

Op-Test No: 2007 Scenario No.: 1 Event No.: 1 Page 1 of 15

Event Description: SG 2 Pressure Transmitter SGCPT1023 fails low

Time	Position	Applicant's Actions or Behavior
T=0	CO	Evaluates alarm window 5A08C per 41AL-1RK5A . Determines that SG 2 Pressure Transmitter SGCPT1023 has failed low.
	CRS	Enters T.S. LCO 3.3.1. Condition A and LCO 3.3.5 Condition A. Determines that the following parameters must be placed in bypass within 1 hour: <ul style="list-style-type: none"> • S/G 2 Low Pressure – RPS • S/G 1 Low Level – ESFAS • S/G 2 Low Level - ESFAS
	CO	Bypasses parameters 12, 18 and 19 on Channel C at RPS. <ul style="list-style-type: none"> • Obtains key • Depresses bypass buttons at PPS cabinets

Op-Test No: 2007 Scenario No.: 1 Event No: 2 Page 2 of

Event Description: TLI Channel 1 fails high.

Time	Position	Applicant's Actions or Behavior
T=13	RO	Evaluate alarm window 4A10B per 40AL-9RK4A . Determines that a TLI channel has failed from board indications.
	CRS	Enters 40AO-9ZZ16 (Section 4) <ul style="list-style-type: none"> ___ 1. Ensure that CEDMCS is NOT in Auto Sequential. ___ 2. IF SBCS has responded to the instrument failure, OR the CRS directs removing SBCS from Remote Automatic, THEN perform BOTH of the following: <ul style="list-style-type: none"> a. Place SBCS in ANY of the following modes: <ul style="list-style-type: none"> • “EMERGENCY OFF” • “LOCAL AUTO” • “MANUAL” b. Restore SG pressure to the desired operating band as needed. ___ 3. Determine the failed instrument by comparing the DVM indications for TLI1 and TLI2 at the RRS Test Drawer. ___ 4. Determine the impact of the failure. REFER TO Appendix B, Control System Response to Instrument Failures. ___ 5. IF RRS is selected to ONE of the following: <ul style="list-style-type: none"> • Average • The affected instrument THEN perform BOTH of the following: <ul style="list-style-type: none"> a. Ensure SBCS is in ONE of the following: <ul style="list-style-type: none"> • Local Automatic • Manual b. Select the unaffected instrument at the RRS Test Panel. ___ 6. Check that Tavg/Tref mismatch is 3°F or less. ___ 7. Place CEDMCS in the desired mode of operation. ___ 8. IF Remote Automatic operation of SBCS is desired, THEN place SBCS in “REMOTE AUTO”.
	RO or CO	Places CEDMCS in any mode other than Auto Sequential using the Mode Select Switch for CEDMCS on Board 4.
	CO	Places SBCS in Local Auto or manual per 40OP-9SF05. 4.4.3 Shifting to the Manual Mode . <ul style="list-style-type: none"> ___ 1. Depress the “MAN” pushbutton on the bottom of the Master Controller and ensure that the pushbutton backlight illuminates.

		<p>2. The Master Controller is now in Manual, and its output may be adjusted by use of the slide bar at the bottom of the controller.</p> <p style="text-align: center;">OR</p> <p>4.4.5 Shifting to the Local-Automatic Mode.</p> <p>_____ 1. Adjust the Local-Automatic Setpoint (black pointer) thumbwheel on the right side of the Master Controller to match the Remote Setpoint (black and white pointer) on the left side of the Master Controller.</p> <p>_____ 2. IF SGN-PIC-1010, Master Controller is in auto, THEN depress the “MAN” pushbutton on the bottom of the Master Controller and ensure that the pushbutton backlight illuminates.</p> <p>_____ 3. Place the Remote/Local Setpoint Selector switch on the left side of the Master Controller to the “L” (Local) position ensuring full movement of switch travel.</p> <p>_____ 4. Depress the “AUTO” pushbutton on the bottom of the Master Controller and ensure that the pushbutton backlight illuminates.</p> <p>_____ 5. The Master Controller is now in Local-Automatic and its output will be determined by the Local-Automatic Setpoint thumbwheel located on the right side of the controller.</p> <p>Determines failed instrument is TLI 1 at RRS cabinet by comparing digital readings from each channel at the Reactor Regulating System cabinet (RRS).</p> <p>Selects TLI 2 at RRS cabinet. (May either perform Skill of Craft or use 40OP-9SF08)</p> <p>Places SBCS in Remote Auto per 40OP-9SF05.</p> <p>4.4.4 Shifting to the Remote-Automatic Mode.</p> <p>_____ 1. IF SGN-PIC-1010, Master Controller is in auto, THEN depress the “MAN” pushbutton on the bottom of the Master Controller and ensure that the pushbutton backlight illuminates.</p> <p>_____ 2. Place the Remote/Local Setpoint Selector switch on the left side of the Master Controller to the “R” (Remote) position ensuring full movement of switch travel.</p>
	<p>RO</p>	<p>Returns CEDMCS to Auto Sequential using the Mode Select Switch for CEDMCS on Board 4.</p>

Op-Test No: 2007 Scenario No.: 1 Event No: 3 Page 4 of

Event Description: Inadvertent Containment Spray Actuation Signal Leg 1-3 B Train

Time	Position	Applicant's Actions or Behavior
T=30	CO	Evaluates alarm window 5B05B per 40AL-9RK5B .
	CRS	<p>Enters 40AO-9ZZ17 (Section 5)</p> <p>___ 1. Record the time of the CSAS Actuation. _____</p> <p><u>N/A</u> 2. IF ANY Containment Spray Pump is running, AND BOTH of the following conditions exist:</p> <ul style="list-style-type: none"> • Containment Spray Pump is NOT being used for SDC • SIAS has actuated <p>THEN override and stop the Containment Spray Pump.</p> <p>___ 3. IF ANY Containment Spray Pump is running, AND BOTH of the following conditions exist:</p> <ul style="list-style-type: none"> • Containment Spray Pump is NOT being used for SDC • SIAS has NOT actuated <p>THEN place the Containment Spray Pump hand switch in "STOP" to anti-pump the CS Pump.</p> <p><u>N/A</u> 4. Override and close all open Containment Spray Header Isolation Valves.</p> <p>___ 5. IF seal injection is in service, AND cooling water is NOT restored to ANY operating RCP within 10 minutes of the initial loss, THEN perform the following:</p> <ul style="list-style-type: none"> a. Ensure the reactor is tripped. b. Stop all of the RCPs. c. Isolate controlled bleedoff. <p>___ 6. Override and open the following to restore Nuclear Cooling Water to Containment:</p> <ul style="list-style-type: none"> • NCB-UV-403, NCW Containment Upstream Return Isolation Valve • NCB-UV-401, NCW Containment Upstream Supply Isolation Valve <p><u>N/A</u> 7. IF IAA-UV-2, Outside Ctmt Isolation Valve has closed, THEN perform the following:</p> <p><u>N/A</u> 8. IF letdown is isolated, THEN perform the following:</p> <p><u>N/A</u> 9. IF Containment is accessible, THEN perform the following:</p>

		<p>___ 10. IF ANY Control Room Essential AHUs started, THEN override and stop the running fans.</p> <p>___ 11. IF RCP Seal Bleedoff isolated to the VCT, THEN override and open the closed RCP Seal Bleedoff Isolation Valves.</p> <p><u>N/A</u> 12. IF Steam Generator Blowdown is isolated, THEN perform the following:</p> <p>Step 13 is information on restarting CS pumps if necessary.</p> <p>___ 14. Perform the following:</p> <ol style="list-style-type: none"> PERFORM Appendix C, PPS-ESFAS Check, steps 1 and 2 to check that equipment actuated as expected. Document components that failed to actuate in the Control Room Log. Ensure compliance with Technical Specifications for components that failed to actuate or were overridden. <p>Tech Specs affected:</p> <ul style="list-style-type: none"> LCO 3.6.3 Condition A (Containment isolation valves) LCO 3.6.6 Condition A (Containment Spray) LCO 3.7.11 Condition A (Control Room Ventilation) <p>May refer to 40AO-9ZZ03 for NCW alarms.</p> <p>Evaluator note: SIB-UV-671, Containment Spray valve, is mechanically seized.</p>
	RO	<p>Stops the “B” Containment Spray pump.</p> <p>Overrides and opens CHB-UV-505, Controlled Bleedoff Containment Isolation valve.</p>
	CO	<p>Restores NCW to Containment by overriding and opening NCB-UV 403 and NCB-UV 401.</p> <p>May be asked by CRS to use appendix to check CSAS actuation.</p>
	RO	<p>Stops B Control Room Essential Air Handling Unit on Board 2.</p>
		<p>Evaluator Note: The next event has a 5 minute ramp before the crew sees it.</p>

Op-Test No: <u>2007</u> Scenario No.: <u>1</u> Event No: <u>4</u> Page <u>6</u> of		
Event Description: C Main Transformer High Winding Temperature		
Time	Position	Applicant's Actions or Behavior
T=43	RO	Evaluates alarm window 1A16B per 41AO-1RK1A . Sends AO to investigate locally (this may be done by CO)
	CRS	May refer to 40AL-9MA01 , local alarm response. Evaluator note: the following are AO actions in the field. 1. Units 1 & 2 Only: Confirm the high winding temperature condition by performing the following: 1.1 Perform ALL the following at the ETM to determine BOTH winding temperature (relay #2) and liquid temperature (relay #1): <ul style="list-style-type: none"> • Observe Relay #1 light illuminated. • Observe oil temperature as it scrolls onto the LED. (about every 2 seconds) • Observe Relay #2 light illuminated • Observe winding temperature as it scrolls onto the LED. (about every 2seconds) 1.2 Observe winding temperature on PMS computer points MAT2 (A Phase), MAT3 (B Phase), MAT4 (C Phase) 1.3 Compare the winding temperature with the liquid temperature. 2. Unit 3 Only: N/A 3. IF the winding temperature is valid, THEN notify the Control Room to reduce load as necessary to maintain winding temperature less than the alarm setpoint (first by reducing Megavar loading and then if temperature is still not lowering, reducing Megawatt loading). 4. Contact Maintenance Engineering for further loading guidance.
	CO	Reduces Megavar loading to unity.
	CRS	Gives reactivity brief for a unit downpower. Informs ECC of the transformer problem and the downpower.
	RO	Starts a boration or inserts CEAs for the downpower. ____ 7.3.1 IF the reactor is critical, THEN determine the gallons of boric acid to be added. <u>N/A</u> 7.3.2 IF the reactor is not critical,

		<p>THEN perform the following:</p> <p>___ 7.3.3 IF, at any time, letdown is diverted to CVCS HUT, THEN notify Radiation Protection to evaluate impact on current radiation levels near the HUT.</p> <p><u>N/A</u> 7.3.4 WHEN diverting CVCS Letdown, THEN perform ONE of the following:</p> <p>___ 7.3.5 IF makeup is in manual as directed in step 4.3.3.1, AND it is desired to perform this makeup in Automatic, THEN perform ALL of the following:</p> <p>___ 1. Place CHN-HS-210 in Automatic. ___ 2. Place CHN-HS-527 in Open/Auto. ___ 3. Place CHN-FIC-210Y in Automatic using Appendix M - Operation of the Digital Makeup Controllers and Totalizers, Section 1.0.</p> <p>___ 7.3.6 Set the desired boric acid makeup flow rate on the Foxboro controller, CHN-FIC-210Y.</p> <p>___ 1. IF the required makeup flow is equal to or greater than 40 gpm, THEN set the desired makeup flow to not more than 40 gpm.</p> <p>___ 7.3.7 Select the "Target" makeup volume (gallons) on the boric acid makeup flow totalizer/counter CHN-FQIS-210Y (Micro-Motion) as determined in step 7.3.1 or 7.3.2.</p> <p>___ 7.3.8 IF the reactor is critical, THEN ensure CEDMCS is in the desired mode of operation per CRS direction.</p> <p>___ 7.3.9 IF borating directly to the VCT, THEN place CHN-HS-512, Makeup Inlet to VCT in the OPEN position.</p> <p>___ 7.3.10 Start the boration as follows:</p> <p>___ 1. Place CHN-HS-210 in the BORATE position. ___ 2. Depress the "Reset" pushbutton - the left pushbutton on the totalizer/counter module (Micro-Motion). ___ 3. Depress the "Start" pushbutton - the left pushbutton on the totalizer/counter module (Micro-Motion).</p> <p>7.3.11 Check for BOTH of the following:</p> <p>___ One boric acid pump started ___ CHN-FIC-210X indicates no RMW flow, (CHN-FV-210X closed)</p> <p>___ 7.3.12 IF borating directly to the suction of the charging pumps, THEN ensure CHN-UV-527, Makeup to CHRG PMPS (VCT Bypass) is open.</p> <p>___ 7.3.13 On CHN-FIC-210Y (Foxboro) check that "Process Flow" increases (middle bar graph) towards the Auto setpoint,</p>
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		<p>overshoots the Auto setpoint and then stabilizes at the Auto setpoint.</p> <p>____ 7.3.14 Check proper flow indicated on CHN-FIC-210Y.</p> <p>____ 7.3.15 IF the actual required makeup flow is equal to or greater than 40 gpm, THEN perform the following:</p> <ul style="list-style-type: none"> ____ 1. Ensure “Auto Setpoint” is selected on CHN-UV-210Y. ____ 2. Depress the up arrow to increase the setpoint to the required makeup flow value. <p>____ 7.3.16 IF the reactor is critical, THEN monitor the effects of boration on CEA motion, RCS temperature and Reactor Power.</p>
	CO	Reduces turbine load as necessary to maintain primary temperature as directed by the CRS.

Op-Test No: 2007 Scenario No.: 1 Event No: 5 Page 9 ofEvent Description: Main Generator trip
Reactor trip due to SGN-PT-1027 failing low

Time	Position	Applicant's Actions or Behavior
T=67	CRS	<p>Refers to 40AO-9ZZ08, but will not have time to implement.</p> <p>When the reactor trips, goes to 40EP-9EO01, Standard Post Trip Actions (SPTAs).</p> <ol style="list-style-type: none"> 1. Open the placekeeper and enter the EOP Entry Time. 2. Determine that Reactivity Control acceptance criteria are met by the following: <ol style="list-style-type: none"> a. Check that reactor power is dropping. b. Check that start-up rate is negative. c. Check that ALL full strength CEAs are inserted. 3. Determine that Maintenance of Vital Auxiliaries acceptance criteria are met by the following: <ol style="list-style-type: none"> a. Check that the Main Turbine is tripped. b. Check that the Main Generator output breakers are open. c. Check that station loads have transferred to offsite electrical power such that BOTH of the following conditions are met: <ul style="list-style-type: none"> • All vital and non-vital AC buses are powered • All vital and non-vital DC buses are powered 4. Determine that RCS Inventory Control acceptance criteria are met by the following: <ol style="list-style-type: none"> a. Check that Pressurizer level meets BOTH of the following: <ul style="list-style-type: none"> • 10 - 65% • Trending as expected to 33 - 53% b. Check that the RCS is 24°F or more subcooled. c. Check that BOTH of the following are in service to all RCPs. <ul style="list-style-type: none"> • Seal injection • Nuclear Cooling Water 5. Determine that RCS Pressure Control acceptance criteria are met by BOTH of the following: <ul style="list-style-type: none"> • Pressurizer pressure is 1837 - 2285 psia • Pressurizer pressure is trending as expected to 2225 - 2275 psia 6. Determine that Core Heat Removal acceptance criteria are met by ALL of the following: <ul style="list-style-type: none"> • At least one RCP is operating • Loop ΔT is less than 10°F • RCS is 24°F or more subcooled 7. Determine that RCS Heat Removal acceptance criteria are met by the

		<p>following:</p> <ol style="list-style-type: none"> a. Check that at least one Steam Generator meets BOTH of the following conditions: <ul style="list-style-type: none"> • Level is 35% WR or more • Feedwater is restoring or maintaining level 45 - 60% NR b. Check that Tc is 560 - 570°F. c. Check that steam generator pressure is 1140 - 1200 psia. <p>8. Determine that Containment Isolation acceptance criteria are met by the following:</p> <ol style="list-style-type: none"> a. Check that Containment pressure is less than 2.5 psig. b. IF CIAS has actuated, THEN override and open BOTH of the following: <ul style="list-style-type: none"> • HPA-HS-1, Control System A Supply Isolation Valve UV-1 • HPB-HS-2, Control System B Supply Isolation Valve UV-2 c. REFER TO Appendix 7, List of EOP Radiation Monitors and check BOTH of the following conditions: <ul style="list-style-type: none"> • No valid containment area radiation monitor alarms or unexplained rise in activity • No valid steam plant activity monitor alarms or unexplained rise in activity <p>9. Determine that Containment Temperature, Pressure, and Combustible Gas Control acceptance criteria are met by the following:</p> <ol style="list-style-type: none"> a. Check that containment temperature is less than 117°F. b. Check that containment pressure is less than 2.5 psig. <p>10. IF all acceptance criteria are met, AND no contingency actions were performed, THEN GO TO 40EP-9EO02, Reactor Trip.</p> <p>11. IF any acceptance criteria are NOT met, OR ANY contingency action was taken, THEN GO TO Section 4.0, Diagnostic Actions to diagnose the event.</p>
	<p>CO</p>	<p>Evaluator note: Operation of Steam Bypass Control System (SBCS) or Atmospheric Dump Valves (ADV's) controllers due to the failure of SGN-PT-1027 in this situation is a basic skill of a Reactor Operator.</p> <p>Observes that SBCS is not working properly and takes contingency actions for heat removal by either manual operation of SBCS or using ADVs.</p> <p>Performs SPTAs. Responsible for the following Safety Functions/actions:</p> <ul style="list-style-type: none"> • Reactivity report (either operator may give this) • Main Turbine and Generator output breaker report • RCS heat removal, including Tc, SG levels, SG pressures. • Containment Isolation: Containment pressure and radiation monitors (either operator may give this). • Containment Temperature and Pressure Control: Containment pressure and temperature (either operator may give this).

		Critical Task – Establish secondary heat removal prior to exiting SPTAs.
	RO	Performs SPTAs. Responsible for the following Safety Functions/actions: <ul style="list-style-type: none">• Maintenance of Vital Auxiliaries: Electric plant report, Board 1.• RCS Inventory Control: Pressurizer level, subcooling, and NCW flow to RCPs.• RCS Pressure Control: RCS Pressure• Core Heat Removal: RCP status, Loop ΔT, subcooling.

Op-Test No: 2007 Scenario No.: 1 Event No: 6 Page 12 of

Event Description: SG 2 ESD to Containment

Time	Position	Applicant's Actions or Behavior
T=70	RO	Responds to Pressurizer Level being out of band low by starting the third Charging Pump.
	CRS	<p>Diagnoses ESD, enters 40EP-9EO05 procedure.</p> <ol style="list-style-type: none"> 1. Confirm the diagnosis of an Excess Steam Demand by performing the following: <ol style="list-style-type: none"> a. Check that the Safety Function Status Check acceptance criteria are satisfied. b. Ensure that the Steam Generator Sample Valves are open. c. Direct Chemistry to PERFORM 74DP-9ZZ05, Abnormal Occurrence Checklist. 2. Ensure the event is being classified. 3. Open the Placekeeper and enter the EOP Entry Time. 4. IF Pressurizer pressure drops to the SIAS setpoint, THEN check that SIAS is actuated. 5. IF SIAS has actuated, THEN perform the following: <ol style="list-style-type: none"> a. Check that the HPSI and LPSI Pumps have started. b. Check that safety injection flow is adequate. 6. IF SIAS has actuated, THEN perform the following <ol style="list-style-type: none"> a. IF RWT level is above 73%, AND it is desired to align Charging Pump suction through CHE-HV-536 or CHN-UV-514, THEN PERFORM Appendix 103, RWT Makeup / Emergency Boration. b. IF it is determined that RWT level may lower to less than 73% during the event, OR it is desired to align Charging Pump suction through an alternate suction path, THEN PERFORM ONE of the following: <ul style="list-style-type: none"> • Appendix 10, Charging Pump Alternate Suction to the RWT / Restoration • Appendix 11, Charging Pump Alternate Suction to the SFP / Restoration 7. Ensure that MSIS is actuated. 8. IF Pressurizer pressure remains below the SIAS setpoint, THEN perform the following: <ol style="list-style-type: none"> a. Ensure ONE RCP is stopped in each loop.

- b. **IF** RCS subcooling is less than 24°F,
THEN ensure all RCPs are stopped.
9. **IF ANY** RCPs are operating,
THEN PERFORM Appendix 16, RCP Trip Criteria and check the RCP operating limits satisfied.
10. Determine the most affected Steam Generator by considering **ALL** of the following:
- High steam flow from Steam Generator
 - Steam generator pressures
 - Steam generator levels
 - RCS cold leg temperatures
11. **IF** the break is **NOT** isolated,
THEN isolate the most affected Steam Generator by performing the following:
- a. Ensure the MSIVs on the most affected Steam Generator are closed.
- b. Ensure the MSIV Bypass Valve on the most affected Steam Generator is closed.
- c. Close the ADVs on the most affected steam generator.
- d. Close the Economizer FWIVs on the most affected Steam Generator.
- e. Close the Downcomer Isolation Valves on the most affected Steam Generator.
- f. Ensure the Aux Feed Pump A Steam Supply Valve from the most affected Steam Generator is closed:
- SG 1**
- SGA-UV-134, SG 1 Steam Supply to Aux Feed Pump A
- SG 2**
- SGA-UV-138, SG 2 Steam Supply to Aux Feed Pump A
- g. Ensure the Auxiliary Feedwater Isolation Valves to the most affected Steam Generator are closed:
- SG 1**
- AFB-UV-34, Aux Feedwater to SG1 Downstream Valve
 - AFC-UV-36, Aux Feedwater to SG1 Downstream Valve
- SG 2**
- AFA-UV-37, Aux Feedwater to SG2 Downstream Valve
 - AFB-UV-35, Aux Feedwater to SG2 Downstream Valve
- h. Close **BOTH** of the steam trap isolation valves on the most affected Steam Generator:
- SG 1**
- SGA-UV-1133, Steam Trap M23 Isolation
 - SGB-UV-1135A / 1135B, Steam Trap M01 / M02 Isolations
- SG 2**
- SGA-UV-1134, Steam Trap M24 Isolation
 - SGB-UV-1136A / 1136B, Steam Trap M03 / M04 Isolations
- i. Close the Blowdown Containment Isolation Valves on the most affected Steam Generator.
- j. Check that the Steam Generator Safety Valves are closed.

