTS:</p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A reactor trip has occurred on Unit 1 due to a loss of both Main Feedwater pumps. The CA system will not function. Attempts to restart the CFPT's have been unsuccessful.
2. EP/1/A/5000/FR-H.1 (Response to Loss of Secondary Heat Sink) has been entered due to a "RED PATH" for the Heat Sink critical safety function while performing EP/1/A/5000/ES-0.1 (Reactor Trip Response).
3. Bleed and Feed initiation criteria has been met.

INITIATING CUES:

1. The CRS instructs you to initiate NC system bleed and feed per steps 19-24 of EP/1/A/5000/FR-H.1. Inform the CRS when the feed and bleed path has been initiated and verified.

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Restore Power to 1ETA From Offsite Power

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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 175.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	MAL-DG001A D/G 1A FAILS TO START	Active				
	MAL-DG001B D/G 1B FAILS TO START	Active				
	MAL-EQB003A LOSS OF D/G 1A SEQUENCER CTRL PWR	Active				
	MAL-EQB003B LOSS OF D/G 1B SEQUENCER CTRL PWR	Active				
	LOA-EP067 600V LC ELXA BKR ELXA-4B	Close	10			2
	LOA-EP069 600V LC ELXC BKR ELXC-4B	Close	20			2

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 has experienced a Loss Of All AC power.
2. It is desired to restore normal power to 1ETA from offsite power through 1ATC.
3. The TCC has verified adequate switchyard voltage and grid reliability.
4. The load shed of 1ETA has been completed and all lockout relays on 1ETA have been reset.

INITIATING CUES:

1. The CRS instructs you to align normal power to 1ETA by completing Enclosure 8 of EP/1/A/5000/ECA-0.0.

EXAMINER NOTE: After reading cue, provide the applicant with a copy of EP/1/A/5000/ECA-0.0 Enclosure 8.

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p>STEP 1: 1. Verify the following 1ETA lockout relays - RESET:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 86N (1ETA 03 Cubicle) <input type="checkbox"/> 86B (1ETA 03 Cubicle) <input type="checkbox"/> 86S (1ETA 04 Cubicle) <input type="checkbox"/> 86D (1ETA 19 Cubicle). <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Per the initial conditions the applicant determines that all lockout relays have been reset.</p> <p>EXAMINER CUE: If asked, "1ETA lockout relays are reset."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 2: 2. IF AT ANY TIME it becomes apparent this enclosure will not be successful, THEN perform the following:</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant flags this step and continues with the procedure.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 3: 3. IF 1ATC energized, THEN GO TO Step 15.</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant determines that 1ATC is not energized.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> 4. IF 6.9 KV buss 1TA energized, THEN GO TO Step 14.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that 1TA is not energized.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> 5. IF transformer 1T2A energized, THEN GO TO Step 13.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that 1T2A is not energized.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> 6. Notify Transmission Control Center (TCC), using one of the following methods, to coordinate attempts to restore power:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Outside line: <ul style="list-style-type: none"> <input type="checkbox"/> 704-382-9404 <input type="checkbox"/> 704-382-9411 <input type="checkbox"/> 704-382-4413 <input type="checkbox"/> 704-382-9403 <input type="checkbox"/> 704-399-9744. <input type="checkbox"/> Two-way radio. <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant contacts TCC using any of the listed methods.</p> <p>EXAMINER CUE: Repeat back information provided by the examinee.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 7:</u> 7. Notify TCC to verify adequate switchyard voltage and grid reliability.</p> <p><u>STANDARD:</u></p> <p>Applicant verifies with TCC or uses information given on the cue sheet.</p> <p><u>EXAMINER CUE:</u> If asked, "The TCC has verified adequate switchyard voltage and grid reliability."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> 8. Ensure both main transformer's MODs - CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that both main transformer MODs red CLSD lights are lit.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> 9. Verify both turbine generator breakers - OPEN.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that both turbine generator breakers green OPEN lights are lit.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 10:</u> 10. Prepare the 6.9 KV busses for power restoration as follows:</p> <p>a. Dispatch operator to ensure breakers for all de-energized motor loads on following 6.9 KV busses - OPEN:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1TA <input type="checkbox"/> 1TB <input type="checkbox"/> 1TC <input type="checkbox"/> 1TD. <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant dispatches an operator to open all breakers for de-energized motor loads on all 6.9 KV busses.</p> <p><u>EXAMINER CUE:</u> "Operators have been dispatched."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> 10b. Place switches for the following pumps in the "OFF" position:</p> <ul style="list-style-type: none"> <input type="checkbox"/> All de-energized hotwell pumps <input type="checkbox"/> All de-energized condensate booster pumps. <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant places the switches for all hotwell and condensate booster pumps to the OFF position.</p> <p>This step is critical to allow an orderly restoration of loads upon restoration of power.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 12:</u> 10c. Depress the OFF pushbutton for all de-energized KR pumps.</p> <p><u>STANDARD:</u></p> <p>Applicant depresses the green OFF pushbutton on 'A' and 'C' KR pumps and verifies the green OFF light is lit and the red ON light is dark.</p> <p><u>EXAMINER NOTE:</u> 'B' KR (Recirculated Cooling Water) pump is energized from Unit 2.</p> <p>This step is critical to allow an orderly restoration of loads upon restoration of power.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> 11. Do not continue in this procedure until all de-energized 6.9 KV motor load breakers are open.</p> <p><u>STANDARD:</u></p> <p>Applicant does not continue until all de-energized 6.9 KV motor load breakers are open.</p> <p><u>EXAMINER CUE:</u> "NEO reports that all de-energized 6.9 KV motor load breakers are open."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>NOTE</u> Zone A or B lockout will occur if at least one main transformer cooling circuit is not restored within 15 minutes of re-energizing the main transformer.</p>	

