

Facility: Indian Point 2Task No: 0140040401Task Title: Perform the required actions for a malfunction of rod position indicator014A2.06 (2.6/3.0)K/A Reference: 014A4.03 (2.6/2.7)Job Performance Measure No: Sim-A

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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: Reactor is at indicated power, Xenon lowering, no equipment OOS. Tave is approximately 0.8°F higher than Tref, and Delta-Flux is slightly positive.

Task Standard: Plant stabilized with appropriate procedures completed

Required Materials: 2-AOP-ROD-1, Rod Control and Indication Systems Malfunctions
Graph RPC-3, Actual vs. Indicated Rod Position (All Rods)
2-SOP-16.1.1, Rod Control System Operation

General References: SOP-16.1.1, Rod Control System Operation
ARP SF 2-7, Control Rod or Power Distribution Trouble alarm

Initiating Cue: When I tell you to begin, you are to manually insert control rods 5 steps to return Tave to Tref and lower delta-flux per SOP 16.1.1 section 4.3

Time Critical Task: No

Validation Time: 20 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Reviews 2-SOP-16.1.1, section 4.3

CUE: All initial conditions per SOP 16.1.1 are met

Standard: Procedures referenced

Comment:

√ 2. Performance Step: Places the Rod Control Bank Selector Switch on panel FB to the MAN position.

Standard: Rod Control Bank Selector Switch on panel FB in the MAN position

Comment:

√ 3. Performance Step: Places the Rod Control IN-OUT switch on panel FB to the IN position.

Standard: Rod Control IN-OUT lever held in the IN position. Control Bank Delta rods begin inserting.

NOTE: After rod motion begins, malfunction XMT-CRF018A LVDT F-2 IRPI failure will actuate.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

4. Performance Step: Releases IN-OUT lever to stop rod motion. Observes IRPI indication and rod bottom light for control rod F-2

Standard: Rod Motion stopped.

CUE: Role play as the BOP RO and acknowledge 3 alarms: (Read the following aloud)

- SG 3-1, Metal Impact Monitoring, expected alarm
- SF 2-7, Control Rod or Power Distribution Trouble alarm
- SBF-1 4-6, Rod Bottom Rod Stop alarm

CUE: Provide the following cue if necessary: The CRS directs the candidate to perform AOP-ROD-1

Comment:

√ 5. Performance Step: Refers to procedure 2-AOP-ROD-1, Rod Control and Indication Systems Malfunctions

Standard:. Correct procedure entered.

Comment:

6. Performance Step: Uses redundant indication to determine that the malfunction is a RPI malfunction.

Standard: Determines that a RPI malfunction has occurred.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ **7. Performance Step:** Places the Flight Panel DVM ROD GROUP SELECTOR switch on panel FB to BK D GR 1 position.
Places the ROD SELECTOR switch to ROD 1
Depresses the VDC pushbutton (if necessary, selects the 0-20 V range)
Observes 0.000 VDC
References Graphs RPC-3 and observes 0.000VDC corresponds to actual rod position of 0

Standard: Determines that the LVDT output is zero, hence the nature of the malfunction is an RPI channel failure.

CUE: If necessary, CRS directs candidate to use the Flight Panel DVM

Comment:

8. Performance Step: Refers to Technical Specification 3.1.7, Rod Position Indication.

Standard: Determines that 3.1.7 Condition A applies.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

9. Performance Step: Returns to procedure and step in effect (manual rod insertion to lower Tave and Delta-flux)

CUE: CRS directs you to suspend control rod insertion until Reactor Engineering has verified rod position.

Standard: Monitors control bank delta step demand, delta-flux, Tave

Comment:

Terminating Cue: Completion of AOP-ROD-1 with return to procedure and step in effect.

VERIFICATION OF COMPLETION

Job Performance Measure No. Sim-A, Perform the required actions for a malfunction of rod position indicator

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Simulator Setup

Reset simulator to IC-126

Ensure that the flight panel DVM is OFF

Verify trigger 1 setup:

```
>sim-A.bat  
TRGSET 1 "MCRFGNS(13).eq.219"  
TRG 1 "IMF XMT-CRF018A (-1 0) 0.0000 0 222"
```

Use IC-3 EOL reactivity summary sheet

INITIATING CUES:

1. Reactor is at indicated power, Xenon lowering, no equipment OOS.
2. Tave is approximately 0.8°F higher than Tref, and Delta-Flux is slightly positive
3. When I tell you to begin, you are to manually insert control rods 5 steps to return Tave to Tref and lower delta-flux per SOP 16.1.1 section 4.3

TASK STANDARD:

