

FINAL AS-ADMINISTERED WALKTHROUGH JPMS

FOR THE PALISADES EXAMINATION - DECEMBER 2001

Facility: PALISADES		Date of Examination: DEC 2001	
Exam Level: SRO/RO		Operating Test No.: 1	
B.1 Control Room Systems			
System / JPM Title		Type Code*	Safety Function
a.	Rotate Instrument Air Compressors	NSA	8
b.	Synch to Grid	MSL	4
c.	Emergency Borate	MSA	1
d.	Raise SIT Pressure (IPE)	MSA	2
e.	Raise RIA-0707 High Rad Trip Setpoint	DS	7
f.	Place LTOP In Service	NSA	3
g.	Transfer Bus 1C from D/G to S/G Transformer	MS	6
B.2 Facility Walk-Through			
a.	Backwash Traveling Screens	NLA	8
b.	Secure from WGDT Release	NR	9
c.	Restore Power to D-11A from Sta. Battery #1	DL	6
* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA			

REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM - B.1-a

TITLE: Rotate Instrument Air Compressors

CANDIDATE: _____

EXAMINER: _____

**JOB PERFORMANCE MEASURE
DATA PAGE**

Task: Rotate Instrument Air Compressors

Alternate Path: When Instrument Air compressors are rotated, the jacket service water outlet temperature TI-0806 will be out-of-spec high. This will require alternate actions to be directed (adjust Jacket Cooling Water Bypass Valve MV-SW128) to ensure adequate cooling to the compressor which has just been placed in-service.

Facility JPM #: NEW

K/A: 078K4.01 Importance: SRO: 2.9 RO: 2.7

K/A Statement: Knowledge of IAS design features/interlocks which provide for manual/automatic transfers of control.

Task Standard: Instrument Air System pressure is restored to normal.

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: SOP-19, Instrument Air System
ONP-7.1, Loss of Instrument Air

Validation Time: 18 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____

Date: _____

Signature

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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.

Special Note: Assume that all Plant Requirements and Precautions and Limitations have been reviewed and complied with. You are NOT expected, nor are you required to consult the Plant Requirements and Precautions and Limitations section of any procedure for this JPM.

INITIAL CONDITIONS:

The plant is at full power. Instrument Air Compressor C-2B is in service, but must be removed from service this shift for maintenance due to vibration. C-2A and C-2C are in AUTO.

INITIATING CUES:

You have been directed to rotate Instrument Air Compressors by placing C-2A and C-2C in service, and securing C-2B and placing it in AUTO, per SOP-19.

START TIME: _____

STEP / STANDARD		Grading
<p>Step 1: Obtains current procedure.</p> <p>Standard: Obtains copy of SOP-19 and refers to Section 7.2.4.b</p> <p>Notes:</p> <p>Comments: <i>An Auxiliary Operator is stationed at the compressors.</i></p>	<p>S___</p> <p>U___</p>	
<p>Step 2: Start C-2A per Section 7.2.1.i</p> <p>Standard: Places handswitch for C-2A to HAND. Observes RED light ON and GREEN light OFF.</p> <p>Notes: <i>CRITICAL STEP to start air compressor.</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>	
<p>Step 3: Verify Cooling Water Solenoid Valve opens</p> <p>Standard: Directs AO to check for cooling water flow by observing Cooling Water Flow Indicator FI-0801 for C-2A.</p> <p>Notes: <i>Cue: AO reports FI-0801 indicates cooling water flow. CRITICAL STEP to ensure cooling water flow.</i></p> <p>Comments: <i>This step may be done AFTER C-2C is started.</i></p>	<p>S___</p> <p>U___</p>	

STEP / STANDARD		Grading
<p>Step 4: Observe for unusual noise or temperature</p> <p>Standard: Directs AO to observe C-2A for any unusual noise or temperature.</p> <p>Notes: Cue: AO reports no unusual noise or temperature for C-2A.</p> <p>Comments: <i>This step may be done AFTER C-2C is started.</i></p>	<p>S___</p> <p>U___</p>	
<p>Step 5: Ensure prescribed jacket service water outlet temperature.</p> <p>Standard: Directs AO to verify jacket service water outlet temperature TI-0806 is between 110°F and 130°F.</p> <p>Notes: Cue: (After approx. one minute) AO reports C-2A jacket service water outlet temperature indicates 112°F.</p> <p>Comments: <i>This step may be done AFTER C-2C is started.</i></p>	<p>S___</p> <p>U___</p>	
<p>Step 6: Start C-2C per Section 7.2.1.</p> <p>Standard: Places handswitch for C-2C to HAND. Observes RED light ON and GREEN light OFF.</p> <p>Notes: <i>CRITICAL STEP to start air compressor.</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>	

