

Facility: Indian Point 2		Date of Examination: 3/17/2003		
Exam Level: RO/SROI		Operating Test No.: 1		
B.1: Control Room Systems				
	System	JPM Description	Type Code*	Safety Function
S1	001 Rod Control	Stabilize reactor power at 10^{-8} amps following criticality	N,S,A,L	1
S2	006 ECCS	Fill a Safety Injection Accumulator (Repeat from last NRC exam)	D,S	2
S3	010 Pressurizer Pressure Control	Depressurize the RCS following a SGTR	M,S,A,E	3
S4	041 Steam Dump	Cooldown the RCS to target temperature	N,S,A,E	4S
S5	013 ESF	Reset CIA and CIB	N,S,A,E	5
S6	062 AC Distribution	Restore 6.9KV Busses from off-site power.	D,S	6
S7	015 Nuclear Instrumentation	Return a Power Range Channel to service	N,S	7
B.2 Facility Walk-Through				
P1	004 CVCS	Align City Water Cooling to Charging pumps	R,D,E	2
P2	041 Steam Dump	Local Operation of Atmospheric Steam Dumps	D,E	4S
P3	078 Instrument Air	Locally Restore Instrument Air pressure	N,E	8
*	Type Codes:	(D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol Room, (S)imulator, (L)ow-Power, (R)CA, (E)OP/AB		

Facility: Indian Point 2		Date of Examination: 3/17/2003		
Exam Level: <u>SROU</u>		Operating Test No.: 1		
B.1: Control Room Systems				
	System	JPM Description	Type Code*	Safety Function
S1	001 Rod Control	Stabilize reactor power at 10^{-8} amps following criticality	N,S,A,L	1
S2				
S3	010 Pressurizer Pressure Control	Depressurize the RCS following a SGTR	M,S,E	3
S4				
S5	013 ESF	Reset CIA and CIB	N,S,A,E	5
S6				
S7				
B.2 Facility Walk-Through				
P1	004 CVCS	Align City Water Cooling to Charging pumps	R,D,E	2
P2	041 Steam Dump	Local Operation of Atmospheric Steam Dumps	D,E	4S
P3				
*	Type Codes:	(D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol Room, (S)imulator, (L)ow-Power, (R)CA, (E)OP/AB		

Facility: Indian Point Unit 2 Task No.: N/A
Task Title: Withdraw Control Rods to 10^{-8} Amps JPM No.: 2003 NRC S1
(Alternate)
K/A Reference: 001 A2.03 (3.5/4.2)

Examinee: NRC Examiner:
Facility Evaluator: Date:
Method of testing:
Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A reactor startup is in progress. All precautions and limitations of POP 1.2 are met. Step 4.35 is complete. The reactor is critical.

Task Standard: The reactor is tripped due to dropped rods.

Required Materials: POP 1.2
AOI-16.1.1

General References: POP 1.2
AOI-16.1.1

Handouts: Marked up copy of POP-1.2

Initiating Cue: The CRS directs you to perform the actions necessary to establish a .3 - .5 DPM startup rate and raise power to 10^{-8} amps for critical data.

Time Critical Task: NO

Validation Time: 35 minutes

SIMULATOR SETUP

Reset to IC-218.

PICS needs to have rod supervision updated

(Denote Critical Steps with an asterisk)

* **Performance Step: 1** Raise reactor power to 10-8 amps

Standard: Places Rod Bank Selector Switch in MANUAL
 Moves Rod Control In-Hold-Out switch to out
 Observes control rods in CBD moving outwards
 Observes Startup Rate increasing on SR and IR SUR meters
 Withdraws rods to establish a positive SUR.

Comment: **Rods should be withdrawn to about 120 steps on CBD to obtain +0.2 DPM SUR.**

NOTE: If reactor power drops to less than P-6 setpoint, re-blocking the source range high flux trips will be necessary to prevent a reactor trip when increasing power.

- * **Performance Step: 2** WHEN POWER ABOVE P-6 green light on panel FB is lit, AND the annunciator FB 3-5 LOW POWER PERMISSIVE BLOCK NOT ENGAGED alarm occurs at 1.0 E^{-10} amps, PERFORM the following:
- Standard:** a. BLOCK Source Range High Flux trips.
Depresses block pushbuttons.
- Source Range Train A Man Trip Block
 - Source Range Train B Man Trip Block
- Performance Step:** b. OBSERVE SOURCE RANGE TRIP BLOCKED green light lit on panel FB
- Standard:** Verifies Source Range Trip Blocked light illuminated on Panel FB
- Performance Step:** c. VERIFY SOURCE RANGE LOSS OF DETECTOR VOLTAGE alarm window FC 3-1 actuates.
- Standard:** Verifies alarm window FC 3-1 actuates.
- Performance Step:** d. VERIFY both source range channels indicate zero.
- Standard:** Verifies both channels indicate zero on panel FC.
- N-31 indicates zero
 - N-32 indicates zero
- Comment:**
- Performance Step: 3** Switch NIS Recorder to read both intermediate range channels.
- Standard:** Rotates NR-45 channel selector switches on panel FC so that one switch is selected to IR channel N-35 and the other switch is selected to IR channel N-36.
- Comment:**
- Performance Step: 4** Announce Criticality
- Standard:** No action required.
- Comment:** Cue if necessary: The announcement was already made as part of the initial conditions.

Performance Step: 5	INITIATE removal of AUDIO COUNT RATE DRAWER and SCALER TIMER DRAWER from service per SOP 13.1
Standard:	No action required.
Comment:	Cue: A second RO will be assigned to remove the AUDIO COUNT RATE DRAWER and SCALER TIMER DRAWER from service per SOP 13.1 .
Performance Step: 6	DIRECT Chemistry to obtain and analyze an RCS Boron Sample and a Gaseous Waste Sample per TS Table 4.10.3
Standard:	Utilizes telephone to contact chemistry and request RCS Boron Sample and a Gaseous Waste Sample per TS Table 4.10.3
Comment:	Booth Instructor: Acknowledge directions for chemistry to take samples.

The following represents the alternate path for this JPM

* Performance Step: 7	INSERT rods to stabilize power at approximately 1.0 E-8 amps on Intermediate range indicators.
Standard:	Verifies Rod Bank Selector Switch in MANUAL Moves Rod Control In-Hold-Out switch to in Observes control rods in CBD moving inwards Observes Startup Rate decreasing on IR SUR meters Inserts rods until SUR is zero and power is stabilized between 9×10^{-9} and 2×10^{-8} amps.
Comment:	Booth Instructor cue: As soon as candidate inserts control rods to stabilize power, insert malfunctions for dropped rods MAL CRF002AY ROD: P10 Dropped rod option 2 stationary coil MAL CRF002BA ROD: H8 Dropped rod option 2 stationary coil

* **Performance Step: 8** DIAGNOSES dropped control rods and trips reactor per AOI-16.1.1.

Standard: Depresses manual reactor trip pushbutton.

Comment:

Terminating Cue: When the candidate trips the reactor due to multiple dropped rods, the evaluation for this JPM is complete

Job Performance Measure No.: IP2 NRC S1

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS: A reactor startup is in progress. All precautions and limitations of POP 1.2 are met. Step 4.35 is complete. The reactor is critical.