1. Plant stabilized with appropriate procedures completed

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

RPC-3 Revision 13

INDIAN POINT STATION

UNIT No. 2

Actual vs Indicated

Rod Position

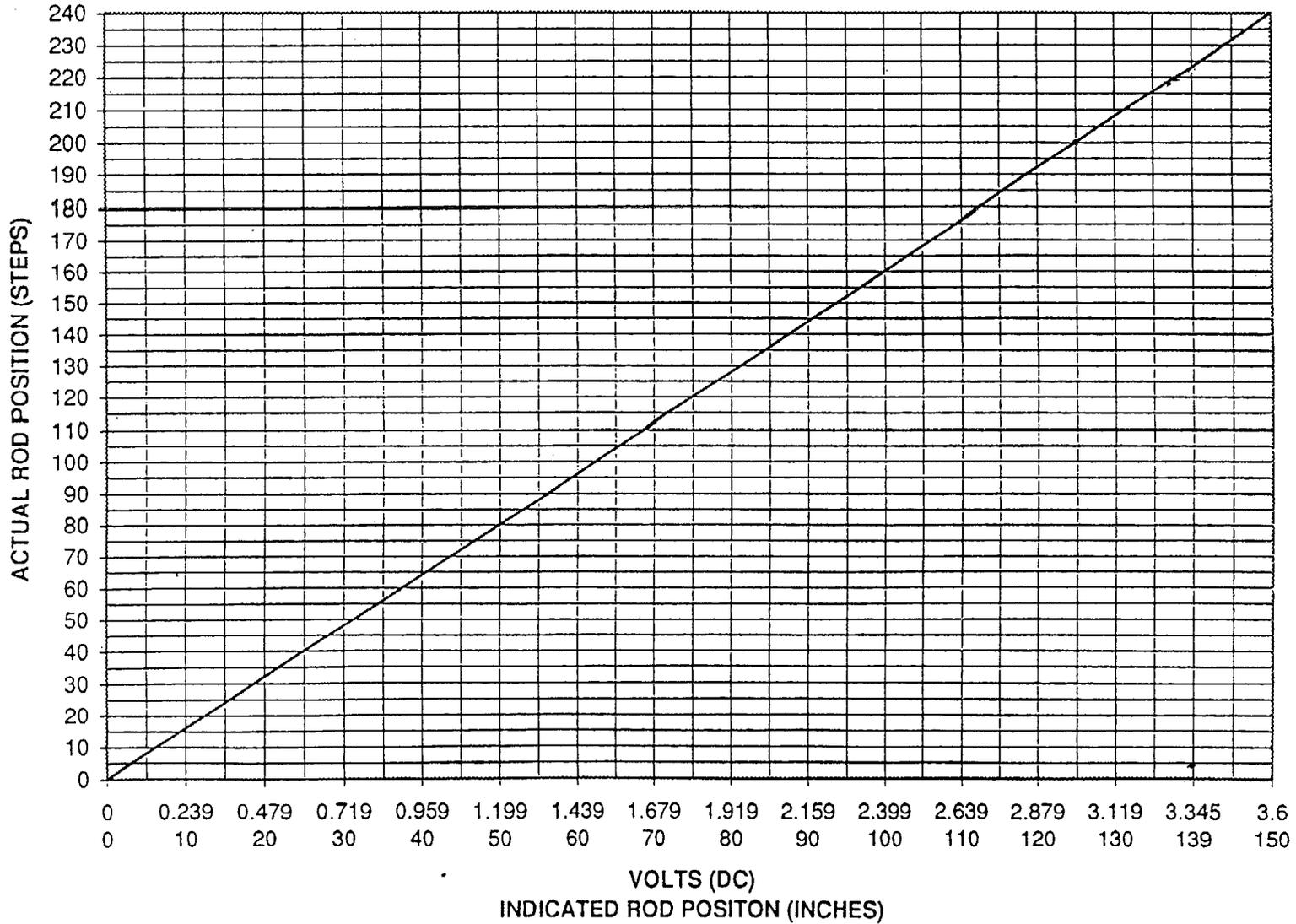
ROD POSITION - ALL RODS

SNSC

Approved

Effective Date

2057 8/30/95
DOMINO DUNN
Jay Huse
8/30/95



Facility: Indian Point 2Task No: 0060160401Task Title: Align SI pump and header during LOCA with RCS temperature <350°FK/A Reference: 006A4.07 (4.4/4.4)Job Performance Measure No: Sim-B

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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 LOCA has occurred while performing a plant cooldown to mode 5. The team is currently performing AOI-4.2.2, LOCA When RCS Temperature at Least 200°F and Less Than 350°F. SI pumps are danger tagged due to SOP 1.4.1 step 4.1.5.

Task Standard: SI system aligned per AOI-4.2.2 step 4

Required Materials: AOI-4.2.2 , LOCA When RCS Temperature at Least 200°F and Less Than 350°F

General References: AOI-4.2.2

Initiating Cue: The CRS has directed you to verify proper SI System alignment in accordance with AOI-4.2.2 step 4.

Time Critical Task: No

Validation Time: 20 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Checks RWST level greater than 9.24 feet

Standard: RWST level verified

Comment:

2. Performance Step: Verifies SI Pump cold leg injection valves OPEN

CUE: If NPO dispatched, NPO reports 856A, E, C, D are all open.

Standard: Checks 856A, E, C, D all de-energized OPEN

Comment:

3. Performance Step: Verifies 22 SI pump suction stops OPEN

Standard: 887A and 887B position indication or two-is-true indication checked to verify valves OPEN

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

4. Performance Step: Verifies 22 SI pump discharge valves OPEN

Standard:. 851A and 851B position indication or two-is-true indication checked to verify valves OPEN

Comment:

5. Performance Step: Checks RHR Hot Leg Suction stops – CLOSED
Determines MOV 730 and 731 are Closed

Standard: Checks 730 and 731 CLOSED

Comment:

6. Performance Step: Checks status of SI pumps

Standard: Determines none are running

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

7. Performance Step: Checks the following:
PRZR Level < 14% (yes)
RCS Subcooling < 52°F (yes)

Standard: Answers 'yes' to at least one of the conditions checked

Comment:

√ 8. Performance Step: Start 21 SI pump

Standard: Determines 21 SI pump will not start (Alternate Path)

Comment:

√ 9. Performance Step: Closes MOV-851B (Alternate Path)

Standard: 851B CLOSED

Comment:

√ 10. Performance Step: Starts 22 SI Pump (Alternate Path)

Standard: 22 SI pump started

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

11. Performance Step: Places 21 and 23 SI pumps to PULL OUT

Standard: 21 and 23 SI pumps control switches in PULL OUT

Comment:

Terminating Cue: Step 4 of AOI-4.2.2 complete.

VERIFICATION OF COMPLETION

Job Performance Measure No. Sim-B, Align SI pump and header during LOCA with RCS temperature <350°F

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Simulator Setup

Reset simulator to IC-128
Place caution tags on All SI Pumps

INITIATING CUES:

1. A LOCA has occurred while performing a plant cool down to mode 5.
2. The team is currently performing AOI-4.2.2, LOCA When RCS Temperature at Least 200°F and Less Than 350°F
3. SI Pumps are caution tagged per SOP 1.4.1 step 4.1.5
4. 856A, E, C, D Cold Leg Injection Valves are de-energized OPEN
5. The CRS has directed you to verify proper SI System alignment in accordance with AOI-4.2.2 step 4.

TASK STANDARD:

AOI-4.2.2 step 4 complete

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 0100010401Task Title: PZR PRESSURE CHANNEL FAILURE (Control pressure manually)K/A Reference: 010A3.02 (3.6/3.5)010A4.01 (3.7/3.5)010A4.02 (3.6/3.4)Job Performance Measure No: Sim-C

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: Reactor is at indicated power, steady state, no equipment OOS

Task Standard: Plant stabilized with appropriate procedures completed

Required Materials: 2-AOP-INST-1, Instrument/Controller Malfunctions

General References:

Initiating Cue: When I tell you to begin, you are to take the appropriate actions to stabilize the plant in response to indications and annunciators

Time Critical Task: NO

Validation Time: 20 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

Note: Place simulator in RUN and activate malfunction Pressurizer Pressure Ch-1 (PT-455) fails low (XMT-RCS028A, severity 1700, ramp 0, delay 0)

1. Performance Step: Diagnose pressurizer pressure control malfunction.

Standard: Verbalizes pressurizer pressure control is not stable, or verbalizes Pressurizer Pressure Channel 1 has failed low.

Comment:

Cue: Evaluator, CRS directs you to implement immediate actions of 2-AOP-INST-1, Instrument/Controller failures

2. Performance Step: Performs immediate operator actions of 2-AOP-INST-1, from memory.

Standard: May be performed in any order. After taking manual action in performance step 3, returns and checks remaining control systems.