	RO	<p>Initiates SIAS/CIAS/MSIS. (could be CO)</p> <p>Starts CS A pump by taking the CS A handswitch to start twice.</p> <p>Critical Task – Initiate MSIS within 30 minutes of exceeding 3 psig in Containment.</p>
	CO	<p>(Evaluator note: AFB-P01 may already be running due to the SIAS)</p> <p>Establishes feed with AFB-P01 due to losing Main Feed on MSIS:</p> <ul style="list-style-type: none"> • Starts AFB-P01 on Board 6 • Opens AFB-UV-34 on Board 6 • Throttles open AFB-UV-30 to establish feed to SG 1 only. <p>Prepares to use ADVs on SG 1 to catch primary plant rebound when SG 2 is dry.</p>
	Crew	May initiate CSAS on Containment pressure trending towards the setpoint.
	CO	<p>Override AFAS 2 and stop feeding the faulted Steam Generator.</p> <p>Closes overridden valves NCB-UV 403 and NCB-UV 401.</p>
	RO	<p>Stop all RCPs when CSAS isolates NCW to containment.</p> <p>Isolates Seal Bleedoff from RCPs by closing RCN-HV-430 through 433</p> <p>OR</p> <p>CHA-UV-506, CHA-UV-507, and CHB-UV505.</p>

Op-Test No: 2007 Scenario No.: 1 Event No: 7 Page 15 of

Event Description: Loss of all Containment Spray.

Time	Position	Applicant's Actions or Behavior
T=85	CRS	Diagnoses that Containment Spray is lost, transitions to the Functional Recovery Procedure. May dispatch AO to open stuck closed B CS valve (SIB-UV-671). Selects CTPC 2 as jeopardized. Directs contingency actions to align LPSI A to CS A header.
	RO	Performs valve alignment to crosstie LPSI A to the CS A header: <ul style="list-style-type: none"> • Ensures LPSI is running • Ensures that SIA-HV-306 is closed. • Ensures that SIA-HV-687 is open. • Ensures that SIA-UV-672 is open. • Ensures that SIA-HV-685 is open • Check that LPSI pump is running at less than 60 amps.
	CRS/RO	Evaluates containment parameters to confirm Containment Header flow. Critical Task – Establish Containment Spray flow prior to completing CTPC 2.

Op-Test No: 2007 Scenario No.: 2 Event No: 2 Page 2 of

Event Description: SIT 1B low pressure alarms due to leak.

Time	Position	Applicant's Actions or Behavior
T= 5	RO	Evaluates alarm window 2C01A using 40AL-9RK2C. <ul style="list-style-type: none"> • Verifies alarm is valid • Verifies SIT vent valves SIA-HV-608 and SIB-HV-643 are closed. • Monitor SIT level indication. • Check possible fill and /or drain lineups that could cause the alarm.
	CRS	Enters LCO 3.5.1 Condition B for one SIT inoperable. Directs RO to repressurized SIT 1B. Exits LCO 3.5.1 Condition B when SIT pressure is greater than 600 psig. *Evaluator note – CRS should determine that SR 3.5.1.3 requires pressure to be 600 to 625 psig.
	RO	Pressurizes SIT 1B using 40OP-9SI03: <ul style="list-style-type: none"> • Goes to step 4.3.4 • Opens GAA-UV-1 (CO may be asked to do this) • Opens SIB-HV-642 • Commences pressurization by opening SIA-HV-649 • When the SIT is at the required pressure, closes SIA-HV-649 • Closes SIB-HV-642 • Closes GAA-UV-1

Op-Test No: <u>2007</u> Scenario No.: <u>2</u> Event No: <u>3</u> Page <u>3</u> of		
Event Description: CEA 17 slips 15" into the core		
Time	Position	Applicant's Actions or Behavior
T= 20	CO	Responds to alarms, determines that a CEA has slipped into the core
	CRS	Implement CEA Malfunction procedure, 40AO-9ZZ11. <ul style="list-style-type: none"> • Direct CEDMCS to Standby • Directs performance of Appendix E, Initial Actions.
	RO	Place CEDMCS in Standby
	CRS	Performs Reactivity Brief with crew on initial power reduction Directs lowering turbine load to raise Tave 3 degrees F greater than Tref within 10 minutes of the CEA slip. Critical Task – Begin Downpower within 15 minutes
	CO	Lowers Turbine load to raise Tave greater than Tref by 3 degrees F. Evaluator note: The Critical Task is met when load is taken off the turbine.
	CRS	Performs calculations for 20% power reduction Performs Reactivity Brief for lowering power to 80% Directs crew to perform unit downpower May contact ECC to inform them of downpower *Evaluator note – boration amount should be around 900 gallons
	RO	Places Pressurizer in boron equalization Borates the RCS for downpower using 40OP-9CH01
	CO	Lowers Turbine load to maintain temperature on program.
	CRS	Enters LCO 3.1.5 Condition A and LCO 3.2.4 Condition B. May discuss 72ST-9RX03, COLSS Inoperable ST but will not have time to perform.

Op-Test No: 2007 Scenario No.: 2 Event No: 4 Page 4 of

Event Description: CEA 52 drops into the core.

Time	Position	Applicant's Actions or Behavior
T= 40	Crew	<p>Determines that a second CEA is deviating and manually trips the reactor per step 3 of CEA Malfunction procedure, 40AO-9ZZ11.</p> <p>Critical Task – Trip the reactor immediately when two rods are deviating more than 9.9 inches from their subgroup. (as defined in Technical Specifications page 1.3.13)</p>
	CRS	<p>When the reactor trips, goes to 40EP-9EO01, Standard Post Trip Actions (SPTAs).</p> <ol style="list-style-type: none"> 1. Open the placekeeper and enter the EOP Entry Time. 2. Determine that Reactivity Control acceptance criteria are met by the following: <ol style="list-style-type: none"> a. Check that reactor power is dropping. b. Check that start-up rate is negative. c. Check that ALL full strength CEAs are inserted.

Op-Test No: <u>2007</u> Scenario No.: <u>2</u> Event No.: <u>5</u> Page <u>5</u> of		
Event Description: Generator output breakers do not open on Reactor Trip Small primary leak begins		
Time	Position	Applicant's Actions or Behavior
T=41	CRS	Determine that Maintenance of Vital Auxiliaries acceptance criteria are met by the following: a. Check that the Main Turbine is tripped. b. Check that the Main Generator output breakers are open. c. Check that station loads have transferred to offsite electrical power such that BOTH of the following conditions are met: • All vital and non-vital AC buses are powered • All vital and non-vital DC buses are powered
	CO	Evaluates status of Generator output breakers Opens output breakers *Evaluator note- CO may open breakers before the CRS gets to the step in the procedure

Op-Test No: <u>2007</u> Scenario No.: <u>2</u> Event No: <u>6</u> Page <u>6</u> of		
Event Description: Fast Bus Transfer fails		
Time	Position	Applicant's Actions or Behavior
T= 44	CO	Determines that power has been lost to support Main Feedwater operations Establishes a feed source using either AFN-P01 or AFB-P01 Establishes heat removal using either SBCS valves 1007/1008 or ADVs.
	RO	Evaluates RCP operating criteria Determines that NCW and RCPs have been deenergized Shuts Containment Control Bleedoff Isolation valves CHA-UV-506, CHB-UV-505, and CHA-HV-507.
	CRS	<p>4. Determine that RCS Inventory Control acceptance criteria are met by the following:</p> <ol style="list-style-type: none"> Check that Pressurizer level meets BOTH of the following: <ul style="list-style-type: none"> 10 - 65% Trending as expected to 33 - 53% Check that the RCS is 24°F or more subcooled. Check that BOTH of the following are in service to all RCPs. <ul style="list-style-type: none"> Seal injection Nuclear Cooling Water <p>5. Determine that RCS Pressure Control acceptance criteria are met by BOTH of the following:</p> <ul style="list-style-type: none"> Pressurizer pressure is 1837 - 2285 psia Pressurizer pressure is trending as expected to 2225 - 2275 psia <p>6. Determine that Core Heat Removal acceptance criteria are met by ALL of the following:</p> <ul style="list-style-type: none"> At least one RCP is operating Loop ΔT is less than 10°F RCS is 24°F or more subcooled <p>7. Determine that RCS Heat Removal acceptance criteria are met by the following:</p> <ol style="list-style-type: none"> Check that at least one Steam Generator meets BOTH of the following conditions: <ul style="list-style-type: none"> Level is 35% WR or more Feedwater is restoring or maintaining level 45 - 60% NR Check that Tc is 560 - 570°F.

		<p>c. Check that steam generator pressure is 1140 - 1200 psia.</p> <p>8. Determine that Containment Isolation acceptance criteria are met by the following:</p> <p>a. Check that Containment pressure is less than 2.5 psig.</p> <p>b. IF CIAS has actuated, THEN override and open BOTH of the following:</p> <ul style="list-style-type: none">• HPA-HS-1, Control System A Supply Isolation Valve UV-1• HPB-HS-2, Control System B Supply Isolation Valve UV-2 <p>c. REFER TO Appendix 7, List of EOP Radiation Monitors and check BOTH of the following conditions:</p> <ul style="list-style-type: none">• No valid containment area radiation monitor alarms or unexplained rise in activity• No valid steam plant activity monitor alarms or unexplained rise in activity <p>9. Determine that Containment Temperature, Pressure, and Combustible Gas Control acceptance criteria are met by the following:</p> <p>a. Check that containment temperature is less than 117°F.</p> <p>b. Check that containment pressure is less than 2.5 psig.</p> <p>10. IF all acceptance criteria are met, AND no contingency actions were performed, THEN GO TO 40EP-9EO02, Reactor Trip.</p> <p>11. IF any acceptance criteria are NOT met, OR ANY contingency action was taken, THEN GO TO Section 4.0, Diagnostic Actions to diagnose the event.</p> <p>Examiner note: Cue the large LOCA at the end of this event.</p>
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Op-Test No: <u>2007</u> Scenario No.: <u>2</u> Event No: <u>7</u> Page <u>8</u> of		
Event Description: LOCA		
Time	Position	Applicant's Actions or Behavior
T= 50	CRS	Diagnoses Loss of Coolant Accident, implements 40EP-EO03. <ul style="list-style-type: none"> • Ensures SIAS actuation • Ensures HPSI and LPSI pumps have started
	RO	Starts all available Charging pumps if Pressurizer level is below the band

Op-Test No: 2007 Scenario No.: 2 Event No: 8 Page 9 of

Event Description: HPSI B trip, HPSI A fail to auto start

Time	Position	Applicant's Actions or Behavior
T=51	RO	When SIAS actuates, determines that HPSI A should have auto started Starts HPSI A and ensure adequate Safety Injection Flow. Critical Task – Start HPSI A within 30 minutes of SIAS signal.

Op-Test No: 2007 Scenario No.: 3 Event No: 1 Page 1 of 12

Event Description: CHN-PDIC-240 controller failure

Time	Position	Applicant's Actions or Behavior
T=0	RO	Responds to alarm windows on Board 3 using 40AL-9RK3A. Diagnoses that CHN-PDIC-240 has failed.
	CRS	Directs RO to place CHN-PDIC-240 in manual per the alarm response.
	RO	Places CHN-PDIC-240 in manual and restores pressure to the normal band.

Op-Test No: 2007 Scenario No.: 3 Event No: 2 Page 2 of

Event Description: Plant Cooling Water system leak.

Time	Position	Applicant's Actions or Behavior
T=7	CO	<p>Responds to a PCW low pressure alarm using 40AL-9RK7A</p> <p>Verifies that system pressure is low</p> <p>Determines that the Standby pump did not start as designed.</p> <p>Dispatches AOs to investigate</p>
	CRS	<p>May direct the CO to start the pump using guidance from the alarm response.</p> <p>May refer to 40AO-9ZZ03, Loss of Cooling Water.</p>
	CO	<p>Starts the A PW pump to restore pressure</p> <p>Stops the B PW pump when the AO reports a leak on the pump discharge.</p>
		<p>Examiner note: Wait for AO to report on PCW pump before going to next event.</p>

Op-Test No: 2007 Scenario No.: 3 Event No: 3 Page 3 of

Event Description: Control power for LPSI A fails

Time	Position	Applicant's Actions or Behavior
T=18	RO	Responds to SESS alarm on B02, using 41AL-1ES2A. Reports white SEIS light for LPSI A.
	CRS	Determines LPSI pump A is inoperable. Enters LCO 3.5.3 Condition A and TLCO 3.5.201 Condition A. Evaluator note: the TLCO comes from the TRM (Technical Requirements Manual)

Op-Test No: 2007 Scenario No.: 3 Event No: 4 Page 4 of

Event Description: High pressure alarm on SIN-PT-390 due to check valve leakage

Time	Position	Applicant's Actions or Behavior
T=23	RO	Addresses alarm on window 2B09B using 40AL-9RK2B. Checks indication to verify the alarm.
	CRS	Evaluates LCOs 3.4.14 and 3.4.15. Directs RO to reduce pressure per the alarm response.
	RO	Opens SIE-HV-661 Opens SIB-UV-322 Closes SIB-UV-322 when pressure is constant. Determines that gross leakage is not present (Alarm does not come back in for three minutes) Closes SIE-HV-661 Monitors repressurization rate.

Op-Test No: 2007 Scenario No.: 3 Event No: 5 Page 5 of

Event Description: Main Generator AC regulator failure

Time	Position	Applicant's Actions or Behavior
T=32	CO	Responds to alarm window 6B08D using 41AL-1RK6B. (Excitation System Trouble Alarm) Determines that a mode change has occurred
	CRS	Directs CO to increase the voltage set-point adjuster per the alarm response. Call other Units to determine their regulator mode. May evaluate LCO 3.8.1 May call ECC requesting MVAR guidance.
	CO	Attempts to boost voltage per the alarm response. Determines that AC regulator is not available Evaluator note: CO will watch the MVAR meter to determine if the regulator is responding.
	CRS	Directs the CO to switch voltage control to DC
	CO	Switches voltage control to DC using 40OP-9MB01 <ul style="list-style-type: none"> • Ensures Transfer Volts meter is 0 +/- 25 volts. • Press "DC" on the AC/DC transfer switch • Check that system switches to DC on the panel • Adjust MVARs as directed by the CRS

Op-Test No: <u>2007</u> Scenario No.: <u>3</u> Event No: <u>7</u> Page <u>7</u> of		
Event Description: Stuck out CEA on Reactor trip.		
Time	Position	Applicant's Actions or Behavior
T=38	Crew	Starts performance of SPTAs
	CO	Performs Reactivity Safety Function Reports 1 CEA stuck out to CRS (this may be done by the RO)
	CRS	When the reactor trips, goes to 40EP-9EO01 , Standard Post Trip Actions (SPTAs). 1. Open the placekeeper and enter the EOP Entry Time. 2. Determine that Reactivity Control acceptance criteria are met by the following: a. Check that reactor power is dropping. b. Check that start-up rate is negative. c. Check that ALL full strength CEAs are inserted. <i>Contingency action:</i> Directs RO to borate the RCS at greater than 40 gpm
	RO	Starts boration of greater than 40 gpm *Evaluator note – boration flowpath can vary. The list of approved paths is in the contingency actions of SPTAs. The following is the most likely boration method used. ___ 7.3.1 IF the reactor is critical, THEN determine the gallons of boric acid to be added. <u>N/A</u> 7.3.2 IF the reactor is not critical, THEN perform the following: ___ 7.3.3 IF , at any time, letdown is diverted to CVCS HUT, THEN notify Radiation Protection to evaluate impact on current radiation levels near the HUT. <u>N/A</u> 7.3.4 WHEN diverting CVCS Letdown, THEN perform ONE of the following: ___ 7.3.5 IF makeup is in manual as directed in step 4.3.3.1, AND it is desired to perform this makeup in Automatic, THEN perform ALL of the following: ___ 1. Place CHN-HS-210 in Automatic. ___ 2. Place CHN-HS-527 in Open/Auto.

		<p>_____ 3. Place CHN-FIC-210Y in Automatic using Appendix M - Operation of the Digital Makeup Controllers and Totalizers, Section 1.0.</p> <p>_____ 7.3.6 Set the desired boric acid makeup flow rate on the Foxboro controller, CHN-FIC-210Y.</p> <p>_____ 1. IF the required makeup flow is equal to or greater than 40 gpm, THEN set the desired makeup flow to not more than 40 gpm.</p> <p>_____ 7.3.7 Select the “Target” makeup volume (gallons) on the boric acid makeup flow totalizer/counter CHN-FQIS-210Y (Micro-Motion) as determined in step 7.3.1 or 7.3.2.</p> <p>_____ 7.3.8 IF the reactor is critical, THEN ensure CEDMCS is in the desired mode of operation per CRS direction.</p> <p>_____ 7.3.9 IF borating directly to the VCT, THEN place CHN-HS-512, Makeup Inlet to VCT in the OPEN position.</p> <p>_____ 7.3.10 Start the boration as follows:</p> <p>_____ 1. Place CHN-HS-210 in the BORATE position.</p> <p>_____ 2. Depress the “Reset” pushbutton - the left pushbutton on the totalizer/counter module (Micro-Motion).</p> <p>_____ 3. Depress the “Start” pushbutton - the left pushbutton on the totalizer/counter module (Micro-Motion).</p> <p>7.3.11 Check for BOTH of the following:</p> <p>_____ One boric acid pump started</p> <p>_____ CHN-FIC-210X indicates no RMW flow, (CHN-FV-210X closed)</p> <p>_____ 7.3.12 IF borating directly to the suction of the charging pumps, THEN ensure CHN-UV-527, Makeup to CHRG PMPS (VCT Bypass) is open.</p> <p>_____ 7.3.13 On CHN-FIC-210Y (Foxboro) check that “Process Flow” increases (middle bar graph) towards the Auto setpoint, overshoots the Auto setpoint and then stabilizes at the Auto setpoint.</p> <p>_____ 7.3.14 Check proper flow indicated on CHN-FIC-210Y.</p> <p>_____ 7.3.15 IF the actual required makeup flow is equal to or greater than 40 gpm, THEN perform the following:</p> <p>_____ 1. Ensure “Auto Setpoint” is selected on CHN-UV-210Y.</p> <p>_____ 2. Depress the up arrow to increase the setpoint to the required makeup flow value.</p> <p>Critical Task – borate the RCS greater than 40 gpm prior to exiting SPTA’s.</p>
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Op-Test No: 2007 Scenario No.: 3 Event No: 8 Page 9 of

Event Description: AFB-P01 trip

Evaluator note: if the CO starts AFN-P01 first (after the Reactor trip), event 9 will be run before event 8. The intent is to disable each AFW pump sequentially.

Time	Position	Applicant's Actions or Behavior
T=41	CO	When Aux Feedpump B trips, establishes feed with AFN-P01 <ul style="list-style-type: none"> • Opens CTA-HV-1 and CTA-HV-4, suction valves for AFN-P01 • Starts AFN-P01
		*Evaluator note – Events 7 and 8 may be switched if the CO chooses a different feed source when the reactor is tripped. It is assumed that the CO will feed with AFB initially. If the CO initially feeds with AFN, these events will be switched.
	CRS	Continues with SPTAs. <ol style="list-style-type: none"> 3. Determine that Maintenance of Vital Auxiliaries acceptance criteria are met by the following: <ol style="list-style-type: none"> a. Check that the Main Turbine is tripped. b. Check that the Main Generator output breakers are open. c. Check that station loads have transferred to offsite electrical power such that BOTH of the following conditions are met: <ul style="list-style-type: none"> • All vital and non-vital AC buses are powered • All vital and non-vital DC buses are powered 4. Determine that RCS Inventory Control acceptance criteria are met by the following: <ol style="list-style-type: none"> a. Check that Pressurizer level meets BOTH of the following: <ul style="list-style-type: none"> • 10 - 65% • Trending as expected to 33 - 53% b. Check that the RCS is 24°F or more subcooled. c. Check that BOTH of the following are in service to all RCPs. <ul style="list-style-type: none"> • Seal injection • Nuclear Cooling Water 5. Determine that RCS Pressure Control acceptance criteria are met by BOTH of the following: <ul style="list-style-type: none"> • Pressurizer pressure is 1837 - 2285 psia • Pressurizer pressure is trending as expected to 2225 - 2275 psia 6. Determine that Core Heat Removal acceptance criteria are met by ALL of the following: <ul style="list-style-type: none"> • At least one RCP is operating • Loop ΔT is less than 10°F

		<ul style="list-style-type: none">• RCS is 24°F or more subcooled <ol style="list-style-type: none">7. Determine that RCS Heat Removal acceptance criteria are met by the following:<ol style="list-style-type: none">a. Check that at least one Steam Generator meets BOTH of the following conditions:<ul style="list-style-type: none">• Level is 35% WR or more• Feedwater is restoring or maintaining level 45 - 60% NRb. Check that Tc is 560 - 570°F.c. Check that steam generator pressure is 1140 - 1200 psia.8. Determine that Containment Isolation acceptance criteria are met by the following:<ol style="list-style-type: none">a. Check that Containment pressure is less than 2.5 psig.b. IF CIAS has actuated, THEN override and open BOTH of the following:<ul style="list-style-type: none">• HPA-HS-1, Control System A Supply Isolation Valve UV-1• HPB-HS-2, Control System B Supply Isolation Valve UV-2c. REFER TO Appendix 7, List of EOP Radiation Monitors and check BOTH of the following conditions:<ul style="list-style-type: none">• No valid containment area radiation monitor alarms or unexplained rise in activity• No valid steam plant activity monitor alarms or unexplained rise in activity9. Determine that Containment Temperature, Pressure, and Combustible Gas Control acceptance criteria are met by the following:<ol style="list-style-type: none">a. Check that containment temperature is less than 117°F.b. Check that containment pressure is less than 2.5 psig.10. IF all acceptance criteria are met, AND no contingency actions were performed, THEN GO TO 40EP-9EO02, Reactor Trip.11. IF any acceptance criteria are NOT met, OR ANY contingency action was taken, THEN GO TO Section 4.0, Diagnostic Actions to diagnose the event.
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Op-Test No: 2007 Scenario No.: 3 Event No: 9 Page 11 of

Event Description: AFN trip/NBN-X03 fault

Time	Position	Applicant's Actions or Behavior
T=50	CO	Reports to the CRS that feed to the SGs is not available
	RO	Verifies that DG A has sequenced onto PBA-S03 Manually starts Spray Pond A pump to provide cooling to the diesel Critical Task - Start A Spray Pond or Emergency Stop DG A w/in 15 minutes