INITIATING CUE: The CRS directs you to perform the actions necessary to establish a .3 - .5 DPM startup rate and raise power to 10^{-8} amps for critical data.

Facility: Indian Point Unit 2 Task No.: 006 004 04 01
Task Title: Fill #21 Safety Injection Accumulator JPM No.: 2003 NRC S2
K/A Reference: 006 A1.13 (3.5/3.7)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

- Initial Conditions:
1. Plant is stable at 100% power.
 2. A low-level condition exists in #21 SI Accumulator.
 3. Support systems are aligned in accordance with their applicable COLs.
 4. The Accumulator Topping Pump is "TAGGED OUT" and unavailable for use.
 5. The vapor containment is NOT open for personnel access.

Task Standard: #21 Safety Injection Accumulator filled to -50% [±5%] with the 22 SI Pump secured, and 890A closed.

Required Materials: SOP 10.1.1

General References: SOP 10.1.1

Handouts: NONE

Initiating Cue: The CRS has instructed you to fill #21 SI Accumulator to 50%, using the 22 SI pump.

Time Critical Task: NO

Validation Time: 15 minutes

SIMULATOR SETUP

Reset to IC 210

21 SI Accumulator level reduced to 40% with N₂ gas pressure at ~ 670 psig so that Accumulator pressure exceeds 675 psig during refill activities.

(Denote Critical Steps with an asterisk)

Performance Step: 1 Obtain correct procedure.

Standard: SOP 10.1.1

Comment:

Performance Step: 2 Reviews Precautions & Limitations and Initial Conditions.

Standard: Reviews P&L's and initial conditions.

Comment: **CUE: If necessary, provide candidate with CUE that all P&L's and initial conditions have been met.**

Performance Step: 3 Verify Accumulators are NOT drained and depressurized.

Standard: Checks 21 Accumulator pressure and level indicators to determine that the accumulator has pressure and level – GREATER THAN ZERO.

Comment: **Panel SB Accum 21 Level % Channel 1
Panel SB Accum 21 Press PSIG Channel 1
Or
Panel SM Accum 21 Level % Channel 2
Panel SM Accum 21 Press PSIG Channel 2**

Performance Step: 4 Verify RCS pressure is greater than 1600 psig and RCS temperature is greater than 350°F.

Standard: Checks RCS pressure indication – GREATER THAN 1600 psig
OR
RCS temperature indicators are GREATER THAN 350°F.

Comment: **Any of the following may be used to check RCS pressure:
Panel FD Pressurizer Pressure recorder, or
Panel FD Loop 21 Hot Leg Pressure recorder, or
Panel FB Pres 21 PSIG Channel 1, 2, 3, or 4, or
Panel SF RCS Pressure Wide/Narrow recorder**

**Any of the following may be used to check RCS temperature:
Panel FD RCS Cold Leg Temp recorder, or
Panel FC Tave Loop 1, 2, 3, or 4 temperature indication, or
Panel FD Ave Tave recorder**

NOTE: The following valves are normally positioned to the position requested by the procedure, and Initiating Cue #4 informed the candidate that the COLs were completed.

Performance Step: 5 Ensure following SI pump alignment valves are OPEN and the Accumulator Drain/Test stops are CLOSED.

Standard: Determines from initial conditions or Evaluator CUE that SI pump alignment valves are OPEN and the Accumulator Drain/Test stops are CLOSED.

Comment: **CUE:** If necessary Cue candidate that ALL valves in steps 4.1.2.(3) and 4.1.2.(4) are in the required position.

Performance Step: 6 Ensure SI pump suction pressure at least 10 psig.

Standard: Checks SI pump suction pressure meter GREATER THAN 10 psig [PI 947] panel SB-2

Comment:

* **Performance Step: 7** Start the 22 SI Pump.

- Observes green light extinguishes and red light illuminates

Standard: Places C.S. for 22 SI Pump to – START.

Comment:

Performance Step: 8 Verifies pump Start.

Standard: Checks 22 SI Pump RED breaker closed indicating light - LIT
AND
GREEN breaker open indicating light – NOT LIT.

Comment:

* **Performance Step: 9** OPEN 890A Accumulator Fill Stop.

Standard: Places C.S. for 890A [21 Accum Fill Valve] to OPEN on panel SM

Comment:

Performance Step: 10 Verify 890A Accumulator Fill Stop OPEN.
Standard: Checks 890A [21 Accum Fill Valve] RED open indicating light – LIT

AND

Green closed indicating light – NOT LIT on panel SM

Comment:

Performance Step: 11 Fill Accumulator to obtain level of 50%
Standard: Check Accumulator level and pressure indication – RISING on panel SM or SB-1

Comment:

NOTE: The simulator setup should insure that the Accumulator pressure will rise above 675 psig, thus requiring Venting of the Accumulator.

Performance Step: 12 Checks Accumulator pressure to determine if venting is required.
Standard: Checks Accumulator pressure meters, GREATER THAN 675 psig on panel SM or SB-1.

AND

DETERMINES THAT VENTING WILL BE REQUIRED.

Comment: Alarm SB-1 window 1-10 "21 ACCUMULATOR PRESSURE HIGH LOW" is expected at 675 psig

* **Performance Step: 13** Close 890a Accumulator Fill Stop.

- Observes green closed light illuminates and red open light extinguishes

Standard: Places C.S. for 890A [21 Accum Fill Valve] to CLOSE on panel SM

Comment:

- Performance Step: 14** Verify 890A Accumulator Fill Stop CLOSED.
- Standard:** Checks 890A [21 Accum Fill Valve] RED open indicating light – NOT LIT.
- AND
- GREEN closed indicating light – LIT.
- Comment:**
- CUE:** Role-play the CRS and instruct candidate to reduce Accumulator pressure to 635 - 660 psig.
- Note:** The candidate will refer to SOP-10.1.1, section 4.1.9 to vent the accumulator. Steps 15 through 23 of this JPM guide apply to the venting process.
- Performance Step: 15** Monitor the VC atmosphere.
- Standard:** Checks radiation monitors R41 Particulate/R42 Radiogas – STABLE on Panel SA-1 recorders, or on panel 1FA SRDs
- Comment:**
- Performance Step: 16** Ensure the following valves closed:
- 891A/B/C/D, Accumulator Discharge Gas Valve green light lit on panel SM
- HCV-943, Accumulator Vent Valve controller on panel SM, dial and meter at zero
- PCV-863, Accumulator Nitrogen Supply Line green light lit on panel SM
- Standard:** Checks position indicating lights for 891A/B/C/D, HCV-943, PCV-863 all RED open indicating lights – NOT LIT.
- AND
- GREEN closed indicating lights – LIT.
- AND
- HCV-943 controller at zero demand
- Comment:**
- * **Performance Step: 17** Open N₂ supply stop.