Checks the following control systems to determine if any are affected:

- Rod Control
- Pressurizer Pressure Control
- Pressurizer Level Control
- MBFP Speed Control
- SG Level Control
- SP Pressure Control

Determines Pressurizer Pressure Control is affected

- Checks SG Level control inputs affected
- Checks Steam Dumps affected

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ **3. Performance Step: Place pressurizer pressure master controller (or individually spray valve controllers) in manual and control to stabilize the plant**

Standard: Pressurizer pressure control in manual and Pressurizer pressure increase stopped. Controls adjusted so that pressure is trending towards 2235psig.

Comment:

CUE: CRS directs you to continue in AOP-INST-1. Evaluator provide copy of AOP-INST-1 to candidate.

4. Performance Step: Manually operate PRZR heaters and sprays as necessary to maintain desired RCS pressure

CUE: After pressure is in manual control and trending towards 2235, provide cue that CRS has directed a spare operator to manually control pressure while the examinee continues in the procedure.

Standard: Pressure is in manual control and trending (under the operator's control) towards 2235 (or stable at 2235)

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 5. Performance Step: Place Pressurizer Pressure Defeat switch (P/455A in Rack B-6) to DEFEAT 1&4.

Standard:. Switch P/455A in DEFEAT 1&4 Position.

Comment:

√ 6. Performance Step: Return Pressurizer Pressure Control to AUTOMATIC operation.

CUE: CRS has directed you to place pressure control back in auto.

Standard: Adjusts pressurizer pressure to 2235, or adjusts set point dial until deviation indicates zero. Verifies deviation meter indicates zero. Places Auto/Manual selector on controller to Auto.

Comment:

7. Performance Step: Refer to Technical Specifications for Required Actions

CUE: CRS has checked Technical Specifications and directs you to trip the applicable bistables as directed by the procedure.

Standard: Ensures that appropriate TS have been referenced.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 8. Performance Step: Places Pressurizer Pressure Channel 1 Bistable Trips Switches to the TRIP position.

Standard:. Goes to Foxboro Rack A-4 and places the following bistable trip switches in the tripped position:

- (Loop 1) Hi Press Trip (Alarm SA 2-2 actuates) (white light comes on)
- (Loop 1) Lo Press Trip (white lights stays off)
- (Loop 1) SI (white light stays off)
- (Loop 1) Unblock SI (white light comes on)
- (Loop 1) Over Temp Trip (white light stays off)

Comment:

Terminating Cue: Plant stabilized with appropriate procedures completed

VERIFICATION OF COMPLETION

Job Performance Measure No.: Sim-C, Perform the required action for PZR
PRESSURE CHANNEL FAILURE (Control pressure manually)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Simulator Setup

Reset simulator to IC-2,

Insert malfunction: XMT-RCS028A, severity 1700, ramp 0, delay 0

INITIATING CUES:

1. Reactor is at indicated power, steady state, no equipment OOS
2. When I tell you to begin, you are to take the appropriate actions to stabilize the plant in response to indications and annunciators.

TASK STANDARD:

Plant stabilized with appropriate procedures completed

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 0030010201Task Title: Verify RCP operation per EOP E-0 step 9K/A Reference: 003A2.02 (3.7/3.9)Job Performance Measure No: Sim-D

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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. This is a time critical task.

Initial Conditions: A SGTR has occurred resulting in a Safety Injection and the team is performing EOP E-0. 21 CCW Pump is OOS for maintenance.

Task Standard: RCPs tripped and a Charging Pump running at maximum speed.

Required Materials: EOP E-0, Reactor Trip or Safety Injection, Step 9

General References: EOP E-0, Reactor Trip or Safety Injection, Step

Initiating Cue: The CRS has directed you to Check RCP Seal Cooling in accordance with EOP E-0, step 9

Time Critical Task: yes

Validation Time: 8 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

Evaluator Note: RCPS will trip in ~ 3 minutes after the simulator is placed in run. Do not put simulator in run until the candidate is ready to begin.

1. Performance Step: Checks three CCW Pumps Running

Determines 21 CCW pump is not running because it is in pullout and Danger Tagged OOS for maintenance

Determines 22 CCW pump is not running because it has an amber lamp illuminated indicating that it has tripped

Attempts to start 23 CCW pump, which does not start.

Dispatches an NPO to align backup cooling to Charging, SI and RHR pumps per SOP 4.1.2, CCW System Operation.

CUE: When NPO dispatched, acknowledge request to align backup cooling.

Simulator Operator: Run batch file ccw-1.bat when directed to align backup cooling to Charging, SI and RHR pumps per SOP 4.1.2, CCW System Operation

Standard: Does NOT attempt to start 21 or 22 CCW pump. Determines 23 CCW pump will not start. Dispatches NPO to align backup cooling to Charging, SI and RHR pumps.

Comment:

√ 2. Performance Step: Checks CCW flow to RCP thermal barriers – NORMAL:
Checks RCP Thermal barrier CCW alarms –Cleared (NO)
Stops all RCPs (Alternate Path)

Standard: Places control switches for all RCPs to STOP

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ **3. Performance Step:** Checks a charging Pump RUNNING (NO) (Alternate Path)
Checks 480V buses powered by offsite power
Starts one charging pump
Places speed controller in manual and adjusts to maximum speed

Standard: One charging pump running at maximum speed

Comment:

4. Performance Step: Verifies SW aligned for three headers

Standard: Placard on panel SB-1 checked

Comment:

5. Performance Step: Dispatches NPO to locally verify SWN-4 and SWN-5 are CLOSED

Standard: NPO dispatched to close valves

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

6. Performance Step: Checks 1-2-3 as non-essential SW header
 Checks offsite power available to bus 2A/3A
 Starts 22 Service Water Pump

Standard: 22 Service Water Pump started

Comment:

Terminating Cue: E-0 Step 9 completed

VERIFICATION OF COMPLETION

Job Performance Measure No. Sim-D, Verify RCP operation per EOP E-0 step 9

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Simulator Setup

Reset simulator to IC-127

IC with SGTR, 21 CCW OOS, 22 CCW tripped, 23 CCW failed as is, no charging pumps running.

Execute bat CCW-1.bat when dispatched to align backup cooling.

INITIATING CUES:

1. This task is time critical.
2. A SGTR has occurred resulting in a Safety Injection.
3. The team is performing EOP E-0.
4. 21 CCW Pump is OOS for maintenance
5. The CRS has directed you to Check RCP Seal Cooling in accordance with EOP E-0, step 9

TASK STANDARD:

EOP E-0 step 9 completed

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 0610010301Task Title: Start ABFPs and supply AFW flow to the SGs during plant shutdownK/A Reference: 061A1.01 (3.9/4.2)
061A3.01 (4.2/4.2)Job Performance Measure No: Sim-E

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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: Plant shutdown is in progress per POP-3.1, Plant Shutdown Mode 1 to Mode 3. Currently at step 4.34. Plant is at 3.5% power. AFW system and pumps are aligned per the COL.