Op-Test No: 2007 Scenario No.: 3 Event No: 10 Page 12 of

Event Description: Loss of all feed

Time	Position	Applicant's Actions or Behavior
T=55	CRS	Implements Loss of All Feed, 40EP-9EO06 <ul style="list-style-type: none"> • Directs RO to stop all RCPs • Directs CO to close Blowdown Containment Isolation Valve and Steam Generator Sample Valves • Directs CO to perform Standard Appendix 43 to start the B MFWP
	RO	Stops all RCPs
	CO	Closes all Blowdown Containment Isolation Valve and Steam Generator Sample Valves Performs Standard Appendix 43 to start the B MFWP <ul style="list-style-type: none"> • Places Downcomer valves in manual and closes them • Fast closes Economizer FWIVs • Places FTN-HS-54 to the fully counter clockwise position • Place FTN-HS-100 in Manual • Closes the Turbine Before Seat Drain Valves • Resets B MFWP • Adjusts FWPT speed to obtain pump discharge pressure 100 psig greater than Steam Generator pressure • Establishes feed to SGs using Downcomer valves in manual <p>Critical Task- Establish feed to a SG prior to exiting the LOAF procedure.</p>



JP-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- None

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Copy of 40EP-9EO10, Appendix 56, Restore DG B to PBB-S04



JP-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

- **The plant has experienced an electrical blackout condition.**
- **The emergency diesel generators are not running.**
- **The CRS has directed you to recover and start Emergency Diesel Generator B using Standard Appendix 56, Restore DG B to PBB-S04.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



JP-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	IF the annunciator panel indicates "ENGINE OVERSPEED" (DGB-07A), THEN perform the following:	Annunciator panel indicates "OVERSPEED ENGINE". (Window DGB-07A)	Examinee observes annunciator panel.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	<u>Press</u> "STOP" on DGB-HS-30 "DGB Emergency Stop".	DGB-HS-30 STOP pushbutton has been pressed.	Examinee simulates pressing DGB-HS-30.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Press the plunger on DGB-UV-238 "DGB OVERSPEED FUEL TRIP SOLENOID VALVE"	DGB-UV-238 plunger has been pressed.	Examinee simulates pressing plunger on DGB-UV-238. NOTE: Located generator platform southeast of the diesel.
SAT / UNSAT Comments (required for UNSAT):			



JP-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
4. *	<u>Reset</u> the intake air butterfly valve, ensuring handle is latched.	Intake Air Butterfly Valve is reset and handle is latched.	Examinee locates and simulates/explains resetting Intake Air Butterfly Valve by referring to Attachment 56-A. (Resetting intake air butterfly valve).
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
5.	<u>Inform</u> the responsible operator that the D/G may start.	Control Room acknowledges Diesel Generator "B" may start.	Examinee simulates informing responsible operator that "B" D/G may start.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6. *	<u>Press</u> "Reset" on DGB-HS-30 "EMERGENCY STOP" to start the diesel generator.	"B" diesel generator is NOT running.	Examinee simulates pressing DGB-HS-30. Does not go to procedure step 18. Proceeds to step 2. Note: Alternate Path point.
SAT / UNSAT Comments (required for UNSAT):			



JP-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
7.	IF the annunciator panel indicates "GENERATOR DIFFERENTIAL" (DGB-05B), THEN perform the following:	Annunciator panel indicates "GENERATOR DIFFERENTIAL". (Window DGB-05B)	Examinee observes annunciator panel.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
8.	Inform CRS of alarm.	The CRS directs you to reset the Generator Differential trip.	Examinee informs CRS of Generator Differential Alarm.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
9. *	IF the CRS directs resetting the Generator Differential trip, THEN perform the following: <u>Press</u> "STOP" on DGB-HS-30 "DGB Emergency Stop".	DGB-HS-30 STOP pushbutton has been pressed.	Examinee simulates pressing DGB-HS-30.
SAT / UNSAT Comments (required for UNSAT):			



JP-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
10. *	Reset "GENERATOR DIFFERENTIAL LOCKOUT RELAY 86D"		Examinee simulates resetting GENERATOR DIFFERENTIAL LOCKOUT RELAY 86D NOTE: Located on DG B control board.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
11.	Check that the "LOCKOUT RELAY RESET" white light is on.	The "LOCKOUT RELAY RESET" white light is on.	Examinee checks "LOCKOUT RELAY RESET" white light.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
12.	<u>Inform</u> the responsible operator that the D/G may start.	Control Room acknowledges Diesel Generator "B" may start.	Examinee simulates informing responsible operator that "B" D/G may start.
SAT / UNSAT Comments (required for UNSAT):			



JP-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

	STEP	CUE	STANDARD
13. *	Press "Reset" on DGB-HS-30 "DG B Emergency Stop" to start the diesel generator.	"B" diesel generator is running.	Examinee simulates pressing DGB-HS-30.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



JP-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/7/07	New	Made Alternate Path from bank JPM.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JP-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

- **The plant has experienced an electrical blackout condition.**
- **The emergency diesel generators are not running.**
- **The CRS has directed you to recover and start Emergency Diesel Generator B using Standard Appendix 56, Restore DG B to PBB-S04.**

CANDIDATE



JP-2
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 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 0150030604 Establish Charging and Letdown
 TASK STANDARD: Align Standby Letdown Valves
 K/A: 32004A406 K/A RATING: RO: 3.6 SRO: 3.1
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): AO VALIDATION TIME: 20 minutes
 REFERENCES: 40EP-9EO10, Standard Appendices, Appendix 13 Aligning Standby Letdown Valves, Rev 51
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: Alan Malley TECH REVIEW: _____
 REVISION DATE: 4/23/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



JP-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- None

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Copy of 40EP-9EO10, Standard Appendices, Appendix 13 - Aligning Standby Letdown Valves



JP-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP. If it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

- **The plant was shutdown due to an emergency situation and is in the process of being cooled down from Mode 3 to Mode 5 to make some repairs.**
- **The plant is now at a point where the standby letdown and pressure control valves are to be put in service.**
- **The responsible control room operator has instructed you to perform 40EP-9EO10, Standard Appendices, Standard Appendix 13, Aligning Standby Letdown Valves.**
- **CHN-LV-110P and CHN-PV-201Q are presently in service.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- No attempt will be made to actually unlock or operate any valves.



JP-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1. *	Open CHN-V343, LETDOWN FLOW CONTROL VALVE CHN-LV-110Q INLET ISOL VALVE	CHN-V343 has been rotated in the counter-clockwise direction and will not rotate any further. The reachrod position indicator shows "OPEN".	Examinee simulates operating reach rod to open valve verbalizing expected indications that valve is opening. Note: 100' Aux Bldg Letdown Valve Gallery.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	Place CHN-HS-110-1, Letdown Control Valve Selector to the "BOTH" position.	The Control Room informs you that letdown control valve selector switch is in the "BOTH" position.	Examinee simulates calling the Control Room to have them position handswitch CHN-HS-110-1.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Slowly open CHN-V340, LETDOWN FLOW CONTROL VALVE CHN-LV-110Q OUTLET ISOL VALVE	CHN-V340 has been rotated in the counter-clockwise direction and will not rotate any further. The reachrod position indicator show "OPEN".	Examinee simulates operating reach rod to slowly open valve verbalizing expected indications that valve is opening. Note: 100' Aux Bldg Letdown Valve Gallery.
SAT / UNSAT Comments (required for UNSAT):			



JP-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
4.	Adjust the in service Backpressure Control Valve to maintain backpressure 200 psig below the RCS pressure.	The Control Room informs you that the in service backpressure control valve is maintaining backpressure 200 psig below the RCS pressure.	Examinee simulates calling the Control Room to have backpressure adjusted 200 psig below the RCS pressure.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
5. *	Open CHN-V348, BACKPRESSURE CONTROL VALVE CHN-PV-201P INLET ISOL VALVE	CHN-V348 has been rotated in the counter-clockwise direction and will not rotate any further. The reachrod position indicator show "OPEN".	Examinee simulates operating reach rod to open valve, verbalizing expected indications that valve is opening. Note: 110' Aux Bldg Letdown Valve gallery.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6.	Place CHN-HS-201, Backpressure Control Valve Selector to the "BOTH" position.	The Control Room informs you that backpressure control valve selector switch is in the "BOTH" position.	Examinee simulates calling the Control Room to have them position handswitch CHN-HS-201.
SAT / UNSAT Comments (required for UNSAT):			



JP-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
7. *	Slowly open CHN-V350, BACKPRESSURE CONTROL VALVE CHN-PV-201P OUTLET ISOL VALVE	CHN-V350 has been rotated in the counter-clockwise direction and will not rotate any further. The reachrod position indicator show "OPEN".	Examinee simulates operating reach rod to slowly open valve verbalizing expected indications that valve is opening. Note: 110' Aux Bldg Letdown Valve gallery.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



JP-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	4/23/2007	6	Enhancements for procedural accuracy.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JP-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

- **The plant was shutdown due to an emergency situation and is in the process of being cooled down from Mode 3 to Mode 5 to make some repairs.**
- **The plant is now at a point where the standby letdown and pressure control valves are to be put in service.**
- **The responsible control room operator has instructed you to perform 40EP-9EO10, Standard Appendices, Standard Appendix 13, Aligning Standby Letdown Valves.**
- **CHN-LV-110P and CHN-PV-201Q are presently in service.**

CANDIDATE

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- None

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- None.

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- You may use any source of information normally available.

INITIATING CUE:

- **A steam generator tube leak has occurred. The CRS has directed you to align the Turbine Building Sumps to LRS per 40AO-9ZZ02, Appendix D.**
-

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed IAW OTG-01.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.

JPM START TIME:

	STEP	CUE	STANDARD
1. *	Unlock and open OWN-V022, Turbine Bldg. sump discharge to LRS.	OWN-V022 is open	Examinee locates and simulates unlocking and opening of OWN-V022.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Close OWN-V021, Turbine Bldg. sump discharge to Oily Waste Separator.	OWN-V021 is closed	Examinee locates and simulates closure of OWN-V021.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Unlock and open OWN-V033, South Condenser sump discharge to LRS.	OWN-V033 is open.	Examinee locates and simulates unlocking and opening of OWN-V033.
SAT / UNSAT Comments (required for UNSAT):			

COMMENTS:

	STEP	CUE	STANDARD
4. *	Close OWN-V029, South Condenser sump discharge to Oily Waste Separator.	OWN-V029 is closed	Examinee locates and simulates closure of OWN-V029.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
5. *	Open CMN-V091, Low TDS sump discharge to LRS.	OWN-V091 is open.	Examinee locates and simulates opening of OWN-V091.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6. *	Open SCN-V175, Blowdown low TDS sump discharge to LRS.	SCN-V175 is open.	Examinee locates and simulates opening of SCN-V175.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7. *	Close CMN-V076, Low TDS sump discharge to CW return line.	OWN-V076 is closed.	Examinee locates and simulates closure of OWN-V076.
SAT / UNSAT Comments (required for UNSAT):			

COMMENTS:

	STEP	CUE	STANDARD
8. *	Close SCN-V176, Blowdown low TDS sump discharge to CW return line.	SCN-V176 is closed.	Examinee locates and simulates closure of SCN-V176.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
9. *	Unlock and open OWN-V042, North Condenser sump discharge to LRS.	OWN-V042 is open.	Examinee locates and simulates unlocking and opening of OWN-V042.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
10. *	Close OWN V151, North Condenser sump discharge to Oily Waste Separator.	OWN-V151 is closed.	Examinee locates and simulates closure of OWN-V151.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
11.	Inform the responsible operator that this appendix is complete.		Examinee simulates informing the CRS that Appendix D is complete.
SAT / UNSAT Comments (required for UNSAT):			

COMMENTS:

JPM STOP TIME:

NORMAL TERMINATION POINT

COMMENTS:

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	03/19/97	6	New Format
1	7/27/00	6	Correct K&A, add safety concerns.
2	5/4/2001	3	40AO-9ZZ02 changed this appendix to D from C.
3	6/21/2001	3	40AO-9ZZ02 changed order of valve alignment in Appendix D
4	7/27/01	6	Minor typo, standards wording
5	5/10/2007	6	Changed to new JPM format.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

INITIAL CONDITIONS

INITIATING CUE:

A steam generator tube leak has occurred. The CRS has directed you to align the Turbine Building Sumps to LRS per 40AO-9ZZ02, Appendix D.

CANDIDATE



JS-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM BASIS INFORMATION

TASK: 0060010401 Align the Essential Auxiliary Feedwater System for Automatic Operation
 TASK STANDARD: AFA-P01 and associated valves in standby and aligned for automatic operation with no SESS abnormalities.
 K/A: 3.4-061-A3.03 K/A RATING: RO: 3.9 SRO: 3.9
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): RO VALIDATION TIME: 15 minutes
 REFERENCES: 40OP-9AF01, Essential Auxiliary Feedwater System, Rev 36
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path	X	

APPROVAL

DEVELOPER: Alan Malley TECH REVIEW: _____
 REVISION DATE: 04/25/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



JS-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

1. SIMULATOR SETUP:

A. IC#: 52.

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	Reset to IC 52.	
2.	Run scenario: NRC EXAM/JS1	Loads keys for component remotes in step 3 below.
3.	Go to run on simulator	
4.	Acknowledge alarms	
5.	Freeze simulator	
6.	Provide initiating cue	
7.	Go to run on simulator	

Commands needed during performance of JPM

Step	COMMAND	DESCRIPTION
	crMVMS13SGAUV138 9 100	Fails SGA-UV-138 open Already loaded into IC 52
3.	When directed to close PKAM4115: crB4MS13SGAUV134 1 Close When directed to close PKAM4116: crB4MS13SGAUV138 1 Close	Key 1 (Restores power to SGA-UV-134) Key 2 (Restores power to SGA-UV-138)

C. SPECIAL INSTRUCTIONS:

- IC 52 is set up specifically for JS-1 and JS2, 2007 NRC Exam

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Ensure appropriate revision of procedure available.



JS-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

EVALUATOR NOTE: Examiner will interface with the candidate as the Aux Operator. Ensure the Examiner has a radio and headset to communicate with the Simulator Driver.

INITIATING CUE:

- **AFA-P01 was out for maintenance.**
- **The permit has been removed and the CRS is directing you to align the Essential Auxiliary Feedwater System for Automatic Operation in accordance with 40OP-9AF01, Section 4.3.**
- **All prerequisites have been completed.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.



JS-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM START TIME:

	STEP	CUE	STANDARD
1.	Examinee determines the need to perform the following: <ul style="list-style-type: none"> • Appendix A • Appendix B • Appendix C • Appendix D (Step 4.3.1)	Appendices A, B, C, & D have been completed satisfactorily.	Examinee addresses the need to perform Appendices A, B, C, D.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Close AFA-HV-54, AFA-P01 Trip & Throttle Valve. (Step 4.3.2)		Examinee closes: ESS STM DRIVEN AFW TRIP THROT VLV HV-54, AFA-HS-54D
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Direct a Nuclear Operator to close BOTH the following breakers: <ul style="list-style-type: none"> • PKA-M4115, SGA-UV-134 supply breaker • PKA-M4116, SGA-UV-138 supply breaker (Step 4.3.3)	Direct Driver to activate Key 1 to close KA-M4115 Direct driver to activate Key 2 to close PKA-M4116	AO is directed to close breakers PKA-M4115 and PKA-M4116 SGA-UV-138 will inadvertently open. NOTE: The procedure provides a contingent action for inadvertent opening of the steam admission valves.
SAT / UNSAT Comments (required for UNSAT):			



JS-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
4.	IF SGA-UV-134 inadvertently opened, THEN close SGA-UV-134 (Step 4.3.4)		Examinee determines SGA-UV-134 did not inadvertently open.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
5. *	IF SGA-UV-138 inadvertently opened, THEN close SGA-UV-138 (Step 4.3.5)		Examinee closes SGA-UV-138 after inadvertent opening.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6. *	Open AFA-HV-54, Aux Feedpump AFA-P01 Trip & Throttle valve. (Step 4.3.6)		Examinee opens AFA-HV-54.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7.	Verifies status of AFA-P01 (Step 4.3.7)		Examinee verifies AFA-P01 not rolling (stopped) or stops rolling within five minutes.
SAT / UNSAT Comments (required for UNSAT):			



JS-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
8.	Ensure AFA-HV-54 is reset and open per Appendix G – Resetting AFA-P01 Overspeed Trip Linkage. (Step 4.3.8)		Verify AFA-HV-54 is reset and open by either: <ul style="list-style-type: none"> • B06 light indication • directs AO to ensure that AFA-HV-54 is reset and open per Appendix G.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
9.	IF AFA-P01 is being restored from an outage/maintenance condition. THEN perform Appendix E – AFA-P01 Prestart Checklist. (Step 4.3.9)	Area 1 will perform Appendix E.	Examinee determines the need to perform Appendix E and directs AO to perform.
SAT / UNSAT Comments (required for UNSAT):			

Evaluator note: Step 4.3.10 is N/A

	STEP	CUE	STANDARD
10.	Ensure SESS Component Status Train A and B have no SEIS Alarms on AUX FW SG1 & AUX FW SG2 windows. (Step 4.3.11)		Examinee verifies SESS Panel clear and no SEIS Alarms on Aux FW SG #1 and #2 windows.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:



JS-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

NORMAL TERMINATION POINT



JS-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	4/25/2007	3	

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
INITIAL CONDITIONS

INITIATING CUE:

- **AFA-P01 was out for maintenance.**
- **The permit has been removed and the CRS is directing you to align the Essential Auxiliary Feedwater System for Automatic Operation in accordance with 40OP-9AF01, Section 4.3.**
- **All prerequisites have been completed.**

CANDIDATE



JS-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM BASIS INFORMATION

TASK: 1240025201 Energize Switchyard loads from the GTGs
 TASK STANDARD: Breaker NAN-S05F closed.
 K/A: 3.6-062-A4.01 K/A RATING: RO: 3.3 SRO: 3.1
 K/A: 4.1-055-EA1.07 K/A RATING: RO: 4.3 SRO: 4.5
 APPLICABLE POSITION(S): RO VALIDATION TIME: 12 minutes
 REFERENCES: 40EP-9EO10, Standard Appendices, Appendix 54, Revision 55
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alternative Path	<input type="checkbox"/>	<input checked="" type="checkbox"/>

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____
 REVISION DATE: 04/25/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



JS-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

1. SIMULATOR SETUP:

A. IC#: 52

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	Run scenario: NRC Exam/JS-2	Loads keys for GTG breaker operation
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- IC 52 is set up specifically for JS-1 and JS2, 2007 NRC Exam
- Have driver acknowledge nuisance alarms

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

3. SETUP CONDITIONS:

- Loss of offsite power, both EDGs carrying their respective buses.
- Appendix 53, Align De-energized Buses, completed.



JS-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPMs ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPMs

- You may use any source of information normally available.

EVALUATOR NOTE: Examiner will interface with the candidate as the Aux Operator. Ensure the Examiner has a radio and headset to communicate with the Simulator Driver.

-

INITIATING CUE:

- **The unit has experienced a Loss of Offsite power.**
- **Both Emergency Diesels are carrying their respective busses.**
- **The CRS directs you to energize switchyard loads using Standard Appendix 54.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.



JS-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM START TIME:

	STEP	CUE	STANDARD
1.	Obtain 40EP-9EO10		Obtains Standard Appendix 54.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	Ensure Standard Appendix 53, Align De-energized Buses, has been completed. (Step 1)	Standard Appendix 53 has been completed by another RO.	Verifies Standard Appendix 53 has been completed.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3.	Direct an operator to perform Attachment 54-A., Energize NKN-H21 from the GTG. (Step 2)	Attachment 54-A is being performed in the field by an AO. Direct Simulator driver to execute scenario EOP Files/attach54a-1	Ensures that Attachment 54-A is being performed.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
4.	If the GTG is supplying a Unit 1 vital 4.16 kV AC bus, then GO TO step 7. (Step 3)		Examinee should N/A this step based on initiating cue.
SAT / UNSAT Comments (required for UNSAT):			



JS-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
5.	Direct an operator to close breaker NAN-S03AB, 13.8 kV Supply from GTG. (Step 4)	Direct Simulator driver to activate Key 20 to close NAN-S03AB Inform Examinee when NAN-S03AB closed	Ensures NAN-S03AB has been closed.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6.	Ensure that BOTH of the following breakers are open: <ul style="list-style-type: none"> • PBA-S03L • PBB-S04L (Step 5)		Examinee ensures that PBA-S03L and PBB-S04L are open as necessary.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7.	Perform the following: <ol style="list-style-type: none"> 1. Contact the GTG operator at extension 1159 or 7159, 2. Direct the GTG operator to energize NAN-S07. 3. Direct the GTG operator to close breaker NAN-S07D. (Step 6)		Examinee directs GTG operator to energize NAN-S07 and close NAN-S07D.
SAT / UNSAT Comments (required for UNSAT):			



JS-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
8. *	Open ALL of the following breakers <ul style="list-style-type: none"> • NGN-L13B2 • NGN-L15B2 • NGN-L05B2 (Step 7)		Examinee opens all three breakers.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
9. *	When the GTG operator has energized NAN-S07, AND breaker NAN-S07D is closed, THEN close breaker NAN-S03A. (Step 8)	Direct Sim driver to activate Key 21 then inform Examinee that NAN-S07 has been energized from GTG #1 and NAN-S07D is closed.	NAN-S03A is closed using: ESF SERV XFMR X03 NBN-HS-S03A
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
10. *	Perform the following to energize 13.8 kV bus NAN-S01 from NAN-S03 <ol style="list-style-type: none"> 1. Place synchronizing switch NAN-SS-S03B to on. 2. Close breaker NAN-S03B. 3. Place synchronizing switch NAN-SS-S03B to off. (Step 9)		NAN-S01 is energized from NAN-S03.
SAT / UNSAT Comments (required for UNSAT):			



JS-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
11. *	When informed by the operator performing Attachment 54-A that NHN-M21 is ready to be energized, THEN perform the following: <ol style="list-style-type: none"> 1. Close breaker NAN-S01D 2. Close NGN-L13B2. (Step 10)	Attachment 54A is complete (when scenario EOP Files/attach54a-1 finishes).	NGN-L13 is energized by closing: 480 LCS –L05 L13 L15 13.8 KV SUPPLY BREAKER NGN-HS-S01D And 480V LC-13 MAIN BKR NGN-HS-L13B2

SAT / UNSAT
Comments (required for UNSAT):

	STEP	CUE	STANDARD
12.	WHEN EF Battery Charger, NKN-H21 is supplying the 125V DC Bus E, THEN check for normal voltage and amperage indication. (Step 11)	Simulator driver will call as AO to inform the Examinee that EF Battery Charger is on the “E” DC bus.	Examinee checks for normal voltage and amps on the EF battery charger

SAT / UNSAT
Comments (required for UNSAT):

	STEP	CUE	STANDARD
13. *	If NAN-S05A is open, THEN perform the following to energize 13.8 kV Bus S05 from the GTGs: <ol style="list-style-type: none"> 1. Place synchronizing switch NAN-SS-S05A to on. 2. Close breaker NAN-S05A. 3. Place synchronizing switch NAN-SS-S05A to off. (Step 12)		NAN-S05 is energized.