Standard:	Places C.S. for 891A [N ₂ supply stop] to – OPEN.
Comment:	
Performance Step: 18	Verify N ₂ supply stop open.
Standard:	Checks 891A [N ₂ supply stop] RED open indicating light – LIT. AND GREEN closed indicating light – NOT LIT.
Comment:	
* Performance Step: 19	Slowly Open HCV-943 to depressurize Accumulator.
Standard:	Slowly TURNS the Controller for HCV-943 to COUNTERCLOCKWISE raise direction.
Comment:	
Performance Step: 20	Verifies Accumulator pressure slowly dropping to 660 psig.
Standard:	Checks Accumulator pressure meter, SLOWLY dropping to 660 psig. (PI-937A Accum 21 Press Psig Ch-2 on panel SM, or Accum 21 Press Psig Ch-1 on panel SB-1)
Comment:	Note: Depressurization rate depends on how far open HCV-943 is. May cue candidate to open further to increase depressurization rate
	NOTE: When Accumulator pressure is between 635 and 660 psig the next step will be performed.
* Performance Step: 21	Close HCV-943.
Standard:	Slowly TURNS the Controller for HCV-943 to the CLOCKWISE direction UNTIL FULL LOWERED (0 position)
Comment:	
* Performance Step: 22	Close N ₂ supply stop.
Standard:	Places C.S. for 891A [N ₂ supply stop] to – CLOSE.

Comment:**Performance Step: 23** Verify N₂ supply stop Closed.**Standard:** Checks 891A [N₂ supply stop] RED open indicating light – NOT LIT.

AND

GREEN closed indicating light – LIT.

Comment:**NOTE: RESTART filling the accumulator.*** **Performance Step: 24** OPEN 890A Accumulator Fill Stop.**Standard:** Places C.S. for 890A [21 Accum Fill Valve] to OPEN.**Comment:****Performance Step: 25** Verify 890A Accumulator Fill Stop OPEN.**Standard:** Checks 890A [21 Accum Fill Valve] RED open indicating light – LIT

AND

GREEN closed indicating light – NOT LIT.

Comment:**Performance Step: 26** If RWST level decreases to less than 37 feet and RWST level low alarm on panel SBF-1 has not annunciated, then direct I&C to investigate cause.**Standard:** Checks RWST level GREATER THAN 37 feet.
Panel SB-1 RWST Level Feet indicating gauge, or
Panel AS-3 RWST Level recorder**Comment:**

Performance Step: 27 If RCS temperature is greater than 350°F, maintain RWST level greater than 36 ft. 10 in.

Standard: Checks RCS temperature greater than 350°F, and RWST level GREATER THAN 36 ft. 10 in.

Comment:

* **Performance Step: 28** Fill Accumulator to obtain level of 50%

Standard: Checks Accumulator level and pressure indication – RISING to 50% (+/-5%).

Comment:

-
- * **Performance Step: 29** CLOSE 890A Accumulator Fill Stop.
Standard: Places C.S. for 890A [21 Accum Fill Valve] to CLOSE.

Comment:
- Performance Step: 30** Verify 890A Accumulator Fill Stop CLOSED.
Standard: Checks 890A [21 Accum Fill Valve] RED open indicating light – NOT LIT.

AND
GREEN closed indicating light – LIT.

Comment:
- * **Performance Step: 31** Stop the 22 SI Pump.
Standard: Places C.S. for 22 SI Pump to – STOP.

Comment:
- Performance Step: 32** Verifies pump Stop.
Standard: Checks 22 SI Pump RED breaker closed indicating light – NOT LIT.

AND
GREEN open indicating light – LIT.

Comment:
- Performance Step: 33** Verify Nitrogen Supply Stop closed.
Standard: Determines 891A, 21 Accumulator N2 Stop, is closed

Comment:
- Terminating Cue:** When accumulator level is within the normal band and SI system is realigned, the evaluation for this JPM is complete

Job Performance Measure No.: IP2 NRC S2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

1. Plant is stable at 100% power.
2. A low-level condition exists in #21 SI Accumulator.
3. Support systems are aligned in accordance with their applicable COLs.
4. The Accumulator Topping Pump is "TAGGED OUT" and unavailable for use.
5. The vapor containment is NOT open for personnel access.

INITIATING CUE:

The CRS has instructed you to fill #21 SI Accumulator to 50%, using the 22 SI pump.

Facility: Indian Point Unit 2 Task No.: 300 050 05 01

Task Title: Depressurize the RCS to Restore Inventory During a SGTR JPM No.: 2003 NRC S3 SROU

K/A Reference: 038 EA1.03 (4.3/4.1)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

1. A Steam Generator Tube Rupture occurred 30 minutes ago on 21 Steam Generator.
2. All required actions of E-0 and E-3 have been completed up to and including the RCS cooldown.
3. Ruptured SG Pressure has been verified increasing with adequate RCS subcooling.
4. Normal Spray and Pressurizer PORVs have failed to depressurize the RCS

Task Standard: The RCS is being depressurized to meet the requirements of E-3

Required Materials: E-3

General References: E-3

Handouts: NONE

Initiating Cue: The CRS has directed you to depressurize the RCS in accordance with E-3 using Auxiliary Spray commencing with step 19.

Time Critical Task: NO

Validation Time: 25 Minutes

SIMULATOR SETUP

Reset to IC 208

Spray valves failed closed.

PORV fails as is.

PORV block valve MOV 535 fails closed.

DO NOT PLACE SIMULATOR IN RUN UNTIL JUST BEFORE THE CANDIDATE IS READY TO BEGIN

(Denote Critical Steps with an asterisk)

Performance Step: 1 Obtain correct procedure.

Standard: E-3

Comment:

*** Performance Step: 2****Establish Aux Spray**

- a. Maintain RCP seal injection 6 gpm to 10 gpm.
- b. Reduce charging pump speed to minimum flow.
- c. Close charging line flow control valve:
 - HCV-142
- d. Close the charging stop valves:
 - 204A – Loop 22
 - 204B – Loop 21
- e. Close the pressurizer spray valves:
 - PCV-455A
 - PCV-455B
- f. Open auxiliary spray valve:
 - 212
- g. Initiate spray slowly using HCV-142.
- h. Adjusted charging pump speed to increase spray flow.

Standard:**Established aux spray.**

- a. Maintained RCP seal injection 6 gpm to 10 gpm.
- b. Reduced charging pump speed to minimum flow.
- c. Closed charging line flow control valve:
 - HCV-142
- d. Closed the charging stop valves:
 - 204A – Loop 22
 - 204B – Loop 21
- e. Closed the pressurizer spray valves:
 - PCV-455A
 - PCV-455B
- f. Closed the pressurizer spray valve:
 - 212
- g. Initiated spray using HCV-142.
- h. Adjusted charging pump speed to increase spray flow.

Comment:

- | | | |
|---|--|---|
| * | Performance Step: 3
Standard: | Secure depressurization.
Aux spray valve closed with RCS pressure < Ruptured SG press
and PRZR level > 14% OR Pressurizer level reached 71%.
(More likely) |
| | Performance Step: 4
Standard: | Check RCS Pressure.
RCS Pressure verified increasing. |
| | Comment: | |
| | Performance Step: 5
Standard: | Verify requirements to terminate SI.
Adequate subcooling, heat sink, PRZR level and RCS pressure
stable or increasing verified. |
| | Comment: | |
| * | Performance Step: 6
Standard: | Stop SI Pumps.
SI Pumps stopped and placed in AUTO. |
| | Comment: | |
| | Terminating Cue: | When RCS pressure is lowering due to Aux Spray flow, the
evaluation for this JPM is complete |

Job Performance Measure No.: 2003 NRC S3 SROU

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

1. A Steam Generator Tube Rupture occurred 30 minutes ago on 21 Steam Generator.
2. All required actions of E-0 and E-3 have been completed up to and including the RCS cooldown.
3. Ruptured SG Pressure has been verified increasing with adequate RCS subcooling.
4. Normal Spray and Pressurizer PORVs have failed to depressurize the RCS

INITIATING CUE:

The CRS has directed you to depressurize the RCS using Auxiliary Spray in accordance with E-3 commencing with step 19.

Facility: Indian Point Unit 2 Task No.: 300 050 05 01

Task Title: Depressurize the RCS to Restore
Inventory During a SGTR
(Alternate) JPM No.: 2003 NRC S3

K/A Reference: 038 EA1.03 (4.3/4.1)

Examinee:

NRC Examiner:

Facility Evaluator:

Date:

Method of testing:Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____**READ TO THE EXAMINEE**

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

1. A Steam Generator Tube Rupture occurred 30 minutes ago on 21 Steam Generator.
2. All required actions of E-0 and E-3 have been completed up to and including the RCS cooldown.
3. Ruptured SG Pressure has been verified increasing with adequate RCS subcooling.

Task Standard: The RCS is being depressurized to meet the requirements of E-3

Required Materials: E-3

General References: E-3

Handouts: NONE

Initiating Cue: The CRS has directed you to depressurize the RCS in accordance with E-3 commencing with step 17.

Time Critical Task: NO

Validation Time: 25 Minutes

SIMULATOR SETUP

Reset to IC 208

Spray valves failed closed (PCV 455A and PCV455B)

PORV 456 failed as is.

PORV block valve MOV 535 failed closed.

DO NOT PLACE SIMULATOR IN RUN UNTIL JUST BEFORE THE CANDIDATE IS READY TO BEGIN

(Denote Critical Steps with an asterisk)

Performance Step: 1 Obtain correct procedure.

Standard: E-3

Comment:

- * **Performance Step: 2** Check ability to use normal spray as follows:
- Places master controller for pressurizer pressure in manual
 - Moves lever to spray position to demand spray
 - Determines that spray valves do not open by observing spray valve position indicators and pressure response. Green lights remain lit and red lights stay off for both Spray Control Valves PCV 455A and PCV 455B
 - Places spray valve individual controllers to manual and moves lever to open position.
 - Determines that spray valves do not open by observing spray valve position indicators and pressure response.

Standard: Normal spray verified not available and transition to step 17.

Comment:

- Performance Step: 3** Verify PRZR PORV flow path available as follows:
- Observes control power available by position indication lights for both PORVs (PCV 456 and PCV 455C) and both Block Valves (MOV 536 and MOV 535) illuminated.

Standard: Both PORV's verified available.

Comment:

- * **Performance Step: 4** Commence depressurization using PRZR PORV.
- Places control switch for PORV 456 to open
 - Observes PORV position indication lights remain lit, red lights do not illuminate, and determines that PORV does not open
 - Observes pressure response and determines that PORV has not opened
 - Places Block Valve MOV 535 control switch to open
 - Observes MOV 535 position indication green light remains lit and red light remains off, and determines that Block Valve will not open.
 - Determines that neither PORV is available
- Standard:** PORVs unavailable for depressurization.

Comment:

The following represents the alternate path of this JPM

*** Performance Step: 5****Establish Aux Spray**

- a. Maintain RCP seal injection 6 gpm to 10 gpm.
 - Observes Seal Injection Flow indicators for all 4 RCPs on panel SA
 - If necessary, dispatches Nuclear NPO to adjust charging pump recirculation valves during subsequent steps
- b. Reduce charging pump speed to minimum flow by placing charging pump speed controllers to manual and reducing controller output to minimum (rotates manual output knob CCW)
- c. Close charging line flow control valve:
 - HCV-142 by adjusting controller on panel SF to zero
- d. Close the charging stop valves by placing control switches on panel SF to closed and observing green position indication
 - 204A – Loop 22
 - 204B – Loop 21
- e. Verifies Spray Control Valves are closed by observing spray valve green position indication lit and red closed lamps off.
 - PCV-455A
 - PCV-455B
- f. Open auxiliary spray valve by placing control switch on panel SF to open and observing red position indication.
 - 212
- g. Initiate spray slowly using HCV-142.
 - Opens HCV-142 slowly by rotating the controller knob in the open CCW direction
- h. Adjusted charging pump speed to increase spray flow. Rotate CHG Pump Speed Controller manual adjust knob CW
 - Increases charging pump speed controller output while observing charging flow indication, pressurizer pressure indication, and pressurizer level.

Standard:**Aux. Spray established and verified by**

- Decreasing pressurizer pressure
 - Checks Loop 24 Hot Leg Pressure Recorder on panel FD, or
 - RCS Pressure Wide/Narrow on panel SF
- Increasing pressurizer level
 - Checks Panel FB Pressurizer level Ch 1, 2, or 3 (LI-459, 460, or 461)

Comment:

-
- * **Performance Step: 6** Secure depressurization when criteria met
- Standard:** Aux spray valve closed with RCS pressure < Ruptured SG press
 and PRZR level > 14%
- OR
- Pressurizer level reached 71%. (More likely)
-
- Terminating Cue:** When RCS pressure is lowering due to Aux Spray flow and any
 termination criteria is met, the evaluation for this JPM is complete

Job Performance Measure No.: 2003 NRC S3

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

1. A Steam Generator Tube Rupture occurred 30 minutes ago on 21 Steam Generator.
2. All required actions of E-0 and E-3 have been completed up to and including the RCS cooldown.
3. Ruptured SG Pressure has been verified increasing with adequate RCS subcooling.

INITIATING CUE:

The CRS has directed you to depressurize the RCS in accordance with E-3 commencing with step 17.

Facility: Indian Point Unit 2 Task No.: 300 049 05 01

Task Title: Cooldown to Target Temperature for JPM No.: 2003 NRC S4
SGTR (Alternate)

K/A Reference: 038 EA1.36 (4.3/4.5)

Examinee:

NRC Examiner:

Facility Evaluator:

Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A Steam Generator Tube Rupture has occurred.
The team has performed actions of E-0 and transition to E-3 has been made.

Task Standard: Cooldown to target temperature is complete. No radioactive release initiated as a result of operator action.

Required Materials: E-3

General References: E-3

Handouts: NONE

Initiating Cue: The CRS directs you to perform cooldown to target temperature IAW E-3, step 6.

Time Critical Task: NO

Validation Time: 20 minutes

SIMULATOR SETUP

Reset to IC 217.

Allow simulator to run and ensure SG 21 Atmospheric dump valve is controlling at 1030 psig

(Denote Critical Steps with an asterisk)

- * **Performance Step: 1** Initiate RCS Cooldown:
Determine required core exit temperature:
- Observes ruptured SG pressure on panel FB (PI 419 A, B, C)

Standard: Candidate determines that target temperature is 510°F for SG pressure equal to 1030 psig.