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 14:</u> 12. Energize 6.9 KV busses as follows:</p> <p style="padding-left: 40px;">a. Announce "Energizing Unit 1 main power. All personnel stand clear."</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant makes announcement using plant paging system.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 15:</u> 12b. Verify the following unit tie PCBs - CLOSED:</p> <p style="padding-left: 40px;"><input type="checkbox"/> PCB 15 <input type="checkbox"/> PCB 18.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant determines that the PCBs red CLSD lights are dark and transitions to the RNO.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 16:</u> 12b RNO Perform the following:</p> <p style="padding-left: 40px;">1) IF unit tie PCB(s) disconnects - OPEN, THEN return PCB(s) to operation. REFER TO OP/0/A/6350/010 (Operation of Station Breakers and Disconnects).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant determines this step is N/A.</p> <p><u>EXAMINER CUE:</u> If asked, "Disconnects have not been opened."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 17:</u> 12b RNO 2) WHEN unit tie PCB(s) returned to operation, THEN close the following unit tie PCBs:</p> <p style="margin-left: 40px;"> <input type="checkbox"/> PCB 15 <input type="checkbox"/> PCB 18. </p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant depresses the red CLOSE pushbutton and verifies the red CLSD lights are lit for PCBs 15 and 18.</p> <p>This step is critical because it is part of the normal lineup from offsite power to 1ETA.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 18:</u> 12b RNO 3) IF PCB(s) will not close, THEN notify TCC to close affected PCB(s).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 19:</u> 13. Verify 1TA - ENERGIZED.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines that 1TA is not energized and transitions to the RNO.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 20:</u> 13 RNO Perform the following:</p> <p style="padding-left: 40px;">a. IF not previously performed, THEN dispatch operator to ensure breakers for all motor loads on 6.9 KV buss 1TA - OPEN:</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant determines this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u> 13 RNO b. Ensure switches for the following pumps in the "OFF" position:</p> <p style="padding-left: 40px;"><input type="checkbox"/> "HTWL PUMP 1A" <input type="checkbox"/> "CM BSTR PUMP 1A"</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant determines that this step was previously performed.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 22:</u> 13 RNO c. Place "7KV BUS 1TA MODE SEL" switch in "MAN A & TIE".</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 2px;">Applicant places the switch "7KV BUS 1TA MODE SEL" in the "MAN A & TIE" position.</p> <p>This step is critical because if not performed then closure of "7KV FDR FRM 1T2A" in the next step would not be possible.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 23:</u> 13 RNO d. Close "7KV 1TA FDR FRM 1T2A".</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the red CLOSE pushbutton on "7KV 1TA FDR FRM 1T2A" and verifies the red CLSD light is lit and green OPEN light is dark.</p> <p>This step is critical because it is part of the normal lineup from offsite power to 1ETA.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 24:</u> 13 RNO e. IF "7KV 1TA FDR FRM 1T2A" fails to close, THEN dispatch operator to close 1TA-05 (Normal A Incoming Feeder From XFMR 1T2A). REFER TO Enclosure 32 (Local Operation of 6900V Bus Breakers).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 25:</u> 14. Verify 1ATC - ENERGIZED.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant verifies that 1ATC is energized.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 26:</u> 15. Verify 1ETA-03 (Normal Incoming Feeder From Xfmr 1ATC) - RACKED IN.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant uses status lights or cue to verify 1ETA-03 is racked in.</p> <p><u>EXAMINER CUE:</u> If asked, "1ETA-03 is racked in."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 27:</u> 16. Do not continue in this enclosure until:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 4KV XFMR 1ATC – ENERGIZED <input type="checkbox"/> 1ETA-03 (Normal Incoming Feeder From Xfmr 1ATC) - RACKED IN. <input type="checkbox"/> Load shed of 1ETA – COMPLETE <input type="checkbox"/> The following 1ETA lockout relays - RESET: <ul style="list-style-type: none"> <input type="checkbox"/> 86N (1ETA 03 Cubicle) <input type="checkbox"/> 86B (1ETA 03 Cubicle) <input type="checkbox"/> 86S (1ETA 04 Cubicle) <input type="checkbox"/> 86D (1ETA 19 Cubicle). <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines all conditions are met and continues in the procedure.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 28:</u> 17. Energize 1ETA as follows:</p> <p style="margin-left: 40px;">a. Close "ETA NORM FDR FRM ATC".</p> <p><u>STANDARD:</u></p> <div style="background-color: #e0e0e0; padding: 5px; margin: 5px 0;"> Applicant depresses the red CLOSE pushbutton on "ETA NORM FDR FRM ATC" and verifies the red CLSD light lit and green OPEN light dark. </div> <p>This step is critical because it is part of the normal lineup from offsite power to 1ETA.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 29:</u> 17b. Verify 1ETA - ENERGIZED.</p> <p><u>STANDARD:</u></p> <div style="background-color: #e0e0e0; padding: 5px; margin: 5px 0;"> Applicant determines 1ETA is energized by viewing OAC graphics or by line volts indication on 1MC-8. </div> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 30:</u> 18. Notify dispatched operator to close the following load center normal incoming breakers from 1ETA:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1ELXA-4B (Normal Incoming Breaker Fed From Xfmr 1ETXA) (AB-577, AA-47, Rm 496) <input type="checkbox"/> 1ELXC-4B (Normal Incoming Breaker Fed From Xfmr 1ETXC) (AB-577, AA-46, Rm 496) <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant notifies dispatched operator to close load center breakers 1ELXA-4B and 1ELXC-4B.</p> <p><u>EXAMINER NOTE:</u> Simulator operator will insert EVENT 2.</p> <p><u>EXAMINER CUE:</u> When all indicating lights on the KC system on 1MC-11 are lit, then tell examinee "Operator reports that 1ELXA-4B and 1ELXC-4B are closed."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 31:</u> 19. GO TO Section C. (Operator Actions), Step 38.</p> <p><u>STANDARD:</u></p> <p><u>EXAMINER CUE:</u> "The CRS will continue to direct actions of ECA-0.0. This JPM is complete."</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 has experienced a Loss Of All AC power.
2. It is desired to restore normal power to 1ETA from offsite power through 1ATC.
3. The TCC has verified adequate switchyard voltage and grid reliability.
4. The load shed of 1ETA has been completed and all lockout relays on 1ETA have been reset.

INITIATING CUES:

1. The CRS instructs you to align normal power to 1ETA by completing Enclosure 8 of EP/1/A/5000/ECA-0.0.

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**Ensure Proper Feedwater Isolation On A
Reactor Trip**

Catawba Nuclear Station

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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 173.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	MAL-ISE007A AUTO CF ISOL SIGNAL TRN A	Block				
	MAL-ISE007B AUTO CF ISOL SIGNAL TRN B	Block				
	MAL-CA007D S/G TEMPERING VLV CA188 FAILURE	Open				
	MAL-CA004A FAILURE OF CA PUMP A TO START	Auto				
	MAL-CA004B FAILURE OF CA PUMP B TO START	Auto				
	VLV-CA030A SA2 CA PMP TURB STM SPLY VL FAIL AUTO ACTIONS	Active				
	VLV-CA031A SA5 CA PMP TURB STM SPLY VL FAIL AUTO ACTIONS	Active				
	MAL-CA007D S/G TEMPERING VLV CA188 FAILURE	Open				
	OVR-ISE006C CNT FW ISOL TRN A INIT PB	Off				
	OVR-ISE008C CNT FW ISOL TRN B INIT PB	Off				

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A reactor trip has occurred on Unit 1 due to a loss of both Main Feedwater pumps. EP/1/A/5000/ES-0.1 (Reactor Trip Response) has been implemented.

INITIATING CUES:

1. The CRS instructs you to perform step 6 of EP/1/A/5000/ES-0.1 to verify feedwater status.

Examiner Note: After reading cue, provide the applicant with a copy of EP/1/A/5000/ES-0.1 page 4.

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START TIME: _____

<p><u>STEP 1:</u> 6. Verify feedwater status as follows: a. T-Avg - LESS THAN 564°F.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant determines Tavg is less than 564°F by use of NC Loop A/B/C/D Lo Tavg channels I/II/III/IV status lights lit on 1SI-7, OR on NC Loop A/B/C/D Tavg meters on 1MC-5, OR on Selected Tavg chart recorder on 1MC-1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> 6b. All Feedwater Isolation status lights (1SI-5) - LIT.</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0;">Applicant determines "S/G A (B) (C) CF CONT ISOL VLVS CLSD" status lights are lit, and "S/G D CF CONT ISOL VLVS CLSD" status light is DARK on 1SI-5. Applicant should transition to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 3:</u> 6b. RNO 1) Manually initiate Feedwater Isolation.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the CF ISOL TRN A/B red INITIATE pushbutton and verifies red INIT lights are lit and yellow RST lights are dark on 1MC-2.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p><u>STEP 4:</u> 6b. RNO 2) <u>IF</u> proper status light indication is not obtained, <u>THEN</u> manually close valves.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses and holds green CLOSE pushbutton for 1CF-60 and verifies green CLSD light is lit and red OPEN light is dark. Applicant depresses green CLOSE pushbutton for 1CA-188 and verifies green CLSD light is lit and red OPEN light is dark. Applicant depresses the M pushbutton on valves 1CF-55 and 1CF-57, then depresses the decrease demand pushbuttons to fully close the valves.</p> <p><u>EXAMINER NOTE:</u> S/G D CF CONT ISOL VLVS CLSD status light on 1SI-5 will now be lit.</p> <p>Step is critical since these valves must be manually closed to provide proper feedwater isolation.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">CRITICAL STEP</p> <p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>