SAT / UNSAT
Comments (required for UNSAT):



JS-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

	STEP	CUE	STANDARD
14. *	Close breaker NAN-S05F to supply switchyard loads. (Step 13)		NAN-S05F is closed.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



JS-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	04/25/2007	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
INITIAL CONDITIONS

INITIATING CUE:

- **The unit has experienced a Loss of Offsite power.**
- **Both Emergency Diesels are carrying their respective busses.**
- **The CRS directs you to energize switchyard loads using Standard Appendix 54.**

CANDIDATE



JS-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM BASIS INFORMATION

TASK: 0130010801 Place the Train A (B) LPSI Pump in service on Shutdown Cooling
 TASK STANDARD: Containment spray pump 'B' stopped with SDC flow 3780-5000 gpm
 K/A: 3.4-005-A4.01 K/A RATING: RO: 3.6 SRO: 3.4
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): RO VALIDATION TIME: 15 minutes
 REFERENCES: 40OP-9SI01, SHUTDOWN COOLING INITIATION, Rev 40
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: John M. Dedon TECH REVIEW: _____
 REVISION DATE: 04/25/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



JS-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

1. SIMULATOR SETUP:

A. IC#: 57

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- Go to RUN on simulator.
- Acknowledge alarms and FREEZE the simulator.
- Provide initiating CUE.
- Go to RUN on the simulator

D. REQUIRED CONDITIONS:

- LPSI pump "B" on SDC in parallel with the "B" Train CS pump. This is already in the IC.

2. SPECIAL TOOLS/EQUIPMENT:

- Ensure appropriate procedure revision in place.
- Need 6 caution tags on SI mini-flow recirculation valves.
- Put SI-352 X and Y trend pens on Board 2 ERFDADS



JS-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

- **The CRS directs you to secure Containment Spray Pump "B" from its present parallel operation with LPSI Pump "B" in shutdown cooling mode per 40OP-9SI01, Section 18.0.**
- **All prerequisites are completed.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.



JS-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM START TIME:

	STEP	CUE	STANDARD
1.	Obtain procedure 40OP-9SI01.		Procedure obtained. Examinee goes to Section 18.0 of 40OP-9SI01
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	Step 18.3.1 Determine current plant Mode and applicable flow band.		Note: This step is an implied procedural step since the examinee must determine the plant mode to use the correct table values. Examinee determines the plant to be in Mode 5.
SAT / UNSAT Comments (required for UNSAT):			



JS-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
3. *	Adjust SIB-HV-679 and SIB-HV-307 as necessary to obtain the following: <ul style="list-style-type: none"> • CS “B” flow approximately 600 gpm as indicated in SIB-FI-348. • LPSI pump B flow per the table. (SIB-PI-307 minus SIB-FI-348) • Total SDC flow rate 3,780 – 5,000 gpm as indicated on SIB-FI-307 (Step 18.3.1)	If requested: Maintain current temperature $\pm 2^{\circ}\text{F}$	Slowly close: CNTMT SPRAY PMP B DSCH TO S/D HX B VLV HV-679 SIB-HS679 To achieve 600 gpm on CNTMT SPRAY PUMP B DISCHARGE FLOW SIB-FI-348 Slowly close: LPSI-S/D COOLING HX B BYPASS VLV HV-307 SIB-HS-307 To achieve 3780 - 5000 gpm on LPSI-S/D COOLING B HEADER FLOW TO LOOPS SIB-FI-307
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
4. *	WHEN CS pump B flow is approximately 600 gpm as indicated on SIB-FI-348, THEN Stop CS Pump B using SIB-HS-6. (Step 18.3.2)		CS B secured
SAT / UNSAT Comments (required for UNSAT):			



JS-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
5.	Adjust SIB-HV-658 and SIB-HV-307 as necessary to maintain the following: <ul style="list-style-type: none"> • SDC flow rate for the current mode • RCS cooldown rate (Step 18.3.3)	If asked, cue: Current conditions are acceptable.	Examinee ensures SDC flow rate is 3780-5000 gpm.

SAT / UNSAT

Comments (required for UNSAT):

	STEP	CUE	STANDARD
6.	Direct a Nuclear Operator to perform Appendix D - Periodic Venting of the SDC Header. (Step 18.3.4)	The Auxiliary Operator has performed Appendix D, venting of SDC Header.	Directs AO to perform Appendix D.

SAT / UNSAT

Comments (required for UNSAT):

JPM STOP TIME:

NORMAL TERMINATION POINT



JS-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	4/25/2007	6	Enhancements to JPM to more closely match procedure and improve examinee evaluation.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
INITIAL CONDITIONS

INITIATING CUE:

- **The CRS directs you to secure Containment Spray Pump "B" from its present parallel operation with LPSI Pump "B" in shutdown cooling mode per 40OP-9SI01, Section 18.0.**
- **All prerequisites are completed.**

CANDIDATE



JS-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM BASIS INFORMATION

TASK: 1250370201, Perform actions for loss of letdown.

TASK STANDARD: All charging pumps are stopped and CHB-UV-255 closed

K/A: 3.3.2-004-A2.07 K/A RATING: RO: 3.4 SRO: 3.7

K/A: K/A RATING: RO: SRO:

APPLICABLE POSITION(S): RO VALIDATION TIME: 12 minutes

REFERENCES: 40AO-9ZZ05 Loss of Letdown, Rev 17

SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path	X	

APPROVAL

DEVELOPER: Alan Malley TECH REVIEW: _____

REVISION DATE: 04/25/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT

TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)

EVALUATOR NAME: _____ (print)

Date _____

GRADE (Check One) SAT UNSAT



JS-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

1. SIMULATOR SETUP:

A. IC#: 54

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION

C. SPECIAL INSTRUCTIONS:

- Reset to IC 54. **For the 2007 NRC Exam, this IC is also used for JPM JS-5.**
- **Verify that PPCS set to 2250 psia**
- Place simulator in RUN and acknowledge alarms.
- Provide Cue.
- Place simulator in RUN.

D. REQUIRED CONDITIONS:

- Letdown isolated, Letdown Control Valves in manual and closed, Normally running Charging Pump in PTL, Pressurizer level at 56% and rising. IC 54 has these conditions built in.

2. SPECIAL TOOLS/EQUIPMENT:

- Ensure appropriate revision of procedure available.
- No Simulator Driver actions are required for this JPM.



JS-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

EVALUATOR NOTE: Examiner will interface with the candidate as the Aux Operator. Ensure the Examiner has a radio and headset to communicate with the Simulator Driver.

INITIATING CUE:

- **The Unit is in mode 1.**
- **Letdown was lost.**
- **The CRS has determined that letdown can NOT be restored.**
- **CRS directs you to perform applicable steps of 40AO-9ZZ05, Loss of Letdown, Appendix "C", Extended Operations Without Letdown.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.



JS-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM START TIME:

	STEP	CUE	STANDARD
1.	WHEN letdown can be restored, THEN <u>GO TO</u> Appendix A, Restoration of Letdown with a Pressurizer Steam Bubble. (Step 1)	If Requested: Letdown can not be restored	Examinee should determine from Initiating Cue that letdown cannot be restored.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	IF Boron equalization is in progress, THEN <u>STOP</u> Boron equalization. (Step 2)		Examinee determines Boron equalization is not in progress. Note: Pressurizer heaters may be on due to dynamic conditions of changing Pzr level. This is not boron equalization.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3.	Notify chemistry that the plant will be operated with letdown flow isolated. (Step 3)	Chemistry is notified of the status of letdown.	Examinee calls chemistry and informs them of the status of letdown.
SAT / UNSAT Comments (required for UNSAT):			



JS-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
4.	<p>WHEN the CRS determines seal injection and charging are to be stopped, OR pressurizer level is 56% or more and rising, THEN perform the following:</p> <ul style="list-style-type: none"> • IF the unit is in Mode 1, 2 or 3, THEN ensure compliance with LCO 3.4.9, Pressurizer. <p>(Step 4)</p>	<p>The CRS will ensure compliance with LCO 3.4.9 if pressurizer level exceeds the Tech Spec limit.</p>	<p>Examinee determines that pressurizer level is $\geq 56\%$ and rising (or will exceed 56% shortly).</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
5.	<p>Ensure controlled Bleedoff is isolated on all standby RCP's.</p> <p>(Step 4)</p>		<p>Examinee determines RCP controlled Bleedoff valves should be open and are open.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			



JS-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
6. *	Close the seal injection flow control valves. (Step 4)		Examinee places the individual seal injection flow controllers in manual and adjusts the output TO 100% to close the valves by using: RCP 1(2) / A (B) SEAL INJECTION FLOW CONTROL CHN-FIC-241 THRU 244 Note: <ul style="list-style-type: none"> • These are reverse acting valves 100% output is full closed • This action may be performed by fully closing one valve at a time or partially closing each valve followed by full closure. NOTE: ALTERNATE PATH. The flow control valve for RCP 2B (CHN-FIC-244) will not respond and will not close so the examinee should go to the contingency step and close CHB-HV-255.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7. *	4.c Contingency c.1 Close CHB-HV-255, Seal Injection Supply Header Isolation Valve. (Step 4)		Examinee closes CHB-HV-255, Seal Injection Supply Header Isolation Valve.
SAT / UNSAT Comments (required for UNSAT):			



JS-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
8. *	Place all charging pumps in pull to lock (PTL). (Step 4)		Examinee places all charging pumps in pull to lock (PTL) by using: CHARGING PUMP 1 P01 *CHA-HS-216 And CHARGING PUMP 3 P01 *CHA-HS-218A CHB-HS-218 (no breaker therefore not required to go to PTL) And CHARGING PUMP 2 P01 CHB-HS-217 (in PTL is setup) NOTE: Critical nature of this step is that all running charging pumps are stopped.
SAT / UNSAT Comments (required for UNSAT):			



JS-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
9.	<p>IF charging has been stopped, AND ANY of the following conditions exist:</p> <ul style="list-style-type: none"> • Pressurizer level is less than 53% • Seal injection is needed <p>THEN perform the following:</p> <ol style="list-style-type: none"> a. Open CHN-PDV-240 b. Start at least one Charging Pump c. Adjust CHN-PDIC-240 to 90-135 psid and place in AUTO. d. IF seal injection is needed, THEN restore seal injection. e. Operate charging as needed to maintain pressurizer level between 33 and 53%. <p>(Step 5)</p>	<p>The CRS has determined that Seal Injection is not needed at this time.</p>	<p>Examinee determines that pressurizer level is > 53%.</p> <p>Note: Examinee proceeds to procedure step 6 regarding VCT level after step is read/addressed.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
10.	<p>IF VCT level needs to be lowered, THEN direct an Operator to perform the following:</p> <ol style="list-style-type: none"> a. Open CHN-V117, VCT drain to the EDT (Blending Room, 120' of the Auxiliary Bldg.). b. WHEN the desired level is reached, THEN close CHN-V117. <p>(Step 6)</p>	<p>The CRS has determined the VCT does not need to be lowered.</p>	<p>NOTE: The operator may determine that VCT level needs to be lowered and take procedural action, or may ask CRS. Step should not be performed based on CUE.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

JPM STOP TIME:

NORMAL TERMINATION POINT



JS-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
001	10/12/2004	3	Revised to reflect procedure change to prevent pressurizer level from exceeding Tech Spec limit.
002	04/20/2005	6	Revised to make step 7 non-critical since no action is required.
003	4/25/2007	6	Enhancements to bring in line with procedure.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
INITIAL CONDITIONS

INITIATING CUE:

- The Unit is in mode 1.
- Letdown was lost.
- The CRS has determined that letdown can NOT be restored.
- CRS directs you to perform applicable steps of 40AO-9ZZ05, Loss of Letdown, Appendix "C", Extended Operations Without Letdown.

CANDIDATE



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

JPM BASIS INFORMATION

TASK: 1220020001 Perform Adjustable Power Signal Calibrations

TASK STANDARD: Calibrate Linear Power Channel

K/A: 3.7-015-A4.02

K/A RATING: RO: 3.9 SRO: 3.9

K/A:

K/A RATING: RO: SRO:

APPLICABLE POSITION(S): RO

VALIDATION TIME: 20 minutes

REFERENCES: 40ST-9NI01, Adjustable Power Signal Calibrations, Revision 37

SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO	
Time Critical	<input type="checkbox"/>	<input checked="" type="checkbox"/>	This JPM tests a Unit difference.
Alternative Path	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____

REVISION DATE: 4/25/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT

TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)

EVALUATOR NAME: _____ (print)

Date _____

GRADE (Check One) SAT UNSAT



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

1. SIMULATOR SETUP:

A. IC#: 54

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- Must run in Simulator A (old CPCs)
- Channel A Linear Power Potentiometer must be adjusted down (IC 54 has this).
- IC 54 also is the setup for JS 4 on the 2007 NRC exam.

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Completed computer printout for NI01.
- Calculator



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

You are in Unit 3, Cycle 11.

The unit is in Mode 1 at 100% power.

Earlier this shift, the Channel A Linear Power indicator failed its channel check per 40ST-9ZZM1, Operations Mode 1 Surveillance Logs. It reads over two percent lower than the other channels.

You are the RO. The CRS directs you to perform 40ST-9NI01, section 8.4 to calibrate only Channel A Linear Power. Another RO has already taken data and input it into the Excel spreadsheet. All prerequisites are complete.

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

JPM START TIME:

	STEP	CUE	STANDARD
1.	8.4.1, Perform calculations for each adjustable power signal requiring adjustment in the appropriate section or appendix as determined by the follow:		Based on the initiating cue, the Examinee uses the table in step 8.4.1 and determines section 8.4.4 for Linear Power Calibrations is needed. Examiner Note: Table 8.4.1 is attached for reference.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	Unit 3 only, perform ONE of the following to complete calculation of new linear power gain adjust: <ul style="list-style-type: none"> • Excel Spreadsheet • Appendix G (Step 8.4.4.1)	Give the examinee the completed computer sheet when this step is reached.	Spreadsheet is used to determine calibration voltage.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3.	If spreadsheet used, attach to this procedure package. (Step 8.4.4.2)		Spreadsheet is kept with procedure.
SAT / UNSAT Comments (required for UNSAT):			



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

	STEP	CUE	STANDARD
4. *	Place the OUTPUT SELECT Switch to the CAL SUM position (NI Drawer) (Step 8.4.4.4)		OUTPUT SELECT Switch is in the CAL SUM position
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
5. *	Place the Input Select Switch to the NI position (Bistable Control Panel) (Step 8.4.4.5)		Input Select Switch is in the NI position
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6. *	IF the SM/CRS directs, THEN perform the following: <ol style="list-style-type: none"> 1. Bypass VAR OVER PWR Channel on the BCP. 2. Independent Verification of Channel bypass. (Step 8.4.4.6)	<p>The CRS directs you to bypass Channel "A" VAR OVER PWR Channel Trip before continuing.</p> <p>Another RO has completed the independent verification.</p>	<p>Channel A VOPT Bypass light on.</p> <p>Examinee asks for an independent verification.</p>
SAT / UNSAT Comments (required for UNSAT):			



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

	STEP	CUE	STANDARD
7. *	Perform the following: 1. Adjust Linear Power Remote Gain Adjust potentiometer on B05 until the DVM reading matches the VOLTAGE reading corresponding to Calorimetric Power (+/- 0.025V) recorded on the manual calculation sheet. 2. Record the DVM reading for the channel adjusted. (Step 8.4.4.7)	Another Operator will read the DVM for you Note: use headsets if another JPM is in progress	Adjust DVM to 5.0 +/-0.025 volts of value recorded in Appendix G. DVM value recorded in step 8.4.4.7. Should be 5 if performed correctly

SAT / UNSAT
Comments (required for UNSAT):

	STEP	CUE	STANDARD
8.	Ensure the Linear Power Remote Gain Adjust potentiometer on B05 is locked. (Step 8.4.4.8)		Linear Power Remote Gain Adjust potentiometer on B05 is locked.

SAT / UNSAT
Comments (required for UNSAT):



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

	STEP	CUE	STANDARD
9.	IF the required Linear Power Calibrations and CPC constant changes are completed on this channel, Then perform Step 8.4.5 for this channel. (Step 8.4.4.9)	No other calibrations will be required at this time.	Examinee goes to step 8.4.5.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
10. *	Perform an as left channel calibration check by performing all of the following: Record data in step 8.4.5.1		Examinee records data in step 8.4.5.1
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
11. *	Check Acceptance Criteria using table in 8.4.5.2		Examinee determines that the acceptance criterion is met. Note: Examinee must use the top row on this table corresponding to reactor power >80% and the column for channel "A".
SAT / UNSAT Comments (required for UNSAT):			



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

	STEP	CUE	STANDARD
12. *	If the acceptance criterion is not met, then recalibrate the affect power signal. (Step 8.4.5.3)		Examinee should determine that the acceptance criterion is met. If it is not met, the Examinee may recalibrate the channel.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
13.	Perform as left channel checks after each channel is adjusted. (Step 8.4.5.4)		Examinee records data per step 8.4.5.4. Note: must use Unit 3, Channel "A".
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
14.	IF a channel/parameter was bypassed AND the SM/CRS directs, THEN perform both of the following.	Another RO will remove the channel from bypass.	
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	4/25/2007	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

Table 8.4.1

Condition (initial)	IF	AND	THEN
	reactor power is between 20% and 80%	any signal is less than the calorimetric calculation by more than 0.5%	perform the following as necessary for each affected channel (unperformed channels may be left blank)
	reactor power is greater than or equal to 80%	the absolute value of the difference between the signal and the calorimetric power is greater than or equal to 2%	
	reactor power is between 75% and 80% during a power ascension to optimize power readings to within minus (-)0.5% to less than plus (+)2.0% prior to reaching 80%.		Unit 3 only - Step 8.4.2 for CPC Channels to be adjusted A ____ B ____ C ____ D ____
	reactor power is greater than or equal to 80%	the CRS directs	Unit 1 & 2 only - Step 8.4.3 for CPC Channels to be adjusted A ____ B ____ C ____ D ____
	during Power Ascension Testing per 72PA-9ZZ07 reactor power is less than 80%	any signal is less than the calorimetric calculation by more than 0.5%	Step 8.4.4 for Linear Power Calibrations A ____ B ____ C ____ D ____
	during Power Ascension Testing per 72PA-9ZZ07 reactor power is less than 80%	any signal is greater than the calorimetric calculation by more than 2%	
	reactor power is between 20% and 80%	any signal is greater than the calorimetric calculation by more than (+)10%	perform Appendix F , CPC Addressable Constants/Linear Power Calculations (Biased). (The biased portion of the excel spreadsheet may also be used)

EXAMINER REFERENCE



JS 5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

INITIAL CONDITIONS

INITIATING CUE:

You are in Unit 3, Cycle 11.

The unit is in Mode 1 at 100% power.

Earlier this shift, the Channel A Linear Power indicator failed its channel check per 40ST-9ZZM1, Operations Mode 1 Surveillance Logs. It reads over two percent lower than the other channels.

You are the RO. The CRS directs you to perform 40ST-9NI01, section 8.4 to calibrate only Channel A Linear Power. Another RO has already taken data and input it into the Excel spreadsheet. All prerequisites are complete.

CANDIDATE

SA-S Key

FORM EP-0541 R PUNGS EMERGENCY PLANNING

FORM EP-0541 R PUNGS EMERGENCY PLANNING

PALO VERDE NAN EMERGENCY MESSAGE FORM

PALO VERDE NAN EMERGENCY MESSAGE FORM

"NAN OPERATIONAL"

1. (check one) This is a drill This is not a drill

2. This NAN call was initiated at: _____ (time)

3. This is Palo Verde Nuclear Generating Station Notification of (check applicable)
 UNUSUAL EVENT
 ALERT
 SITE AREA EMERGENCY
 GENERAL EMERGENCY
 EVENT TERMINATION AT _____

Declared at _____ (time) / _____ (date) PUNGS EAL(S): 1-2, 1-7, 1-14
(Offering current classification only)

4. The wind speed is 10 MPH from DELTA degrees
(35' to 15 min avg) (35' to 15 min avg)

Authenticator Code DELTA This is JOE OREKATOR (check one) STSC Comm. Gov't Liaison

5. There is NO radioactive release due to this event
 A radioactive release is occurring which does NOT exceed federally approved limits due to this event
 A radioactive release is occurring that exceeds federally approved limits due to this event

6. The following action is recommended:
 There are NO PROTECTIVE ACTIONS required
 Shelter 2-mile radius
 Evacuate 2-mile radius and 5-miles in sectors A-B-C
 Evacuate 5-mile radius and 10-miles in sectors _____
 Recommend consideration of KI as a protective measure for emergency workers / general public (circle appropriate one(s))
 Other _____

7. (check one) This is a drill This is not a drill

Approval _____ (ECEO signature) _____ (time) _____ (date)

Responding Agency	Alternate Link	Time	Initial	ACK
Maricopa County Sheriff's Office (24 hrs/day)	NAN Radio BU or 9-602-8176-1030			
AZ Department of Public Safety (24 hrs/day)	NAN Radio BU or 9-602-223-2209			
Buckeye Police Dept. (24 hrs/day)	NAN Radio BU or 9-623-386-4421			
AZ Radiation Regulatory Agency	NAN Radio BU or 9-602-255-4845			
AZ Division of Emergency Mgmt.	NAN Radio BU or 9-602-244-0504			
Maricopa County Dept. of Emergency Mgmt.	NAN Radio BU or 9-602-273-1411			

9. *PAGER* (type in): 602-658-0311 (message): "This is / is not a drill, PUNGS Unit 1, 2, 3. A classification of (A for ALL is for security event / loss of offsite power / ISFSI / natural disaster / or 3 unit events) NIE / ALERT / SAE / GE / TERMINATION declared at _____ EAL(s) _____ This is / is not a drill."
(time)

10. Dispatcher (GCC) (read message from table 9) Black phone in CR (alternate) 81-1085
 NRC Headquarters (NRC Comm will call) 301-816-5100 (alternate) 301-951-0550

A. For a DRILL, EXERCISE, or TEST, retrieve the current month's WHITE Authenticator Code.

B. For an ACTUAL EVENT, retrieve the LOWEST NUMBERED COLORED Authenticator Code.

C. Complete steps 1, 4, and 7 of this form. For step 4, use ERFDADS, select "TOP MENU", then "PAID" displays, then "MET DATA" to obtain required meteorological information. (If wind speed is ≥ 50 mph, or if data displayed is not green numerals on a black background (bad data), or if ERFDADS is not available, then call National Weather Service 9-602-275-7003. Request met data for the SRP switchyard at PUNGS.)

D. Instruct the EC to complete steps 3, 5 & 6, review for accuracy, and sign approval for transmitting. The declared time in step 3 is when the event was classified. Government Liaison completes steps 3, 5 & 6 and the EOD reviews and signs.

E. _____ Pick up the receiver on the NAN phone, _____ push the "A" button and then push the "F". Allow approximately 15 seconds for all stations to access the phone. _____ Record the time in step 2.

F. Depress the talk bar on the handset, announce the following message: "STAND BY FOR WARNING-POINT ROLL CALL, ALL STATIONS OBTAIN COPY OF PALO VERDE NAN EMERGENCY MESSAGE FORM." (repeat message)

G. Announce each NAN agency name. As agencies acknowledge, log time & initial in step 8.

H. When agencies have acknowledged, read aloud steps 1 - 7.

I. Announce the following message: "STAND BY FOR ACKNOWLEDGEMENT ROLL CALL, MARICOPA COUNTY SHERIFF'S OFFICE DID YOU COPY?"

J. Allow time for the Sheriff's office to repeat back the entire message.

K. Ensure message was read back verbatim. Correct any incorrect information.

L. Call out each NAN agency name. Ensure each agency acknowledges their copy and check ACK.

M. When all agencies acknowledge receipt of the message, announce: "END OF MESSAGE".

N. If one or more of the expedited responding agencies does not acknowledge following the Sheriff's Office read back and acknowledgement roll call, contact agency via the alternate link (phone preferred) listed in step 8.

O. Retrieve the appropriate information from step 1 and 3 to fill out step 9.

P. Use the "WPAGER" program on a computer in the Control Room or in the STSC (Government Liaison in EOP). Type in pager number 602-658-0311, then type in message from step 9 in the message window, then click send. (Government Liaison skip steps Q - W.)

Q. In step 10, notify GCC dispatcher by phone by reading the message from step 9.

R. Verify with the NRC Communicator that the NRC Headquarters' notification per step 10 has been completed.

S. For an Actual Event, call personnel in the unaffected units and request them to update the colored authenticator code envelope to reflect the next number.

T. FAX the NAN form (left half of this page) to the Government Liaison in the EOP.

U. Note any problems that have occurred with the roll call, the communications or with the acknowledgement of offsite agencies on the Emergency Action Log sheet, EP-0012.

V. For PAR updates, complete steps 1 through 10, but use original classification and event times to complete step 3, provide updated PAR information in items 4, 5 and 6.

W. GO TO EPIP-01, Appendix C, Subsequent Actions (N/A for Government Liaison).

SA 5

2.70 Form EP-0541, Palo Verde NAN Emergency Message Form (sample)

FORM EP-0541 R PVNGS EMERGENCY PLANNING

PALO VERDE NAN EMERGENCY MESSAGE FORM

"NAN OPERATIONAL"

PALO VERDE NAN EMERGENCY MESSAGE FORM

FORM EP-0541 R PVNGS EMERGENCY PLANNING

PALO VERDE NAN EMERGENCY MESSAGE FORM

1. (check one) This is a drill This is not a drill

2. This NAN call was initiated at: _____ (time) _____ (date)

3. This is Palo Verde Nuclear Generating Station Notification of (check applicable)

- UNUSUAL EVENT
- ALERT
- SITE AREA EMERGENCY
- GENERAL EMERGENCY
- EVENT TERMINATION AT _____ (time) / _____ (date)

Declared at _____ (time) _____ (date) PVNGS EAL(s): _____ (driving current classification only)

4. The wind speed is 10 MPH from 200 degrees

Authenticator Code DELTA

This is JOE OPERATOR (check one) STSC Comm. Gov't Liaison

- There is NO radioactive release due to this event
 - A radioactive release is occurring which does NOT exceed federally approved limits due to this event
 - A radioactive release is occurring that exceeds federally approved limits due to this event
6. The following action is recommended:
- There are NO PROTECTIVE ACTIONS required
 - Shelter 2-mile radius
 - Evacuate 2-mile radius and 5-miles in sectors _____
 - Evacuate 5-mile radius and 10-miles in sectors _____
 - Recommend consideration of KI as a protective measure for emergency workers / general public (circle appropriate one(s))
 - Other _____

7. (check one) This is a drill This is not a drill

Approval _____ (EEOCD signature) _____ (time) _____ (date)

Responding Agency	Alternate Link	Time	Initial	ACK
Maricopa County Sheriff's Office (24 hrs./day)	NAN Radio BU or 9-602-876-1030			
AZ Department of Public Safety (24 hrs./day)	NAN Radio BU or 9-602-223-2209			
Buckeye Police Dept. (24 hrs./day)	NAN Radio BU or 9-623-386-4421			
AZ Radiation Regulatory Agency	NAN Radio BU or 9-602-255-4845			
AZ Division of Emergency Mgmt.	NAN Radio BU or 9-602-244-0504			
Maricopa County Dept. of Emergency Mgmt.	NAN Radio BU or 9-602-273-1411			

9. "WPAGER" (type in): 602-658-0311 (message): "This is / is not a drill, PVNGS Unit 1, 2, 3, A, classification of (A for ALL is for security event / loss of offsite power / ISFSI / natural disaster / or 3 unit events) NUC / ALERT / SAE / GE / TERMINATION declared at _____ (time) _____ (date) This is / is not a drill."

Dispatcher (GCC) (used message from step 9)	Black phone in CR
NRC Headquarters (NRC Comm will call)	301-916-5100 (alternate) 301-951-0550 (alternate)

- A. For a **DRILL, EXERCISE, or TEST**, retrieve the current month's **WHITE** Authenticator Code.
- B. For an **ACTUAL EVENT**, retrieve the **LOWEST NUMBERED COLORED** Authenticator Code.
- C. Complete steps 1, 4, and 7 of this form. For step 4, use ERFDADS, select "**TOP MENU**", then "**P&ID**" displays, then "**MET DATA**" to obtain required meteorological information. (if wind speed is \geq 50 mph, or if data displayed is not green numerals on a black background (bad data), or if ERFDADS is not available, then call National Weather Service 9-602-275-7003. Request met data for the SRP switchyard at PVNGS.)
- D. Instruct the EC to complete steps 3, 5 & 6, review for accuracy, and sign approval for transmitting. The declared time in step 3 is when the event was classified. Government Liaison completes steps 3, 5 & 6 and the EOD reviews and signs.
- E. _____ Pick up the receiver on the NAN phone. _____ push the "A" button and then push the "x". Allow approximately 15 seconds for all stations to access the phone. _____ Record the time in step 2.
- F. Depress the talk bar on the handset, announce the following message: "**STAND BY FOR WARNING-POINT ROLL CALL, ALL STATIONS OBTAIN COPY OF PALO VERDE NAN EMERGENCY MESSAGE FORM.**" (repeat message)
- G. Announce each NAN agency name. As agencies acknowledge, log time & initial in step 8.
- H. When agencies have acknowledged, read aloud steps 1 - 7.
- I. Announce the following message: "**STAND BY FOR ACKNOWLEDGEMENT ROLL CALL, MARICOPA COUNTY SHERIFF'S OFFICE DID YOU COPY?**"
- J. Allow time for the Sheriff's office to repeat back the entire message.
- K. Ensure message was read back verbatim. Correct any incorrect information.
- L. Call out each NAN agency name. Ensure each agency acknowledges their copy and check ACK.
- M. When all agencies acknowledge receipt of the message, announce: "**END OF MESSAGE**".
- N. If one or more of the expected responding agencies does not acknowledge following the Sheriff's Office read back and acknowledgement roll call, contact agency via the alternate link (phone preferred) listed in step 8.
- O. Retrieve the appropriate information from step 1 and 3 to fill out step 9.
- P. Use the "**WPAGER**" program on a computer in the Control Room or in the STSC (Government Liaison in EOF). Type in pager number **602-658-0311**, then type in message from step 9 in the message window, then click send. (Government Liaison skip steps Q - W.)
- Q. In step 10, notify GCC dispatcher by phone by reading the message from step 9.
- R. Verify with the NRC Communicator that the NRC Headquarters' notification per step 10 has been completed.
- S. For an **Actual Event**, call personnel in the unaffected units and request them to update the colored authenticator code envelope to reflect the next number.
- T. FAX the NAN form (left half of this page) to the Government Liaison in the EOF.
- U. Note any problems that have occurred with the roll call, the communications or with the acknowledgement of offsite agencies on the Emergency Action Log sheet, EP-0012.
- V. For **PAR updates**, complete steps 1 through 10, but use original classification and event times to complete step 3, provide updated **PAR** information in items 4, 5 and 6.
- W. GO TO EPIP-01, Appendix C, Subsequent Actions (N/A for Government Liaison).

Power Operations

40OP-9ZZ05

Revision
117

4.0 POWER ASCENSION ABOVE 20%

Power ascension above 20% will primarily be accomplished by adjusting RCS boron concentration. This method is preferred due to the uniform power change across the core versus that of CEA movement. The RCS boron concentration should be adjusted so that Group 5 will satisfy the Power Dependent Insertion Limits (PDILs) when 20% power is attained. Power ascension rate shall be determined by the Fuel Preconditioning guidelines, Appendix A.

This section does not address any specific initial xenon condition such as startup immediately after a trip where the ASI and reactivity are greatly affected as a result of changing xenon conditions. The user should be aware that power ascension at a constant dilution rate may not be uniform due to changes in the xenon concentration. Changes in the dilution rate may be necessary to maintain a desired power ascension. Once the desired power level is achieved, periodic dilution of the RCS will be necessary until a new xenon equilibrium condition is established.

4.1 Personnel Indoctrination

- 4.1.1 This section will be used by the Control Room Supervisor who will direct the operation of Reactor Operators to operate primary and secondary systems from the Control Room.
- 4.1.2 The time required for power ascension will vary dependent on Fuel Preconditioning Guidelines, Appendix A.
- 4.1.3 **IF** the final steady state power level is restricted to less than 100% for administrative, plant configuration, or other reasons, **THEN** the user may exit this section.
- 4.1.4 40OP-9MT01, Moisture Separator Reheater (MT), will be performed in parallel with this section. It has generator load dependent steps.
- 4.1.5 Plant activities may preclude the performance of specific steps in the order presented in this procedure.
- 4.1.6 The power calibrations required by SR 3.3.1.4 may be waived during initial cycle power ascension physics testing.

Power Operations

40OP-9ZZ05

Revision
117

4.1.7 A power increase following a previous "significant" downpower wherein power was stabilized for an "extended" period may result in: 1 - ASI exceeding the Technical Specification positive ASI limit, and/or 2 - A reduction in Power Operating Limits (POLs) below the current power level. Based on Reactor Engineering judgment and the SIMULATE-3 cases performed to evaluate transportability to Palo Verde, "significant" and "extended" can be generally defined as "20% reduction" and "5 hours" respectively. The ASI and/or POL limits may become limiting prior to or after the final power level has been reached due to Xenon redistribution, particularly if ASI has already peaked and is heading in the positive direction prior to initiation of the power increase. Reactor Engineering should be requested to model the proposed power ascension using SIMULATE-3 to determine if ASI and/or the POL will become limiting or consideration should be given to delay the power ascension until ASI has turned back towards the top of the core. Reference CRDR #2686632, OE 16602 & OE 17718.

4.2 Prerequisites

- MT 4.2.1 **IF** the beginning power level is above 20% or the final target power level is not 100%,
THEN it is permissible to N/A those steps which do not apply.
- N/A 4.2.2 Reactor power just below 20%.
- MT 4.2.3 Reactor Engineering has been contacted to obtain their predictions of core performance for this evolution.
- MT 4.2.4 System Engineering, Thermal Performance Group, has been contacted to address the COLSS constants for Steam Generator Blowdown. (CRDR 3-7-0202)
- MT 4.2.5 TSCCR status on Steam Generator Blowdown COLSS constants has been addressed. (CRDR 3-7-0202)
- MT 4.2.6 Energy Control Center is cognizant of the intent to increase power level.
- 4.2.7 Most limiting loading rate for Power changes has been determined based on Appendix A - Fuel Preconditioning Guidelines, Appendix C - Turbine Load Changes or recommendation from Reactor Engineering, whichever is most limiting.
- MT 4.2.8 For power operation above 50%, ensure a second Feedwater Pump is in Hot Standby per 40OP-9FT01, Feedwater Pump Turbine A, or 40OP-9FT02, Feedwater Pump Turbine B.
- MT 4.2.9 Maximum load limitation based on equipment availability (Appendix D, Operating Limits) administrative or other reasons has been determined.

Power Operations	40OP-9ZZ05	Revision 117

- mt 4.2.10 Mode checklist for power operations above 20% power per 40OP-9ZZ11, Mode Change Checklist has been completed.
- mt 4.2.11 AMI setpoint has been adjusted to value from Appendix I - Manual AMI Setpoint Selection.
- mt 4.2.12 The determination has been made to perform a rodded or unrodded power ascension per section 7.0, ASI Control During Power Operation.
- mt 4.2.13 40ST-9ZZM1, Operations Mode 1 Surveillance Logs is current for operation at greater than 20% power:
- mt 4.2.14 Water Reclamation Facility has been informed of the power ascension.
- mt 4.2.15 **IF** a Power Change Worksheet is requested by the Shift Manager/CRS, **THEN** ensure a Power Change Worksheet has been completed using Appendix O - Power Change Worksheet.

Power Operations

40OP-9ZZ05

Revision
117

4.3 Instructions

CAUTION

mh

CPC and COLSS displays of ASI value can have a large difference between them due to design differences and calculations processes. CPC's can generate an Auxiliary Trip of the unit prior to COLSS indicating a problem with ASI.

mh

4.3.1 Maintain ASI between (-)0.45 and (+)0.45 as read on CPC point ID 187 [0187], Hot Pin ASI by performing ALL of the following:

----- **NOTE** -----

mh

The more frequently that CPC ASI is monitored the better the picture that will be provided to the Control Room of the trend of ASI.

mh

1. Select CPC point ID 187 [0187], Hot Pin ASI on all Operable CPC channels at least every 15 minutes until ASI swings have stabilized.

mh

2. Select the most limiting ASI value from the CPC's. (The most limiting ASI value would be the one closest to the (-)0.45 and (+)0.45 ASI units limits.)

mh

3. **IF** the most limiting CPC point ID 187 [0187], Hot Pin ASI indicates a value outside the limits of (-)0.45 and (+)0.45, **AND** is trending to the CPC AUX Trip value of ± 0.5 , **THEN initiate** a manual reactor trip.

4.3.2 Validate Secondary Calorimetric Power (COLSS PT JSCALOR) by performing **ALL** the following:

mh

4.3.2.1 Obtain a COLSS Detail Report using 77OP-9RJ02, PMS User Guide.

----- **NOTE** -----

mh

COLSS Inputs appear on page 1 of the Detail Report. An invalid parameter will not print out. There will be a blank space rather than a numerical value.

mh

4.3.2.2 Check all parameters listed under the SELECTED COLSS INPUTS column have valid inputs.

Power Operations

40OP-9ZZ05

Revision
117

mt 4.3.2.3 Check page 2 of the Detail Report, Block F for JSCALOR parameters. BSCAL should indicate a value.

mt 4.3.2.4 **IF** all SELECTED COLSS INPUTS display a valid input, **AND** BSCAL indicates a value, **THEN** JSCALOR is valid.

4.3.3 **IF** Secondary Calorimetric Power (COLSS PT JSCALOR) is unavailable, **THEN** a validated Core Delta T power (COLSS PT NKBDELTC) may be used after performing ALL the following:

N/A 4.3.3.1 Obtain a COLSS Detail Report using 77OP-9RJ02, PMS User Guide.

----- **NOTE** -----

mt COLSS Inputs appear on page 1 of the Detail Report. An invalid parameter will not print out. There will be a blank space rather than a numerical value.

N/A 4.3.3.2 Check all parameters listed under the SELECTED COLSS INPUTS column have valid inputs.

----- **NOTE** -----

mt Mass flowrate appears on page 2 of the Details Report, block D.

N/A 4.3.3.3 Check that TOTAL REACTOR COOLANT MASS FLOWRATE is greater than 0.16236 E +09 LBM/HR.

----- **NOTE** -----

mt In the COLSS Detail Print Report JSCALOR is BSCAL. BDELTC and JSCALOR appear on page 2 of the Detail Report, blocks E1 and F respectively.

N/A 4.3.3.4 Check that the deviation between BDELTC and JSCALOR is less than 5%.

N/A 4.3.4 **IF** Core Delta T power (COLSS PT NKBDELTC) is **not** available, **THEN** contact Reactor Engineering.

mt 4.3.5 Maintain the loading rate less than the rate determined in Step 4.2.7.

mt 4.3.6 PERFORM Appendix N - Power Ascension Ramprate OAP to determine if the Power Ascension Ramprate OAP is available.

Power Operations

40OP-9ZZ05

Revision
117

4.3.7 Monitor the power ascension using **ONE** of the following:

N/A

1. **IF** the Power Ascension Ramprate OAP is available, **THEN perform** the Power Ascension Ramprate OAP to monitor the power ascension during performance of this procedure.
2. **IF** Power Ascension Ramprate OAP is **not** available, **THEN perform** Appendix J - Power Ascension Ramprate Data Sheet to monitor the power ascension during performance of this procedure.

_____ 4.3.8 Ensure FWN-HV-103, HP Feedwater Heater Train A/B Bypass Valve is closed.

_____ 4.3.9 Inform Chemistry of any power increase. (REFER TO SR 3.4.17.2)

_____ 4.3.10 Direct Chemistry to perform **BOTH** of the following during the power ascension.

- Monitor secondary chemistry.
- RCS boron samples every six hours.

_____ 4.3.11 Operate SG blowdown, condensate demineralizers and chemical additions as directed by Chemistry and Operations Water Treatment.

----- **NOTE** -----

Power ascension rate may change with a constant makeup flow, depending on xenon conditions and boron concentration.

_____ 4.3.12 Calculate RMW addition rate and volume. (Use the Core Data Book or Boron Operator Assistance Program.)

_____ 4.3.13 Ensure the actual azimuthal power tilt does not exceed the maximum allowable azimuthal power tilt in LCO 3.2.3.

STEAM GENERATOR TUBE RUPTURE

INSTRUCTIONSCONTINGENCY ACTIONS

15. **WHEN** T_h is less than 540°F,
THEN isolate the most affected Steam
Generator by performing the following:

- a. Close the ADVs on the most
affected Steam Generator.
- b. Close the MSIVs on the most
affected Steam Generator.
- c. Close the MSIV Bypass Valve on
the most affected Steam
Generator.

- d. Close the Economizer FWIVs on
the most affected Steam
Generator.

c.1 Close **ONE** of the following on the
most affected Steam Generator:

SG1

- SGE-V048, "MSIV BYPASS
MANUAL ISOLATION VALVE"

SG 2

- SGE-V084, "MSIV BYPASS
MANUAL ISOLATION VALVE"

(continue)

STEAM GENERATOR TUBE RUPTURE

INSTRUCTIONS

CONTINGENCY ACTIONS

15. (continued)

e. Close the Downcomer Isolation Valves on the most affected Steam Generator.

e.1 Ensure **BOTH** of the following valves are closed on the most affected Steam Generator:

SG 1

- SGN-HV-1142, SG 1 FW Isolation Block Valve
- SGN-HV-1143, SG 1 FW Isolation Bypass

SG 2

- SGN-HV-1144, SG 2 FW Isolation Block Valve
- SGN-HV-1145, SG 2 FW Isolation Bypass

f. Close the Blowdown Containment Isolation Valves on the most affected Steam Generator.

f.1 PERFORM Appendix 3, Manual Isolation of Blowdown Valves and close the blowdown valves on the most affected Steam Generator.

(continue)

STEAM GENERATOR TUBE RUPTURE

INSTRUCTIONSCONTINGENCY ACTIONS

15. (continued)

- g. Close **BOTH** of the steam trap isolation valves on the most affected Steam Generator:

SG 1

- SGA-UV-1133, Steam Trap M23 Isolation
- SGB-UV-1135A / 1135B, Steam Trap M01 / M02 Isolations

SG 2

- SGA-UV-1134, Steam Trap M24 Isolation
- SGB-UV-1136A / 1136B, Steam Trap M03 / M04 Isolations

- h. Check that the Steam Generator Safety Valves are closed.

- g.1 Locally isolate **ALL** of the following steam traps on the most affected Steam Generator:

SG 1

- SGE-V096, "STEAM TRAP SGN-M23 ISOLATION"
- SGE-V127, "STEAM TRAP SGN-M01 ISOLATION"
- SGE-V133, "STEAM TRAP SGN-M02 ISOLATION"

SG 2

- SGE-V092, "STEAM TRAP SGN-M24 ISOLATION"
- SGE-V139, "STEAM TRAP SGN-M03 ISOLATION"
- SGE-V145, "STEAM TRAP SGN-M04 ISOLATION"

(continue)

STEAM GENERATOR TUBE RUPTURE

INSTRUCTIONSCONTINGENCY ACTIONS

15. (continued)

- i. Ensure the Aux Feed Pump A Steam Supply Valve from the most affected Steam Generator is closed:

SG 1

- SGA-UV-134, SG 1 Steam Supply to Aux Feed Pump A

SG 2

- SGA-UV-138, SG 2 Steam Supply to Aux Feed Pump A

- j. Ensure the Auxiliary Feedwater Isolation Valves to the most affected Steam Generator are closed.

SG 1

- AFB-UV-34, Aux Feedwater to SG1 Downstream Valve
- AFC-UV-36, Aux Feedwater to SG1 Downstream Valve

SG 2

- AFA-UV-37, Aux Feedwater to SG2 Downstream Valve
- AFB-UV-35, Aux Feedwater to SG2 Downstream Valve

ANNUNCIATOR WINDOW INDEX

<u>GROUP</u>	<u>PT. ID</u>	<u>POSSIBLE CAUSE</u>	<u>SETPOINT</u>
A	RCPS100X	Pressurizer Pressure Ch X Lo	2160 psia
	RCPS100Y	Pressurizer Pressure Ch Y Lo	2160 psia
B	RCPS100H	Pressurizer Pressure Hi	2285 psia

RESPONSE SECTION**GROUP A**

PT. ID	POSSIBLE CAUSE	SETPOINT
RCPS100X	Pressurizer Pressure Ch X Lo	2160 psia
RCPS100Y	Pressurizer Pressure Ch Y Lo	2160 psia

AUTO ACTION

- ___ 1. Backup heaters on at 2200 psia

FIRST PRIORITY OPERATOR ACTION

- ___ 1. Check pressurizer pressure by observing RCN-PT-100X and RCN-PT-100Y on RCN-PR-100 on B04.
- ___ 2. **IF** the controlling channel has failed,
THEN place handswitch RCN-HS-100 on B04 to the unaffected channel.
- ___ 3. **IF BOTH** RCN-PT-100X and RCN-PT-100Y fail low,
THEN perform the following:
- ___ 3.1 Take manual control of RCN-PIK-100, RCN-PIC-100 and the Backup heaters.
- ___ 3.2 Stop pressurizer heaters.
- ___ 3.3 Use main spray (in manual) to lower plant pressure.
- ___ 3.4 **IF** RCS pressure is approaching 2383 psia,
THEN perform the following:
- ___ 3.4.1 Manually trip the reactor.
- ___ 3.4.2 GO TO 40EP-9E001, Standard Post Trip Actions.
- ___ 4. **IF** the main spray valve(s) are not closed,
THEN take manual control of pressurizer pressure control RCN-PIK-100 on B04 and close all main spray valves.

(Continued)

FIRST PRIORITY OPERATOR ACTION (Cont'd)**NOTE**

The actions in the following step should be taken in a timely manner in order to minimize the possibility of receiving a SIAS/CIAS actuation.

- _____ 5. **IF** the main spray valve(s) remain open,
THEN perform the following:
- _____ 5.1 Manually trip the reactor.
- _____ 5.2 Trip all 4 RCPs.
- _____ 5.3 GO TO 40EP-9EO01, Standard Post Trip Actions.
- _____ 6. **IF** the auxiliary spray valve(s) are **NOT** closed,
THEN attempt to close them using CHA-HS-205 and/or CHB-HS-203.
- _____ 7. Ensure backup heaters are on.
- _____ 8. **IF ANY** of the proportional heater breakers have tripped,
THEN close the heater breaker by selecting the handswitch to "ON".
- RCN-HS-100-1
 - RCN-HS-100-2

SECOND PRIORITY OPERATOR ACTION

- _____ 1. Check the ability to maintain pressure with the available pressurizer heaters.
- _____ 2. Monitor pressurizer level RCA-LI-110X, RCB-LI-110Y and level recorder RCN-LR-110 for indication of possible leak.
- _____ 3. **IF** a reactor trip is not required,
THEN minimize rate of load changes to facilitate pressure control until the cause is determined and corrected.
- _____ 4. Perform independent verification on all applicable valves, breakers and components that were operated by this alarm response per 02DP-0ZZ01, Verification of Plant Activities.

End of Response

**REACTOR POWER CUTBACK
(LOSS OF FEEDPUMP)****3.0 LOSS OF FEEDPUMP**INSTRUCTIONSCONTINGENCY ACTIONS

- ___ 30. **IF** CEA Reg Group 3 is higher than 95 inches withdrawn, **THEN** perform the following to restore normal CEA group overlap:
- a. PERFORM Appendix E, Reactivity Impact While Restoring CEA Overlap.
 - b. Monitor CEA alignment using the CEAC CRT when moving CEAs.
 - c. Maintain the Tave/Tref mismatch within $\pm 3^{\circ}\text{F}$.
 - d. Wait a minimum of 1 minute between CEA pulls.
 - e. Withdraw Reg Group 4 in Manual Group "MG" in 10 inch increments to 95 inches below the position of Reg Group 3 while closely monitoring the reactor response.
 - f. **IF** the rise in reactor power exceeds 1% during any CEA pull, **THEN** adjust the amount of the next CEA withdrawal to obtain a less than 1% rise.
 - g. REFER TO Appendix A, CPC / LCO Info.

**REACTOR POWER CUTBACK
(LOSS OF FEEDPUMP)****Appendix E, Reactivity Impact While Restoring CEA Overlap**INSTRUCTIONSCONTINGENCY ACTIONS

___ 1. Determine how a reactivity insertion will impact **BOTH** of the following:

- Reactor power
- RCS temperature

----- **NOTE** -----

This appendix is only applicable while withdrawing Reg Group 4 in Manual Group between 0 and 50 inches during the restoration of normal CEA overlap following a RPCB.

----- **NOTE** -----

The negative reactivity impact of xenon building in has not been included in this evaluation. The effects of xenon will result in a lower temperature and power rise than indicated below.

___ 2. Determine the maximum expected reactor power and RCS temperature changes for a 10 inch withdrawal of RG-4 using **ANY** of the following information:

BOC (0 EFPD)

- 3°F Tc or 2% power rise

MOC (250 EFPD)

- 2°F Tc or 1.5% power rise

EOC (510 EFPD)

- 1°F Tc or 1% power rise

**REACTOR POWER CUTBACK
(LOSS OF FEEDPUMP)****Appendix E, Reactivity Impact While Restoring CEA Overlap**INSTRUCTIONSCONTINGENCY ACTIONS

NOTE

The goal is to allow a timely restoration of the normal CEA overlap while not challenging a CPC generated VOPT. It is desired to keep the rise in Reactor power at 1% or less for each CEA pull with a 1 minute hold between pulls. However, if any one 10 inch CEA pull results in up to a 2% power rise, a CPC VOPT will still not be challenged. Normal CEA overlap is restored in step 30. in section 3.0 and step 14. in section 4.0.

- ___ 3. **IF** the rise in reactor power exceeds 1% during any CEA pull, **THEN** adjust the amount of the next CEA withdrawal to obtain a less than 1% rise.
- ___ 4. **WHEN** CEA overlap has been restored, **THEN** REFER TO the Core Data Book for further reactivity impacts.

End of Appendix



SA-5
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1240100402 Determine Protective Action Recommendations

TASK STANDARD: A General Emergency is declared within 15 minutes. Form EP-0541 is filled out and notification initiated within 13 minutes. Protective Action Recommendations made for affected sectors A-B-C.

K/A: 2.4.44 K/A RATING: RO: 2.1 SRO: 4.0

K/A: K/A RATING: RO: SRO:

APPLICABLE POSITION(S): SRO VALIDATION TIME: 15 minutes

REFERENCES: EPIP-01, STSC Actions, EPIP-99 EPIP Standard Appendices.

SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT
 CLASSROOM

JPM TYPE

	YES	NO
Time Critical	X	
Alternative Path		X

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____

REVISION DATE: 5/3/07 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT

TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)

EVALUATOR NAME: _____ (print)

Date _____

GRADE (Check One) SAT UNSAT



SA-5
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

1. SIMULATOR SETUP:

- A. IC#: N/A (May be performed in the simulator or classroom, NO setup required)
- B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	N/A	
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- None

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- EPIP-01 and EPIP-99
- Form EP-0541 available with the following information filled out:
 - Section 1 and 6 – check the “This is not a drill” box
 - Section 4 – filled in wind speed and direction, authenticator code, operator name, and STSC communicator box checked.



SA-5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

- **You are in Unit 1.**
- **A SGTR > 200 gpm has occurred.**
- **The crew tripped the reactor.**
- **On the reactor trip a Loss of Power to the grid occurred.**
- **DG 'A' did not automatically start.**
- **HPSI pump 'B' has a white SEIS light illuminated.**
- **The CRS entered the Functional Recovery Procedure.**
- **The crew has restored power to PBA-S03 using the 'A' DG and has started the 'A' HPSI pump.**
- **RVLMS indicated <21% in the outlet plenum 10 minutes ago, but now indicates >21%.**
- **The secondary operator has stabilized the secondary plant using AF 'A' and the ADVs.**

Your task is to perform the duties of the Emergency Coordinator until relieved.

This is a Time Critical JPM.

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.



SA-5
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- Performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- Locked valves will be involved. No attempt will be made to actually operate any valves.



**SA-5
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	Obtain Procedure EPIP-01, STSC Actions		EPIP 01 obtained. Start Time: _____ (Begins when examinee receives and acknowledges Initiating Cue)
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	IF a toxic gas release has occurred, THEN , consider the initiation of a CRVIAS in the affected Control Room(s). (Step 3.1)		Examinee N/As this step since there is no toxic gas release.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3.	IF EPIP-09 entry is required AND EPIP-09 has not already been implemented, THEN GO TO EPIP-09. (Step 3.2)		Examinee N/As this step since there is no security event.
SAT / UNSAT Comments (required for UNSAT):			



**SA-5
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

	STEP	CUE	STANDARD
4.	<p>Contact the Shift Manger (or designee) in the other two units to discuss the possibility that EALs may be exceeded in more than one unit.</p> <p>IF only ONE unit is impacted, THEN designate the affected Shift Manager (or designee) the On-Shift EC.</p> <p>(Step 3.3)</p>	<p>When requested CUE:</p> <p>Units 2 and 3 have a LOOP in progress which is EAL 2-1.</p>	<p>Examinee determines that the Unit 1 Shift Manager should be the On-Shift EC.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
5. *	<p>IF an STSC Communicator is available in the EC's control room, THEN direct them to assume the STSC Communicator role.</p> <p>IF an STSC Communicator is NOT available in the EC's control room, THEN contact the Area 2 Auxiliary Operator via the plant radio to report to the control room.</p> <p>(Steps 3.4 and 3.5)</p>	<p>When requested CUE:</p> <p>An STSC communicator is <u>NOT</u> available in the EC's control room.</p> <p><i>When called as Communicator: Wait four minutes and then give the examinee the copy of Form 541.</i></p> <p>Area 2 will report to the control room as the STSC Communicator.</p> <p>Inform the EC to fill out steps 3, 5 and 6 of the form, review the form for accuracy, and sign the form.</p>	<p>The examinee calls Area 2 Auxiliary Operator via the plant radio to report to the control room.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			



SA-5
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

	STEP	CUE	STANDARD
6. *	Ensure the Shift Manger (or designee) in the affected unit performs ALL of the following:		
	<ul style="list-style-type: none"> Direct an EC qualified individual (normally the STA) to independently determine if any EALs have been met or exceeded. 	The STA will determine if any EALs have been met or exceeded.	Examinee directs STA to independently determine if any EALs have been met or exceeded.
	<ul style="list-style-type: none"> Evaluate the fission product barrier thresholds and the event based EALs where and EAL may have been met. USE EPIP-99, Appendix A and determine the EAL(s) which are currently being met or exceeded. 		The examinee reviews Appendix A and determines that the following EAL has been met: SGTR > 132 gpm with a prolonged release of contaminated secondary coolant occurring from the ruptured S/G to the environment [1-7], Release of contaminated Secondary side to atmosphere (i.e., S/G safety or ADV) with S/G P/S leakage > Tech Spec allowable S/G P/S leakage [1-14], and Valid RVLMS level currently or previously < 21% plenum [1-2] (Examinee may add EAL 1-6 although not required.)
	<ul style="list-style-type: none"> IF time permits, THEN review the classification with another EC qualified individual. 	The STA concurs with your classification.	The examinee ensures the STA concurs with his classification.
SAT / UNSAT Comments (required for UNSAT):			



**SA-5
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

	STEP	CUE	STANDARD
7. *	<p>IF an EAL has been met or exceeded, THEN the EC determines the classification and logs the declaration time.</p> <p>(Step 3.9)</p>		<p>The examinee records the declaration time next to the classification for General Emergency.</p> <p>End Time: _____</p> <p>Classification Time: _____ <15 min) (Start time – End time < 15 minutes)</p> <p>Notification Start Time: _____</p> <p>(Note: Classification of event starts the Notification time critical 13 minute portion of JPM.)</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
8. *	<p>Add 15 minutes to the time noted above (declaration time) to determine when the notification of offsite agencies must commence.</p> <p>(Step 3.10)</p>		<p>The examinee adds 15 minutes to the time of declaration and notes the time in the procedure.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
9.	<p>IF the EC determines that an EAL had previously been met, AND no EALs are currently exceed, THEN, GO TO Section 8.0.</p> <p>(Step 3.11)</p>	<p>If requested: conditions have not changed since the Initiating Cue was given.</p>	<p>The examinee N/As this step due to EALs still being met.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			



SA-5
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
10.	<p>IF the EC determines that no EAL(s) have been met, THEN, exit this procedure.</p> <p>(Step 3.12)</p>		The examinee N/As this step due to EALs being met.
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
11.	<p>IF the event endangers personnel, THEN transmit the following message.....</p> <p>(Step 3.13)</p>		The examinee N/As this step due to no personnel being endangered.
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
12. *	<p>IF the STSC has NOT already been activated in the Emergency Coordinator's unit, THEN, the On-Shift EC performs ALL of the following:</p> <p>Transmit the following message over the Unit Evacuation System: "Attention all plant personnel....."</p> <p>(Step 3.14)</p>		The examinee makes the announcement over the Unit Evacuation System.
<p>SAT / UNSAT Comments (required for UNSAT):</p>			



SA-5
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

	STEP	CUE	STANDARD
13. *	<p>The examinee goes to Section 7.0 of the procedure for a General Emergency.</p> <p>(Step 3.15)</p>		<p>The examinee makes the announcement over the Unit Evacuation System.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
14. *	<p>The examinee notes the time of the General Emergency Classification and the time offsite agency notifications must commence in the procedure.</p> <p>(Step 7.2 and 7.3)</p>		<p>The examinee notes both times in the procedure.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
15. *	<p>WHEN the STSC Communicator arrives in the control room, THEN direct the communicator to perform EPIP-01, Appendix C, STSC Communicator Actions.</p> <p>(Step 7.4)</p>		<p>The examinee directs the STSC communicator to perform Appendix C.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			



**SA-5
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

	STEP	CUE	STANDARD
16. *	Gather the information for the Emergency Message Form: (Step 7.5)		The examinee gathers the information for the form
	List the EALs that placed the unit/site in the current classification.		* The examinee lists EAL 1-2, 1-7 and 1-14. Examinee may add EAL 1-6 but it is not required.
	IF radioactive release is occurring AND it is NOT known if a federal limit is being exceeded, THEN specify that the release is NOT exceeding the federal limit.	If requested: There are no other RMS alarms in.	* The examinee checks the box for a release is occurring and is NOT exceeding federal limits.
	Determine the appropriate PAR using EPIP-99 or RPM recommendations.	If requested: The RPM has no PAR recommendations.	* The examinee determines the PAR to be EVACUATION for 2-mile radius and 5 miles in potentially affected sectors (A-B-C).
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
17. *	WHEN the Emergency Message Form is provided by the STSC Communicator THEN complete the EC portion. (Step 7.6)		Fills out form EP-0541 as follows: Sec. #2 left blank * Sec. #3 General Emergency, date and time, Status code- [1-2], [1-7], and [1-14] * Sec. #5 A radioactive release is occurring which does not exceed federally approved limits due to this event * Sec. #6 PAR is EVACUATION for 2-mile radius and 5 miles in potentially affected sectors A-B-C. NOTE: Critical portion of this step is to correctly identify General Emergency, Status Code, PAR (including affected sectors) with the correct date and time on the form.
SAT / UNSAT Comments (required for UNSAT):			



**SA-5
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

	STEP	CUE	STANDARD
18. *	<p>WHEN the Emergency Message Form has been authorized, THEN direct the STSC Communicator to begin transmitting the information to the offsite agencies within the time noted in step 7.3.</p> <p>(Step 7.7)</p>	<p>When form is submitted:</p> <p>The Site Manager has arrived and has assumed responsibilities of the Emergency Coordinator.</p>	<p>Approves form and directs communicator to transmit form.</p> <p>End TIME _____ . This direction to transmit ends this time critical portion of the JPM.</p> <p>*Notification TIME _____ (≤ 13 minutes from JPM step 7)</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

JPM STOP TIME:

NORMAL TERMINATION POINT



SA-5
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
001	05/26/05	6	Added more info to the initiating cue. AFA and ADVs. Corrected setup info and added more details for critical task on step 17.
2	3/23/07	3	NAN form changed such that unit number is not required

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



SA-5
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam
INITIAL CONDITIONS

INITIATING CUE:

- You are in Unit 1.
- A SGTR > 200 gpm has occurred.
- The crew tripped the reactor.
- On the reactor trip a Loss of Power to the grid occurred.
- DG 'A' did not automatically start.
- HPSI pump 'B' has a white SEIS light illuminated.
- The CRS entered the Functional Recovery Procedure.
- The crew has restored power to PBA-S03 using the 'A' DG and has started the 'A' HPSI pump.
- RVLMS indicated <21% in the outlet plenum 10 minutes ago, but now indicates >21%.
- The secondary operator has stabilized the secondary plant using AF 'A' and the ADVs.

Your task is to perform the duties of the Emergency Coordinator until relieved.

This is a **Time Critical JPM**.

CANDIDATE



SA-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1290020301 Conduct On Shift Operations IAW Conduct of Shift Operations

TASK STANDARD: Develop Pre-Job Brief

K/A: 2.3.3

K/A RATING: RO: 1.8 SRO: 2.9

K/A: 2.3.4

K/A RATING: RO: 2.5 SRO: 3.1

APPLICABLE POSITION(S): SRO VALIDATION TIME:

REFERENCES: 75DP-9RP01, Radiation Exposure and Access Control

SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____

REVISION DATE: 5/29/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT

TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)

EVALUATOR NAME: _____ (print)

Date _____

GRADE (Check One) SAT UNSAT



SA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- This is an admin JPM. Any testing location is acceptable.
- Steps can be done in any order.

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- 75DP-9RP01, Radiation Exposure and Access Control
- REP# 9-1014C
- Survey map of RW truck bay.



SA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

You are the Work Control SRO in Unit 1. Operations Support will be helping the Rad Material Control group set up some specialized resin processing equipment. This will involve one AO (Radwaste operator) entering the High Level Storage Area (HLSA) in the Radwaste truck bay.

Radiation Protection has informed you that they will be using REP 9-1014C for this job. The task will involve moving two barrels containing the equipment to the setup location. Both barrels read 1150 millirem on contact and will be moved using remote handling equipment.

This evolution has been performed in the past. They expect the operator to be in an 800 mr/hr field for 24 minutes. The operator assigned to the job has a current year to date exposure of 652 mr.

Your task as WC SRO is as follows:

Given the REP and radiation survey map of the Radwaste truck bay, outline a pre-job brief covering the following topics:

- **Task #**
- **How much dose is expected to be received by the operator**
- **Max stay time (in the 800 mr/hr area) before the first administrative exposure hold point (per 75DP-9RP01) is exceeded**
- **Expected amount of RP coverage while performing the job.**

Note: this will not take the place of the pre-job brief with RP.



SA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



SA-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	Determine Task.		Examinee determines that Task 3 will be used.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Determine expected dose to be received.		Determines 320 mrem will be received.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Determine maximum stay time in field.		Determines that max stay time 1.06 hours (63 to 64 minutes).
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
4. *	Determine RP Coverage requirements per the REP.		Determines that the REP will require continuous RP coverage.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



SA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

SA 4 Answer Key

Pre-Job Brief Form

Description of job: Set up resin transfer equipment in HLSA.

REP/Task: 9-1014C. Task 3

Expected dose: 320 millirem

Max stay time: 1.06 hours or 63 minutes (63 to 64 minutes)

RP coverage: RP coverage is continuous.



SA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/29/2007	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



SA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

You are the Work Control SRO in Unit 1. Operations Support will be helping the Rad Material Control group set up some specialized resin processing equipment. This will involve one AO (Radwaste operator) entering the High Level Storage Area (HLSA) in the Radwaste truck bay.

Radiation Protection has informed you that they will be using REP 9-1014C for this job. The task will involve moving two barrels containing the equipment to the setup location. Both barrels read 1150 millirem on contact and will be moved using remote handling equipment.

This evolution has been performed in the past. They expect the operator to be in an 800 mr/hr field for 24 minutes. The operator assigned to the job has a current year to date exposure of 652 mr.

Your task as WC SRO is as follows:

Given the REP and radiation survey map of the Radwaste truck bay, outline a pre-job brief covering the following topics:

- **Task #**
- **How much dose is expected to be received by the operator**
- **Max stay time (in the 800 mr/hr area) before the first administrative exposure hold point (per 75DP-9RP01) is exceeded**
- **Expected amount of RP coverage while performing the job.**

Note: this will not take the place of the pre-job brief with RP.

CANDIDATE



SA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

Pre-Job Brief Outline Form

Description of job:

REP/Task:

Expected dose:

Max stay time:

RP coverage:



SA-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1290190102 Ensure Compliance with Tech Specs

TASK STANDARD: Determine status of MSIV LCOs

K/A: 2.2.22

K/A RATING: RO: 3.4 SRO: 4.1

K/A:

K/A RATING: RO: SRO:

APPLICABLE POSITION(S): SRO

VALIDATION TIME: 15 minutes

REFERENCES: Technical Specifications

SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT
 CLASSROOM

JPM TYPE

	YES	NO
Time Critical	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alternative Path	<input type="checkbox"/>	<input checked="" type="checkbox"/>

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____

REVISION DATE: 5/18/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT

TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)

EVALUATOR NAME: _____ (print)

Date _____

GRADE (Check One) SAT UNSAT



SA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- This is an Admin JPM. Any testing location is acceptable.

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Copy of Technical Specifications and Bases.



SA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

Unit 1 is in Mode 1 and has had a series of events associated with the MSIVs.

Your task is to evaluate MSIV status for the time line (attached) and determine what LCO and action should have been applied for each time.