Comment:

- * **Performance Step: 2** Dump steam to condenser from intact SG(s) at maximum rate. NOT to exceed 0.5 E6 lbs/hr per intact SG:
- a. Check condenser – AVAILABLE
 - Checks MSIVs open (red lights lit on panel SB-1)
 - Checks Circulating Water Pumps operating (red lights lit on panel SJ)
 - b. Place steam dump controller switch to manual and adjust for zero output. (Closed, moves lever to closed until 0 output demand on panel FC)
 - c. Transfer condenser steam dump to pressure control mode and adjusts controller output to begin opening of steam dumps (Panel FB, Steam Dump Control Transfer Switch to PRESS)

Standard:

- Determines condenser is available.
- Places steam dump control in manual with zero output.
- Places steam dump in pressure control mode and adjusts to initiate cooldown. Adjusts lever to the right to increase the demand/output.
- Observes Steam Dump valve indicating lights on panel FB and steam flow indication on panel FC
- Determines steam dumps will not open (Stm Dump to CNDSR Group 1 light not lit. No steam flow indicated on panel FB Stm Flow Indicators and recorders.

Comment:

The following represents the alternate path of this JPM

- * **Performance Step: 3** Manually dump steam at maximum rate from intact SG(s):
- Use SG atmospheric steam dump:
 - Places Atmospheric Steam Dump controllers for 22, 23, and 24 SGs in manual and adjusts to maximum output.
- Standard:** Operates 22, 23, 24 ATM steam dumps. Places levers in manual position and moves levers to right. Adjust to 100%/OPEN output for each.
- Comment:**
-
- Performance Step: 4** Core exit TCs – LESS THAN REQUIRED TEMPERATURE
- Observes Core Exit Thermocouple temperatures on Accident Assessment Panel CET plasma displays.
- Standard:** Determines RCS temperature less than 510.
- Comment:**
-
- Performance Step: 5** Stop RCS cooldown.
- Adjusts controllers for 22, 23 and 24 Atmospheric Steam Dumps to closed. (0% demand output)
- Standard:** Closes atmospheric steam dumps.
- Comment:**
-
- Terminating Cue:** When the RCS is cooled to target temperature using intact SG Atmospheric Relief valves, the evaluation for this JPM is complete

Job Performance Measure No.: 2003 NRC S4

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS: A Steam Generator Tube Rupture has occurred.
The team has performed actions of E-0 and transition to E-3 has been made.

INITIATING CUE: The CRS directs you to perform cooldown to target temperature IAW E-3, step 6.

Facility: Indian Point Unit 2 Task No.: N/A
Task Title: Reset Containment Isolation Phase JPM No.: 2003 NRC S5
B (Alternate)
K/A Reference: 013 A4.02 (4.3/4.4)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A Steam Line Break has occurred inside containment. The team has entered ES-1.1, SI Termination. Safety Injection is reset.

Task Standard: Containment Isolation Phase A and Phase B are reset

Required Materials: ES-1.1, steps 2 and 3
Flashlight

General References: ES-1.1, steps 2 and 3

Handouts: NONE

Initiating Cue: The CRS has directed you to reset Containment Isolation Phase A and Phase B in accordance with ES-1.1, steps 2 and 3.

Time Critical Task: NO

Validation Time: 10 minutes

SIMULATOR SETUP

Reset to IC-221.

(Denote Critical Steps with an asterisk)

Performance Step: 1 Obtain correct procedure

Standard: Correctly locates and refers to ES-1.1, steps 2 and 3

Comment:

* **Performance Step: 2** Place IVSW switches to OPEN on SN Panel

Standard: Places control switches for the following valves to OPEN at Panel SN:

- 1410
- 1413
- SOV-3518
- SOV-3519

Comment:

* **Performance Step: 3** Place CNTMT RAD MON WCPS VALVES control switch to OPEN on SN Panel

Standard: Places Rad Mon WCPS supply and return valves control switch to OPEN at Panel SN

Comment:

Performance Step: 4 Verify personnel and equipment hatch solenoid control switches to INCIDENT on SM Panel

Standard: Verifies personnel and equipment hatch solenoids in INCIDENT at Panel SM

Comment:

-
- * Performance Step: 5** Place control switches for all remaining Phase A isolation valves to CLOSE on SN Panel
- Standard:** Places all Phase A (Yellow labeled) control switches, except the switches already opened, to CLOSE position on Panel SN.
- Comment:**
- * Performance Step: 6** One at a time, depress Phase A Reset buttons
- CI Phase A Train A
 - CI Phase A Train B
- Standard:** Individually presses CI Phase A Train A and B pushbuttons on Panel SN.
- Comment:**
- Performance Step: 7** Verify Train A and B - reset
- Standard:** Verifies CI Phase A, Train A and B are reset by the audible sound of 86 devices resetting.
- Comment:**
- Performance Step: 8** Check Phase B ACTUATED
- Standard:** Verifies Containment Isolation Phase B is actuated by checking all Phase B (red labeled) valves closed indication on Panel SN or 'Two is True' lights.
- Comment:**

Performance Step: 9 Containment Pressure less than 17 psig

Standard: Verifies Containment pressure is below 17 psig by checking Wide Range pressure transmitters on Panel SB-1 or Wide Range recorders on Panel AS-1 and AS-2

Comment:

- * **Performance Step: 10** One at a time, depress Containment Spray Reset pushbuttons
- Spray SYS Reset Train A
 - Spray SYS Reset Train B

Standard: Depresses Containment Spray Reset Train A and B pushbuttons one at a time on Panel SB-1. Will hear one audible click

Comment:

- * **Performance Step: 11** One at a time, depress Phase B reset buttons
- CI Phase B Train A
 - CI Phase B Train B

Standard: Depresses Phase B Reset Train A and B pushbuttons one at a time on Panel SN

Comment:

The following step represents the alternate path of this JPM

Performance Step: 12 Verify Train A and B - RESET

Standard: Determines that Phase B is NOT reset. Audible indication of Train B 86 relay reset is heard. Indication of Train A 86 relay reset is NOT heard

Comment:

- * **Performance Step: 13** Verify relays reset (Top of Safeguards Initiation Racks 1-2 and 2-2)
- S1
 - S2
 - CB1
 - CB2

Standard: Verifies relays S1, S2, and CB2 are reset above Safeguards Initiation Racks 1-2 and 2-2. Places CB1 reset switch to the RESET position above Safeguards Initiation Rack 1-2.

Comment:

- Performance Step: 14** Establish Instrument Air to Containment
- Open PCV-1228

Standard: Locates PCV-1228 control switch and places in OPEN position. Observes valve open indication, Red light on, Green light off on Panel SN

Terminating Cue: When Containment Isolation Phase A and B are reset, the evaluation for this JPM is complete.

Job Performance Measure No.: 2003 NRC S5

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS: A Steam Line Break has occurred inside containment. The team has entered ES-1.1, SI Termination. Safety Injection is reset.

INITIATING CUE: The CRS has directed you to reset Containment Isolation Phase A and Phase B in accordance with ES-1.1, steps 2 and 3.

Facility: Indian Point Unit 2 Task No.: 080 003 03 01
Task Title: Restore 6.9 KV Power From Off-Site, With the Unit Off-Line JPM No.: 2003 NRC S6
K/A Reference: 062 A4.01 (3.3/3.1)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: 1. A Loss of Power has occurred due to loss of the Station Aux Transformer.
 2. 138 KV power will not be available for over ONE HOUR.
 3. 6.9KV busses 5 and 6 will be energized form 13.8KV power.

Task Standard: 6.9KV busses 5 and 6 are energized from 13.8KV.

Required Materials: AOI 27.1.1

General References: AOI 27.1.1

Handouts: NONE

Initiating Cue: The CRS has directed you to restore 6.9KV busses 5 and 6 in accordance with AOI 27.1.1, step 13.

Time Critical Task: NO

Validation Time: 10 Minutes

SIMULATOR SETUP

Reset to IC-209

Loss of SAT

AOI 27.1.1 completed through step 12.

(Denote Critical Steps with an asterisk)

Performance Step: 1 Obtain correct procedure.

Standard: AOI 27.1.1

Comment:

Performance Step: 2 Determine from the DO if the time for 138KV power restoration to Unit 2 will exceed 30 minutes.

Standard: Initial conditions stated >1 hour.

Comment:

* **Performance Step: 3** Verify that 13.8KV power is available as follows:

- GT-1, feed from 13W92
- GT-2, feed to Units 2 and 3
- GT-1 13.8KV bus voltage indicated

OR

52GT/2F, feed from 13W93

52GT/BT, feed to Units 2 and 3

Standard: Verifies 13.8KV power is available from 13W92

Comment:

* **Performance Step: 4** Place the following breakers in pullout and caution tag:

- 6900V bus 1-5 tie breaker UT1-ST5
- 6900V bus 2-5 tie breaker UT2-ST5
- 6900V bus 3-5 tie breaker UT3-ST6
- 6900V bus 4-6 tie breaker UT4-ST6

Standard: Switches placed in pullout IAW Step 13 RNO

Comment: **CUE: CRS informs candidate that tags will be hung by another operator**

*** Performance Step: 5**

Place the following breakers in pullout:

- 6900V bus 5 normal supply breaker ST-5
- Station service xfrmr 5 supply breaker SS5
- 6900V bus 6 normal supply breaker ST-6
- Station service xfrmr 6 supply breaker SS6

Standard:

Switches placed in pullout IAW Step 13 RNO

Comment:**NOTE:** When ST-6 is placed in TPO, Panel SHF, Window 4-4, '6900 V Station Aux Breaker Trip' alarm will clear**Note:** When SS6 is placed in TPO, Panel SHF, Window 4-3, '6900 V Station Service Transformer Breaker Trip' alarm will clear*** Performance Step: 6**

Check 86ST5 and 86ST6 lockout relays reset

Standard:

Calls NPO to verify reset

Comment:**CUE:** NPO reports lockouts are reset**Performance Step: 7**

Align voltmeter selector switch to the bus to be energized, and check voltage is zero

Standard:

Aligns switch to bus 5 and 6, checks voltage on both busses is zero

Comment:*** Performance Step: 8**

With the DO's concurrence, CLOSE the Unit 1 GT transformer breaker 52GT25 and 52GT26.

Standard:

Breakers closed

Comment:**CUE:** DO concurs.**Comment:**

Terminating Cue:

When 6.9 KV bus 5 and 6 are energized from 13.8 KV, the evaluation for this JPM is complete

Job Performance Measure No.: 2003 NRC S6

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

1. A Loss of Power has occurred due to loss of the Station Aux Transformer.
2. 138 KV power will not be available for over ONE HOUR.
3. 6.9KV busses 5 and 6 will be energized from 13.8KV power.

INITIATING CUE:

The CRS has directed you to restore 6.9KV busses 5 and 6 in accordance with AOI 27.1.1, step 13

Facility: Indian Point Unit 2 Task No.: 015 008 02 01

Task Title: Placing A Power Range Channel In Service JPM No.: 2003 NRC S7

K/A Reference: 015 A3.03 (3.9/3.9)

Examinee:

NRC Examiner:

Facility Evaluator:

Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Power Range Channel N41 was removed from service due to a faulty comparator. The channel has been repaired and tested.

Task Standard: Power Range Channel N41 has been restored to service.

Required Materials: SOP 13.1

General References: SOP 13.1

Handouts: NONE

Initiating Cue: The CRS directs you to place power range channel N41 in service IAW SOP 13.1, Section 4.3.

Time Critical Task: NO

Validation Time: 20 minutes

SIMULATOR SETUP

Reset to IC-203.

Stage fuses for N41 in plastic bag. Hang off drawer handle at N41.

(Denote Critical Steps with an asterisk)

Performance Step: 1 ENSURE that the Power Mismatch Bypass Switch (Miscellaneous Control and Indication Panel) is in BYPASS for the selected channel.

Standard: Verifies switch in bypass.

Comment:

Performance Step: 2 ENSURE that the Comparator Channel Defeat Switch (Comparator and Rate Drawer) is in BYPASS for the selected channel.

Standard: Verifies switch in bypass.

Comment:

Performance Step: 3 PLACE the selected channel's Operation Selector switch in NORMAL.

Standard: Locates operation selector switch and verifies it is in normal position.

Comment:

* **Performance Step: 4** ENERGIZE the selected channel by installing the Control Power AND verifying the Instrument Power Fuses.

Standard: Locates and installs control power fuses. Verifies instrument power fuses already installed.

Comment: **Multiple alarms will clear**

Performance Step: 5 VERIFY that the NIS POWER RANGE LOSS OF DETECTOR VOLTAGE alarm (Panel FCF, Window 3-3) is NOT annunciated.

Standard: Verifies annunciator not lit.

Comment:

Performance Step: 6 ALLOW the channel to warm up for 30 minutes.
Standard:

Comment: **CUE: 30 minutes has elapsed.**

Performance Step: 7 RETURN the selected channel to service as follows:

- PERFORM the applicable post maintenance test, as specified by I&C (e.g., CHECK detector current, power level, etc.)

Standard:

Comment: **CUE: Already performed.**

* **Performance Step: 8** ENSURE rod control in MANUAL.
Standard: Verifies rod control in manual

Comment:

* **Performance Step: 9** PLACE the Power Mismatch Bypass Switch (Miscellaneous Control and Indication Panel) to OPERATE, to re-establish the signal from the selected channel to the automatic rod control Power Mismatch Unit.
Standard: Place switch in operate.

Comment:

Performance Step: 10 WAIT at least 2 minutes to allow the Power Mismatch Unit to stabilize.
Standard:

Comment: **NOTE: Must wait 2 minutes or rod motion will occur when rods are placed in AUTO.**

- * **Performance Step: 11** IF directed by the CRS, RETURN Rod Control to automatic.
Standard:

Comment: **CUE: CRS directs rod control be placed in AUTO.**

- * **Performance Step: 12** PLACE both the Upper AND Lower Section switches (Detector Current Comparators) to NORMAL to re-establish the signal from the channel to the Detector Current Comparators:

Upper Section Switch NORMAL

Lower Section Switch NORMAL

Standard: Places upper and lower sections in NORMAL.

Comment:

Performance Step: 13 VERIFY that both DEFEAT lights are extinguished.

Upper Section Channel Defeat Light EXTINGUISHED

Lower Section Channel Defeat Light EXTINGUISHED

Standard: Verifies both lights NOT lit.

Comment:

- * **Performance Step: 14** PLACE the Comparator Channel Defeat Switch (Comparator and Rate Drawer) to NORMAL to re-establish the signal from the selected channel to the Comparator Circuit.

Standard: Places switch in NORMAL.

Comment:

Performance Step: 15 VERIFY that the COMPARATOR DEFEAT light is EXTINGUISHED.

Standard: Verifies light NOT lit.

Comment:

-
- * **Performance Step: 16** PLACE the Rod Stop Bypass Switch (Miscellaneous Control and Indication Panel) to OPERATE for the selected channel.
- Standard:** Places switch in operate.
- Comment:**
-
- * **Performance Step: 17** PLACE the Dropped Rod Mode Switch to RESET AND RETURN to NORMAL for the selected channel to ensure channel dropped rod protection.
- Standard:** Locates switch turns to reset, then NORMAL.
- Comment:** **Alarm clears**
-
- Performance Step: 18** VERIFY that the Dropped Rod Bypass Lamp is EXTINGUISHED (NIS Rack).
- Standard:** Verifies light NOT lit.
- Comment:**
-
- Performance Step: 19** VERIFY that the NIS Dropped Rod Bypass CH.# lamp is EXTINGUISHED (Flight Panel).
- Standard:** Verifies light not LIT.
- Comment:**
-
- Performance Step: 20** VERIFY that the NIS TRIP BYPASS remote alarm is NOT annunciated (Panel FCF, Window 4-2).
- Standard:** Verifies annunciator OFF.
- Comment:**

Performance Step: 21 VERIFY that the NIS POWER RANGE DROPPED ROD STOP alarm is NOT annunciated (Panel FCF, Window 1-4).

Standard: Verifies annunciator OFF.

Comment:

Performance Step: 22 CHECK Bistable Proving Lamp for the selected channel ILLUMINATED.

Channel	Trip Switch	Location
N-41	Overtemp. Delta T	Foxboro Rack A-4, Ch. I

Standard: Verifies lamp above the Overtemperature Delta T bistable trip switch is lit

Comment:

* **Performance Step: 23** PLACE the Overtemperature Bistable Trip Switch for the selected channel to the UNTRIPPED position.

Standard: Places switch in UNTRIPPED position.

Comment: Alarm clears

Performance Step: 24 ENSURE the following for the selected channel:

- bistable proving lamps are extinguished
- channel trip alarms are cleared (Panel SAF, Window 2-8)
- trip status lamp is extinguished (Panel SOF, RPS Window)

Standard: Verifies alarms clear and lamps UNLIT.

Comment:

-
- * **Performance Step: 25** ENSURE that the loop Delta-T Defeat Switch T/411A OR T/411B (Foxboro Rack B-8) is in NORMAL for the selected channel:
- | | |
|------------------------------|--------|
| Delta-T Defeat Switch T/411A | NORMAL |
|------------------------------|--------|
- Standard:** Places switch in NORMAL.
- Comment:**
- Terminating Cue:** When the Power Range Channel is returned to service and verified functional with alarms clear, the evaluation for this JPM is complete

Job Performance Measure No.: 2003 NRC S7

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS: Power Range Channel N41 was removed from service due to a faulty comparator. The channel has been repaired and tested.

INITIATING CUE: The CRS directs you to place power range channel N41 in service IAW SOP 13.1, Section 4.3.

Facility: Indian Point Unit 2 Task No.: 008 004 0404
Task Title: Perform the Required Actions to
Establish Backup Cooling to the
Charging Pumps JPM No.: 2003 NRC P1
K/A Reference: 004 K1.36 (2.6/2.8)

Examinee:

NRC Examiner:

Facility Evaluator:

Date:

Method of testing:

Simulated Performance: X Actual Performance:
Classroom Simulator Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: 1. The CCR has been evacuated due to a fire and AOI 27.1.9, Control Room Inaccessibility Safe Shutdown Control, has been implemented.
2. CCW cooling to the Charging Pumps is not available.

Task Standard: Backup cooling has been established to the Charging Pumps.

Required Materials: AOI 27.1.9, Attachment 14

General References: AOI 27.1.9, Attachment 14

Handouts: None

Initiating Cue: The CRS has directed you to establish backup cooling to the Charging Pumps.

Time Critical Task: NO

Validation Time: 20 Minutes

(Denote Critical Steps with an asterisk)

Performance Step: 1 Obtain correct procedure.

Standard: AOI 27.1.9, Attachment 14, Step 1.

Comment:

Performance Step: 2 Notes Health Physics controls in the area required to operate the valves for this task. Also notes that ladder will be required for use

Standard: Notify HP or determine requirements in accordance with RWP.

Comment:

CUE: If asked, report that HP has surveyed the area and the task may continue.

CUE: If candidate determines a ladder is required, ask where they would get one.

Performance Step: 3 Connect hose to Charging Pumps City Water Backup Header Stop.

Standard: Locate hose and 1873D connection.

Comment:

CUE: Hose connected.

Performance Step: 4 Route hose to drainage.

Standard: Simulate routing hose to suitable drainage.

Comment:

* **Performance Step: 5** Close Charging Pumps City Water Backup Telltale Stop.

Standard: 1874 to clockwise direction.

Comment:

CUE: Valve closed.

* **Performance Step: 6** Open Charging Pumps City Water Backup Outlet Header Stops.

Standard: 1873C and 1873D to counter-clockwise direction.

Comment:

CUE: Valves open.

- * **Performance Step: 7** Close Charging Pumps Oil and Fluid Drive Coolers Outlet Stop.
Standard: 756B to Clockwise direction.

Comment: **CUE: Valve closed.**

- * **Performance Step: 8** Open Charging Pumps City Water Inlet Header Stops.
Standard: 1873A and 1873B to the counter-clockwise direction.

Comment: **CUE: Valve open.**

- * **Performance Step: 9** Close Charging Pumps Oil and Fluid Drive Coolers Inlet Stop.
Standard: 756A to Clockwise direction.

Comment: **CUE: Valve closed.**

Terminating Cue: When backup (City Water) cooling to the Charging Pumps is established, the evaluation for this JPM is complete

Job Performance Measure No.: 2003 NRC P1

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

1. The CCR has been evacuated due to a fire and AOI 27.1.9, Control Room Inaccessibility Safe Shutdown Control, has been implemented.
2. CCW cooling to the Charging Pumps is not available.

INITIATING CUE:

The CRS has directed you to establish backup cooling to the Charging Pumps.

Facility: Indian Point Unit 2 Task No.: 0840010404

Task Title: Perform the Required Actions to
Dump Steam Locally Using the
Atmospheric Steam Dump Valve for
22 S/G (PCV-1135) JPM No.: 2003 NRC P2

K/A Reference: 041 A4.06 (2.9/3.1)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: X Actual Performance:

Classroom Simulator Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: 1. The CCR has been evacuated due to a fire and AOI 27.1.9.1, Control Room Inaccessibility with Power Available has been implemented.

2. Radio communications have been established.

Task Standard: Instrument Air isolated and Nitrogen pressure indicated on pressure gauge P-2 (PI-6113) for PCV-1135.

Required Materials: AOI 27.1.9.1 Attachment 4

General References: AOI 27.1.9.1 Attachment 4

Handouts: None (Ensure candidate has a flashlight)

Initiating Cue: The CRS has directed you to dump steam locally from 22 Steam Generator using the Atmospheric Steam Dump Valve, PCV-1135.

Time Critical Task: NO

Validation Time: 15 Minutes

(Denote Critical Steps with an asterisk)

NOTE: Remind operator to NOT change any switch or valve positions.

Performance Step: 1 Obtains correct procedure and step.
Standard: AOI 27.1.9.1, Attachment 4, Step 1.

Comment:

Performance Step: 2 Observes cautions prior first step.
Standard: N/A

Comment:

Performance Step: 3 Ensure the atmospheric steam dump isolation stop is OPEN.
Standard: Locates and indicates proper direction to ensure MS-3B is OPEN.

Comment: **CUE: After locating valve and indicating proper movement, cue that valve is OPEN.**

* **Performance Step: 4** Close the normal Instrument Air supply stop from the Positioner to the diaphragm, Valve F (V-1).
Standard: Locates and indicates proper direction to CLOSE IA-1203 for PCV-1135

Comment: **CUE: After valve is located and simulated movement, cue that valve is CLOSED.**

Performance Step: 5 Ensure the N2 pressure regulating valve H is closed.
Standard: Locates and indicates proper direction to CLOSE PRV-5610 for PCV-1135. (Counter clockwise)

Comment: **CUE: After valve is located and simulated movement, cue that valve is CLOSED. (Set to minimum)**

-
- | | |
|------------------------------|--|
| * Performance Step: 6 | OPEN the N2 Inlet Stop valve C (V-4). |
| Standard: | Locates and indicates proper direction to OPEN SGN-501 for PCV-1135. |
| Comment: | CUE: After valve is located and simulated movement, cue that valve is OPEN. |
|
 | |
| * Performance Step: 7 | Slowly OPEN the N2 to the Diaphragm Stop valve D (V-2). |
| Standard: | Locates valve and indicates proper direction to OPEN SGN-509 for PCV-1135. |
| Comment: | CUE: After valve is located and simulated movement, cue that valve is OPENING. |
|
 | |
| Performance Step: 8 | Ensure the vent valve E (V-3) is CLOSED. |
| Standard: | Locates valve and indicates proper direction to CLOSE IA-1009 for PCV-1135. |
| Comment: | CUE: After valve is located and simulated movement, cue that valve is CLOSED. |
|
 | |
| * Performance Step: 9 | While observing pressure on indicator M (P-2), throttle OPEN Nitrogen Regulator valve H. |
| Standard: | Locates indicator and valve and indicates proper movement to throttle OPEN PRV-5610 for PCV-1135. |
| Comment: | CUE: After indicator and valve is located and proper movement simulated, cue that pressure is 15 psig and increasing. |
|
 | |
| Performance Step: 10 | Contact CRS at Safe Shutdown Panel and report that manual control is established |
| Standard: | Contacts CRS using radio |
| Comment: | Cue: CRS acknowledges manual control established |

Terminating Cue:

When the candidate is controlling 22 SG pressure locally, the evaluation for this JPM is complete

Job Performance Measure No.: 2003 NRC P2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

1. The CCR has been evacuated due to a fire and AOI 27.1.9.1, Control Room Inaccessibility with Power Available has been implemented.
2. Radio communications have been established.

INITIATING CUE:

The CRS has directed you to dump steam locally from 22 Steam Generator using the Atmospheric Steam Dump Valve, PCV-1135.

Facility: Indian Point Unit 2 Task No.: 0780460404
Task Title: Respond to a Loss of Instrument Air JPM No.: 2003 NRC P3
K/A Reference: 079 A2.01 (2.9/3.2)

Examinee:

NRC Examiner:

Facility Evaluator:

Date:

Method of testing:

Simulated Performance: X Actual Performance:
Classroom Simulator Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A Loss of Instrument Air has occurred. Instrument Air pressure continues to decrease. The CCR has received reports of a large air leak in the Support Facility

Task Standard: Instrument Air Compressors are running with SA-835 and SA-981 closed

Required Materials: AOI-29.2

General References: AOI-29.2

Handouts: None

Initiating Cue: The CRS has directed you to perform step 3 RNO of AOI-29.2 through step 3.h to restore Instrument Air Pressure.

Time Critical Task: NO

Validation Time: 15 Minutes

(Denote Critical Steps with an asterisk)

NOTE: Remind operator NOT to re-position any switches or equipment.

- | | |
|------------------------------|---|
| Performance Step: 1 | Obtain correct procedure. |
| Standard: | AOI 29.2, step 3 |
| Comment: | |
| | |
| Performance Step: 2 | Verify Instrument Air Compressors running in AUTO |
| Standard: | Checks control switches in AUTO and checks Instrument Air compressors running. |
| Comment: | CUE: Instrument Air Compressors are NOT running |
| | |
| * Performance Step: 3 | Start Instrument Air Compressors in HAND |
| Standard: | Locates 21 and 22 Instrument Air Compressor control switches and rotates to HAND position |
| Comment: | CUE: When candidate rotates control switch to HAND, inform them that the compressor has started |
| | |
| * Performance Step: 4 | Place Instrument Air Dryer control switches to OFF |
| Standard: | <ul style="list-style-type: none">○ Locates 21 and 22 Instrument Air Dryer control switches and places in OFF.○ Located 23 Instrument Air Dryer control switch on Panel EDH8 and places in OFF |
| Comment: | CUE: After locating and demonstrating switch position, inform then candidate that switches are OFF. |

-
- * **Performance Step: 5** Implement AOI-29.3, Support Facility Station Air Compressor Filter/Dryer Trouble.
- Standard:** Refers to AOI-29.3
- Comment:** **CUE: Inform candidate that another operator will perform AOI-29.3**
- * **Performance Step: 6** Place 11 Station Air Dryer Control disconnect switch (in stainless steel box next to dryer) in OFF
- Standard:** Locates box and simulates placing disconnect switch in OFF
- Comment:** **CUE: After locating box, inform the candidate that the disconnect is OFF. (DO NOT ALLOW APPLICANT TO OPEN BOX)**
- Performance Step: 7** Evaluate status of Unit 1 CENTACS and 11 Station Air Dryer
- Standard:** Locates CENTACS and 11 Station Air Dryer and attempts to determine status by checking pressures, temperatures, and DP for dryer.
- Comment:** **CUE: CENTAC 11 is running. CENTAC 12 is Off. 11 Station Air Dryer appears to be normal. CENTAC 11 is running loaded.**
- * **Performance Step: 8** If Unit 2 Instrument Air pressure decrease is due to a Support Facility problem, CLOSE the following (15' by 11 Station Air Receiver)
- SA-835
 - SA-981
- Standard:** Locates valves 835 and 981 on 15' level and simulates closing by turning clockwise
- Comment:** **CUE: Valves stop rotating in the clockwise direction.**

-
- * **Performance Step: 9** Begin actions to restore Support Facility Air per AOI-29.3, Support Facility Station Air Compressor Filter/Dryer Trouble.
- Standard:** No action required
- Comment:** **CUE: Inform candidate that another operator will perform AOI-29.3**
- Performance Step: 10** Report status of Support Facility Air System to the FSS
- Standard:** Reports that SA-835 and SA-981 are closed
- Comment:** **CUE: Unit 2 Instrument Air pressure is rising**
- Terminating Cue:** When SA-835 and SA-981 are closed and Instrument Air pressure is rising, the evaluation for this JPM is complete.

Job Performance Measure No.: IP2 NRC P3

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

A Loss of Instrument Air has occurred. Instrument Air pressure continues to decrease. The CCR has received reports of a large air leak in the Support Facility.

INITIATING CUE:

The CRS has directed you to perform step 3 RNO of AOI-29.2 through step 3.h to restore Instrument Air Pressure.