Task Standard: AFW flow being supplied to each SG with level between 35-65%

Required Materials: 2-SOP-21.3, Auxiliary Feedwater System Operation
2-AOP-FW-1, Loss of Main Feedwater

General References: POP-3.1, Plant Shutdown Mode 1 to Mode 3

Initiating Cue: CRS has directed you to Start auxiliary boiler feed pumps and supply AFW flow to all SGs in preparation to shift main Feedwater supply to auxiliary feedwater supply per 2-SOP-21.3, Auxiliary Feedwater System Operation

Time Critical Task: NO

Validation Time: 20 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Verify that the Recirculation Control Valve Switch is in AUTO and the recirculation valves are open for 21 and 23 ABFPs

Standard: Checks both switches and valve indications in AUTO and open.

Comment:

√ 2. Performance Step: Starts 21 and 23 ABFPs

Standard: 21 Motor Drive ABFP running, determines 23 ABFP did not start.

SIMULATOR OPERATOR: Activate trigger 1 now to trip 21 MBFP

CUE: CRS directs you to perform the immediate actions of AOP-FW-1, Loss of Main Feedwater.

Comment: "Take appropriate action"

NOTE: This begins the alternate path portion of the task:

3. Performance Step: Checks if any MBFP is operating (no)
Checks reactor power < 4% (yes)

CUE: Provide a copy of AOP-FW-1 to the candidate. CRS directs you to continue in AOP-FW-1.

Standard: Checks no Feed Pumps running and reactor power less than 4%

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

4. Performance Step: Checks 21 and 23 ABFPs running (No, only 21)
 Performs Attachment 1 (Feeding SGs With AFW Pumps)

Standard: ABFPs checked. Performs attachment 1

Comment:

√ 5. Performance Step: Starts 22 ABFP as follows

- Set HCV-1118 (ABFP TURBINE SPEED CONTROL), to minimum speed (Panel SCF).
- Checks PCV-1139 in AUTO
- Select PCV-1139 to ON
- Slowly increase 22 ABFP turbine speed using HCV-1118 (ABFP TURBINE SPEED CONTROL) as necessary to control discharge pressure and flow rate.
- Adjusts HCV 405 C and D to maintain desired auxiliary feed flow to SGs

Standard: SG levels maintained 35-65% using AFW flow to all SGs

Terminating Cue: All SGs being fed AFW Flow and levels maintained 35 – 65%

VERIFICATION OF COMPLETION

Job Performance Measure No.: Sim-E, Start ABFPs and supply AFW flow to the SGs during plant shutdown

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Simulator Setup

Reset simulator to IC-131 Rx power 3.5 percent

Insert malfunction: Trigger 1 trips 21 MBFP. 23 ABFP does not start

INITIATING CUES:

1. Plant shutdown is in progress per POP-3.1, Plant Shutdown Mode 1 to Mode 3, at step 4.34.
2. Plant is at 3.5% power.
3. CRS has directed you to start auxiliary boiler feed pumps and supply AFW flow to all of the SGs in preparation to shift main Feedwater supply to auxiliary feedwater supply per 2-SOP-21.3, Auxiliary Feedwater System Operation.
4. AFW system and pumps are aligned per the COL
5. Maintain SG levels between 35-65%

TASK STANDARD:

Auxiliary feed flow supplied to each SG and levels maintained 35-65%

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 3000380502Task Title: Manually initiate CS when actuation is required (Alternate path)K/A Reference: 026 A4.01 (4.5/4.3)Job Performance Measure No: Sim-F

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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 LOCA has occurred. The team is performing EOP E-0, Reactor Trip or Safety Injection. You have been directed to perform Attachment 1, Automatic Action Verification.

Task Standard: All available containment spray and cooling equipment is operating, and containment isolation is complete.

Required Materials: EOP E-0, Attachment 1.

General References: EOP E-0, Attachment 1.

Initiating Cue: The CRS has directed you to perform E-0, Attachment 1 Automatic Action Verification

Time Critical Task: No

Validation Time: 20 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Verify Proper Charging System Operation

Standard: Starts one charging pump in Manual as maximum speed
Aligns charging pump suction to RWST

- Opens LCV-112B
- Closes LCV-112C

Places RCS Makeup Control Switch to STOP

Comment:

2. Performance Step: Check 345 KV MO Disconnect Switch F7-9 OPEN

Standard: Verifies that Generator Output Breakers 7 and 9 are OPEN

Comment:

3. Performance Step: Checks status of 480V Buses

Standard: Checks all 480V buses energized by offsite power
Dispatches an NPO to reset lighting and MCCs 24A, 27A, and 29A
Stops all condensate pumps

CUE: Acknowledge call to NPO to reset lighting and MCCs

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

4. Performance Step: Verify FW isolation

Standard: Checks Main Boiler Feed Pumps TRIPPED
Main Boiler Feed Pump Discharge Valves CLOSED
FW regulating Valves CLOSED
FW Stop Valves CLOSED
SG Blowdown Valves CLOSED

Comment:

√ 5. Performance Step: Check if Main Steamlines should be isolated

Standard: Determines containment pressure has been greater than 24 PSIG

- Manually closes MSIVs (this is an alternate path step)

Comment:

6. Performance Step: Verify Proper Service Water System Operation

Standard: Checks three SW pumps on Essential Header
Checks SW valves from EDGs OPEN (1276 and 1276A)

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

7. Performance Step: Verify SI System Pumps Running

Standard: Checks three pumps running
Checks MOV 851A and 851B OPEN
Checks two RHR pumps running

Comment:

8. Performance Step: Verify proper SI System valve alignment

Standard: Checks 822A and B, RHR HX CCW Outlet valves OPEN
Checks 746 and 747, RHR HX MOVs OPEN

Comment:

√ 9. Performance Step: Verify Containment Fan Coolers IN-SERVICE

Standard: Manually starts 21, 22, 23, 24 and 25 FCUs (Alternate Path)
Checks NORM OUT valves OPEN
Checks TCV-1104 and 1105 BOTH OPEN

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

10. Performance Step: Verify AFW Flow to All SGs

Standard: Checks flow indicated to all SGs

Comment:

11. Performance Step: Verify Containment Ventilation Isolation

Standard: Checks Containment Purge valves CLOSED
Checks Containment Pressure Relief valves CLOSED

Comment:

12. Performance Step: Verify Containment Isolation Phase A

Standard: Checks CA1 and CA2 relays tripped above safeguards relay racks E/F
Checks Phase A Valves CLOSED
Checks IVSW Valves OPEN
Checks WCP Valves OPEN
Places personnel and equipment hatch solenoid switches to INCIDENT
Dispatches an NPO to periodically check IVSW tank level and pressure and
WCP header pressures

CUE: NPO acknowledges order to monitor IVSW and WCP

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ **13. Performance Step:** Check if Containment Spray should be actuated