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<p><u>STEP 5:</u> 6c. Total feed flow to S/G(s) – GREATER THAN 450 GPM.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines feed flow to S/G's is zero gpm and transitions to the RNO.</p> <p><u>EXAMINER CUE:</u> If applicant addresses a RED path on the Heat Sink critical safety function, “The STA and OSM will validate the red path.”</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> 6c. RNO Establish feed flow to maintain at least one S/G N/R level greater than 11% OR total feed flow greater than 450 GPM using one of the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> CA pumps <li style="text-align: center;">OR <input type="checkbox"/> Main Feedwater System. REFER TO OP/1/A/6250/001 (Condensate and Feedwater System). <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant starts 1A and/or 1B CA pumps to achieve at least 450 gpm flow to one or more S/G's.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A reactor trip has occurred on Unit 1 due to a loss of both Main Feedwater pumps. EP/1/A/5000/ES-0.1 (Reactor Trip Response) has been implemented.

INITIATING CUES:

1. The CRS instructs you to perform step 6 of EP/1/A/5000/ES-0.1 to verify feedwater status.

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JPM G

**Place KC In Parallel Operation Per
OP/1/A/6400/005**

Catawba Nuclear Station

JPM-G

Dec. 2010 NRC Exam

SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 174.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	Reset to 100% IC with 1A2 KC pump in service.					

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. There is a work list item from work control to place KC on Unit 1 in parallel operation in preparation for Aux Safeguards Testing early on the next shift.

INITIATING CUES:

1. The CRS instructs you to place KC in parallel operation by performing Encl. 4.4 of OP/1/A/6400/005. You are to start 1B1 KC pump. Initial conditions have previously been verified and signed off. You are to begin at step 2.7.

Examiner Note: After reading cue, provide the applicant with a copy of OP/1/A/6400/005 Encl. 4.4.

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START TIME: _____

STEP 1: 2.7 **IF** placing KC Train 1B in parallel operation with KC Train 1A with the trains cross-connected, complete the following steps:

___ SAT

___ UNSAT

NOTE: RN System minimum flow protection is normally established using an idle KC train.

2.7.1 Complete the following steps to ensure the RN System has miniflow protection:

2.7.1.1 IF a Unit 2 KC Hx discharge valve is in the "MINIFLOW" position, perform the following:

A. Ensure the associated inlet valve is open:

- 2RN-287A (KC Hx 2A Inlet Isol)
- 2RN-347B (KC Hx 2B Inlet Isol)

STANDARD:

Applicant asks Unit 2 operator to verify which KC heat exchanger is in service and whether its respective heat exchanger inlet valve is open.

Examiner Cue: "2B KC heat exchanger is in the "MINIFLOW" position and 2RN-347B is open."

COMMENTS:

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<p><u>STEP 2:</u> 2.7.1.1 B. Ensure a complete RN flow path exists from the RN Pumps through the applicable Hx to the discharge.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines RN system is in normal lineup and has a flowpath through 2B KC heat exchanger to the discharge by looking at the OAC graphic.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> 2.7.1.2 IF no Unit 2 KC Hxs are available for RN miniflow, establish miniflow per OP/0/A/6400/006 C (Nuclear Service Water System) as necessary to maintain RN flow \geq 8600 gpm per operating RN Pump.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines this step is N/A. 2B KC heat exchanger is available for miniflow.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> 2.7.2 Ensure 1RN-347B (KC Hx 1B Inlet Isol) is open.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that the red OPEN light lit and green CLSD light dark on 1RN-347B.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 5:</u> 2.7.3 Ensure "KC HX 1B OTLT MODE" is in "KC TEMP".</p> <p><u>STANDARD:</u></p> <p>Applicant rotates "KC HX 1B OTLT MODE" switch counter-clockwise to the "KC TEMP" position.</p> <p>This step is critical because starting a pump in this train with RN flow elevated through the KC heat exchanger, could cause letdown temperature to decrease rapidly, causing a reactivity excursion due to the increased affinity for boron in the letdown demineralizers.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 6:</u> 2.7.4 IF letdown is in service per OP/1/A/6200/001 (Chemical and Volume Control System) perform the following: (R.M.)</p> <p style="padding-left: 40px;">2.7.4.1 Place 1KC-132 (Letdn Hx Oflt Temp Ctrl) in manual.</p> <p><u>STANDARD:</u></p> <p>Applicant depresses the M button on the control station for 1KC-132.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 7:</u> 2.7.4.2 WHILE 1KC-132 (Letdn Hx Oflt Temp Ctrl) is in manual during the train swap adjust as required to maintain letdown temperature stable.</p> <p><u>STANDARD:</u></p> <p>This is a continuous action step. Through the rest of the procedure the applicant will manually throttle 1KC-132 to stabilize letdown temperature.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 8:</u> 2.7.4.3 Record position of 1NV-153A (Letdn Hx Otlt 3-Way Vlv). Recorded position _____</p> <p><u>STANDARD:</u></p> <p>Applicant records position of 1NV-153A to be the AUTO/DEMIN position.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> 2.7.4.4 IF letdown flow is through the demineralizers, notify Primary Chemistry that the demineralizers will be bypassed while shifting KC Pumps. Person notified _____</p> <p><u>STANDARD:</u></p> <p>Applicant contacts Primary Chemistry and informs them that the demineralizers will be bypassed.</p> <p><u>EXAMINER CUE:</u> "This is Steve in Primary Chemistry. I understand that the letdown demineralizers will be bypassed while shifting KC pumps."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p>STEP 10: 2.7.4.5 IF letdown flow is through the demineralizers, notify Radiation Protection that the demineralizers will be bypassed while shifting KC Pumps. Person notified _____</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant contacts Radiation Protection and informs them that the demineralizers will be bypassed.</p> <p>EXAMINER CUE: "This is Gary in Radiation Protection. I understand that the letdown demineralizers will be bypassed while shifting KC pumps."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 11: 2.7.4.6 Place 1NV-153A (Letdn Hx Otlf 3-Way Vlv) in the "VCT" position.</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant rotates switch for 1NV-153A counter-clockwise to the VCT position and verifies white light lit and red light dark.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION: 5700 gpm discharge header flow per operating KC Pump shall NOT be exceeded.</p>	

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<p><u>STEP 12:</u> 2.7.5 Start either KC Train 1B pump:</p> <p style="padding-left: 40px;"><input type="checkbox"/> "KC PUMP B1" OR <input type="checkbox"/> "KC PUMP B2"</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Per initiating cue, applicant will start 1B1 KC pump by depressing the red ON pushbutton and verifying red ON light lit and green OFF light dark.</p> <p>This step is critical because one 'B' KC pump has to be started to place KC in parallel operation per the JPM standard.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> 2.7.6 IF letdown is in service per OP/1/A/6200/001 (Chemical and Volume Control System), WHEN KC flow and temperature have stabilized perform the following: (R.M.)</p> <p style="padding-left: 40px;">2.7.6.1 Return 1NV-153A (Letdn Hx Otlt 3-Way Vlv) to the position recorded in Step 2.7.4.3.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant will rotate switch for 1NV-153A clockwise to the DEMIN position, verifying the RED light lit and WHITE light dark, and then return the switch to the AUTO position.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p>STEP 14: 2.7.6.2 IF letdown flow is through the demineralizers, notify Primary Chemistry that the demineralizers have been restored to service. Person notified _____</p> <p>STANDARD:</p> <p style="background-color: #cccccc;">Applicant contacts Primary Chemistry and lets them know that the demineralizers have been returned to service.</p> <p>EXAMINER CUE: "This is Steve with Primary Chemistry. I understand that the letdown demineralizers have been returned to service."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 15: 2.7.6.3 IF letdown flow is through the demineralizers, notify Radiation Protection that the demineralizers have been restored to service. Person notified _____</p> <p>STANDARD:</p> <p style="background-color: #cccccc;">Applicant contacts Radiation Protection and lets them know that the demineralizers have been returned to service.</p> <p>EXAMINER CUE: "This is Gary with Radiation Protection. I understand that the letdown demineralizers have been returned to service."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 16:</u> 2.7.6.4 Return 1KC-132 (Letdn Hx Oflt Temp Ctrl) to auto.</p> <p><u>STANDARD:</u></p> <p>Applicant depresses the A pushbutton on controller for 1KC-132.</p> <p><u>EXAMINER CUE:</u> "Another operator will finish the procedure. This JPM is complete."</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p><input type="checkbox"/> SAT</p> <p><input type="checkbox"/> UNSAT</p>
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STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. There is a work list item from work control to place KC on Unit 1 in parallel operation in preparation for Aux Safeguards Testing early on the next shift.

INITIATING CUES:

1. The CRS instructs you to place KC in parallel operation by performing Encl. 4.4 of OP/1/A/6400/005. You are to start 1B1 KC pump. Initial conditions have previously been verified and signed off. You are to begin at step 2.7.

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JPM H

**Increase Level In The PRT Using
OP/1/A/6150/004 Encl. 4.2**

Catawba Nuclear Station

JPM H

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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Reset to IC # 176.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Ensure simulator setup per table below.
6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE "Extra Operator" is present in the simulator.
8. Place simulator in FREEZE until Examiner cue is given.

✓	Instructor Action	Final	Delay	Ramp	Delete In	Event
	LOA-NC015 NC48 - PRT GAS SAMPLE VESSEL BYP	.35		10		2
	LOA-NC015 NC48 - PRT GAS SAMPLE VESSEL BYP	0		10		4
Lower PRT Level to approx 66% and increase PRT pressure to 5.1 psig then freeze						

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. PRT level is 66.6%
2. PRT pressure is reading 5.1 PSIG.

INITIATING CUES:

1. CRS directs you to increase PRT level to 72% per OP/1/A/6150/004 (Pressurizer Relief Tank) Encl. 4.2.
2. Initial conditions have been previously verified and signed off.
3. Valves are aligned per Enclosures 4.7 and 4.8 of OP/1/A/6150/004.

EXAMINER NOTE: After reading initiating cue, provide applicant with a copy of OP/1/A/6150/004 Encl. 4.2 with the initial conditions signed off.

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START TIME: _____

<p><u>STEP 1:</u> 2.1 Ensure valves are aligned per Enclosure 4.7 (Valve Checklist).</p> <p><u>STANDARD:</u></p> <p>Per initiating cue, the applicant determines that this step is met.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> 2.2 Ensure valves are independently verified per Enclosure 4.8 (Independent Verification Valve Checklist).</p> <p><u>STANDARD:</u></p> <p>Per initiating cue, the applicant determines that this step is met.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 3:</u> 2.3 IF level in the PRT is to be raised, complete the following steps:</p> <p>2.3.1 Open the following valves to align the RMWST to the PRT:</p> <ul style="list-style-type: none"> • 1NC-58A (PRT Spray Supply Isol) • 1NC-56B (RMW Pump Disch Cont Isol) <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the red OPEN pushbutton on 1NC-58A and 1NC-56B and verifies the red OPEN lights are lit and green CLSD lights are dark.</p> <p>This step is critical because these valves need to be opened to align a flowpath for makeup to the PRT.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> 2.3.2 Start a Reactor Makeup Water pump:</p> <ul style="list-style-type: none"> • "RX M/U WTR PUMP 1A" <li style="text-align: center;">OR • "RX M/U WTR PUMP 1B" <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant turns switch for 1A or 1B reactor makeup water pump clockwise to the ON position and verifies red light lit and green light dark.</p> <p>This step is critical to provide makeup flow to the PRT.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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<p>STEP 5: 2.3.3 IF at any time while raising PRT level PRT pressure increases to 6 psig, as indicated on 1NCP-5130 (PRT Press, complete the following steps:</p> <p style="padding-left: 40px;">2.3.3.1 Stop the reactor makeup water pump.</p> <p>EXAMINER NOTE: When PRT pressure increases to > 6 PSIG the applicant will perform the following.</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant determines that PRT pressure has increased above 6 PSIG and stop the reactor makeup water pump started in the previous step.</p> <p>This step is critical to setup normal PRT lineup prior to venting.</p> <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>STEP 6: 2.3.3.2 Close the following valves:</p> <ul style="list-style-type: none"> • 1NC-58A (PRT Spray Supply Isol) • 1NC-56B (RMW Pump Disch Cont Isol) <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant depresses the green CLOSE pushbutton and verifies the green CLSD light is lit and the red OPEN light is dark for 1NC-58A and 1NC-56B.</p> <p>This step is critical to setup normal PRT lineup prior to venting.</p> <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 7:</u> 2.3.3.3 Vent the PRT per Enclosure 4.5 (Venting the Pressurizer Relief Tank).</p> <p><u>STANDARD:</u></p> <p>Applicant describes obtaining a copy of Enclosure 4.5 of OP/1/A/6150/004.</p> <p><u>EXAMINER CUE:</u> Provide applicant a copy of Enclosure 4.5.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>EXAMINER NOTE:</u> The following steps are from Enclosure 4.5 to vent the PRT.</p>	
<p><u>STEP 8:</u> 1. Initial Conditions of Encl. 4.5</p> <p>1.1 Review the Limits and Precautions.</p> <p><u>STANDARD:</u></p> <p>Applicant reviews the limits and precautions.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 9:</u> 1.2 Verify the PRT is in operation per Enclosure 4.1 (Establishing Normal Operating Conditions).</p> <p><u>STANDARD:</u></p> <p>Applicant will check the control copy of this OP for verification that system is aligned per Enclosure 4.1.</p> <p><u>EXAMINER CUE:</u> "PRT is in operation per Enclosure 4.1."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> 1.3 Verify the WG System is available for PRT venting per OP/0/A/6500/003 (Radwaste Chemistry Operating Procedure for the Gaseous Waste (WG) System).</p> <p><u>STANDARD:</u></p> <p>Applicant will check control copy of OP/0/A/6500/003 for system availability for PRT venting.</p> <p><u>EXAMINER CUE:</u> "Waste Gas System is available for PRT venting per OP/0/A/6500/003."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 11:</u> 2.1 IF pressure in the PRT is greater than 8 psig, lower level in the PRT per Enclosure 4.2 (Adjusting Pressurizer Relief Tank Level) until pressure is less than 8 psig.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> 2.2 IF the GN System is the N2 supply, close 1GN-96 (N2 Supply To Unit 1 PRT) (AB-543, EE-543, Rm 217).</p> <p><u>STANDARD:</u></p> <p><u>EXAMINER CUE:</u> "GN system is the N2 supply."</p> <p style="background-color: #cccccc;">Applicant will dispatch an operator to locally close 1GN-96.</p> <p><u>EXAMINER CUE:</u> "1GN-96 is closed."</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 13:</u> 2.3 IF Waste Gas Shutdown Decay Tank "B" is the N2 supply, notify Radwaste Chemistry to isolate the flow path.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Per previous step, applicant determines that this step is N/A.</p> <p><u>EXAMINER CUE:</u> If asked, "Waste Gas Decay Tank B is not the N2 supply to the PRT."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> 2.4 Notify Radwaste Chemistry to align the WG System for venting the PRT to the WG System per OP/0/A/6500/003 (Radwaste Chemistry Operating Procedure for the Gaseous Waste (WG) System). Person notified _____</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant notifies Radwaste Chemistry to align the WG system for venting the PRT to the WG system per OP/0/A/6500/003.</p> <p><u>EXAMINER CUE:</u> "This is Steve in Radwaste Chemistry. I understand that I need to align the WG system for venting the PRT to the WG system."</p> <p><u>EXAMINER CUE:</u> "Time compression. This is Steve with Radwaste Chemistry. The WG system is aligned for venting the PRT."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 15:</u> 2.5 Verify the following valves are open:</p> <ul style="list-style-type: none">• 1NC-53B (N2 To PRT Cont Isol)• 1NC-54A (N2 To PRT Cont Isol) <p><u>STANDARD:</u></p> <p>Applicant verifies the red OPEN light lit and green CLSD light dark on 1NC-53B and 1NC-54A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> 2.6 Coordinate the following step with Radwaste Chemistry.</p> <p><u>STANDARD:</u></p> <p>Applicant coordinates steps with Radwaste Chemistry.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE: In the following step, opening 1NC-48 (PRT Gas Smpl Vessel Byp) too fast may result in tripping the WG Compressor.</p>	

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<p><u>STEP 17:</u> 2.7 While in contact with Radwaste, <u>slowly</u> open 1NC-48 (PRT Gas Smpl Vessel Byp) (AB-551, CC-52, Rm 250) to vent the PRT.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant dispatches operator to Rm 250 to slowly open 1NC-48.</p> <p><u>EXAMINER CUE:</u> "Operator has been dispatched."</p> <p><u>EXAMINER NOTE:</u> Booth operator will insert Event 1 to throttle open 1NC-48.</p> <p><u>EXAMINER CUE:</u> "Time compression. 1NC-48 is throttled open."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 18:</u> 2.8 IF Step 2.1 was performed, establish PRT level at 75% per Enclosure 4.2 (Adjusting Pressurizer Relief Tank Level).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 19:</u> 2.9 WHEN the desired PRT pressure is reached, close 1NC-48 (PRT Gas Smpl Vessel Byp).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">When desired pressure is reached, applicant will direct dispatched operator to close 1NC-48.</p> <p><u>EXAMINER NOTE:</u> When PRT pressure decreases to 3 PSIG, then PRT pressure regulating valve from the GN system (1NC-52) will maintain pressure at 3 PSIG.</p> <p><u>EXAMINER NOTE:</u> Booth operator will insert Event 3 to close 1NC-48.</p> <p><u>EXAMINER CUE:</u> "1NC-48 is closed."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 20:</u> 2.10 Notify Radwaste Chemistry that venting of the PRT is complete.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant notifies Radwaste Chemistry that PRT venting is complete.</p> <p><u>EXAMINER CUE:</u> "This is Steve in Radwaste Chemistry. I understand that PRT venting is complete."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 21:</u> 2.11 IF necessary, repressurize the PRT as follows:</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant should determine that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE: At this point, the PRT has been returned to normal alignment per Enclosure 4.1 (Establishing Normal Operating Conditions).</p>	
<p><u>STEP 22:</u> 2.12 Do NOT file this enclosure in the Control Copy folder of this procedure.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant would route this enclosure.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>EXAMINER NOTE:</u> Applicant will now return to Enclosure 4.2 step 2.3.3.4.</p>	

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<p><u>STEP 23:</u> 2.3.3.4 WHEN PRT pressure has been reduced to 3 psig, return to Step 2.3.1.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant returns to step 2.3.1.</p> <p><u>COMMENTS:</u></p>	<p><input type="checkbox"/> SAT</p> <p><input type="checkbox"/> UNSAT</p>
<p><u>STEP 24:</u> 2.3.1 Open the following valves to align the RMWST to the PRT:</p> <ul style="list-style-type: none"> • 1NC-58A (PRT Spray Supply Isol) • 1NC-56B (RMW Pump Disch Cont Isol) <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the red OPEN pushbutton and verifies the red OPEN light lit and green CLSD light dark on valves 1NC-58A and 1NC-56B.</p> <p>This step is critical because these valves need to be opened to align a flowpath for makeup to the PRT.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p><input type="checkbox"/> SAT</p> <p><input type="checkbox"/> UNSAT</p>

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<p><u>STEP 25:</u> 2.3.2 Start a Reactor Makeup Water pump:</p> <ul style="list-style-type: none">• "RX M/U WTR PUMP 1A"<li style="text-align: center;">OR• "RX M/U WTR PUMP 1B" <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant turns control switch for 1A or 1B reactor makeup water pump in the clockwise direction to the ON position and verifies the red light lit and green light dark.</p> <p>This step is critical to provide makeup flow to the PRT.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 26:</u> 2.3.3 IF at any time while raising PRT level PRT pressure increases to 6 psig, as indicated on 1NCP-5130 (PRT Press) complete the following steps:</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines that this step does not apply now and continues with the enclosure.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 27:</u> 2.3.4 WHEN the desired level is reached, stop the reactor makeup water pump.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">When 72 % level in the PRT is reached, applicant stops the reactor makeup water pump started in step 2.3.2 and verifies the green light lit and red light dark.</p> <p>This step is critical to return the PRT to a normal lineup per Encl. 4.1.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 28:</u> 2.3.5 Close the following valves:</p> <ul style="list-style-type: none"> • 1NC-58A (PRT Spray Supply Isol) • 1NC-56B (RMW Pump Disch Cont Isol) <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant depresses the green CLOSE pushbutton and verifies the red OPEN light dark and green CLSD light lit on valves 1NC-58A and 1NC-56B.</p> <p>EXAMINER NOTE: This step is ONLY critical if the applicant fails to stop the reactor makeup water pump in the previous step.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">*CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 29:</u> 2.3.6 Align the reactor makeup water pump used in this section as required per OP/1/A/6150/009 (Boron Concentration Control).</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant places reactor makeup water pump control switch stopped in step 2.3.4 in the AUTO position.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p><u>STEP 30:</u> 2.4 IF level in the PRT is to be lowered, complete the following steps:</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p><u>STEP 31:</u> 2.5 Do NOT file this enclosure in the Control Copy folder of this procedure.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant will route the enclosure.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. PRT level is 66.6%
2. PRT pressure is reading 5.1 PSIG.