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



SA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1. *	Examinee fills out cue sheet.		The examinee determines the LCO and action for each of the seven times given on the cue sheet. Each of the seven determinations is a critical step. Failure of any one constitutes failure of the JPM. Evaluator note: MSIV accumulators must be 5000 psig or greater to be operable.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



SA-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

SA-3 Answer Key

Time	MSIV number	Accumulator Train	Pressure	LCO and action entered
T=0	170	A	4950	LCO 3.7.2 Action A
T=1 hr	180	A	4975	LCO 3.7.2 Action C
T=2 hrs	170	A	5200	LCO 3.7.2 Action A
T=3 hrs	171	B	4950	LCO 3.7.2 Action B
T=4 hrs	180	A	5100	LCO 3.7.2 Actions D and F
	171	A	4980	
T=5 hrs	171	B	5050	LCO 3.7.2 Action A
T=6 hrs	181	A	4950	LCO 3.7.2 Action E, LCO 3.0.3
	180	B	4800	



SA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/18/2007	6	New issue

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



SA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

Unit 1 is in Mode 1 and has had a series of events associated with the MSIVs.
Your task is to evaluate MSIV status for the time line (attached) and determine what LCO and action should have been applied for each time.

CANDIDATE

The following chart gives a chronological order of conditions that existed with Unit 1's MSIVs.
 Fill out all LCO actions that are entered.

Time	MSIV number	Accumulator Train	Pressure	LCO and action entered
T=0	170	A	4950	
T=1 hr	180	A	4975	
T=2 hrs	170	A	5200	
T=3 hrs	171	B	4950	
T=4 hrs	180	A	5100	
	171	A	4980	
T=5 hrs	171	B	5050	
T=6 hrs	181	A	4950	
	180	B	4800	

SA-3 Answer Key

Time	MSIV number	Accumulator Train	Pressure	LCO and action entered
T=0	170	A	4950	LCO 3.7.2 Action A
T=1 hr	180	A	4975	LCO 3.7.2 Action C
T=2 hrs	170	A	5200	LCO 3.7.2 Action A
T=3 hrs	171	B	4950	LCO 3.7.2 Action B
T=4 hrs	180	A	5100	LCO 3.7.2 Actions D and F
	171	A	4980	
T=5 hrs	171	B	5050	LCO 3.7.2 Action A
T=6 hrs	181	A	4950	LCO 3.7.2 Action E, LCO 3.0.3
	180	B	4800	



SA-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1290020301 Conduct of Shift Operations
 TASK STANDARD: Determine that Unit 1 Shift Manning is below minimum.
 K/A: 2.1.4 K/A RATING: RO: 2.3 SRO: 3.4
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): SRO VALIDATION TIME: 20 minutes
 REFERENCES: 40DP-9OP02, Conduct of Shift Operations
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT
 CLASSROOM

JPM TYPE

	YES	NO
Time Critical	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alternative Path	<input type="checkbox"/>	<input checked="" type="checkbox"/>

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____
 REVISION DATE: 5/20/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



SA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- **This is an Admin JPM. Any testing location is acceptable.**
- **The steps may be performed in any order, i.e. it does not matter which document is evaluated first, just that the examinee arrives at the right conclusion.**

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Technical Specifications
- 40DP-9OP02, Conduct of Shift Operations
- 10CFR50



SA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

The time is 1900. All unit crews turned over 30 minutes ago. The statuses of all units are as follows:

Unit 1 is in a refueling outage. The core is offloaded. Current Manning:

- Shift Manager
- Control Room Supervisor
- 1 Reactor Operator in the Control Room
- 1 Reactor Operator attending a briefing in Unit 1 Ops Support
- 1 STA
- Primary Log taking AO
- Secondary Log taking AO
- 5 other AO's for outage support
- Radwaste operator (Evaporator is running)
- Demin operator offloading resin from Service Vessel F to a poly container
- 3 Reactor Operators being utilized as Outage Coordinators

Unit 2 is in short notice outage due to a Main Turbine Lube Oil problem. The plant is currently in Mode 5 awaiting parts. Current manning;

- Shift Manager,
- Control Room Supervisor
- 2 Reactor Operators
- 1 STA assigned to Unit 2
- 1 STA assigned to Unit 3 assisting with mode change paperwork
- Primary Log taking AO
- Secondary Log taking AO

Unit 3 is at 100% power. Current manning:



SA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

- **Shift Manager**
- **Control Room Supervisor is leaving now to respond to an emergency at home**
- **3 Reactor Operators (one is designated as Fire Team Advisor)**
- **4 AO's covering Areas 1-4**
- **Radwaste operator (assigned Units 2 and 3)**
- **Demin operator performing resin regeneration**
- **A Senior Reactor Operator has been called out but will not arrive until 2045**

Your task is to evaluate staffing for each unit and determine if it meets the requirements of:

- **Technical Specifications**
- **Station procedures.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



SA-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	Evaluate Technical Specifications		<p>Note: The examinee may request a copy of 10CFR50.54(m) to complete the evaluation.</p> <p>Examinee should determine that no unit is violating Technical Specifications.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
2. *	Evaluate Conduct of Shift Operations		<p>The examinee should conclude the following:</p> <p>Unit 1- Although there is only 1 RO in the Control Room, this is allowed by Conduct of Shift Operations.</p> <p>Unit 2- this unit is in violation because there are not 3 AO's "within the unit" as defined in the note on page 12 of Conduct of Shift Operations.</p> <p>Unit 3- Although the CRS will be absent, this is allowed for up to two hours. No violation in this unit.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

JPM STOP TIME:

NORMAL TERMINATION POINT



SA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/20/2007	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



SA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIATING CUE:

The time is 1900. All unit crews turned over 30 minutes ago. The statuses of all units are as follows:

Unit 1 is in a refueling outage. The core is offloaded. Current Manning:

- Shift Manager
- Control Room Supervisor
- 1 Reactor Operator in the Control Room
- 1 Reactor Operator attending a briefing in Unit 1 Ops Support
- 1 STA
- Primary Log taking AO
- Secondary Log taking AO
- 5 other AO's for outage support
- Radwaste operator (Evaporator is running)
- Demin operator offloading resin from Service Vessel F to a poly container
- 3 Reactor Operators being utilized as Outage Coordinators

Unit 2 is in short notice outage due to a Main Turbine Lube Oil problem. The plant is currently in Mode 5 awaiting parts. Current manning;

- Shift Manager,
- Control Room Supervisor
- 2 Reactor Operators
- 1 STA assigned to Unit 2
- 1 STA assigned to Unit 3 assisting with mode change paperwork
- Primary Log taking AO
- Secondary Log taking AO

Unit 3 is at 100% power. Current manning:

- Shift Manager
- Control Room Supervisor is leaving now to respond to an emergency at home
- 3 Reactor Operators (one is designated as Fire Team Advisor)
- 4 AO's covering Areas 1-4
- Radwaste operator (assigned Units 2 and 3)
- Demin operator performing resin regeneration
- A Senior Reactor Operator has been called out but will not arrive until 2045

Your task is to evaluate staffing for each unit and determine if it meets the requirements of:

- Technical Specifications
- Station procedures.

CANDIDATE



SA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

Worksheet

	Tech Spec	Station procedures
Unit 1		
Unit 2		
Unit 3		



SA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1290240302 Ensure Emergency Notification and Response
 TASK STANDARD: Perform event notification for a hazardous material emergency
 K/A: 2.1.26 K/A RATING: RO: 2.2 SRO: 2.6
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): SRO VALIDATION TIME: 15 minutes
 REFERENCES: 14DP-0FP32, Emergency Notification and Response
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: Alan Malley TECH REVIEW: _____
 REVISION DATE: 5/10/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



SA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- If performed in the simulator or a Unit control room the examinee should locate and simulate use of the actual equipment.

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- None



SA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

The Unit 1 Demin operator was assigned to fill the Hydrazine Addition Tanks.

- **He reports to your Shift Manager (Unit 1) that the Hydrazine Liquibin transfer hose detached and 5 gallons of hydrazine have spilled on the floor near the Hydrazine Addition Tanks. The leak has been stopped. The Demin Operator threw rags on the hydrazine to contain the spill and small flames can now be seen on the rags.**
- **NO one else has been informed.**
- **The Shift Manager directs you to perform Control Room actions to initiate response by all required personnel per 14DP-0FP32, Emergency Notification and Response.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.



SA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	Assess type, location, and severity of emergency.		Examinee refers to 14DP-0FP32, section 3 for Control Room Actions. Note: The type, location, and severity of emergency are provided in initiating CUE.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Notify Security of emergency type, location, and severity. Direct Security to Contact the Fire Department. (3.2.2.1)	Security has been notified and they will contact the Fire Department.	Examinee notifies Security at X4444; Type: Fire and chemical spill Location: U1 Turbine Building Severity: fire, N2H4 spill Direct Security to contact the Fire Department.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3.	Determine if Emergency Plan Classification is required. (3.2.2.1)	If asked CUE: The SM will evaluate E-Plan Classification.	Examinee may recommend to SM to check E-Plan Classification.
SAT / UNSAT Comments (required for UNSAT):			



SA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
4. *	Make required Site announcement (Appendix B). (3.2.2.2)		Examinee sounds the Emergency fire Alarm for 15 to 20 seconds and makes the following site announcement: "Attention All Plant Personnel. Attention All Plant Personnel. There is a Fire Emergency in Unit 1 in the Turbine Building 100' Level. All Personnel are instructed to leave and stay clear of the area." Repeat the message. Critical part is properly making the announcement using App. B.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
5.	Direct the Fire Team Advisor to respond to the area with Protective equipment, portable radio and keys, and await the arrival of the Fire Department. (3.2.2.4)	The Fire Team Advisor will meet the Fire Department outside the 100 foot level of the Turbine Building.	Examinee directs the Fire Team Advisor to respond: <ul style="list-style-type: none"> • Inform the Fire Team Advisor of the emergency, • Direct the Fire Team Advisor to respond to the area with protective equipment, portable radio and keys, and await the arrival of the Fire Department.
SAT / UNSAT Comments (required for UNSAT):			



SA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
6. *	WHEN the Incident Commander contacts the unit on the radio, THEN inform the Incident Commander with the type, severity, intensity and location of the emergency. (3.2.3.1)	The Incident Commander is on the radio and requests information concerning the event.	Examinee informs the incident commander of the chemical spill and fire. Type: Fire and chemical spill Location: U1 Turbine Building Severity: fire, N2H4 spill
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7.	Direct the STA to evaluate the impact to safe shutdown equipment. (3.2.3.2)	The STA will evaluate impact to safe shutdown equipment. If asked CUE: The Incident Commander has not requested any backup. (for step 3.2.3.4)	Examinee directs the STA to evaluate the impact to safe shutdown equipment
SAT / UNSAT Comments (required for UNSAT):			



SA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
8.	Performs completion of Appendix B and announces termination of the event.	When the examinee completes step 3.2.3.9 then cue: The Incident Commander now informs you that the emergency is terminated and makes no other requests.	Examinee simulates sounding the "All Clear" signal for 15 to 20 seconds and makes the following event termination announcement: "Attention All Plant Personnel. Attention All Plant Personnel. The Fire Emergency in Unit 1 in the Turbine Building 100' level has been terminated." Repeat the message.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



SA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
1	5/10/2007	3	Procedure steps resequenced, changed emergency to fire/hazardous material.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



SA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

The Unit 1 Demin operator was assigned to fill the Hydrazine Addition Tanks.

- **He reports to your Shift Manager (Unit 1) that the Hydrazine Liquibin transfer hose detached and 5 gallons of hydrazine have spilled on the floor near the Hydrazine Addition Tanks. The leak has been stopped. The Demin Operator threw rags on the hydrazine to contain the spill and small flames can now be seen on the rags.**
- **NO one else has been informed.**
- **The Shift Manager directs you to perform Control Room actions to initiate response by all required personnel per 14DP-0FP32, Emergency Notification and Response.**

CANDIDATE



RA-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1290020301 Conduct On Shift Operations IAW Conduct of Shift Operations
 TASK STANDARD: Calculate dose and evaluate exposure hold points.
 K/A: 2.3.4 K/A RATING: RO: 2.5 SRO: 3.1
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): RO VALIDATION TIME: 10 minutes
 REFERENCES: 75DP-9RP01, Radiation Exposure and Access Control
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT
 CLASSROOM

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____
 REVISION DATE: 5/25/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



RA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- This is an admin JPM. Any testing location is acceptable.

D. REQUIRED CONDITIONS:

- None.

2. SPECIAL TOOLS/EQUIPMENT:

- Calculator
- Pen and paper.
- 75DP-9RP01



RA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

You are being sent into the High Activity Storage area in the Radwaste Building truck bay to coordinate a resin transfer of high activity spent resin to a High Integrity Container. The following conditions exist:

General area dose is 800 mr/hr.

It will take 24 minutes to complete the job in the above radiation field.

Your exposure to date is 1258 millirem.

Based on these conditions, answer the following questions prior to the start of the job:

- **How much radiation exposure will you get (in millirem)?**
- **Based on this exposure, what authorization is required to proceed with the job.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.



RA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



RA-4
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1. *	Examinee determines radiation exposure		Based on a field of 800 mr/hr and a 24 minute stay time, examinee determines that exposure is 320 mr.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Determine if permission (and whose) is required to proceed with the job.		Examinee determines that a Radiation Protection Department Leader must give permission to exceed 1.5 rem/year (75DP-9RP01)
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



RA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/29/2007	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



RA-4
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

You are being sent into the High Activity Storage area in the Radwaste Building truck bay to coordinate a resin transfer of high activity spent resin to a High Integrity Container. The following conditions exist:

General area dose is 800 mr/hr.

It will take 24 minutes to complete the job in the above radiation field.

Your exposure to date is 1258 millirem.

Based on these conditions, answer the following questions prior to the start of the job:

- How much radiation exposure will you get (in millirem)?
- Based on this exposure, what authorization is required to proceed with the job.

You may use this sheet as your answer page.

Exposure _____

Authorization _____

CANDIDATE



RA-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1270050601 Operate the plant during a power decrease
 TASK STANDARD: Use the XeRho Program to determine the reactivity effect due to Xenon
 K/A: 2.2.34 K/A RATING: RO: 2.8 SRO: 3.2
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): RO VALIDATION TIME: 13 minutes
 REFERENCES: 72OP-9RX01, Calculation of Estimated Critical Condition.
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT
 CLASSROOM

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: Jim Ledford TECH REVIEW: _____
 REVISION DATE: 5/24/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



RA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: N/A

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- This is an admin JPM. Any testing location is acceptable.

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Computer with XeRho spreadsheet available.



RA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

EVALUATOR NOTE: Ensure Xerho program is displaying information from the date 5/3/2007 (default). To reset, close the spreadsheet WITHOUT saving it. If compromising data has been saved to the sheet, zero it by clicking the "INITILIZE" button.

INITIATING CUE:

The status of Unit 1 is as follows:

- **July 1, 2007**
- **0000** Commenced Unit down power from 100% to 40% to remove B CW train.
- **0200** Unit is at 40% JSCALOR, Group 5 at 135" withdrawn. Tcold is on program at 560.0 degrees F.
- **0400** Chemistry reports grab sample taken at 0300 of 1057 ppm boron.
- **0500** PSCEAs have been moved to 140" withdrawn for ASI control.

It is now 0700 and the plant is still stable at 40%. CMC NKEFPH is reading 5400.0. The CRS directs you to fill out the Critical Point Data Record. The Xerho program is available but the PI connection is not. The plant was at equilibrium xenon prior to the downpower.



RA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



RA-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1. *	Fill in EFPD		Examinee takes NKEFPH (5400.0) and divides by 24 to get 225 EFPD.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Fill in Tc		Examinee fills in 560 F on record.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Fill in power.		Examinee fills in 40 under JSCALOR
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
4. *	Fill in boron		Examinee fills in 1057 ppm boron at 0300 on 7-1-2007
SAT / UNSAT Comments (required for UNSAT):			



RA-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
5. *	Fill in CEA position		Examinee fills in Group 5 @ 135 and PSCEA @ 140
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6.	Initialize the Xenon Projection Worksheet		Examinee initializes the Xenon Projection or Xenon History worksheet selecting the tab at the bottom of the worksheet.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7. *	Establish a starting set of data		Examinee clicks the Initialize button to establish a starting set of data in programmed automatic popups; Chooses to erase previous data. Enters date and time Clicks yes to initialize at Eq Xe conditions. Clicks no to manually enter reactor power and core burnup. <ul style="list-style-type: none"> • 100% power and • 225 EFPD
SAT / UNSAT Comments (required for UNSAT):			



RA-3
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
8. *	Add date and time values.		Examinee selects the desired update interval in the drop-list box above the "Add Date/Time Values" button and, Clicks the "Add Date/Time Values" button. Note: any useful update interval is acceptable.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
9. *	Enter power level values in the "Power" column.		Examinee enters 40% power at 0200 and 40% power at 0700. Note: Power MUST be entered at 0200 and 0700. It is NOT necessary to enter a power level value for each date/time. It is only necessary to enter power values corresponding to the beginning and end of a ramp or <u>period of constant power</u>. The examinee must click off the 40% power at 0700 data cell in order to register it in the program.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
10. *	Perform the Xenon calculation		Examinee clicks the "Perform Xenon Calcs" button.
SAT / UNSAT Comments (required for UNSAT):			



RA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

	STEP	CUE	STANDARD
11. *	Record xenon value		Examinee records 3280 pcm. (negative is already on the sheet)
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
12.	Initial prepared by block		"Prepared by" block initialed.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



RA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
1	5/24/2007	6	New JPM format, upgraded to U1C13.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



RA-3
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

The status of Unit 1 is as follows:

- July 1, 2007
- 0000 Commenced Unit down power from 100% to 40% to remove B CW train.
- 0200 Unit is at 40% JSCALOR, Group 5 at 135" withdrawn. Tcold is on program at 560.0 degrees F.
- 0400 Chemistry reports grab sample taken at 0300 of 1057 ppm boron.
- 0500 PSCEAs have been moved to 140" withdrawn for ASI control.

It is now 0700 and the plant is still stable at 40%. CMC NKEFPH is reading 5400.0. The CRS directs you to fill out the Critical Point Data Record. The XeRho program is available but the PI connection is not. The plant was at equilibrium xenon prior to the downpower.

CANDIDATE



RA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: None

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- This is an admin JPM. Any testing location is acceptable.

D. REQUIRED CONDITIONS:

- None

2. SPECIAL TOOLS/EQUIPMENT:

- Copy of 40DP-9OP05, Rev 60
- Information from Control Room log
- PDIL Sheets for RG and PSCEAs with historical data
- Calculator
- Pen and paper



RA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

The B Main Feedwater Pump tripped and was recovered today in Unit 1. During that time, CEAs were below the Power Dependent Insertion Limits. The CRS directs you to use the pertinent information from the Control Room log and fill out the PDIL Insertion Time log per 40DP-90P05, Control Room Data Sheet Instructions.

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



RA-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1. *	Determine the total time the Reg Groups were below the PDILs.		Examinee determines Reg group time to be 7.5 hours (450 minutes).
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Determine the total time the PSCEAs were below the PDILs.		Examinee determines PSCEA group time to be 3 hours (180 minutes).
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Determine total insertion time for Reg Groups		Examinee should determine the insertion time to be 0.1875 EFPD $\frac{450 \text{ minutes} \times 60\% \text{ power}}{144,000} = 0.1875$
SAT / UNSAT Comments (required for UNSAT):			



RA-2
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
4. *	Determine total insertion time for PSCEAs		Examinee should determine the insertion time to be 0.0875 EFPD $\frac{180 \text{ minutes} \times 70\% \text{ power}}{144,000} = 0.0875$

SAT / UNSAT
Comments (required for UNSAT):

	STEP	CUE	STANDARD
5. *	Enter data into PDIL Insertion Time data sheets		Refer to answer keys.

SAT / UNSAT
Comments (required for UNSAT):

JPM STOP TIME:

NORMAL TERMINATION POINT



RA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/23/2007	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



RA-2
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

The B Main Feedwater Pump tripped and was recovered today in Unit 1. During that time, CEAs were below the Power Dependent Insertion Limits. The CRS directs you to use the pertinent information from the Control Room log and fill out the PDIL Insertion Time log per 40DP-9OP05, Control Room Data Sheet Instructions.

CANDIDATE

Control Room Log

ANSWER KEY

Time

Entry

Examinee log entry should contain at least the following elements.

DG A started to perform 40ST-9DG01.

Start signal was Simulated ESFAS actuation from local pushbutton.

DG A tripped on low lube oil pressure

DG A was at 1.8 MW when the trip occurred.

PVAR 888555 was written.

Control Room Log

7-23-2007

Time	Entry
1100	Feedwater Pump Turbine B tripped. Reactor Power Cutback actuation occurred. Entered Power Dependant Insertion Limits for Regulating Group CEAs. Reactor power stabilized at 60%.
1700	Commenced inserting PSCEAs for ASI control while withdrawing Reg Group CEAs. Reactor power is being maintained at 60%.
1830	Exited PDIL for Reg Group CEAs. Computer point NKEFPH = 6501.60
1930	Entered PDIL for PSCEAs.
1940	Placed FWPT B in service in parallel with FWPT A following FWPT B repairs.
2000	Commenced raising Reactor power to 100%. Commenced withdrawal of PSCEAs for ASI control.
2230	Exited PDIL for PSCEA insertion. Reactor power is 70%. Computer point NKEFPH =6501.768.



RA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1270050401 Perform A Power Ascension Above 20%
 TASK STANDARD: The Power ascension rate limit has been determined. The power ascension has been halted / reduced. The max power allowed has been determined.
 K/A: 2.1.23 K/A RATING: RO: 3.9 SRO: 4.0
 K/A: K/A RATING: RO: SRO:
 APPLICABLE POSITION(S): RO VALIDATION TIME: 20 minutes
 REFERENCES: 40OP-9ZZ05, Power Operations
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: Alan Malley TECH REVIEW: _____
 REVISION DATE: 5/10/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



RA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

1. SIMULATOR SETUP:

- A. IC#: This JPM may be run with or without the simulator.
- B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.		
3.		
4.		

- C. SPECIAL INSTRUCTIONS:
 - Ensure that a **marked up** copy of 40OP-9ZZ05 is available with the prerequisites and steps 4.3.1 – 4.3.6 marked as completed.