Standard: Checks containment pressure ever greater than 24 psig (yes)
Verify spray pumps running (no) (Alternate Path)
Manually initiates spray (no effect, not critical) (Alternate Path)
Manually starts both spray pumps (Alternate Path)
Verify Spray Pump Discharge Valves OPEN (no) (Alternate Path)
Manually Opens MOV 866A and 866B (Alternate Path)
Manually Opens MOV 866C and 866D (Alternate Path)
Verify containment isolation Phase B Valves CLOSED (no)
Manually closes 769 and 797, RCP Cooling Inlet (Alternate Path)
Manually Closes 784 and 786, RCP Bearing Discharge (Alternate Path)
Manually Closes 625 and 789, RCP Thermal Barrier Discharge (Alternate Path)
Manually Closes 222, Seal Water Return (Alternate Path)
STOP all RCPs
Dispatches NPO to check OPEN IVSW isolation valves

CUE: NPO acknowledge request to check IVSW valves OPEN

Comment:

14. Performance Step: Verify CCR AC Train A and Train B in Incident Mode 2

Standard: Check dampers in correct position and all lamps illuminated on panel PY2

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

15. Performance Step: Notifies CRS that Attachment 1 is complete

Standard: CRS notified and a summary of equipment issues provided.

Comment:

Terminating Cue: Attachment 1 completed.

VERIFICATION OF COMPLETION

Job Performance Measure No. Sim-F, Manually initiate CS when actuation is required
(Alternate path)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Simulator Setup

Reset simulator to IC-132, Post LOCA with VC Pressure >24 psig, no FCUs running, No auto CS, Phase B auto actuation failure, MSIV auto closure failure

INITIATING CUES:

1. A LOCA has occurred.
2. The team is performing EOP E-0, Reactor Trip or Safety Injection.
3. You have been directed to perform Attachment 1, Automatic Action Verification.

TASK STANDARD:

Attachment1 complete

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 0660011601Task Title: Energize 6.9 KV from 13.8 KV backup powerK/A Reference: 062A2.05 (2.9/3.3)
062A2.12 (3.3/3.6)
062A4.01 (3.3/3.1)

Job Performance Measure No:

Sim-G

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: Plant is at 100% Power, MOL, Steady State. A fault has occurred on the Station Auxiliary Transformer resulting in a loss of offsite power. 13.8KV power is available from Feeder 13W92.

Task Standard: 6.9KV Bus 5 is energized

Required Materials: 2-AOP-138KV-1 Attachment 1; 4 Caution Tags

General References: 2-AOP-138KV-1 Attachment 1

Initiating Cue: The CRS has directed you to energize bus 5 from the 13.8 KV power supply in accordance with 2-AOP-138KV-1, Loss of Power to 6.9KV Bus 5 and/or 6 Attachment 1, Restoration of Power to 6.9KV Bus 5 and/or 6 (Buses 1-4 Energized)

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

-
1. Performance Step: Check for protective relay targets on the following:
- 138KV Protection Relays (rear of Flight Panel)
 - 6.9 KV Bus 5 relays (locally)
 - 6.9 KV Bus 6 relays (locally)

Standard: Checks rear of Flight Panel for relay targets. Identifies a target for the Station Auxiliary Transformer Neutral Over-current relay.
Dispatches an NPO to check for protection relays actuated on 6.9KV buses 5 and 6
Notifies SM that only protection relay actuated is the SAT Neutral OC relay

CUE: NPO reports that there are no protective relays actuated on either Bus 5 or 6.

Comment:

-
2. Performance Step: Obtain determination from DO of expected time for 138KV restoration to Unit 2 SAT

Standard: DO contacted

CUE: If requested, DO reports that the fault is on the Unit 2 Station Aux Transformer and expected repair time is 10 days.

Comment:

-
3. Performance Step: Checks 13.8 KV power source available from 13W92 by checking:
- Checks breaker GT-1 Closed (on unit 1 GT panel)
 - Checks breaker GT-2 Closed
 - Check 13.8KV bus voltage on GT-1 (Dispatch NPO)

CUE: NPO Reports 13.8 KV bus voltage indicated on GT-1 bus.

Standard: Breaker position and Bus voltage checked

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

-
- √ **4. Performance Step:** Place the following breakers in Pull-out and apply Caution Tags:
- Bus 1-5 Tie BRKR UT1-ST5
 - Bus 2-5 Tie BRKR UT2-ST5
 - Bus 3-6 Tie BRKR UT3-ST6
 - Bus 4-6 Tie BRKR UT4-ST6

Standard: Breakers placed in Pull-Out and Caution Tags hung on switches

CUE: CRS Provides completed caution tags to the operator. A third RO will complete the required paperwork.

Comment:

-
- √ **5. Performance Step:** Place the following breakers in Pull-Out:
- 6900V Bus 5 Normal Feed BRKR ST5
 - STA Service XFMR 5 Supply BRKR SS5
 - 6900V Bus 6 Normal Feed BRKR ST6
 - STA Service XFMR 6 Supply BRKR SS6

Standard: Breakers placed in Pull-Out

Comment:

-
6. Performance Step: Green flag the control switches for 22 and 25 Circulators

Standard: 22 and 25 Circulators green flag shows in switch window and 6.9KV Motor trip alarm clears (SH window 3-3)

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ **7. Performance Step:** Close Breaker 52GT25

CUE: If asked, SM provides permission to energize bus 5.

CUE If dispatched, NPO reports that 6.9KV Bus 5 lockout relay 86ST5 is reset

CUE DO provides permission to close 52GT25

Standard: Selects 6.9 KV bus 5 with the Voltmeter Selector Switch

Obtains DO permission to close 52GT25

Closes breaker 52GT25

Comment:

Terminating Cue: 6.9KV Bus 5 is energized

VERIFICATION OF COMPLETION

Job Performance Measure No. Sim-G, Energize 6.9 KV from 13.8 KV backup power

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Reset simulator to IC-3,

MAL-EPS001, Loss of Station Aux Transformer

Close 21 and 23 EDG breakers

Acknowledge alarms

INITIATING CUES:

1. Plant is at 100% Power, MOL, Steady State.
2. A fault has occurred on the Station Auxiliary Transformer resulting in a loss of offsite power.
3. 13.8KV power is available from Feeder 13W92.
4. The CRS has directed you to energize bus 5 from the 13.8 KV power supply in accordance with 2-AOP-138KV-1, Loss of Power to 6.9KV Bus 5 and/or 6 Attachment 1, Restoration of Power to 6.9KV Bus 5 and/or 6 (Buses 1-4 Energized)

TASK STANDARD:

6.9KV Bus 5 is energized

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 0151110401Task Title: Remove an Intermediate Range Channel from serviceK/A Reference: 015A2.02 (3.1/3.5)
015A4.03 (3.8/3.9)

Job Performance Measure No:

Sim-H

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance	_____	Actual Performance	<u>X</u>
Classroom	_____	Simulator	<u>X</u>
		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: Plant is at 100% Power MOL, Steady state conditions. Intermediate Range NI Channel N-35 has failed. The actions of 2-AOP-NI-1 are complete up to removing the channel from service.