INITIATING CUES:

1. CRS directs you to increase PRT level to 72% per OP/1/A/6150/004 (Pressurizer Relief Tank) Encl. 4.2.
2. Initial conditions have been previously verified and signed off.
3. Valves are aligned per Enclosures 4.7 and 4.8 of OP/1/A/6150/004.

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Start MG Set 1A Per OP/1/A/6150/008

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 startup is in progress.
2. All sign-offs for Mode 2 are complete.

INITIATING CUES:

1. The CRS instructs you to start M/G set 1A per Encl. 4.2 of OP/1/A/6150/008 (Rod Control).
2. The initial conditions of Encl. 4.2 have been satisfied.

EXAMINER NOTE: After reading the initiating cue, provide applicant with a copy of OP/1/A/6150/008 Encl. 4.2 with the initial conditions signed off.

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START TIME: _____

<p><u>STEP 1:</u> 3.1 Ensure the M-G set "VOLTAGE ADJUST" potentiometer is set at the mid point.</p> <p><u>STANDARD:</u></p> <p>Applicant verifies the white line in the upper left corner is aligned with "5" on the "Voltage Adjust Potentiometer".</p> <p><u>EXAMINER NOTE:</u> There is a locking device on the potentiometer.</p> <p><u>EXAMINER CUE:</u> "Voltage adjust is set at midpoint."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> 3.2 Verify the "SYNCHRONIZE" switch is in the "OFF" position.</p> <p><u>STANDARD:</u></p> <p>Applicant determines the key alignment tab is in line with the OFF position.</p> <p><u>EXAMINER CUE:</u> "SYNCHRONIZE switch is in the OFF position."</p> <p><u>EXAMINER NOTE:</u> If applicant states that they would obtain the Synchronize tool from the Supervisors Office provide the cue Tool has been obtained.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 3:</u> 3.3 Ensure the voltmeter switch is in position "A-B".</p> <p><u>STANDARD:</u></p> <p>Applicant places the voltmeter switch handle to the "A-B" position.</p> <p><u>EXAMINER CUE:</u> "Voltmeter switch handle is in the A-B position."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> 3.4 Ensure the ammeter switch is in position "A".</p> <p><u>STANDARD:</u></p> <p>Applicant places the ammeter switch handle to position "A".</p> <p><u>EXAMINER CUE:</u> "Ammeter switch handle is in position A."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p>STEP 5: 3.5 For the M-G set to be put in operation, turn the "MOTOR" circuit breaker control switch to the "CLOSE" position.</p> <p>STANDARD:</p> <p style="background-color: #cccccc;">Applicant turns the "MOTOR" circuit breaker control switch to the "CLOSE" position for 1A M/G set and verifies the red CLOSED light lit and green OPEN light dark.</p> <p>EXAMINER CUE: "M/G set 1A red CLOSED light is lit, there is a sound of breaker closing, and M/G set is heard coming up to speed."</p> <p>This step is critical because it starts the M/G set motor.</p> <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>STEP 6: 3.6 Allow 15 seconds to obtain full rated speed.</p> <p>STANDARD:</p> <p style="background-color: #cccccc;">Applicant waits 15 seconds before continuing.</p> <p>EXAMINER CUE: "15 seconds have elapsed."</p> <p>COMMENTS:</p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>NOTE: If this procedure is being performed to support an uncoupled run of the M-G Set motor only, then the remaining steps of this enclosure may be N/A'd.</p> <p>Step 2.7.1 may be signed off after releasing the "GEN. FIELD FLASH" pushbutton.</p>	

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<p>STEP 7: 3.7 Establish initial field voltage as follows:</p> <p style="padding-left: 40px;">3.7.1 Depress and hold the "GEN. FIELD FLASH" pushbutton until the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Generator voltage increases to approximately 260 volts on "GENERATOR LINE VOLTS" voltmeter. <input type="checkbox"/> Generator voltage stabilizes. <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant depresses and holds the "GEN FIELD FLASH" pushbutton, looks for voltage to increase to 260 volts, and for voltage to stabilize.</p> <p>EXAMINER CUE: "GEN FIELD FLASH button has been depressed. Generator voltage is 260 volts and stable on the GENERATOR LINE VOLTS voltmeter."</p> <p>This step is critical because it flashes the generator field necessary for the M/G set to produce proper voltage.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 8: 3.7.2 IF necessary, turn the "VOLTAGE ADJUST" to obtain 260 VAC on the "GENERATOR LINE VOLTS" voltmeter.</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant verifies generator voltage has increased to 260 volts on "GENERATOR LINE VOLTS" voltmeter.</p> <p>EXAMINER CUE: "GENERATOR LINE VOLTS indicates 260 volts."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p>STEP 9: 3.8 Turn the "GENERATOR" circuit breaker control switch to the "CLOSE" position.</p> <p>STANDARD:</p> <p>Applicant rotates the "GENERATOR" circuit breaker control switch to the CLOSE position and verifies the red CLOSED light is lit and green OPEN light is dark.</p> <p>EXAMINER CUE: "GENERATOR circuit breaker red CLOSED light is lit."</p> <p>This step is critical because it closes the generator breaker, placing the M/G set in service.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 10: 3.9 File this enclosure in the Control Copy folder of this procedure.</p> <p>STANDARD:</p> <p>Applicant states they will file the enclosure in the Control Copy folder of the procedure.</p> <p>EXAMINER CUE: "Enclosure has been filed in the proper folder."</p> <p>COMMENTS:</p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 startup is in progress.
2. All sign-offs for Mode 2 are complete.

INITIATING CUES:

1. The CRS instructs you to start M/G set 1A per Encl. 4.2 of OP/1/A/6150/008 (Rod Control).
2. The initial conditions of Encl. 4.2 have been satisfied.

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Place 1B Hydrogen Recombiner In Service

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A LOCA has occurred on Unit 1.
2. H2 Skimmer Fans 1A and 1B are running per Enclosure 4.13 (Emergency Manual Operation of the H2 Skimmer Fans)
3. Hydrogen Recombiner 1A is tagged out for maintenance.

INITIATING CUES:

1. The CRS directs you to place Hydrogen Recombiner 1B in service at the required power per OP/1/A/6450/010 (Containment Hydrogen Control System) Encl. 4.10, steps 2.1 through 2.3.
2. All initial conditions are complete.
3. Containment hydrogen concentration is 5%.
4. Containment pressure is 4.5 PSIG.

EXAMINER NOTE: After reading cue provide applicant with a copy of OP/1/A/6450/010 (Containment Hydrogen Control System) Encl. 4.10 with the initial conditions signed off.

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START TIME: _____

<p>STEP 1: 3.1 Ensure the H2 Skimmer Fans running per Enclosure 4.13 (Emergency Manual Operation of the H2 Skimmer Fans).</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 2px;">Applicant can sign this step off after providing EXAMINER CUE.</p> <p>EXAMINER CUE: "1A and 1B Hydrogen Skimmer fans are in operation."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION: The maximum electric hydrogen recombiner heater temperature is 1400°F.</p>	
<p>NOTE: 1. Temperature stabilization may take up to 5 hours. The heater temperatures are considered stabilized when the channels are within 60°F of each other and the average temperature is ≥ 1225°F. (CNM-1399.36-0010)</p> <p>2. Hydrogen Recombiner Heater 1A Temperature is monitored from 1VXCR5000 (Train A Hydrogen Recombiner Heater Temperature Recorder) located on 1ELCP0299 (AB-577, DD-52, Rm 494).</p> <p>3. 1VXCR5000 is a touch screen video monitor. Touching the screen while in screen saver mode will display the main menu. The thermocouple temperatures will be displayed when the "Digital" icon is selected. The "Return" icon on the lower left of the screen returns to the main menu.</p>	
<p>STEP 2: 3.2 IF placing Hydrogen Recombiner 1A in service, perform the following at 1ELCP0139 (1A Hydrogen Recombiner Control Panel) (AB-577, DD-52, Rm 494):</p> <p><u>STANDARD:</u></p> <p style="background-color: #e0e0e0; padding: 2px;">Applicant determines that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p>STEP 3: 3.3 IF placing Hydrogen Recombiner 1B in service, perform the following at 1ELCP0140 1B Hydrogen Recombiner Control Panel) (AB-560, DD-52, Rm 370):</p> <ul style="list-style-type: none"> ▫ 3.3.1 Ensure the "POWER OUT SWITCH" is in the "OFF" position. <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant determines per initiating cue that 1B Hydrogen Recombiner will be placed in service and proceeds to Rm 370. Applicant ensures the POWER OUT SWITCH is in the OFF position on 1ELCP0140.</p> <p>EXAMINER CUE: "The POWER OUT SWITCH is in the OFF position."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 4: 3.3.2 Ensure the "POWER ADJUST" potentiometer is set to zero (000).</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0; padding: 5px;">Applicant ensures the POWER ADJUST potentiometer is set to zero (000).</p> <p>EXAMINER CUE: "The POWER ADJUST pot is set to zero (000)."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 5:</u> 3.3.3 IF the "POWER IN AVAILABLE" light is DARK, ensure 1EMXL-F07C (1B Electric Hydrogen Recombiner Power Supply Panel) (AB-560, BB-47) is in the "ON" position:</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines the white POWER IN AVAILABLE light is lit, and from EXAMINER CUE will determine this step is N/A.</p> <p><u>EXAMINER CUE:</u> "The white POWER IN AVAILABLE light is lit."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p><u>STEP 6:</u> 3.3.4 Place the "POWER OUT SWITCH" in the "ON" position.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant places the POWER OUT SWITCH up to the ON position.</p> <p>This step is critical because it supplies power to the 1B Hydrogen Recombiner.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">CRITICAL STEP</p> <p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>

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<p><u>STEP 7:</u> 3.3.5 Verify that the red indicating light is lit.</p> <p><u>STANDARD:</u></p> <p>Applicant verifies that the red light on the switch plate is lit.</p> <p><u>EXAMINER CUE:</u> "Red light on the switch plate is lit."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> 3.3.6 Slowly turn the "POWER ADJUST" potentiometer clockwise until 5 KW is indicated on the "POWER OUT" meter.</p> <p><u>STANDARD:</u></p> <p>Applicant adjusts the potentiometer clockwise until 5 KW is indicated on the "POWER OUT" meter.</p> <p><u>EXAMINER CUE:</u> "The POWER OUT meter is indicating 5 KW."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 9:</u> 3.3.7 Maintain a 5 KW output for 10 minutes.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant maintains 5 KW power output for 10 minutes.</p> <p><u>EXAMINER CUE:</u> "Using time compression, 10 minutes has elapsed."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> 3.3.8 Slowly advance the "POWER ADJUST" setting until an output of 10 KW is obtained on the "POWER OUT" meter.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant adjusts the potentiometer clockwise until 10 KW is indicated on the "POWER OUT" meter.</p> <p><u>EXAMINER CUE:</u> "The POWER OUT meter indicates 10 KW."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 11:</u> 3.3.9 Maintain a 10 KW output for 10 minutes.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant maintains a 10 KW power output for 10 minutes.</p> <p><u>EXAMINER CUE:</u> "Using time compression, 10 minutes has elapsed."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> 3.3.10 Advance the "POWER ADJUST" setting until an output of 20 KW is obtained on the "POWER OUT" meter.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant adjusts the potentiometer clockwise until 20 KW is indicated on the "POWER OUT" meter.</p> <p><u>EXAMINER CUE:</u> "The POWER OUT meter indicates 20 KW."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 13:</u> 3.3.11 Maintain a 20 KW output for 5 minutes.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant maintains a 20 KW power output for 5 minutes.</p> <p><u>EXAMINER CUE:</u> "Using time compression, 5 minutes have elapsed."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
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- STEP 14:** 3.3.12 Determine Hydrogen Recombiner 1B power setting as follows:
- 3.3.12.1 Determine KW value from Figure 10 of the Unit One Revised Data Book.
 - 3.3.12.2 H2 concentration (1MC7) _____%
 - 3.3.12.3 **IF** H2 concentration is > 3.5%, add 4KW to calculation.
 - 3.3.12.4 Calculate KW as follows:

$$\frac{\text{3.3.12.1}}{\text{3.3.12.1}} + \frac{\text{3.3.12.3}}{\text{3.3.12.3}} = \text{_____ KW}$$

CRITICAL STEP

___ SAT

___ UNSAT

STANDARD:

Applicant determines proper setting from figure 10 of the Revised Data Book.

EXAMINER NOTE: Provide applicant with a copy of Revised Data Book figure 10.

EXAMINER NOTE: Applicant should determine proper power setting should be approximately 58 KW.

This step is critical because it determines the proper power output going to the Hydrogen Recombiner for the given containment pressure.

COMMENTS:

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<p>STEP 15: 3.3.13 Advance the "POWER ADJUST" setting until the "POWER OUT" meter indicates the value calculated in 3.3.12.4. Adjust POWER ADJUST as necessary to maintain this output.</p> <p>STANDARD:</p> <p style="background-color: #cccccc;">Applicant adjusts the potentiometer until 58 KW is indicated on the "POWER OUT" meter.</p> <p>EXAMINER CUE: "The POWER OUT meter indicates approximately 58 KW."</p> <p>This step is critical because it sets the proper power output to the Hydrogen Recombiner that was calculated in the previous step.</p> <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>STEP 16: 3.3.14 Notify NCO that Hydrogen Recombiner 1B is now in service. Person notified _____</p> <p>STANDARD:</p> <p style="background-color: #cccccc;">Applicant notifies Unit 1 control room that 1B Hydrogen Recombiner is in service.</p> <p>EXAMINER CUE: "Unit 1 Control room, this is Greg. I understand that 1B Hydrogen Recombiner is in service. Another operator will complete this enclosure. This JPM is complete."</p> <p>COMMENTS:</p> <p style="text-align: center;">END OF TASK</p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A LOCA has occurred on Unit 1.
2. H2 Skimmer Fans 1A and 1B are running per Enclosure 4.13 (Emergency Manual Operation of the H2 Skimmer Fans)
3. Hydrogen Recombiner 1A is tagged out for maintenance.

INITIATING CUES:

1. The CRS directs you to place Hydrogen Recombiner 1B in service at the required power per OP/1/A/6450/010 (Containment Hydrogen Control System) encl. 4.10, steps 2.1 through 2.3.
2. All initial conditions are complete.
3. Containment hydrogen concentration is 5%.
4. Containment pressure is 4.5 PSIG.

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2B D/G Start Using AP/2/A/5500/007

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READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 2 has experienced a loss of all AC power to 2ETB.
2. The reason for the loss of AC power has been corrected.
3. 2ETB load shed is complete.

INITIATING CUES:

1. The control room has instructed you to energize 2ETB from 2B D/G by performing AP/2/A/5500/007 (Loss of Normal Power) Enclosure 11.
2. Peer checks have been waived for this task.

EXAMINER NOTE: After reading initiating cue, provide applicant with a copy of AP/2/A/5500/007 (Loss of Normal Power) Enclosure 11.

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START TIME: _____

<p><u>STEP 1:</u> 1. Obtain the following:</p> <ul style="list-style-type: none"><input type="checkbox"/> Key #757 (2A/2B D/G Test Start Switch) from WCC Key Locker<input type="checkbox"/> Flashlight. <p><u>STANDARD:</u></p> <p>Applicant states that they would obtain key #757 from the WCC and a flashlight.</p> <p><u>EXAMINER CUE:</u> "Key #757 and flashlight have been obtained."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> 2. Do not continue in this enclosure until notified that load shed of 2ETB is complete.</p> <p><u>STANDARD:</u></p> <p>Applicant determines from initiating cue that the load shed is complete.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 3:</u> 3. Locally start D/G 2B as follows:</p> <p style="padding-left: 40px;">a. Notify Control Room Operator to place the "D/G 2B CTRL LOCATION" switch on 2MC11 in the "LOCAL" position.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant notifies the control room to place 2B D/G control location to the LOCAL position.</p> <p><u>EXAMINER CUE:</u> When requested "Control room operator reports that 2B D/G control location is in the LOCAL position."</p> <p>This step is critical because it must be performed in order for the D/G to be started locally.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> 3b. IF unable to transfer diesel to Local Control, THEN actuate the "CONTROL ROOM OVERRIDE" at the breakglass station on 2DGCPB.</p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc; padding: 5px;">Applicant determines that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p>STEP 5: 3c. Place the key in the "MANUAL TEST START" keyswitch and turn to the "START" position.</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0;">Applicant places key in the MANUAL TEST START keyswitch and rotates the key clockwise to the START position. Applicant listens for the D/G to start and come up to normal rated speed.</p> <p>EXAMINER CUE: "The Diesel has started."</p> <p>This step is critical because it must be performed to locally start the D/G and meet the JPM standard.</p> <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>STEP 6: 3d. Ensure "SPEED CONTROL" is adjusted to obtain frequency of between 58.8 and 61.2 Hz.</p> <p>STANDARD:</p> <p style="background-color: #e0e0e0;">Applicant locates the D/G frequency meter and indicates they are looking for between 58.8 and 61.2 Hz.</p> <p>EXAMINER CUE: "Frequency is reading 60 Hz."</p> <p>COMMENTS:</p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

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<p><u>STEP 7:</u> 3e. Ensure "VOLTAGE CONTROL" is adjusted to obtain "D/G VOLTAGE" between 4160 and 4600 Volts.</p> <p><u>STANDARD:</u></p> <p>Applicant locates the D/G voltage meter and explains that he is looking for voltage to be between 4160 and 4600 Volts.</p> <p><u>EXAMINER CUE:</u> "Voltage is 4000 Volts."</p> <p>After examiner cue is given, applicant uses the VOLTAGE CONTROL RAISE pushbutton to increase voltage into the desired band.</p> <p><u>EXAMINER CUE:</u> "Voltage is 4200 Volts."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> 4. WHEN the D/G is running, THEN close "DIESEL GENERATOR 2B" breaker.</p> <p><u>STANDARD:</u></p> <p>Applicant indicates that the D/G is running at proper frequency and voltage, and closes 2B D/G breaker by depressing the red CLOSE pushbutton and verifying the red CLSD light is lit and green OPEN light is dark on DIESEL GEN BKR 2ETB18 CLOSE/TRIP switch.</p> <p><u>EXAMINER CUE:</u> "Red CLSD light is lit."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 9:</u> 5. <u>IF</u> D/G breaker will not close, <u>THEN:</u></p> <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant determines that this step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> 6. Close the following essential load center normal incoming breakers:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 2ELXB-4B (Normal Incoming Breaker Fed From Xfmr 2ETXB) (AB-560, AA-67, Rm 362) <input type="checkbox"/> 2ELXD-4B (Normal Incoming Breaker Fed from Xfmr 2ETXD) (AB-560, AA-68, Rm 362). <p><u>STANDARD:</u></p> <p style="background-color: #cccccc;">Applicant closes breakers 2ELXB-4B and 2ELXD-4B by rotating the CLOSE/TRIP handles clockwise to the CLOSE position and verifying the red light is lit and green light dark for these breakers and hearing the breaker closing.</p> <p><u>EXAMINER CUE:</u> "Breakers are closed."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 11:</u> 7. Ensure RN flow through the KD Hx as follows:</p> <p style="padding-left: 40px;">a. Verify 2RN-292B (2B D/G Hx Inlet Isol) (DB-562, BB-76) - OPEN.</p> <p><u>STANDARD:</u></p> <p style="padding-left: 40px;">Applicant checks the position indicator on 2RN-292B pointing to OPEN.</p> <p><u>EXAMINER CUE:</u> "Position indicator is pointing to CLOSED."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p><u>STEP 12:</u> 7b. IF 2RN-292B (2B D/G Hx Inlet Isol) does not open, THEN perform the following:</p> <p style="padding-left: 40px;">1) Open 2EMXF-F01A (2B Diesel Generator Hx Inlet Isol Motor (2RN292B)) (DB-556, CC-75).</p> <p><u>STANDARD:</u></p> <p style="padding-left: 40px;">Applicant explains inserting locking tab, rotating the breaker handle counter-clockwise to the OFF position, and pulling the locking tab back out on 2EMXF-F01A.</p> <p><u>EXAMINER CUE:</u> "Breaker switch is pointing to the OFF position."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>

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<p><u>STEP 13:</u> 7b. 2) Manually open 2RN-292B (2B D/G Hx Inlet Isol).</p> <p><u>STANDARD:</u></p> <p>Applicant explains obtaining a ladder, engages the manual operation clutch, and turns valve handwheel on 2RN-292B counter-clockwise direction to open the valve.</p> <p><u>EXAMINER CUE:</u> "Valve is NOT moving. 2RN-292B position indicator still shows CLOSED."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> 8. IF RN flow cannot be established, THEN:</p> <p>a. Stop D/G 2B by depressing "STOP" on 2DECPB.</p> <p><u>STANDARD:</u></p> <p>Applicant depresses the STOP pushbutton on 2DECPB to stop the D/G.</p> <p><u>EXAMINER CUE:</u> "D/G has been secured."</p> <p>This step is critical because it prevents damaging the D/G due to a lack of cooling water supply.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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<p><u>STEP 15:</u> 8b. Notify the Control Room Supervisor of status.</p> <p><u>STANDARD:</u></p> <p>Applicant calls the CRS at x5164 and informs him that 2B D/G has been secured due to no cooling water flow being available.</p> <p><u>EXAMINER CUE:</u> Examiner repeats back information given.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> 8c. Return this enclosure to the Control Room Supervisor.</p> <p><u>STANDARD:</u></p> <p>Applicant explains returning the enclosure to the CRS.</p> <p><u>EXAMINER CUE:</u> "The CRS has taken the enclosure. This JPM is complete."</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 2 has experienced a loss of all AC power to 2ETB.
2. The reason for the loss of AC power has been corrected.
3. 2ETB load shed is complete.

INITIATING CUES:

1. The control room has instructed you to energize 2ETB from 2B D/G by performing AP/2/A/5500/007 (Loss of Normal Power) Enclosure 11.
2. Peer checks have been waived for this task.