- D. REQUIRED CONDITIONS:
 - None

2. SPECIAL TOOLS/EQUIPMENT:

- **Blank copy** of 40OP-9ZZ05, Appendix J
- **Marked up copy of 40OP-9ZZ05 is available with** the prerequisites and steps 4.3.1 – 4.3.6 marked as completed.
- Calculator



RA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

The following plant conditions exist:

- **The Plant has begun initial power ascension following a 40-day refueling outage.**
- **The Power ascension has been on hold for 2 days at 60% to allow B Main Feed Pump repairs.**
- **B Main Feed Pump has just been placed in service. Reactor Engineering has completed testing and Power ascension to 90% is planned.**
- **The power ascension ramp rate OAP is NOT available.**
- **The prerequisites of 40OP-9ZZ05, Power Operations are complete with the exception of 4.2.7, which requires reevaluation.**
- **Steps 4.3.1 through 4.3.6 of 40OP-9ZZ05 are complete.**

The CRS has directed you to start at step 4.3.7 of 40OP-9ZZ05, perform Appendix J to monitor the power ascension to include the following:

- 1. Determine the most limiting loading rate for Power changes per step 4.2.7.**
- 2. Monitor the power ascension and log data in accordance with Appendix J.**
- 3. Following each data entry, determine if the power ascension rate is within limits and guidelines.**

Note: 2nd verification is not required for this JPM. The examiner will provide actual power level.



RA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- If performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- If locked valves will be involved. No attempt will be made to actually operate any valves.



RA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	Obtain 40OP-9ZZ05, Power Operations.		Obtains 40OP-9ZZ05, Power Operations and Appendix J, Power Ascension Ramprate Data Sheet.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	Determines most limiting rate for Power changes.	Reactor Engineering recommends Appendix A guidelines. After the examinee determines the most limiting rate for Power changes provide the following CUE: The reactivity briefing has been completed and the increase in power will be by a 4 gpm dilution rate with power change estimated to be approximately 2 % per hour. The RO and CO will control the dilution and turbine load increase.	Determines most limiting rate for Power changes to be 2.5% per hour per Appendix A – Fuel Preconditioning Guidelines. EVALUATOR NOTES: Appendix C – Turbine Load Changes above 35% has no load change limit. Appendix A is available in the Simulator
SAT / UNSAT Comments (required for UNSAT):			



RA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
3. *	Examinee enters initial data.	<p>Provide the following CUE when the examinee is at the point of filling in the Actual Power:</p> <p>Power indication by JSCALOR is 60.0%.</p> <p>After examinee enters initial data provide the following CUE: A 4 gpm dilution has commenced and power is increasing. 15 minutes has elapsed and power is now at 60.6%. Determine the power ascension status.</p>	<p>Examinee enters the following data: Date/: Current Date Power Ascension Rate Limit 2.5% Max Power 62.5% (62.5% max limit) Actual Power 60% Performed by: Examinee's initials Verified by: (Not required for this JPM)</p> <p>Evaluator Note: Examinee should use JSCALOR as the power indicator.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
4. *	Examinee logs data and determines power ascension status.	<p>If requested CUE: I understand power ascension is acceptable.</p> <p>(Note: Examinee may state that the power ascension rate is greater than what was predicted during the reactivity briefing- if so, state that the dilution will continue at the current rate.)</p> <p>After the examinee determines power ascension is acceptable provide the following CUE: Another 15 minutes has elapsed and power is now at 61.3%. Determine the power ascension status.</p>	<p>Examinee logs data and determines that the power ascension is acceptable (below target and max allowed limit).</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			



RA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
5. *	Examinee logs data and determines power ascension status.	<p>IF requested CUE: I understand that the power ascension rate is below the maximum allowable limit (but exceeds the 15 minute target rate). Continue with the power increase.</p> <p>EVALUATOR NOTE: The operator may indicate that he would not continue at this point. The intent is to have the operator continue with the power ascension.</p> <p>After the examinee determines power ascension is acceptable provide the following CUE:</p> <p>Another 15 minutes has elapsed and power is now at 62.3%. Determine the power ascension status.</p>	Examinee logs data and informs the CRS that the power ascension rate is below the maximum allowed limit (Examinee may state that the rate exceeds 15 minute target rate).
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6. *	Examinee logs data and determines power ascension status.	<p>I understand that the power ascension is excessive. The power ascension will be halted.</p> <p>After the examinee determines power ascension is acceptable provide the following CUE:</p> <p>Another 15 minutes has elapsed and power is now at 62.5%. Determine the power ascension status.</p>	Examinee informs the CRS that the power ascension must stop or be reduced to prevent exceeding Max Power Allowed for the hour.
SAT / UNSAT Comments (required for UNSAT):			



RA-1
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

	STEP	CUE	STANDARD
7. *	Examinee logs data and determines power ascension status.	<p>IF requested CUE: I understand that the Avg. ramprate equals the guideline target limit.</p> <p>After the examinee determines the power ascension rate provide the following CUE: Determine the new Max power limit allowed for the next 15 minute interval.</p>	<p>Notifies the CRS that power ascension ramprate equals the Max Power Allowed.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
8. *	Examinee logs data and determines new Max Power Allowable limit.	Another operator will complete Appendix J.	Examinee determines the new Max Power Allowed to be 63.1
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

JPM STOP TIME:

NORMAL TERMINATION POINT



RA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
1	5/10/2007	3	Single MFWP operations now has lower power due to SGR.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



RA-1
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

INITIAL CONDITIONS

INITIATING CUE:

The following plant conditions exist:

- The Plant has begun initial power ascension following a 40-day refueling outage.
- The Power ascension has been on hold for 2 days at 60% to allow B Main Feed Pump repairs.
- B Main Feed Pump has just been placed in service. Reactor Engineering has completed testing and Power ascension to 90% is planned.
- The power ascension ramp rate OAP is NOT available.
- The prerequisites of 40OP-9ZZ05, Power Operations are complete with the exception of 4.2.7, which requires reevaluation.
- Steps 4.3.1 through 4.3.6 of 40OP-9ZZ05 are complete.

The CRS has directed you to start at step 4.3.7 of 40OP-9ZZ05, perform Appendix J to monitor the power ascension to include the following:

1. Determine the most limiting loading rate for Power changes per step 4.2.7.
2. Monitor the power ascension and log data in accordance with Appendix J.
3. Following each data entry, determine if the power ascension rate is within limits and guidelines.

Note: 2nd verification is not required for this JPM. The examiner will provide actual power level.

CANDIDATE



JS-8
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 0100010401 Operate the Pressurizer Pressure Control System

TASK STANDARD: Stop Main Spray and energize Backup Heaters

K/A: 3.3-010-A3.02

K/A RATING: RO: 3.6 SRO: 3.5

K/A:

K/A RATING: RO: SRO:

APPLICABLE POSITION(S): RO

VALIDATION TIME: 10 minutes

REFERENCES: 40AL-9RK4A, 4A01B, Rev 25

SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path		X

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____

REVISION DATE: 5/17/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT

TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)

EVALUATOR NAME: _____ (print)

Date _____

GRADE (Check One) SAT UNSAT



JS-8
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: 57

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.	cmCNRC03RCNPIK100_2 f:6	RCN-PIK-100 auto output failure at 6%.
2.		
3.		
4.		

C. SPECIAL INSTRUCTIONS:

- IC 57 has the above malfunction already loaded.

D. REQUIRED CONDITIONS:

- Reset to IC 57.
- Go to RUN on simulator and acknowledge alarms.
- FREEZE the simulator
- Provide Initiating CUE.
- Go to RUN on the Simulator

2. SPECIAL TOOLS/EQUIPMENT:

- None



JS-8
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

Pressurizer Pressure Hi-Low alarm has just annunciated. The CRS directs you to address the alarm and carry out alarm response actions to mitigate the condition.

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- Performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- Locked valves will be involved. No attempt will be made to actually operate any valves.



JS-8
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	Obtains Alarm Response Procedure		Examinee opens 40AL-9RK4A to window 4A01B, Group A
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	Auto Action-Backup heaters on at 2200 psia.		Examinee should note that Backup heaters are not on
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	Check pressurizer pressure by observing RCN-PT-100X and Y		Verifies that pressure is actually low on both channels
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
4. *	Close main spray valves		Note: Steps 2 and 3 should be N/A. Examinee closes main spray valves using RCN-PIK-100 thumbwheel.
SAT / UNSAT Comments (required for UNSAT):			



**JS-8
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

	STEP	CUE	STANDARD
5. *	Ensure backup heaters are on		Note: Steps 5 and 6 are N/A Examinee energizes 6 banks of backup heaters.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6. *	Energize the proportional heaters.		Examinee energizes proportional heaters.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7.	Second Priority Operator actions	When examinee enters this section, cue: “Another operator will complete Secondary Priority Operator Actions”	
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



JS-8
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/17/2007	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS-8
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam
INITIAL CONDITIONS

INITIATING CUE:

Pressurizer Pressure Hi-Low alarm has just annunciated. The CRS directs you to address the alarm and carry out alarm response actions to mitigate the condition.

CANDIDATE



JS-7
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC Exam

JPM BASIS INFORMATION

TASK: 1240050201 Implement SGTR instructions and contingencies

TASK STANDARD: Isolate a Ruptured Steam Generator

K/A: 4.2 037 EK3.06

K/A RATING: RO: 4.2 SRO: 4.3

K/A:

K/A RATING: RO: SRO:

APPLICABLE POSITION(S): RO

VALIDATION TIME: 10 minutes

REFERENCES: 40EP-9EO04, Steam Generator Tube Rupture

SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path	X	

APPROVAL

DEVELOPER: John M. Dedon TECH REVIEW: _____

REVISION DATE: 5/15/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT

TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)

EVALUATOR NAME: _____ (print)

Date _____

GRADE (Check One) SAT UNSAT



JS-7
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

1. SIMULATOR SETUP:

A. IC#: 56

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION
1.		
2.	cmAVFW04SGBUV135_4	
3.	cmAVFW04SGAUV175_4	
4.		

C. SPECIAL INSTRUCTIONS:

- IC 56 has the malfunctions listed above already incorporated. No other setup is necessary.

D. REQUIRED CONDITIONS:

- Reset to IC 56.
- Go to Run on the Simulator.
- Provide Initiating CUE.
- Go to RUN on the Simulator

2. SPECIAL TOOLS/EQUIPMENT:

- None



JS-7
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

- **The reactor has tripped.**
- **The CRS has diagnosed a SGTR in #2 S/G.**
- **The CRS directs you to isolate #2 S/G per 40EP-9EO04, starting at step 15.**

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.
- Notify unit Shift Manager of in-plant JPM performance.
- Performance of this JPM will require entry into areas with alarmed doors. Security requirements must be observed.
- Locked valves will be involved. No attempt will be made to actually operate any valves.



**JS-7
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

JPM START TIME:

	STEP	CUE	STANDARD
1.	<u>Close</u> the ADVs on Steam Generator #2.		Verifies Th <540 Degrees The ADVs on the affected Steam Generator have been Closed.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2. *	<u>Close</u> the MSIVs on Steam Generator #2.		The MSIVs on the affected Steam Generator have been Closed.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3. *	<u>Close</u> the MSIV Bypass Valve on Steam Generator #2 is closed.		The MSIV Bypass Valve on the affected Steam Generator is closed.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
4. *	<u>Close</u> the Economizer FWIV's on Steam Generator #2.		The Economizer FWIV's on the affected Steam Generator has been closed.
SAT / UNSAT Comments (required for UNSAT):			



JS-7
PVNGS JOB PERFORMANCE MEASURE

2007 NRC Exam

	STEP	CUE	STANDARD
5. *	<p><u>Close</u> the Downcomer Isolation Valves on Steam Generator #2.</p> <p>When the Downcomer Isolation Valves will not close, the Examinee will close:</p> <ul style="list-style-type: none"> • SGN-HV-1144 • SGN-HV-1145 		<p>Attempts to close Downcomer Isolation Valves using:</p> <ul style="list-style-type: none"> • SGA-HS-175 • SGB-HS-135 <p>Alternate Path: The Downcomer Isolation Valves are stuck and will not close.</p> <p>Closes SG 2 FW Isolation Block and Bypass valves using:</p> <ul style="list-style-type: none"> • SGN-HS-1144 • SGN-HS-1145
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
6. *	<p><u>Close</u> the Blowdown Containment Isolation Valves on Steam Generator #2.</p>		<p>The Blowdown Containment Isolation Valves on the affected Steam Generator have been closed.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			

	STEP	CUE	STANDARD
7. *	<p><u>Close</u> BOTH of the steam trap isolation valves on Steam Generator #2.</p> <p>SG 2 SGA-UV-1134, Steam Trap M24 Isolation. SGB-UV-1136A/1136B, Steam Trap M03/M04 Isolations.</p>		<p>SGA-HS-1134 to Close SGB-HS-1136 to Close</p> <p>BOTH of the steam trap isolation valves on the affected Steam Generator have been closed.</p> <p>SG 2 Close SGA-UV-1134, Steam Trap M24 Isolation Close SGB-UV-1136A/1136B, Steam Trap M03/M04 Isolations.</p>
<p>SAT / UNSAT Comments (required for UNSAT):</p>			



**JS-7
PVNGS JOB PERFORMANCE MEASURE**

2007 NRC Exam

	STEP	CUE	STANDARD
8. *	Check that the Steam Generator Safety Valves are closed.		Steam Generator Safety Valves indicate closed.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
9. *	Ensure AFA Steam Supply Valve from Steam Generator #2 is closed. (SG #2) SGA-UV-138		The AFA Pump Steam Supply Valve is closed. (SG #2) SGA-UV-138
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
10. *	Ensure the Auxiliary Feedwater Isolation valves to Steam Generator #2 are closed. SG #2 AFA-UV-37 AFB-UV-35	Another operator will continue with the procedure.	Auxiliary Feedwater Isolation valves to the most affected Steam generator are closed SG #2 AFA-UV-37 AFB-UV-35
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



JS-7
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
1	5/15/2007	6	Made into Alternate path.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS-7
PVNGS JOB PERFORMANCE MEASURE
2007 NRC Exam
INITIAL CONDITIONS

INITIATING CUE:

- **The reactor has tripped.**
- **The CRS has diagnosed a SGTR in #2 S/G.**
- **The CRS directs you to isolate #2 S/G, per 40EP-9EO04, starting at step 15.**

CANDIDATE



JS-6
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM BASIS INFORMATION

TASK: 1250430201 Respond to a loss of Feed Pump
 TASK STANDARD: Restore Rod Overlap, trip the reactor when ATWS occurs
 K/A: 3.1-001-A2.13 K/A RATING: RO: 4.4 SRO: 4.6
 APPLICABLE POSITION(S): RO VALIDATION TIME: 15 minutes
 REFERENCES: 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump), Revision 19
 SUGGESTED TESTING ENVIRONMENT: SIMULATOR PLANT

JPM TYPE

	YES	NO
Time Critical		X
Alternative Path	X	

APPROVAL

DEVELOPER: Jordan Johnston TECH REVIEW: _____
 REVISION DATE: 5/4/2007 APPROVAL: _____

TESTING METHOD

ACTUAL TESTING ENVIRONMENT: SIMULATOR PLANT
 TESTING METHOD: SIMULATE PERFORM

EVALUATION

EXAMINEE NAME: _____ (print)
 EVALUATOR NAME: _____ (print)
 Date _____
 GRADE (Check One) SAT UNSAT



JS-6
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

1. SIMULATOR SETUP:

A. IC#: 55

B. MALFUNCTIONS, OVERRIDES & REMOTE FUNCTIONS:

EVENT	COMMAND	DESCRIPTION

STEP	COMMAND	DESCRIPTION
9.	mfRD10B	Uncontrolled rod withdrawal in all CEDMCS modes. Note: IC55 has this malfunction already on KEY 1. The Driver is expected to insert the malfunction without cue on the second CEA withdrawl therefore using the laptop on the Simulator floor may be appropriate.

C. SPECIAL INSTRUCTIONS:

- Run IC 55.
- Acknowledge alarms.
- Freeze the simulator.
- Provide Cue.
- Go to RUN on the Simulator.

D. REQUIRED CONDITIONS:

- Plant conditions are post RPCB from >75% power. MFP "B" is tripped. IC 55 has this established.

2. SPECIAL TOOLS/EQUIPMENT:

- 40AO-9ZZ09, Step 30
- 40AO-9ZZ09, Appendix E
- 2 copies of Reactivity briefing.

EVALUATOR NOTE: Peer Checks are waived for this JPM. The Examinee will request permission from the CRS to perform certain steps. A response such as "I concur" would be an appropriate cue.



JS-6
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
TASK CONDITIONS

INFORMATION PRESENTED TO EXAMINEE:

SPECIAL CONSIDERATIONS:

IN PLANT JPM's ONLY

- Operation of in-plant equipment is to be **SIMULATED ONLY, DO NOT OPERATE** any equipment.
- Inform the control room staff of any discovered deficiencies.
- Comply with the REP, if it is not possible to enter an area it may be permissible to discuss the equipment to be operated. Do not enter contaminated, airborne, or high radiation areas.

ALL JPM's

- You may use any source of information normally available.

INITIATING CUE:

Unit 1 is at 250 EFPD.

The unit has experienced a Reactor Power Cutback due to a trip of the B Main Feed Pump. Groups 4 and 5 are fully inserted into the core.

The CRS will give you a reactivity (Power Change) briefing.

You are then directed to perform Step 30 of 40AO-9ZZ09 to restore normal CEA group overlap.

Peer checks are waived for this JPM.

INFORMATION FOR EVALUATOR'S USE:

* Denotes Critical Step

- At the discretion of the Examiner/Evaluator, this JPM may be terminated when the Task Standard is met or adequate time has been allowed to complete the JPM. It shall be terminated when the Examinee has verbalized completion of the JPM.
- Any step marked UNSAT requires comments.
- If this is the first JPM of the set then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent achieving the task standard.



JS-6
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

JPM START TIME:

	STEP	CUE	STANDARD
1.	Perform Appendix E, Reactivity Impact While Restoring CEA Overlap. (Step 30. a)	If asked, cue: CRS is evaluating Tech Spec LCOs	Examinee determines the maximum expected reactor power and RCS temperature change for a 10 inch withdrawal of RG-4. Note: examinee must determine the correct time in core life.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
2.	Monitor CEA alignment using the CEAC CRT when moving CEAs. (Step 30. b)		Examinee ensures CEAC CRT displays a page showing Group 4 rod positions.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
3.	Maintain Tave/Tref mismatch +/- 3 degrees F. (Step 30. c)		Observe Tave/Tref mismatch +/- 3 degrees F throughout steps.
SAT / UNSAT Comments (required for UNSAT):			



JS-6
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
4.	Wait a minimum of 1 minute between CEA pulls. (Step 30. d)		Waits a minimum of 1 minute between CEA pulls.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
5. *	Select MANUAL GROUP on CEDMCs control panel.		Evaluators Note: the following 3 JPM steps (5, 6, and 7) are implied in procedure step 30.e. CEDMCs selector switch in MANUAL GROUP
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
6. *	Select Group 4 on Group Selector switch		Group Selector Switch in 4
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
7. *	Pull Regulating Group 4 10 inches and evaluate conditions.	When candidate states that he is waiting 1 minute between CEA pulls. Cue: One minute has passed	Pulls Group 4 to no more than 10.75 inches and waits one minute. <ul style="list-style-type: none"> • Evaluates power change and Tavg/Tref mismatch.
SAT / UNSAT Comments (required for UNSAT):			



JS-6
PVNGS JOB PERFORMANCE MEASURE
 2007 NRC EXAM

	STEP	CUE	STANDARD
8.	IF the rise in reactor power exceeds 1% during any CEA pull, THEN adjust the amount of the next CEA withdrawal to obtain less than 1% rise. (Step 30. f)		Examinee adjusts the amount of the next pull if 1% was exceeded in the previous pull.
SAT / UNSAT Comments (required for UNSAT):			

	STEP	CUE	STANDARD
9. *	Pull Regulating Group 4 another 10 inches.	Examinee may communicate to the CRS that rods are withdrawing uncontrollably. If the examinee asks for directions cue: What do you recommend? Then direct the Examinee to follow those recommendations.	Alternate Path Point: Examinee manually trips the reactor. Driver activates Key 1 at the beginning of this pull. Evaluator's Note: When the examinee begins pulling Group 4, Group 3 will begin withdrawing as well. Changing the CEDMCS mode selector will have no effect.
SAT / UNSAT Comments (required for UNSAT):			

JPM STOP TIME:

NORMAL TERMINATION POINT



JS-6
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM

RECORD OF REVISIONS

REVISION NUMBER	REVISION DATE	REASON REVISED	COMMENTS
0	5/4/07	6	New issue.

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



JS-6
PVNGS JOB PERFORMANCE MEASURE
2007 NRC EXAM
INITIAL CONDITIONS

INITIATING CUE:

Unit 1 is at 250 EFPD.

The unit has experienced a Reactor Power Cutback due to a trip of the B Main Feed Pump. Groups 4 and 5 are fully inserted into the core.

The CRS will give you a reactivity (Power Change) briefing.

You are then directed to perform Step 30 of 40AO-9ZZ09 to restore normal CEA group overlap.

Peer checks are waived for this JPM.

CANDIDATE

POWER CHANGE BRIEFING

How far:

We are going to be performing a power change from 57% to 57%.

How fast:

We plan to perform this change over 10 minutes.
(enter time)

Method:

We will do this power change by:

Boration / Dilution and/of CEA manipulation.
(circle one)
(circle one)

We will be borating / diluting 0 gallons to the RCS at 0 gpm.

We will be moving CEAs to GP5 GP4= 34.25" withdrawn PL. (expected rod position)

We will be raising RCS T-cold by no more than 2 °F. (use if temp is raised above program)

YOU will perform CEA manipulations.
(which RO)

Another RO will adjust turbine load to maintain T_{AVE} / T_{REF} or T_{COLD} on program.
(which RO)

We will monitor the change using NKBDELTA / JSCALOR.
(circle one)

Monitoring: YOU is/are assigned to monitor: Power/ CEA Position
(which RO's)

Additional monitoring requirements Another RO will monitor the balance of Plant

Consider and circle as appropriate

CPC pt ID 171

Control Channel Power

$T_{AVE}-T_{REF}$ or T_{COLD}

ASI COLSS or CPC

Generator MWs

Other _____

SA 4 Answer Key

Pre-Job Brief Form

Description of job: Set up resin transfer equipment in HLSA.

REP/Task: 9-1014C. Task 3

Expected dose: 320 millirem

Max stay time: 1.06 hours or 63 minutes (allow +/- 2 minutes)

RP coverage: RP coverage is continuous.