Task Standard: N-35 Removed from service IAW approved procedure

Required Materials: SOP-13.1

General References: 2-AOP-NI-1, Nuclear Instrumentation Malfunction, step 4.20

Initiating Cue: The CRS has directed you to remove channel N-35 from service in accordance with SOP-13.1, Nuclear Instrumentation System Operation. Control Power will NOT be removed.

Time Critical Task: **NO**

Validation Time: 15 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Refers to Section 4.6 of SOP-13.1

Standard: Section 4.6, Removing an Intermediate Range Channel from Service located and referenced.

Comment:

√ 2. **Performance Step:** Place the LEVEL TRIP Switch located on N-35 drawer on rack C-5 to the BYPASS position

Standard: Switch in BYPASS

Comment:

3. Performance Step: Verify the following:

- Level Trip Bypass lamp (at IR drawer) is lit
- Intermediate Range Trip Bypass lamp (Panel FBF) is lit
- NIS Trip Bypass alarm (Panel FCF window 4-2) has annunciated.

Standard: Each lamp and alarm checked.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

4. Performance Step: Place blocking strips across the back of relays

Standard: Determines blocking strips will not be applied.

CUE: If asked, SM/CRS states that control power is not to be removed.

Comment: Take the fuses from the candidate so that they do not get misplaced for simulator reset. Give the fuses to the Simulator Operator.

√ 5. Performance Step: REMOVE the instrument power fuses

Standard: Both instrument power fuses on the N-35 drawer have been removed.

Comment:

6. Performance Step: Verify the following:

- Intermediate Range 35 Loss of Compensating Voltage alarm (Panel FCF window 2-2) is annunciated
- NIS Intermediated Range Loss of Detector Voltage alarm (Panel FCF window 3-2) is annunciated

Standard: Both alarms verified actuated.

Comment:

Terminating Cue: SOP 13.1 Section 4.6 completed with IR Channel N35 removed from service.

VERIFICATION OF COMPLETION

Job Performance Measure No. Sim-H, Remove an Intermediate Range Channel from service

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Simulator Setup

Reset simulator to IC-2, 100% MOL

Insert malfunction: XMT-NIS003C NOISE FAILUE: N35
Severity 100%

INITIATING CUES:

1. Plant is at 100% Power MOL, Steady state conditions.
2. Intermediate Range NI Channel N-35 has failed.
3. The actions of 2-AOP-NI-1 are complete up to removing the channel from service.
4. The CRS has directed you to remove channel N-35 from service in accordance with SOP-13.1, Nuclear Instrumentation System Operation.
5. Control Power will NOT be removed.

TASK STANDARD:

N-35 Removed from service

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2 Task No: 0640020204

Task Title: Manually start 21 Emergency Diesel Generator

K/A Reference: 064A3.06 (3.3/3.4) Job Performance Measure No: Plant-I

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: The EDG system is aligned in accordance with COL. The SM has granted permission for EDG startup. MCC 29A feeder breaker is closed.

Task Standard: EDG 21 is running with 21 EDG Generator Available (green) light lit.

Required Materials: SOP 27.3.1.1, 21 Emergency Diesel Generator Manual Operation

General References: SOP 27.3.1.1 Step 5.1

Initiating Cue: When I tell you to begin, you are to simulate manually starting 21 Emergency Diesel Generator in accordance with the SOP.

Time Critical Task: NO

Validation Time: 30 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Obtain correct procedure

Standard: SOP 27.3.1.1 Step 5.

Comment:

2. Performance Step: Precautions & limitations reviewed

CUE: All precautions and limitations met

Standard: Recognize NOT dead bus pickup and diesel not supplying load

Comment:

3. Performance Step: EDG system aligned

CUE: COL 27.3.1 is complete

Standard: Checks COL alignment.

Comment: Not required, initiating cue

4. Performance Step: MCC 29a Feeder breaker is closed

CUE: If requested, MCC 29A feeder breaker is closed

Standard: Checks MCC 29A feeder breaker closed

Comment: Not required, initiating cue

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

5. Performance Step: Check Fuel Oil Day Tank level

CUE: If hand pump simulated, respond with level >115 gallons

Standard: Observes 21 EDG Tank level & verifies >115 gallons

Comment:

6. Performance Step: Check Starting Air pressure

Standard: Observes 21 EDG Starting Air pressure >269 psig

Comment:

7. Performance Step: Check Jacket Water Expansion Tank level

Standard: Observes 21 EDG JW Expansion Tank level $\geq 50\%$

Comment:

8. Performance Step: Check EDG outlet jacket water temperature and EDG outlet lube oil temperature

Standard: Observes JW temperature on TI-5038 to be $\geq 70F$ with lube oil temp $\geq 120F$ or
Observes lube oil temperature on TI-5424 to be $\geq 90F$ with JW temp $\geq 100F$

Comment:

NOTE: JW Temp located at inlet to upper cooler on the engine free end

NOTE: Lube Oil temp located outlet of lube oil filter on SW side of engine free end

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

9. Performance Step: Simulate Checking dipstick level and condition

CUE: If requested, level is between 3/4 and the HIGH mark and no water droplets are present

Standard: Observes 21 EDG dipstick level 3/4 to HIGH and no water droplets

Comment:

10. Performance Step: Check EDG Crankcase Sump and cylinder block

Standard: Touches 21 EDG Crankcase Sump & cylinder block to verify WARM TO THE TOUCH

Comment:

11. Performance Step: Fuel oil drip tank sight glass observed.

CUE: Level is 1/4 full

Standard: Observes drip tank sight glass

Comment:

12. Performance Step: Checks pre-lube oil pressure at PI-5416

CUE: After simulation of cycling D/P valve pressure CUE: pressure 8 psig

Standard: Proper operation of strainer D/P valve

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

13. Performance Step: Checks pre-lube oil pressure at PI-5417

CUE: Pressure indicates 12 Psig

Standard: Observes oil pressure 2-15 psig

Comment:

14. Performance Step: Checks starting air pressure at PI 5038 (red) or 5039 (black)

CUE: Pressure indicates 150 Psig

Standard: Observes air pressure 135-165 psig

Comment: NOTE: Small panel at generator end of EDG

15. Performance Step: Checks governor oil level

CUE: >1/2 full in glass

Standard: Observes oil level

Comment:

16. Performance Step: Checks trip handle reset

CUE: Handle reset

Standard: Observes handle

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

17. Performance Step: Checks Raw water pressure at PI-5676

CUE: Pressure indicates 30 Psig

Standard: Observes water pressure 10-70 psig

Comment:

18. Performance Step: Checks service water flow

CUE: >1200 gpm if FIC-5919 looked at OR >13.2 Inches ΔP if DPC-5919 used

Standard: Observes Flow >1200 gpm OR 13.2" $H_2O\Delta P$

Comment:

19. Performance Step: Verify lube oil check valves properly seated

Standard: Checks riser oil lines not hot to touch

Comment:

20. Performance Step: Recognize that it is not a dead bus pick up

Standard: Continue to step 5.1.2

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

21. Performance Step: Test the local alarm lights by placing Lamp Test Switch to ON

CUE: After simulating switch to ON, all alarm lights are operational

Standard: Identifies proper switch & indicates proper direction of movement

Comment:

22. Performance Step: Return Lamp Test switch to OFF

CUE: After simulating switch to OFF, only valid alarm lights are lit

Standard: Identifies proper switch & indicates proper direction of movement

Comment:

23. Performance Step: Ensure that the Lockout Relay Reset switch is in RESET

Standard: Observes 21 EDG Lockout Relay Reset switch is in RESET position

Comment:

24. Performance Step: Ensure Voltage Regulator Unit-Parallel switch is in UNIT

Standard: Observes 21 EDG Voltage Regulator Unit-Parallel switch is in UNIT position

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

25. Performance Step: Ensure Voltage Regulator Transfer Control switch is in AUTO

Standard: Observes 21 EDG Voltage Regulator Transfer Control switch is in AUTO position

Comment:

26. Performance Step: Obtain permission from SM to remove EDG from automatic

CUE: If requested, SM gives permission to remove 21 EDG from automatic

Standard: Permission from SM obtained

Comment: Permission provided in initiating cue.

27. Performance Step: Notify CCR that the EDG is to be started. Notifies CCR of entry into Tech Spec 3.7.B.1.

CUE: CCR operator acknowledges

Standard: Simulates CCR notification

Comment:

√ 28. Performance Step: Place Engine Control switch in MANUAL

CUE: After simulated movement, switch is in MANUAL position

Standard: Identifies proper switch & indicates proper direction of movement

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 29. Performance Step: Press the Engine Start button

CUE: After simulated movement, engine cranks and is running

Standard: Identifies proper switch & indicates proper direction of movement

Comment:

30. Performance Step: Check Generator Available Light illuminated. Additionally, Jacket water pressure switch (JWPS) energized light illuminated.
CUE: Lamp On

Standard: Observes Generator Available green light lit

Comment:

Terminating Cue: : EDG 21 is running with 21 EDG Generator Available (green) light lit

Simulator Setup

VERIFICATION OF COMPLETION

Job Performance Measure No. Plant-I, Manually start 21 Emergency Diesel Generator

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

INITIATING CUES:

1. The EDG system is aligned in accordance with COL.
2. The SM has granted permission for EDG startup.
3. MCC 29A feeder breaker is closed
4. When I tell you to begin, you are to *simulate* manually starting 21 Emergency Diesel Generator in accordance with the SOP

TASK STANDARD:

EDG 21 is running with 21 EDG Generator Available (green) light lit

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 0060040404Task Title: Line up alternate cooling to the SIS and RHR PumpsK/A Reference: 026AK3.03 (4.0/4.2)
006K1.11 (2.8/3.2)Job Performance Measure No: Plant-J

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 safety injection with loss of offsite power has occurred. The watch team is performing EOP E-0, Reactor Trip or Safety Injection. No CCW Pumps can be started. SI pumps and RHR pumps are operating.

Task Standard: Backup cooling to SIS and RHR pumps in service per procedure

Required Materials: SOP 4.1.2, Component Cooling System Operation.

General References: SOP 4.1.2, Component Cooling System Operation.

Initiating Cue: The CRS has directed you to *simulate* aligning backup cooling to the RHR pumps and SI pumps using SOP 4.1.2, Component Cooling System Operation.

Time Critical Task: NO

Validation Time: minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Determine need to establish backup cooling using primary water to SIS and RHR pumps, pumps running method.

CUE: IF CRS is asked whether Primary Water or City Water should be used, direct the use of Primary Water.

CUE: When SM is contacted, cue the candidate the SM has provided his signature.

CUE: Direct the candidate to simulate obtaining a key for the Alternate Safe Shutdown Cabinet.

Standard: Utilizes section 4.7.1 (page 28) of procedure 2-SOP-4.1.2. SM permission obtained. Key to ASSS cabinet obtained.

Comment:

√ 2. Performance Step: **CLOSE PW-73, PW to Demineralizer Supply Header Telltale Drain Stop.**

Standard: PW-73 located and simulated motion of valve hand wheel in the clockwise direction until closed.

CUE After simulated motion, cue that the valve is closed.

Comment:

√ 3. Performance Step: **OPEN PW-72, Filter/Demineralizer Primary Water Supply Header Stop**

Standard: PW-72 located and simulated motion of valve hand wheel in the counter-clockwise direction until open.

CUE After simulated motion, cue that the valve is open

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 4. Performance Step: OPEN PW-6, Primary Water Header Division Valve

Standard: PW-6 located and simulated motion of valve hand wheel in the counter-clockwise direction until open.

CUE After simulated motion, cue that the valve is open

Comment:

5. Performance Step: Connect a hose at 734F, SI and RHR Pumps Emergency Cooling Outlet Stop
Route the hose to a floor drain

Standard: Simulated actions to connect a hose to 734F and discusses routing of hose to a floor drain.

CUE: After locating ASSS locker and simulated actions and discussion, cue the candidate that the hose is connected and routed.

CUE: Inform the candidate that he is directed to stay in attendance at the hose, rather than install Temp-Alt tags.

Comment:

√ 6. Performance Step: OPEN 734F, SI and RHR Pumps Emergency Cooling Outlet Stop

CUE After simulated motion, cue that the valve is open

Standard: 734F located and simulated motion in counter-clockwise direction.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 7. Performance Step: **OPEN 734E, SI and RHR Pumps Emergency Cooling Outlet Stop**

CUE After simulated motion, cue that the valve is open

Standard: 734F located and simulated motion in counter-clockwise direction.

Comment:

√ 8. Performance Step: **CLOSE 734B, Hi-Head Safety Injection and RHR Pumps Normal Outlet Stop**

CUE After simulated motion, cue that the valve is closed

Standard: 734B located and simulated motion in clockwise direction.

Comment:

9. Performance Step: **Check CLOSED PW-115, PW to CCW Supply Telltale Drain Stop**

CUE After simulated motion, cue that the valve is closed

Standard: PW-115 located and simulated motion in clockwise direction.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 10. Performance Step: OPEN PW-114, PW to CCW Supply Isolation

CUE After simulated motion, cue that the valve is open

Standard: PW-114 located and simulated motion in counter-clockwise direction.