STEP / STANDARD		Grading
<p>Step 7: Verify Cooling Water Solenoid Valve opens</p> <p>Standard: Directs AO to check for cooling water flow by observing Cooling Water Flow Indicator FI-0803 for C-2C.</p> <p>Notes: Cue: AO reports FI-0803 indicates cooling water flow.</p> <p><i>CRITICAL STEP to ensure cooling water flow.</i></p>	<p>S___</p> <p>U___</p>	
<p>Step 8: Observe for unusual noise or temperature</p> <p>Standard: Directs AO to observe C-2C for any unusual noise or temperature.</p> <p>Notes: Cue: AO reports no unusual noise or temperature for C-2C.</p> <p>Comments:</p>	<p>S___</p> <p>U___</p>	
<p>Step 9: Ensure prescribed jacket service water outlet temperature.</p> <p>Standard: Directs AO to verify jacket service water outlet temperature TI-0808 is between 110°F and 130°F.</p> <p>Notes: Cue: (After ~ one minute) AO reports C-2C jacket service water outlet temperature indicates 132°F.</p> <p>Comments:</p>	<p>S___</p> <p>U___</p>	

STEP / STANDARD	Grading
<p>Step 11: Ensures adequate cooling to compressor C-2C.</p> <p>Standard: Directs AO to adjust MV-SW130 to obtain adequate cooling to C-2C per step h and I.</p> <p>Notes: Cue: (After one minute) AO reports that MV-SW130 was throttled closed and that TI-0808 now indicates 116°F.</p> <p>Comments: CRITICAL STEP to ensure compressor has adequate cooling.</p>	<p>S____</p> <p>U____</p>
<p>Step 12: Stop C-2B.</p> <p>Standard: Places C-2B handswitch to OFF and observes RED light OFF and GREEN light ON.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>
<p>Step 13: Restore C-2B controls to AUTO.</p> <p>Standard: Places C-2B control switch to AUTO.</p> <p>Notes: OFF is also acceptable.</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>

STEP / STANDARD	Grading
<p>Step 14: Informs Control Room Supervisor of completion.</p> <p>Standard: Informs Control Room Supervisor that C-2A and C-2C are inservice, and that C-2B has been secured and placed in AUTO.</p> <p>Notes:</p> <p>Comments:</p> <p style="text-align: center;">END OF TASK</p>	<p>S_____</p> <p>U_____</p>

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

Special Note: Assume that all Plant Requirements and Precautions and Limitations have been reviewed and complied with. You are NOT expected, nor are you required to consult the Plant Requirements and Precautions and Limitations section of any procedure for this JPM.

INITIAL CONDITIONS:

The plant is at full power. Instrument Air Compressor C-2B is in service, but must be removed from service this shift for maintenance due to vibration. C-2A and C-2C are in AUTO.

INITIATING CUES:

You have been directed to rotate Instrument Air Compressors by placing C-2A and C-2C in service, and securing C-2B and placing it in AUTO, per SOP-19.

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to any full power IC (e.g., IC-17).
- Place C-2B in service. Secure C-2A and C-2C and place their handswitches in AUTO.
- Ensure instrument air pressure is normal prior to FREEZE.

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM - B.1-b

**TITLE: Synchronize Main Turbine Generator
to Grid**

CANDIDATE: _____

EXAMINER: _____

**JOB PERFORMANCE MEASURE
DATA PAGE**

Task: Synchronize the Turbine/Generator with output grid to minimum load

Alternate Path: NONE

Facility JPM #: ASKC-03

K/A: 045A4.02 Importance: SRO: 2.6 RO: 2.7

K/A Statement: Ability to manually operate and/or monitor in the control room: T/G controls, including breakers.

Task Standard: Turbine/Generator has been synchronized to the grid, with both generator breakers closed.

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: SOP-8, Main Turbine and Generating Systems
GOP-4, MODE 2 to MODE 1

Validation Time: 28 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT UNSAT

Comments:

Examiner: _____
Signature

Date: _____

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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.

Special Note: Assume that all Plant Requirements and Precautions and Limitations have been reviewed and complied with. You are NOT expected, nor are you required to consult the Plant Requirements and Precautions and Limitations section of any procedure for this JPM.

INITIAL CONDITIONS:

The plant is in MODE 2 and a Turbine/Generator startup is in progress. Main Turbine speed is 1800 RPM. All pre-op testing has been completed.

SOP-8, Main Turbine and Generating Systems steps up to, and including SOP-8, Section 7.1.3.a (Placing Main Transformer Coolers in service) have been completed.

INITIATING CUES:

The Control Room Supervisor has directed you to synchronize the Main Generator to the grid, in accordance with SOP-8, Section 7.1.3.b,c,d,e, and f.

An operator is available to operate the primary systems, including the reactor.

START TIME: _____

STEP / STANDARD		Grading
<p>Step 1: Obtain current procedure.</p> <p>Standard: Obtains copy of SOP-8 and refers to Section 7.1.3.b.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	
<p>Step 2: CLOSE field breaker and verify Main Generator terminal voltage stabilizes at approx. 10 kV.</p> <p>Standard: Field breaker switch closed and terminal voltage at approx. 10 kV.</p> <p>Notes: <i>Critical step</i></p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	
<p>Step 3: Adjust DC (Direct Control) Adjuster to raise terminal voltage.</p> <p>Standard: Terminal voltage at approx. 22 kV, and NOT exceeding 23.1 kV</p> <p>Notes: <i>Critical step</i></p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	

<p>Step 4: Ensure "Loss of Sensing" module is RESET.</p> <p>Standard: "Loss of Sensing" module reset has been verified.</p> <p>Notes: <i>CUE: Loss of Sensing module is reset; red LED light is off.</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>
<p>Step 5: Place Voltage Regulator Control Switch in TEST.</p> <p>Standard: Voltage Regulator Control Switch in TEST. AMBER light is LIT.</p> <p>Notes:</p> <p>Comments:</p>	<p>S___</p> <p>U___</p>
<p>Step 6: Adjust the AC (Automatic Control) Adjuster to change the Regulator Balance Meter indication.</p> <p>Standard: AC Adjuster control operated to change the Regulator Balance Meter indication to between +5 and -5 volts.</p> <p>Notes: <i>(This step verifies the Voltage Regulator is operable.)</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>
<p>Step 7: Adjust the AC Adjuster to zero the Regulator Balance Meter.</p> <p>Standard: Regulator Balance Meter indication is at "0".</p> <p>Notes:</p> <p>Comments:</p>	<p>S___</p> <p>U___</p>

<p>Step 8: Place Voltage Regulator Control Switch to ON and verify red lamp lights.</p> <p>Standard: Voltage Regulator Control Switch to ON and red lamp LIT.</p> <p>Notes: <i>Critical step</i></p> <p>Comments:</p>	<p>S____</p> <p>U____</p>
<p>Step 9: Check terminal voltage for stability.</p> <p>Standard: Main Generator Terminal Voltage meter is checked for stable indication.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>
<p>Step 10: If terminal voltage is NOT stable, return Voltage Regulator Control Switch to TEST or OFF.</p> <p>Standard: Voltage Regulator Control Switch in TEST or OFF is terminal voltage is NOT stable.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>
<p>Step 11: Ensure Turbine speed is near 1800 rpm.</p> <p>Standard: Turbine speed near 1800 rpm.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>

<p>Step 12: Turn Sync Scope for 25F7 to ON.</p> <p>Standard: Locates removable sync switch handle and inserts in sync scope and turns to ON for Main Generator breaker 25F7.</p> <p>Notes: <i>Critical step.</i></p> <p>Comments:</p>	<p>S____</p> <p>U____</p>
<p>Step 13: Adjust "Incoming" voltage to match "Running" voltage.</p> <p>Standard: Uses AC Adjuster to raise or lower generator voltage such that "Incoming" voltage and "Running" voltage are closely matched. Monitors Main Generator terminal voltage to ensure it does not reach 23.1 kV.</p> <p>Notes: <i>Critical step.</i></p> <p>Comments:</p>	<p>S____</p> <p>U____</p>
<p>Step 14: Verify all three phases are closely matched.</p> <p>Standard: Uses Voltage Select Switch to check that each of the three phase voltages differ by less than 1 kV.</p> <p>Notes: <i>Critical Step</i></p> <p>Comments:</p>	<p>S____</p> <p>U____</p>

<p>Step 15:</p> <p>Standard:</p> <p>Notes:</p> <p>Comments:</p>	<p>Request Area Power Control permission to synchronize to the grid.</p> <p>Verifies with Area Power Control that permission is given to synchronize to the grid. <i>(Note: It is acceptable if candidate obtains this information from the Control Room Supervisor.)</i></p> <p>Cue: Area Power Control has given permission to synchronize to the grid.</p>	<p>S____</p> <p>U____</p>
<p>Step 16:</p> <p>Standard:</p> <p>Notes:</p> <p>Comments:</p>	<p>Ensure OPEN 25F7 and 25H9.</p> <p>Checks 25F7 and 25H9 GREEN lights ON and RED lights OFF on panel C-01.</p> <p><i>(Candidate may also check indication on panel C-07, but this is NOT required.)</i></p>	<p>S____</p> <p>U____</p>

STEP / STANDARD		Grading
<p>Step 17: Ensure CLOSED MOD 26H5.</p> <p>Standard: Checks 26H5 RED light ON and GREEN light OFF.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	
<p>Step 18: Ensure the Reactor Operator is ready to raise load.</p> <p>Standard: Checks with Reactor Operator to ensure ready to raise load.</p> <p>Notes: <i>A surrogate operator or instructor will function as the Reactor Operator.</i></p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	
<p>Step 19: Adjust Turbine Speed to get Sync Scope turning slowly in the clockwise direction.</p> <p>Standard: Sync Scope is turning slowly in the clockwise direction.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	

STEP / STANDARD		Grading
<p>Step 20: Ensure Valve Position Limiter is at approximately 10%.</p> <p>Standard: Checks DEH screen Valve Position Limiter indication at approximately 10%.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	
<p>Step 21: Ensure Turbine Bypass Controller is in AUTO with a setpoint of 900 psi.</p> <p>Standard: Checks Turbine Bypass Controller in AUTO with setpoint at 900 psi.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	
<p>Step 22: Establish the following parameters (Reactor Operator):</p> <ul style="list-style-type: none"> ● Reactor Power less than or equal to 13% power (highest of deltaT or NI power). ● Tave less than or equal to 540°F ● PIC-0511, Turbine Bypass Controller output signal greater than 60%. <p>Standard: Checks with Reactor Operator to ensure the above parameters are met before synchronizing.</p> <p>Notes:</p> <p>Comments:</p>	<p>S____</p> <p>U____</p>	

STEP / STANDARD		Grading
<p>Step 23: Close 25F7 as Sync Scope nears "1200" hours.</p> <p>Standard: 25F7 closed.</p> <p>Notes: <i>Critical step.</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>	
<p>Step 24: Verify closed 25F7 and turn sync scope to OFF.</p> <p>Standard: Checks 25F7 RED light ON, and GREEN light OFF. Sync scope for 25F7 turned to OFF.</p> <p>Notes:</p> <p>Comments:</p>	<p>S___</p> <p>U___</p>	
<p>Step 25: Verify the Generator has picked up a minimum of 20MW</p> <p>Standard: Checks DEH screen indications or panel C-01 Power meter indication and verifies load at least 20 MW.</p> <p>Notes:</p> <p>Comments:</p>	<p>S___</p> <p>U___</p>	

<p>Step 26: Verify Turbine Bypass Valve CV-0511 is closing.</p> <p>Standard: Checks CV-0511 controller to verify valve closing.</p> <p>Notes: <i>(Also acceptable to ask Reactor Operator if CV-0511 is closing.)</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>
<p>Step 27: Turn Sync Scope for 25H9 to ON.</p> <p>Standard: Locates removable sync switch handle and inserts in sync scope and turns to ON for Main Generator breaker 25H9.</p> <p>Notes: <i>Critical step.</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>
<p>Step 28: Close 25H9 breaker.</p> <p>Standard: 25H9 closed.</p> <p>Notes: <i>Critical step.</i></p> <p>Comments:</p>	<p>S___</p> <p>U___</p>
<p>Step 29: Verify closed 25H9 and turn sync scope to OFF.</p> <p>Standard: Checks 25H9 RED light ON, and GREEN light OFF. Sync scope for 25H9 turned to OFF.</p> <p>Notes:</p> <p>Comments:</p>	<p>S___</p> <p>U___</p>

<p>Step 30: Inform Control Room Supervisor of completion.</p>	<p>S____</p>
<p>Standard: Informs Control Room Supervisor that Main Turbine/Generator has been synchronized to the grid at minimum load.</p>	<p>U____</p>
<p>Notes: Terminate after step f complete.</p>	
<p>Comments:</p> <p style="text-align: center;"><i>END OF TASK</i></p>	

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER TO UPON COMPLETION OF TASK)

Special Note: Assume that all Plant Requirements and Precautions and Limitations have been reviewed and complied with. You are NOT expected, nor are you required to consult the Plant Requirements and Precautions and Limitations section of any procedure for this JPM.

INITIAL CONDITIONS:

The plant is in MODE 2 and a Turbine/Generator startup is in progress. Main Turbine speed is 1800 RPM. All pre-op testing has been completed.

SOP-8, Main Turbine and Generating Systems steps up to, and including SOP-8, Section 7.1.3.a (Placing Main Transformer Coolers in service) have been completed.

INITIATING CUES:

The Control Room Supervisor has directed you to synchronize the Main Generator to the grid, in accordance with SOP-8, Section 7.1.3.b,c,d,e, and f.

An operator is available to operate the primary systems, including the reactor.

SIMULATOR OPERATOR INSTRUCTIONS

1. Reset to IC-13 (turbine off-line and rolling at 1800 rpm)
2. To get Turbine Bypass Valve to approx. 50% open, operate Group 4 rods to 80-85" withdrawn.