Comment:

**√ 11. Performance Step: OPEN 733C, Hi-Head Safety Injection and RHR Pumps
Primary Water Emergency Supply Stop**

CUE After simulated motion, cue that the valve is open

Standard: 733C located and simulated motion in counter-clockwise direction.

Comment:

**√ 12. Performance Step: CLOSE 734A, Hi-Head Safety Injection and RHR Pumps
Normal Supply Stop**

CUE After simulated motion, cue that the valve is closed

Standard: 734A located and simulated motion in clockwise direction.

Comment:

Terminating Cue: Backup cooling using PW placed in service.

Simulator Setup

VERIFICATION OF COMPLETION

Job Performance Measure No. Plant-J, Line up alternate cooling to the SIS and RHR Pumps

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

INITIAL CONDITIONS:

1. A safety injection with loss of offsite power has occurred.
2. The watch team is performing EOP E-0, Reactor Trip or Safety Injection.
3. No CCW Pumps can be started.
4. SI pumps and RHR pumps are operating.

INITIATING CUE:

The CRS has directed you to *simulate* aligning backup cooling to the RHR pumps and SI pumps using SOP 4.1.2, Component Cooling System Operation.

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED

Facility: Indian Point 2Task No: 0710011604Task Title: Align 24 Large Gas Decay Tank for start of dischargeK/A Reference: 071A4.05 (2.6/2.6)Job Performance Measure No: Plant-K

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: System is aligned in accordance with COL 5.2.1. The SM has directed 24 Large Gas Decay Tank is to be released. 24 Large Gas Decay Tank has been isolated, sampled, and the sample has been analyzed. Release Permit has been completed and approved to release 24 LGDT in accordance with SOP-5.2.1. Radiation monitor R-44 is in service. R_{TA} for the release permit is $3.525 \text{ E-}06 \mu\text{Ci/cc}$

Task Standard: 24 LGDT Release has been started

Required Materials: SOP-5.2.1, Gaseous Waste Disposal System Operation

General References: SOP-5.2.1, Gaseous Waste Disposal System Operation

Initiating Cue: You have been directed to *simulate* lining up and starting a release on 24 Large Gas Decay Tank in accordance with SOP-5.2.1.

Time Critical Task: NO

Validation Time: 30 minutes

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Obtain correct procedure

CUE: Provide candidate SOP 5.2.1.

Standard: SOP 5.2.1 section 4.4 and Attachment 4.

Comment:

√ 2. Performance Step: **Verify RCV-014 Plant Stack Discharge Valve CLOSED**

CUE: After locating Valve indication on waste Disposal Panel, state valve is closed.

Standard: Valve indication on WDP located and position checked closed.

Comment:

√ 3. Performance Step: **CLOSE 1644D, PCV-1039A Inlet Stop**

CUE: After valve located and position indication checked, cue valve closed.

Standard: Valve located and position checked.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 4. Performance Step: **CLOSE 1632, 24 LGDT Reuse Outlet**

CUE: After After valve located and position indication checked, cue valve closed.

Standard: Valve located on WDP.

Comment:

√ 5. Performance Step: **CLOSE PCV-1039B, Gas Analyzer Sample Inlet**

CUE: After valve located, question candidate on method to determine its position. If candidate states that he would use the print, allow the candidate to use print 9321-2730. After appropriate discussion, cue that valve is CLOSED.

NOTE: Drawing indicates that the valve fails closed. Air supply is from under the diaphragm. Therefore, air to open, spring to close. Closed would be stem in the "down" position.

Standard: Valve located and methods for position verification discussed.

Comment:

√ 6. Performance Step: **CLOSE 1617, 21 LGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 7. Performance Step: CLOSE 1618, 22 LGDT Outlet Stop

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

√ 8. Performance Step: CLOSE 1619, 23 LGDT Outlet Stop

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

√ 9. Performance Step: CLOSE 1652F, 21 SGDT Outlet Stop

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 10. **Performance Step:** **CLOSE 1652E, 22 SGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

√ 11. **Performance Step:** **CLOSE 1652D, 23 SGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

√ 12. **Performance Step:** **CLOSE 1652C, 24 SGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 13. Performance Step: CLOSE 1652B, 25 SGDT Outlet Stop

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

√ 14. Performance Step: CLOSE 1652A, 26 SGDT Outlet Stop

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

√ 15. Performance Step: OPEN 1620, 24 LGDT Outlet Stop

CUE: After valve located and proper motion simulated, cue valve open.

Standard: Valve located and hand wheel turned counter clockwise until open.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ **16. Performance Step:** **OPEN 1643D, 24 LGDT Stop (Inlet and PT)**

CUE: After valve located and proper motion simulated, cue valve open.

Standard: Valve located and hand wheel turned counter clockwise until open.

Comment:

17. Performance Step: **Manually select Waste Gas Release Line on Gas Analyzer per SOP-5.2.3**

CUE: After Waste Gas Analyzer is located, cue Analyzer is in manual with WG RELEASE Switch in SAMPLE position.

Standard: Place Gas Analyzer in manual and select WG RELEASE SW to SAMPLE position.

Comment: DO NOT have operator perform SOP-5.2.3. Locating the Waste Gas Analyzer is sufficient.

18. Performance Step: **Prepare release permit**

CUE: CCR has prepared the release. State that the permit number is 04-1

Standard: Check that a permit has been prepared and number recorded on attachment 1.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

√ 19. Performance Step: **Verify PAB exhaust fan running**

CUE: If necessary, cue that the fan is running.

Standard: Checks fan running.

Comment:

20. Performance Step: **Verify Iodine and Particulate Composite Collection device in service**

CUE: Device is in service.

Standard: Checks device operating.

Comment:

√ 21. Performance Step: **Commence Release**

CUE: When CCR asked, direct the operator to commence the release.

CUE: When RCV-014 is simulated to be open, indicate that R-44 is slowly increasing but never gets to the Release Target Activity setpoint. (3.525 e-6)

Standard: Determine release target value
Record on checkoff
Open RCV-014 to indicated point.

Comment:

Terminating Cue: 24 LGDT release has been started.

Simulator Setup

VERIFICATION OF COMPLETION

Job Performance Measure No. Plant-K, Align 24 Large Gas Decay Tank for start of discharge

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

INITIAL CONDITIONS:

1. System is aligned in accordance with COL 5.2.1.
2. The SM has directed 24 Large Gas Decay Tank is to be released.
3. 24 Large Gas Decay Tank has been isolated, sampled, and the sample has been analyzed.
4. Release Permit has been completed and approved to release 24 LGDT in accordance with SOP-5.2.1.
5. Radiation monitor R-44 is in service.
6. R_{TA} for the release permit is $3.525 \text{ E-}06 \mu\text{Ci/cc}$

INITIATING CUE:

You have been directed to *simulate* lining up and starting a release on 24 Large Gas Decay Tank in accordance with SOP-5.2.1.

RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED