Facility: Shearon-Harris Task No.:

Task Title: Isolate SI Accumulators JPM No.: 2007 NRC JPM c

K/A Reference: 006 A4.02 (4.0) • **ALTERNATE PATH**

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 small break LOCA has occurred. Actions have been taken in accordance with PATH-1, and EPP-009, LOCA COOLDOWN AND DEPRESSURIZATION. EPP-009 is in progress at Step 28 – Isolate ECCS Accumulators.

Task Standard:
- ECCS Accumulators "A" and "C" isolated.
- ECCS Accumulator "B" depressurizing to < RCS pressure.

Required Materials: None

General References:
- PATH-1
- EPP-009, LOCA COOLDOWN AND DEPRESSURIZATION, Revision 13
- OP-110, SAFETY INJECTION, Revision 24

Handout:
- EPP-09 marked through Step 27
- OP-110, Section 8.3

Initiating Cue: Starting at Step 28, perform EPP-009. For the purpose of expediting performance of this JPM, simulator time compression techniques will be utilized to perform any directed field tasks.

Time Critical Task: No

Validation Time: 11 minutes

SIMULATOR SETUP

- Initialize to IC-19 (100% power)
- Insert a small break LOCA (MALF RCS 18 2)
- Trip all RCPs
- Perform PATH-1
- Transition to EPP-8
- Transition to EPP-009
- Perform EPP-009 through Step 27
- Insert a malfunction to prevent 1SI-247 from closing (DI XAA1068)
- Place the following remote functions on a trigger to close the breakers for the SI Accumulator Isolation valves when requested:
    - SIS006 CLOSED (Trigger 1)
    - SIS007 CLOSED (Trigger 2)
    - SIS008 CLOSED (Trigger 3)
- FREEZE and SNAP to IC-163 for 2007 NRC JPM c
- Go to RUN, acknowledge and silence alarms before applicant assumes the watch.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

	EPP-009, Step 28.a
Performance Step: 1	Isolate SI Accumulators: a. RCS subcooling greater than 10°F [40°F] – C 20°F [50°F] – M
Standard:	Verifies RCS subcooling requirements are met.
Evaluator Note:	**Adverse containment values are in effect [40°F].**
Comment:	

	EPP-009, Step 28.b
Performance Step: 2	PRZ level greater than 10% [30%]
Standard:	• Verifies PRZ level greater than 30%. • Proceeds to Step 28.e
Comment:	

PERFORMANCE INFORMATION

EPP-009, Step 28.e

Performance Step: 3

e. Locally unlock AND close both breakers for each SI accumulator discharge valve:
   - ISI-246 (MCC-IA21-SA-5C)
   - ISI-247 (MCC-IB21-SB-5C)
   - ISI-248 (MCC-IA21-SA-3D)

Standard: Contacts AO and directs closure of the breakers.

Booth Operator Cue:

- **Acknowledge order.**
- **Actuate the trigger(s) to close all the breakers and then make the report.**

Comment:

EPP-009, Step 28.f

√ **Performance Step: 4**

Shut SI accumulator discharge valves:

- 1SI-246 (√)
- 1SI-247
- 1SI-248 (√)

Standard:

- Places switches for 1SI-246, 1SI-247, 1SI-248 in CLOSE.
- Verifies 1SI-246, 1SI-248 go closed (GREEN light)
- Reports 1SI-247 did NOT close.
- Proceeds to EPP-009, Step 28.f RNO

Comment:

PERFORMANCE INFORMATION

EPP-009, Step 28.f RNO

Performance Step: 5 Vent any unisolable accumulator using OP-110, SAFETY INJECTION, Section 8.3.

Standard: Locates procedure.

Evaluator Cue: **Provide OP-110, Section 8.3 Handout if the correct procedure is located.**

Comment:

OP-110, 8.3.1

Performance Step: 6 Verify Initial Conditions.

Standard: Determines Initial Conditions are met.

Evaluator Cue: **If necessary: No personnel are in containment.**

Comment:

PERFORMANCE INFORMATION

OP-110, 8.3.2.1/8.3.2.2.a

PROCEDURE NOTE: To minimize any potential sluicing between Accumulators through leaking valves, accumulator pressures should be approximately equal (within 4 psid between lowest and highest ERFIS indications) at the completion of this Section. (Reference 2.7.4, AR 72818)

Performance Step: 7

- Perform the following Steps on only one Accumulator at a time. (Reference 2.7.4)
- At the MCB perform the following:

PROCEDURE NOTE: Nitrogen is the primary motive force to LTOPS. The impact on LTOPS operability should be determined prior to shutting 1SI-287 per Precaution and Limitation 4.0.0.06.

- If necessary initiate an EIR.

Standard:

- Determines first NOTE does NOT apply since only one accumulator is being depressurized.
- Informs CRS regarding PORV operability.
- Determines EIR is NOT necessary since this is an EOP directed action or refers it to the CRS.

Evaluator Cue: **Acknowledge any reports.**

Comment:

OP-110, 8.3.2.2.b

√ **Performance Step: 8** Shut 1SI-287, ACCUMULATORS & PRZ PORV N2 SUPPLY

Standard: Places 1SI-287 in SHUT and verifies indication change. (GREEN light ON)

Comment:

PERFORMANCE INFORMATION

OP-110, 8.3.2.2.c

Performance Step: 9 Declare the associated Accumulator inoperable per TS 3.5.1, due to being connected to Non-Safety piping (a one hour action statement in Modes 1 through 3 above 1000 psig).

Standard: Informs CRS.

Evaluator Cue: **Acknowledge report.**

Comment:

OP-110, 8.3.2.2.d

√ **Performance Step: 10** Open the ACCUMULATOR N2 SUPPLY & VENT for the Accumulator to be vented:

Standard: Places 1SI-296, ACCUMULATOR B N_2 SUPPLY & VENT, in OPEN. (RED light)

Comment:

PERFORMANCE INFORMATION

OP-110, 8.3.2.3

Procedure CAUTION: In modes 1, 2, and 3, ensure Accumulators are maintained within Technical Specification limits for pressure and level when venting SI Accumulators.

√ **Performance Step: 11** Slowly adjust HC-936, 1SI-298 ACCUM VENT PRESS CNTL, control potentiometer output signal to open 1SI-298 and vent the Accumulator.

Standard: Adjusts potentiometer slowly while observing pressure in SI Accumulator "B" (PI-925).

Evaluator Note: **Pressure will be dropping very slowly; even when HC-936 is fully open.**

Comment:

Terminating Cue: **When Accumulator "B" only pressure is lowering under control: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM c

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS: A small break LOCA has occurred. Actions have been taken in accordance with PATH-1, and EPP-009, LOCA COOLDOWN AND DEPRESSURIZATION. EPP-009 is in progress at Step 28 – Isolate ECCS Accumulators.

INITIATING CUE: Starting at Step 28, perform EPP-009. For the purpose of expediting performance of this JPM, simulator time compression techniques will be utilized to perform any directed field tasks.

Facility:	Shearon-Harris	Task No.:	301170H601
Task Title:	Initiate RCS Feed and Bleed	JPM No.:	2007 NRC JPM d
K/A Reference:	E05 EA1.1 (4.1)	**ALTERNATE PATH**	

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:

- The reactor tripped from 100% power due to a loss of off-site power.
- A SBLOCA occurred following the reactor trip.
- Adverse containment values are in effect.
- Bus 1A-SA is locked out on an electrical fault.
- Motor Driven AFW Pump "B" is partially disassembled for maintenance.
- The Turbine-Driven AFW Pump failed while starting.
- The crew is performing FRP-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK.
- The Foldout criteria for initiation of RCS Bleed and Feed have just been met.

Task Standard: RCS feed established with maximum available bleed path.

Required Materials: Attach PATH-1 GUIDE Attachment 1 to this JPM for use by the evaluator.

General References: FRP-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK, Revision 21

Handout: Use simulator copy of FRP-H.1. Ensure it is cleaned after each use.

Initiating Cue: Observe the procedure CAUTION prior to FRP-H.1, Step 12, then initiate RCS feed and bleed.

Time Critical Task: No

Validation Time: 8 minutes

SIMULATOR SETUP

- At power IC
- Tag MDAFW Pump "B"
- MALF for an electrical fault to lock out Bus 1A-SA
- MALF to trip TDAFW Pump during AUTO start
- Overrides to block MANUAL OPEN on PCV-445A and PCV-444B
- Loss of Off-site power
- Perform PATH-1
- Perform EPP-4
- SBLOCA after entering FRP-H.1 to get to adverse containment values.
- Perform FRP-H.1 without establishing any source of feed flow
- Allow SG levels to reach feed and bleed Foldout criteria
- Place shifting 1A and 1B Air Compressors to LOCAL Mode on a trigger
- FREEZE and SNAP to IC-164 for 2007 NRC JPM d.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

FRP-H.1, Step 12

Procedure CAUTION: Perform Steps 12 through 21 quickly to establish RCS heat removal by RCS bleed and feed.

Performance Step: 1 Verify All RCPs - STOPPED

Standard: All RCP's stopped on LOOP.

Comment:

FRP-H.1, Step 13

Performance Step: 2 Actuate SI.

Standard: Verifies SI actuated.

Comment:

FRP-H.1, Step 14

Performance Step: 3 Verify RCS Feed Path:

VERIFY BOTH OF THE FOLLOWING:

- VERIFY CSIPs - AT LEAST ONE RUNNING.
- VERIFY SI VALVES - PROPERLY ALIGNED. (REFER TO PATH-1 GUIDE, ATTACHMENT 1)

Standard:

- Verifies both CSIP's running. (RED lights)
- Verifies valve alignment using Guide 1, Attachment 1, and/or verifies flow indication on the SI Flow meters.

Evaluator Note: **Only Train "B" is operable – no power to Train "A".**

Comment:

PERFORMANCE INFORMATION

FRP-H.1, Step 15

√ **Performance Step: 4** Reset SI.

Standard:

- Places both SI Train RESET Switches in RESET and releases. **(√)**
- Verifies RESET on Bypass Permissive Panel.

Comment:

FRP-H.1, Step 16

Performance Step: 5 MANUALLY REALIGN SAFE-GUARDS EQUIPMENT FOLLOWING A LOSS OF OFF-SITE POWER.

(REFER TO PATH-1 GUIDE, ATTACHMENT 2.)

Standard: Reads/acknowledges.

Comment:

FRP-H.1, Step 17

√ **Performance Step: 6** Reset Phase A AND Phase B Isolation Signals.

Standard:

- Places Train "A" and Train "B" Phase "A" RESET Switches in RESET and releases. **(√)**
- Places Train "A" and Train "B" Phase "B" RESET Switches in RESET and releases.

Comment:

FRP-H.1, Step 18

√ **Performance Step: 7** Energize AC Buses 1A1 AND 1B1.

Standard:

- Energizes Bus 1B1 by closing the cross-tie from the vital bus.
- No power available to 1A1.

Comment:

PERFORMANCE INFORMATION

FRP-H.1, Step 19

√ **Performance Step: 8**

Establish Instrument Air AND Nitrogen To CNMT:

a. Open the following valves:

- 1IA-819
- 1SI-287

b. Place air compressor 1A and 1B in the local control mode. (Refer to PATH-1 GUIDE, Attachment 5.)

Standard:

- Opens 1IA-819 (√)
- Opens 1SI-287 (√)
- Dispatches an AO to place 1A and 1B Air Compressors in the LOCAL Control Mode.

Booth Operator Cue:

Acknowledge assignment then actuate the ET to place 1A and 1B Air compressors in the LOCAL Mode and report back.

Comment:

PERFORMANCE INFORMATION

FRP-H.1, Step 20

√ **Performance Step: 9** ESTABLISH RCS BLEED PATH:

ESTABLISH TWO RCS BLEED PATHS LISTED IN TABLE 2 BY PERFORMING THE FOLLOWING FOR EACH BLEED PATH:

- VERIFY PRZ PORV BLOCK VALVE - OPEN.
- OPEN PRZ PORV.
- Evaluate EAL network using entry point U.

Standard:

- Verifies RC-115 and RC-117 indicate OPEN (RED light)
- No indication for RC-113
- Opens PCV-445B **(√)**
- Informs Shift Superintendent to evaluate EAL network using entry point U

Evaluator Cue:

- **The last known position for RC-113 was OPEN.**
- **As Shift Superintendent, acknowledge direction to evaluate the EAL network using entry point U.**

Evaluator Note: **Only PCV-445B will open. The applicant should attempt to open all PRZ PORV's.**

Comment:

FRP-H.1, Step 21.a **(ALTERNATE PATH begins)**

Performance Step: 10 Verify Adequate RCS Bleed Path:

Check PRZ PORVs AND associated block valves - TWO BLEED PATHS OPEN

RNO a. GO TO Step 21c.

Standard:

- Determines only one PRZ PORV is OPEN.
- Proceeds to RNO.

Comment:

PERFORMANCE INFORMATION

FRP-H.1, Step 21.c

√ **Performance Step: 11** Open all RCS vent valves to commence venting:

- 1RC-900
- 1RC-901
- 1RC-902
- 1RC-903
- 1RC-904
- 1RC-905

Standard: Opens:

- 1RC-901 ___
- 1RC-903 ___
- 1RC-905 ___

Evaluator Note: **There is no power available to 1RC-900, 1RC-902, 1RC-904.**

Comment:

Terminating Cue: **After RCS Vent Valves with power available are OPEN: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM d

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS:

- The reactor tripped from 100% power due to a loss of off-site power.
- A SBLOCA occurred following the reactor trip.
- Adverse containment values are in effect.
- Bus 1A-SA is locked out on an electrical fault.
- Motor Driven AFW Pump "B" is partially disassembled for maintenance.
- The Turbine-Driven AFW Pump failed while starting.
- The crew is performing FRP-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK.
- The Foldout criteria for initiation of RCS Bleed and Feed have just been met.

INITIATING CUE: Observe the procedure CAUTION prior to FRP-H.1, Step 12, then initiate RCS feed and bleed.

Attachment 2
Sheet 1 of 1

SAFEGUARDS EQUIPMENT REALIGNMENT FOLLOWING A LOSS OF OFFSITE POWER

IF a loss of offsite power occurs after SI reset, THEN the sequencer will provide a different equipment alignment than that provided by the SI sequencer program:

- RHR pumps and E-6 fans will NOT restart.
- Primary Shield and Reactor Support cooling fans (which were NOT running) will start.
- CNMT fan coolers (which were running in low speed) will restart in high speed.
- If CNMT Spray signal has been reset, the CNMT spray pumps will NOT restart.

These components should be realigned as required by plant conditions.

Facility: Shearon-Harris | Task No.:

Task Title: Control RCS temperature following a reactor trip | JPM No.: 2007 NRC JPM e

K/A Reference: 041 A2.02 (3.6) | **ALTERNATE PATH**

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:

- The reactor tripped from 100% power due to a technician error while testing the turbine protection system.
- The immediate actions of PATH-1 are complete.
- Both vital buses are energized from off-site power.
- The operating crew has just entered EPP-4, REACTOR TRIP RESPONSE.

Task Standard:

- All blowdown FCV's closed.
- MSIV's closed to isolate failed open Steam Dump Valve.

Required Materials: Floor operator to silence, acknowledge, and announce alarms.

General References: EPP-4, REACTOR TRIP RESPONSE, Revision 14

Handout: Use simulator copy of EPP-4. Ensure that it is cleaned after each use.

Initiating Cue: Perform the actions of EPP-4. A second operator is available to silence, acknowledge, and announce alarms not in your immediate vicinity.

Time Critical Task: No

Validation Time: 4 minutes

SIMULATOR SETUP

- 100% power IC.
- MALF for one stuck open steam dump valve (MS-109 @ 70 %).
- MALF for all six SG Blowdown Isolation valves fail to close.
- Manual trip Main Turbine.
- Perform PATH-1 immediate actions.
- Transition to EPP-4.
- FREEZE and SNAP to IC-165 for NRC Exam JPM e.
- RUN
- Setup computer screens for normal monitoring.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1

EPP-4, NOTE
FOLDOUT applies

- SI Initiation
- AFW Suction Switchover

Standard: Verifies no actions required.

Comment:

Performance Step: 2

EPP-4, Step 1
Implement Function Restoration Procedures As Required.

Standard: Verifies no RED or ORANGE CSF.

Comment:

Performance Step: 3

EPP-4, Step 2
Evaluate EAL Network Using Entry Point X.

Standard: Informs SSO.

Evaluator Cue: **Acknowledge "Evaluate EAL Network Using Entry Point X for a reactor trip".**

Comment:

PERFORMANCE INFORMATION

EPP-4, Step 3

Performance Step: 4 Check SG blowdown isolation valves – SHUT

Standard:

- Determines all SG Blowdown Isolation valves are OPEN and answers NO.
- Refers to RNO column.

Comment:

EPP-4, Step 3 RNO **(ALTERNATE PATH)**

√ **Performance Step: 5** Shut SG blowdown FCVs

Standard: Closes each (3) SG Blowdown Flow Control Valve at the Main Control Board by unlocking each POT and adjusting it to ZERO.

Comment:

EPP-4, Table 1

Performance Step: 6 Stabilize AND maintain temperature between 555 ˚F AND 559 ˚F using TABLE 1: RCS TEMPERATURE CONTROL GUIDELINES FOLLOWING RX TRIP

Standard:

- Refers to Table 1.
- Determines RCS temperature < 557 ˚F and decreasing.

Comment:

PERFORMANCE INFORMATION

EPP-4, Table 1

Performance Step: 7 RCS temperature < 557 ˚F and decreasing.

- Stop dumping steam

Standard:

- May note the open steam dump valve and attempt to close it using Steam Dump controls in MANUAL or taking it to OFF.
- May skip over next two steps and begin closing MSIV's.

Evaluator Note: **If applicant begins closing the MSIV's then skip to that JPM Performance Step.**

Comment:

EPP-4, Table 1

Performance Step: 8 RCS temperature < 557 ˚F and decreasing.

- Control feed flow
- Maintain total feedwater flow greater than 210 KPPH until level greater than 25% in one SG.

Standard: Adjusts AFW flow according to NR SG level indication:

- One or more SG's NR level ≥ 25 %: Operator discretion.
- All SG's NR levels < 25%: ≥ 210 KPPH.

Comment:

PERFORMANCE INFORMATION

EPP-4, Table 1

√ **Performance Step: 9** RCS temperature < 557 ˚F and decreasing.

- If cooldown continues then shut MSIV's and Bypass Valves.

Standard: Using each individual control switch, SHUTS:

- MSIV "A" _____ (√)
- MSIV "B" _____ (√)
- MSIV "C" _____ (√)
- Verifies Bypass Valves SHUT

Comment:

Terminating Cue: **When the applicant has moved to the next step (RCP Status): Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM e

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS:

- The reactor tripped from 100% power due to a technician error while testing the turbine protection system.
- The immediate actions of PATH-1 are complete.
- Both vital buses are energized from off-site power.
- The operating crew has just entered EPP-4, REACTOR TRIP RESPONSE.

INITIATING CUE:

Perform the actions of EPP-4. A second operator is available to silence, acknowledge, and announce alarms not in your immediate vicinity.

Facility: Shearon-Harris | Task No.:

Task Title: Reduce Containment Spray flow | JPM No.: 2007 NRC JPM f

K/A Reference: 026 A4.01 (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 large break LOCA has occurred.
- Both RHR Pump breakers have tripped. Maintenance is investigating.
- The crew has transitioned to EPP-12, LOSS OF EMERGENCY COOLANT RECIRCULATION, and has completed Step 9.

Task Standard: Containment Spray Pump flow reduced to one pump running.

Required Materials: None

General References: EPP-12, LOSS OF EMERGENCY COOLANT RECIRCULATION, Revision 17

Handout: Use simulator copy of EPP-12. Ensure that it is cleaned after each use.

Initiating Cue: Beginning at Step 10, perform EPP-12.

Time Critical Task: No

Validation Time: 5 minutes

SIMULATOR SETUP

- 100% power
- LBLOCA
- Perform PATH-1
- Trip both RHR Pumps near the EPP-12 transition point
- Transition to EPP-12
- Perform EPP-12 through Step 9
- FREEZE and SNAP to IC-166 for 2007 NRC JPM f
- Prior to RUN: Place clearance tags on AH-4-1A and AH-4-1B.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

EPP-12, Step 10

Performance Step: 1 Verify Containment Fan Coolers – one fan per unit running in SLOW speed.

Standard: Determines three Containment Fan Coolers are running with one fan in SLOW speed.

Evaluator Note: Fan Cooler AH-4 is tagged out-of-service.

Comment:

EPP-12, Step 11

Performance Step: 2 Check RWST level - greater than 3% (Empty alarm)

Standard: Verifies RWST level greater than 3% by level indication and/or alarm ALB-004-2-5 clear.

Comment:

EPP-12, Step 12.a

Performance Step: 3 Determine CNMT requirements.

- Spray Pump suction – aligned to RWST

Standard: Verifies RWST to CNMT Spray Pump suction valves 1CT-26 and 1CT-71 are aligned to RWST (RED lights).

Comment:

PERFORMANCE INFORMATION

EPP-12, Step 12.b

Performance Step: 4 Determine the required number of CNMT Spray Pumps from Table 1.

Standard:

- Applies existing RWST level (70%), CNMT Pressure (17 PSIG) and number of CNMT Fan Coolers running (3) to Table 1.
- Determines one CNMT Spray Pump is required.

Comment:

EPP-12, Step 12.c

√ **Performance Step: 5** Verify spray pumps – required number running.

Standard: Stops either Containment Spray Pump.

Comment:

EPP-12, Step 12.d

Performance Step: 6 Reset CNMT Spray signal.

Standard: Resets CNMT Spray signal (both trains).

Comment:

PERFORMANCE INFORMATION

	EPP-12, Step 12.e
Performance Step: 7	Align CNMT Spray Pumps stopped in 12.c for standby operation. • Shut CNMT Spray Discharge valves.
Standard:	• Shuts 1CT-50 ("A" CT Pump) • Shuts 1CT-88 ("B" CT Pump)
Evaluator Note:	**The discharge valves and chemical addition valves can be operated in any order.**
Comment:	
	EPP-12, Step 12.e
Performance Step: 8	Align CNMT Spray Pumps stopped in 12.c for standby operation. • Shut Chemical addition valves.
Standard:	• Shuts 1CT-12 ("A" CT Pump) • Shuts 1CT-11 ("B" CT Pump)
Comment:	
Terminating Cue:	**When the applicant proceeds to Step 13 (Align CNMT Spray for Recirculation): Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM f

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS:

- A large break LOCA has occurred.
- Both RHR Pump breakers have tripped. Maintenance is investigating.
- The crew has transitioned to EPP-12, LOSS OF EMERGENCY COOLANT RECIRCULATION, and has completed Step 9.

INITIATING CUE: Beginning at Step 10, perform EPP-12.

Facility:	Shearon Harris	Task No.:	062008H601
Task Title:	Restore Offsite Power to an Emergency Bus	JPM No.:	2007 NRC JPM g
K/A Reference:	062 A4.01 (3.3)		

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 loss of off-site power occurred.
- Bus 1B SB is being carried by the EDG.
- EDG 1A-SA failed to start.
- The switchyard has been reenergized.

Task Standard: Bus 1A-SA energized from the SUT.

Required Materials: Board Operator to acknowledge/silence unrelated alarms.

General References: OP-156.02, AC Electrical Distribution, Revision 59

Handouts: OP-156.02 Section 8.17, Restoration of Off-site Power to Emergency Buses R, with Initial Conditions signed off.

Initiating Cue: The SCO has directed you to restore power to Bus 1A-SA from off-site power per OP-156.02, Section 8.17. The Initial Conditions have been verified. An extra operator has been assigned to deal with alarms that are unrelated to your assigned task.

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR SETUP

ALLOW TWO MINUTES TO PERFORM THIS SETUP FOR EACH CANDIDATE

- Initialize the simulator to 100% (IC-18/19/20).
- Insert malfunction for EDG 1A-SA failure to start <**IMF DSG01 1**>.
- Insert a SUT 1A lockout <**IMF EPS07 1**> and a loss of off-site power <**IMF EPS01 1**>.
- After the B Sequencer has run through, delete the SUT 1A lockout <**DMF EPS07 1**> and loss of off-site power <**DMF EPS01 1**>.
- Verify the A EDG output breaker, BKR 106, is open.
- Acknowledge annunciators.
- When the setup is complete, bring in the candidate..

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Obtain Procedure

Standard: Reviews procedure OP-156.02, Section 8.17.

Examiners Cue: **Provide the operator with the handout (OP-156.02, Section 8.17) with the Initial Conditions signed off.**

Examiners Note:

- **Closed breaker indication is RED.**
- **Open breaker indication is GREEN.**

Comment:

Step 8.17.1

Performance Step: 2 Initial Conditions:

Standard: Verifies Initial Conditions initialed.

Comment:

PERFORMANCE INFORMATION

8.17.2.1.a

Procedure Note: Step 8.17.2.11 energizes Bus 1A-SA, while Step 8.17.2.12 energizes Bus 1B-SB.

Procedure CAUTION: Tripping of a Start Up Transformer Lockout Relay indicates a major fault on the transformer. Re-energizing the transformer may cause additional damage and should NOT be done without Load Dispatcher permission.

√ **Performance Step: 3** RESTORE off-site Power to 6.9KV Emergency Bus A-SA by performing the following:

a. VERIFY the START UP XFMR 1A LOCKOUT SU 1A relay on SU XFMR PROTECTIVE RELAY PANEL 1A is reset.

Standard: Places the START-UP XFMR 1A LOCKOUT Relay Switch to RESET position.

Comment:

Step 8.17.2.1.b

√ **Performance Step: 4** CLOSE 52-2 and/or 52-3.

Standard: Places 52-2 and/or 52-3 control switches to the CLOSE position.

Comment:

PERFORMANCE INFORMATION

Step 8.17.2.1.c.1/2

Procedure Note: Steps 8.17.2.1.c through 8.17.2.1.p are performed at the MCB.

Procedure Caution: Do not attempt to manually reset the 6.9KV Undervoltage Relay Lockout Devices before energizing the 6.9KV buses, or severe damage may result to the relay devices.

Performance Step: 5 VERIFY the availability to SUT 1A, as indicated by the following voltmeters reading between 6.55 and 7.25KV across EACH phase:

(1) EI-503, X Winding Volts (EACH phase)

(2) EI-504, Y Winding Volts (EACH phase)

Standard: Verifies EI-503 and EI-504 reading between 6.55 and 7.25 KV across each phase.

Comment:

Step 8.17.2.1d

Procedure Caution: Lack of breaker lights does not mean that the breaker is open, only that control power is off.

Performance Step: 6 VERIFY that all load feeder breakers are open on Auxiliary Bus 1D as required per the Unit SCO.

Standard: Acknowledges.

Examiners Cue: **All load feeder breakers on Auxiliary Bus 1D have been verified OPEN by an AO.**

Comment:

Step 8.17.2.1.e

√ **Performance Step: 7** PLACE the START UP XFMR A TO AUX BUSES A & D SYNCHRONIZER switch in the BKR 101 position.

Standard: Places START-UP TRANSFORMER "A" Synchronizer Switch in the BKR 101 position.

Comment:

Step 8.17.2.1.f

√ **Performance Step: 8** PLACE BKR 101, START UP XFMR A TO AUX BUS D, in the CLOSE position.

Standard: Places Breaker 101 Control Switch in the CLOSE position.

Comment:

Step 8.17.2.1.g

Performance Step: 9 VERIFY voltage on EI-561, AUX BUS 1D VOLT, is between 6.55 to 7.25KV.

Standard: Verifies EI-561 is reading within the specified band.

Comment:

Step 8.17.2.1.h

Performance Step: 10 PLACE the START UP XFMR A TO AUX BUSES A & D SYNCHRONIZER switch in the OFF position.

Standard: Places the START UP XFMR A TO AUX BUSES A & D Synchronizer Switch in the OFF position.

Comment:

PERFORMANCE INFORMATION

Step 8.17.2.1.i

Procedure Caution:

- Do not attempt to manually reset the 6.9KV undervoltage relay lockout devices before energizing the 6.9KV buses, or severe damage may result to the relay devices.
- Lack of breaker lights does not mean that the breaker is open, only that control power is off.

√ **Performance Step: 11** PLACE BREAKER 104, AUX BUS D TO EMERGENCY BUS A-SA, in the CLOSE position.

Standard: Places Breaker 104 Control Switch in the CLOSE position.

Comment:

Step 8.17.2.1.j

Performance Step: 12 IF BREAKER 106 SA, DIESEL GEN A-SA, is closed with EDG energizing bus 1A-SA, THEN SYNCHRONIZE AND TRANSFER off-site power with EDG A-SA per OP-155 AND DISREGARD the following Steps 8.17.2.1.k through 8.17.2.1.p.

Standard: Verifies Breaker 106 SA OPEN and EDG 1A-SA not running and continues in the procedure.

Examiners Cue: **Per the Initial Conditions: EDG 1A-SA did not start.**

Comment:

Step 8.17.2.1.k

Performance Step: 13 IF BREAKER 106 SA, DIESEL GEN A-SA is open, THEN PERFORM Steps 8.17.2.1.l through 8.17.2.1.p below to energize Bus 1A-SA.

Standard: Proceeds to step 8.17.2.1.l

Comment:

PERFORMANCE INFORMATION

Step 8.17.2.1.l

√ **Performance Step: 14** PLACE EMERGENCY BUS A-SA TO AUX BUS D SYNCHRONIZER Switch in the SYNC position.

Standard: Places EMERGENCY Bus A-SA TO AUX BUS D SYNCHRONIZER Switch to SYNC position.

Comment:

Step 8.17.2.1.m

√ **Performance Step: 15** PLACE BREAKER 105 SA, EMERGENCY BUS A-SA TO AUX BUS D TIE, in the CLOSE position.

Standard: Places the Breaker 105 Control Switch in the CLOSE position.

Comment:

Step 8.17.2.1.n

Performance Step: 16 VERIFY EI-6956A1 SA, EMER BUS A VOLTS, indicates between 6.55 and 7.25KV across EACH phase.

Standard: Verifies EI-6956A1-SA voltage within the specified band across each phase.

Comment:

Step 8.17.2.1.o

Performance Step: 17 PLACE the EMERGENCY BUS A-SA TO AUX BUS D SYNCHRONIZER Switch in the OFF position.

Standard: PLACES the EMERGENCY BUS A-SA TO AUX BUS D SYNCHRONIZER Switch in the OFF position.

Comment:

PERFORMANCE INFORMATION

Step 8.17.2.1.p.1

Performance Step: 18 VERIFY the following breakers are closed:
(1) A3 B-SA, EMERGENCY BUS A3 SA SUPPLY BREAKER.

Standard: Verifies Breaker A3 B-SA indicates CLOSED.

Comment:

Step 8.17.2.1.p.2

√ **Performance Step: 19** VERIFY the following breakers are closed:
(2) A3 A-SA, EMERGENCY BUS A SA TO XFMR A3 SA.

Standard: Places Breaker A3 A-SA Control Switch in the CLOSE position.

Comment:

Step 8.17.2.1.p.3

Performance Step: 20 VERIFY the following breakers are closed:
(3) A2 B-SA, EMERGENCY BUS A2 SA SUPPLY BREAKER.

Standard: Verifies Breaker A2 B-SA CLOSED.

Comment:

Step 8.17.2.1.p.4

Performance Step: 21 VERIFY the following breakers are closed:
(4) A2 A-SA, EMERGENCY BUS A SA TO XFMR A2 SA.

Standard: Verifies Breaker A2 A-SA CLOSED.

Comment:

PERFORMANCE INFORMATION

Step 8.17.2.1.p.5

Performance Step: 22 VERIFY the following breakers are closed:
(5) A1 B, EMERGENCY BUS A1 SUPPLY BREAKER.

Standard: Verifies Breaker A1 B CLOSED.

Comment:

Step 8.17.2.1.p.6

Performance Step: 23 VERIFY the following breakers are closed:
(6) A1 A-SA, EMERGENCY BUS A SA TO XFMR A1.

Standard: Places Breaker A1 A-SA Control Switch in the CLOSE position.

Comment:

Terminating Cue: **When Section 8.17 is complete: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM g

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS:

- A loss of off-site power occurred.
- Bus 1B-SB is being carried by the EDG.
- EDG 1A-SA failed to start.
- The switchyard has been reenergized.

INITIATING CUE:

The SCO has directed you to restore power to Bus 1A-SA from off-site power per OP-156.02, Section 8.17. The Initial Conditions have been verified. An extra operator has been assigned to deal with alarms that are unrelated to your assigned task.

Facility:	Shearon Harris	Task No.:	301058H401
Task Title:	Take corrective action for Loss of Both CCW Pumps	JPM No.:	2007 NRC JPM h
K/A Reference:	APE026 AA1.02 (3.2/3.3)	**ALTERNATE PATH**	

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:

- The plant is at 100 percent power.
- All controls are aligned for full power.
- The following equipment is under clearance:
  - Component Cooling Water Pump "B"
  - Heater Drain Pump "A"
  - Reactor Makeup Water Pump "B"

Task Standard:

- Specified CCW loads isolated.
- Charging isolated.
- Reactor tripped and all RCP's stopped (in that order).

Required Materials: None

General References: AOP-014, LOSS OF COMPONENT COOLING WATER, Rev. 29

Initiating Cue: You are the RO. Maintain current plant conditions.

Time Critical Task: NO

Validation Time: 6 minutes

SIMULATOR SETUP

- Initialize to a 100 percent steady-state condition (IC-18/19/20).
- IMF CCW01B to prevent AUTO/MANUAL start.
- Place IMF CCW01A on a trigger.
- Place clearance tags on the following to mask upcoming fault:
  - CCW Pump "B"
  - HD Pump "A"
  - RMUW Pump "B"
- FREEZE and SNAP to IC-168 for 2007 NRC JPM h.
- RUN
- When the operator has assumed the watch, actuate the trigger to "TRIP" the running CCW pump (IMF CCW01A).

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Simulator Operator:	**Actuate trigger for IMF CCW01A 15-30 seconds after the candidate assumes the watch.**
Performance Step: 1	Responds to CCW alarms.
Standard:	Enters AOP-014, reads purpose and enters at Section 3.0.
Comment:	**May contact Maintenance for support in restoring CCW "B".**
	Step 3.1
Performance Step: 2	Refer to PEP-110, Emergency Classification and Protective Action Recommendations, and enter the EAL Network at Entry Point X.
Standard:	Informs SS-O.
Evaluator Cue:	**Acknowledge.**
Comment:	
	Step 3.2
Performance Step: 3	Evaluate Plant Conditions and go to appropriate section.
Standard:	Identifies condition as Loss of CCW Pump and goes to Section 3.3.
Comment:	

PERFORMANCE INFORMATION

Step 3.3.1

Performance Step: 4 Check the Standby CCW Pump has STARTED.

Standard: Determines no CCW Pump running and none available.

Comment:

PERFORMANCE INFORMATION

Step 3.3.2

Performance Step: 5 Check CCW Header Pressure GREATER THAN 52 psig.

Standard: Determines CCW header pressure is less than 52 PSIG and proceeds to RNO column.

Step 3.3.2.a RNO Column (ALTERNATE PATH begins)

Performance Step: 5a If CCW is lost, then perform the following:

Verify the following valves shut:

Evaluator Note: **Valve operation/verification may be performed in any order.**

√ **Performance Step: 5b**
- 1CS-7, 45 gpm Letdown Orifice A.

Standard: Shuts 1CS-7.

√ **Performance Step: 5c**
- 1CS-8, 60 gpm Letdown Orifice B.

Standard: Shuts 1CS-8.

Performance Step: 5d
- 1CS-9, 60 gpm Letdown Orifice C.

Standard: Verifies 1CS-9.

Performance Step: 5e
- 1CS-460, EXCESS LETDOWN

Standard: Verifies 1CS-460.

Performance Step: 5f
- 1CS-461, EXCESS LETDOWN

Standard: Verifies 1CS-461.

√ **Performance Step: 5g**
- 1SP-948, RCS LOOPS B&C HOT LEG CNMT ISOL

Standard: Shuts 1SP-948.

√ **Performance Step: 5h**
- 1SP-949, RCS LOOP B&C HOT LEG CNMT ISOL

Standard: Shuts 1SP-949.

Performance Step: 5i
- 1SP-40, SB PRESSURIZER LIQUID SAMPLE ISOL

Standard: Verifies 1SP-40 SB.

Performance Step: 5j • 1SP-41 SA, PRESSURIZER LIQUID SAMPLE CNMT ISOL

Standard: Verifies 1SP-41 SA.

Performance Step: 5k • 1SP-59 SB, PRESSURIZER STM SPACE SAMPLE ISOL

Standard: Verifies 1SP-59 SB.

Performance Step: 5l • 1SP-60 SA, PRESSURIZER STM SPACE SAMPLE ISOL

Standard: Verifies 1SP-60 SA.

Comment:

Step 3.3.2.b RNO Column

√ **Performance Step: 6** ISOLATE CHARGING FLOW AS FOLLOWS:

- Place controller FK-122.1 in MANUAL and shut.
- SHUT 1CS-235 SB, Charging Flow Line Isolation.
- SHUT 1CS-238 SA, Charging Flow Line Isolation.

Standard:

- Places FK-122.1 in MANUAL and adjusts to ZERO demand and/or SHUT light lit.
- Places 1CS-235 in SHUT.
- Places 1CS-238 in SHUT.

Comment:

Step 3.3.2.c RNO Column

Performance Step: 7 If the RCS is solid, then stop the running CSIP.

Standard: Determines RCS NOT solid.

Comment:

PERFORMANCE INFORMATION

Step 3.3.2.d RNO Column

Performance Step: 8 If RHR is in service, then shut 1CS-28, RHR LETDOWN (HC-142.1)

Standard: Determines RHR NOT in service.

Comment:

Step 3.3.2.e.1 RNO Column

Performance Step: 9 If CCW is expected to be lost for greater than or equal to 10 minutes, then perform the following:

- Check the reactor is tripped.

Standard: Reports/identifies reactor not tripped.

Evaluator Cue: **After the step "If CCW is expected to be lost for greater than or equal to 10 minutes, then perform the following" is read: No CCW Pump will be available for at least 15 minutes.**

Comment:

Step 3.3.2.e.2 RNO Column

√ **Performance Step: 10** If CCW is expected to be lost for greater than or equal to 10 minutes, then perform the following:

- If the reactor is not tripped, then trip the reactor and go to EOP PATH-1 (continue with this procedure as time permits).

Standard: Initiates a MANUAL reactor trip.

Evaluator Cue: **Another operator will perform EOP PATH-1 immediate actions. Continue performing AOP-014.**

Comment:

PERFORMANCE INFORMATION

Step 3.3.2.e.3 RNO Column

√ **Performance Step: 11** If CCW is expected to be lost for greater than or equal to 10 minutes, then perform the following:

- Stop all running RCP's.

Standard: Stops each RCP (3).

Comment:

Terminating Cue: **When the candidate reads AOP-014 "Go to Step 4": Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM h

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS:

- The plant is at 100 percent power.
- All controls are aligned for full power.
- The following equipment is under clearance:
  - Component Cooling Water Pump "B"
  - Heater Drain Pump "A"
  - Reactor Makeup Water Pump "B"

INITIATING CUE: You are the RO. Maintain current plant conditions.

Facility: Shearon Harris Task No.: 301116H401

Task Title: Inhibit Both Trains of SSPS JPM No.: 2007 NRC JPM i

K/A Reference: APE068 AK 3.18 (4.2/4.5)

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 major fire has occurred on RAB 286' elevation in Cable Spread Room A (FIRE AREA 1-A-CSRA).
- The operating crew is implementing AOP-036, FIRE AREAS 1A-CSRA, 1A-CSRB.
- The reactor was shutdown by driving control rods but neither reactor trip breaker can be opened locally in accordance with AOP-036.05, Section 3.1, Step 1.a.

Task Standard: Control Rod Drive MG Set breakers OPEN and all listed fuses removed.

Required Materials:

- SSPS cabinet key
- Standard safety equipment
- Pictures of breaker cabinets to discuss removal of Rod Drive MG Set breaker control power fuses.

General References: AOP-036, SAFE SHUTDOWN FOLLOWING A FIRE, Rev. 39
AOP-036.05, Fire Areas 1A-CSRA, 1A-CSRB, Revision 4

Handout: AOP-036.05, Fire Areas 1A-CSRA, 1A-CSRB, Section 3.1, Step 1 (Pages 6 and 7)

Initiating Cue:	The SCO has directed you to complete the performance of AOP-036.05, Section 3.1, Step 1. Begin at Step 1.a RNO a (2) – Shutdown the Rod Drive MG sets. Report when Step 1 has been completed.
Time Critical Task:	No
Validation Time:	9 minutes

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Obtain procedure.

Standard: Reviews Section 3.1, Step 1.

Evaluator Cue: **Provide a copy of AOP-036.05, Fire Areas 1A-CSRA, 1A-CSRB, Step 1 (Pages 6 and 7).**

Comment:

Step 3.1.1.a

Procedure Caution:

- The following step will inhibit all automatic and manual safeguards functions since a fire in this area could cause spurious actuations as well as disable controls for resetting SI.
- Removal of Output Relay Power Fuses from both trains of SSPS will generate a Reactor Trip signal. The Reactor should be shut down prior to performing the following step.

Performance Step: 2 Defeat both trains of SSPS as follows:

- Verify Reactor Trip Breakers are OPEN.

Standard: NO - Information provided in Initial Conditions.

Evaluator Cue: **If necessary: Both Reactor Trip Breakers are SHUT.**

Comment:

PERFORMANCE INFORMATION

AOP-036.05, Step 1.a RNO a (2) (a)

√ **Performance Step: 3** TRIP the Rod Drive MG sets breakers:

• 1D2-6D, Rod Drive MG Set 1A

• 1E2-2A, Rod Drive MG Set 1B

Standard: Proceeds to Rod Drive MG Set breaker controls.

- Initiates trip on breaker 1D2-6D
- Initiates trip on breaker 1E2-2A

Evaluator Cue: **As each breaker trip mechanism is pointed out: 1D2-6D/1E2-2A indicates OPEN.**

Comment:

AOP-036.05, Step 1.a RNO a (2) (b)

Performance Step: 4 REMOVE Control Power Fuses from the Rod Drive MG sets breakers:

• 1D2-6D, Rod Drive MG Set 1A

• 1E2-2A, Rod Drive MG Set 1B

Standard: Discusses location and method for pulling the respective fuses.

Evaluator Cue: **Have the applicant explain the fuse removal process using a picture of the selected breaker cabinet. Provide feedback per the breaker cabinet selected.**

Comment:

PERFORMANCE INFORMATION

AOP-035.05, Step 3.1.1.b

Performance Step: 5 Obtain SSPS Key 40, 41, 94, 95, 96, or 97 (MCR or ACP Key Locker).

Standard: Describes the method/location for obtaining the key.

Evaluator Cue: **Provide SSPS Cabinet key.**

Comment:

AOP-035.05, Step 3.1.1.c

√ **Performance Step: 6** Remove the following fuses: (In the front of the SSPS Output cabinets).

- Train A, Output Cabinet No. 1, Output Relay Power Fuses.

Standard: Locates and simulates removal of the Train A Output Cabinet No. 1 Output Relay Power fuses.

Evaluator Cue: **Train A Output Cabinet No. 1 Output Relay Power fuses are removed.**

Comment: **Each cabinet should be closed and locked after the simulated action(s).**

PERFORMANCE INFORMATION

AOP-035.05, Step 3.1.1.c

√ **Performance Step: 7** Remove the following fuses: (In the front of the SSPS Output cabinets).

- Train A, Output Cabinet No. 2, Fuses 61 and 62.

Standard: Locates and simulates removal of Train A Output Cabinet No. 2 fuses 61 and 62.

Evaluator Cue: **Train A Output Cabinet No. 2 fuses 61 and 62 are removed.**

Comment:

AOP-035.05, Step 3.1.1.c

√ **Performance Step: 8** Remove the following fuses: (In the front of the SSPS Output cabinets).

- Train B, Output Cabinet No. 1 Output Relay Power Fuses.

Standard: Locates and simulates removal of Train B Output Cabinet No. 1 Output Relay Power fuses.

Evaluator Cue: **Train B Output Cabinet No. 1 Output Relay Power fuses are removed.**

Comment:

PERFORMANCE INFORMATION

AOP-035.05, Step 3.1.1.c

√ **Performance Step: 9** Remove the following fuses: (In front of the SSPS Output cabinets).

- Train B, Output Cabinet No. 2, Fuses 61 and 62.

Standard: Locates and simulates removal of Train B Output Cabinet No. 2 fuses 61 and 62.

Evaluator Cue: **Train B Output Cabinet No. 2 fuses 61 and 62 are removed.**

Comment:

Terminating Cue: **Control Room/SCO notified of step completion: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM i

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS:

- A major fire has occurred on RAB 286' elevation in Cable Spread Room A (FIRE AREA 1-A-CSRA).
- The operating crew is implementing AOP-036, FIRE AREAS 1A-CSRA, 1A-CSRB.
- The reactor was shutdown by driving control rods but neither reactor trip breaker can be opened locally in accordance with AOP-036.05, Section 3.1, Step 1.a.

INITIATING CUE:

The SCO has directed you to complete the performance of AOP-036.05, Section 3.1, Step 1. Begin at Step 1.a RNO a (2) – Shutdown the Rod Drive MG sets. Report when Step 1 has been completed.

Facility: Shearon Harris | Task No.: 039102H104

Task Title: Shut MSIVs by Isolating Air | JPM No.: 2007 NRC JPM j

K/A Reference: APE040 AA1.04 (4.3/4.3)

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 steamline break caused a safety injection. The MSIVs will not shut from the control room. The operating crew transitioned from PATH-1 to EPP-014, FAULTED STEAM GENERATOR ISOLATION.

Task Standard: RAB 261' instrument air header has been isolated and depressurized.

Required Materials: EOP-EPP-014, Faulted Steam Generator Isolation

General References: EOP-EPP-014, Faulted Steam Generator Isolation, Rev. 15

Handouts: EOP-EPP-014, Page 3

Initiating Cue: The SCO has directed you to perform Step 2 RNO of EPP-014. The MSIV Bypasses are shut.

Time Critical Task: N/A

Validation Time: 7 minutes

SIMULATOR SETUP

N/A

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Obtain Procedure

Standard: Reviews EPP-014, Step 2.

Examiners Cue: **Provide the operator with a copy of EPP-014, Step 2.**

Examiner Note: **The evaluator has the option to have the applicant physically locate the equipment by pointing it out and then discussing operation without using a portable ladder.**

Comment:

Step 2.a

Performance Step: 2 Check MSIVs AND Bypass Valves:

a. Verify all MSIVs - SHUT

Standard: Answers NO - Initial Conditions indicate all MSIVs are OPEN.

Evaluator Note: **The applicant may start in the RNO column.**

Comment:

PERFORMANCE INFORMATION

Step 2.a.1 RNO Column

√ **Performance Step: 3** Check MSIVs AND Bypass Valves:

a. Perform the following:

1) Locally shut instrument air supply to RAB 261: 1IA-814 (north of AH-19 1A-SA)

Standard: Locates and simulates shutting 1IA-814 by rotating the handwheel in the clockwise direction.

Examiners Cue: **If performed properly:**

1IA-814 has stopped rotating in the clockwise direction.

Comment:

Step 2.a.2 RNO Column

√ **Performance Step: 4** 2. Check MSIVs AND Bypass Valves:

a. Perform the following:

2) Locally remove cap AND open drain valve: 1IA-1876 (located in corridor outside VCT valve gallery)

Standard: Locates 1IA-1876, discusses removing the pipe cap, and simulates opening the valve by rotating the handwheel in the counter-clockwise direction.

Examiners Cue: **If performed properly:**

1IA-1876 has stopped rotating in the counter-clockwise direction and the air header is blowing down.

Comment:

PERFORMANCE INFORMATION

Performance Step: 5 Notify the Control Room.

Standard: Simulates notifying the Control Room that instrument air is isolated to the MSIV's and the line has been depressurized.

Examiners Cue: **Respond as the Control Room Operator that all MSIVs have shut.**

Comment:

Terminating Cue: **After the control room has been notified: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM j

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS: A steamline break caused a safety injection. The MSIVs will not shut from the control room. The operating crew transitioned from PATH-1 to EPP-014, FAULTED STEAM GENERATOR ISOLATION.

INITIATING CUE: The SCO has directed you to perform Step 2 RNO of EPP-014. The MSIV Bypasses are shut.

Facility:	Shearon Harris	Task No.:	071104H112
Task Title:	Respond to High Rad Alarm During a Waste Gas Decay Tank Release	JPM No.:	2007 NRC JPM k
K/A Reference:	071 G2.1.30 3.9		

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" Waste Gas Decay Tank is being released.
- Monitors REM-3546 and RM-3546-1 are OPERABLE.

Task Standard: Waste Gas Decay Tank release is terminated per OP-120.07, Waste Gas Processing, Section 8.37.

Required Materials: **On the day of the IP JPM performance, notify the RadWaste Operator that applicants will be entering the area and may be accessing the reading for REM-3546 on the RM-11 Panel.**

General References: OP-120.07, Waste Gas Processing, Rev. 46

Handouts:
- A copy of OP-120.07, Waste Gas Processing, Attachment 3 completed through Item 23.
- A copy of OP-120.07, Waste Gas Processing, Section 8.37.

Initiating Cue: You relieved the operator who commenced the release. The control room has just directed you to implement OP-120.07, Section 8.37, Actions for a REM Monitor Alarm During a Waste Gas Decay Tank Release, because an ALERT alarm has been received on REM-3546.

Time Critical Task: N/A

Validation Time: 20 minutes

SIMULATOR SETUP

N/A

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Obtain Procedure

Standard: Reviews OP-120.07, Section 8.37.

Examiners Cue: **Provide the handout (OP-120.07, Attachment 3 signed off through Item 23 and OP-120.07, Section 8.37).**

Comment:

Step 8.37.1

Performance Step: 2 Verifies the Initial Conditions:

1. A Waste Gas Decay Tank is being released.
2. Monitors REM-3546 or RM-3546-1 are OPERABLE.
3. A REM Monitor Alert or High Alarm has been received.

Standard: Confirms the initial conditions apply.

Comment:

PERFORMANCE INFORMATION

Step 8.37.2.1

Procedure Note:

- If an Alert alarm is received, the WGDT release may continue provided the reading does not approach the High Alarm setpoint.
- This section contains steps which require independent verification.

Performance Step: 3 If the Monitor goes into an Alert Alarm, observe the reading to see if it continues to increase. Record the reading in the Radwaste Control Room AO logs.

Standard: Accesses the REM-3546 monitor reading on the RM-11 Panel.

Examiners Cue: **REM-3546 is rising and approaching the HIGH alarm setpoint.**

Comment: **To access the REM-3546 monitor reading the candidate should depress the appropriate GRID button and then enter the appropriate four digit monitor. After that he depresses the SEL key to select that monitor. The candidate should then use a TREND button to bring up historical data for that monitor. The candidate should not use any buttons other than the GRID buttons, the numerical keypad, the SEL button, the TREND buttons, and/or the CLEAR key if he/she enters a number incorrectly.**

Step 8.37.2.2

Performance Step: 4 If the Monitor reading continues to approach or goes into a High Alarm condition, the Waste Gas Decay Tank release must be secured. Continue to next step to secure the Gas Decay Tank Release.

Standard: Determines the release must be secured and continues to the next step.

Comment:

Step 8.37.2.3

√ **Performance Step: 5** Adjust HK-7392, PLANT VENT Controller until indicator reads 0 and record the Actual Stop Date/Time (Log Item 24).

Standard:

- Adjusts HK-7392 until indicator reads 0.
- Records the actual Stop Date/Time on Attachment 3.

Examiners Cue: **Controller HK-7392 reads 0.**

Examiner Note: **If the applicant incorrectly performs this step then correct performance of either Performance Step 6 or Performance Step 12 becomes critical.**

Comment:

Step 8.37.2.4

Performance Step: 6 Using key, place the WG DECAY TANKS E & F TO PLANT VENT VALVE switch 3WG-229 to KEYLOCKED SHUT and log on Attachment 3. (Log Item 25)

Standard:

- Selects WG DECAY TANKS E & F TO PLANT VENT VALVE 3WG-229 switch to KEYLOCKED SHUT.
- Records log entry on Attachment 3.

Examiners Cue: **3WG-229 is in the KEYLOCKED SHUT position.**

Comment:

Step 8.37.2.5

Procedure Note: Independent verification of 3WG-229 position in the next step can be performed out of sequence.

Performance Step: 7 Perform independent verification that 3WG-229 is locked shut and log on Attachment 3. (Log item 26)

Standard: Logs independent verification entry on Attachment 3 or delays action based on the Procedure Note.

Examiners Cue: **Independent verification will be performed out of sequence in accordance with the procedure note.**

Comment:

Step 8.37.2.6

Performance Step: 8 Notify the Superintendent - Shift Operations that Monitor REM-3546 has alarmed and the release has been stopped.

Standard: Notifies the Superintendent Shift Operations that monitor REM-3546 alarmed and the release has been stopped.

Examiners Cue: **Superintendent Shift Operations acknowledges the report.**

Comment:

PERFORMANCE INFORMATION

Step 8.37.2.7.a

Performance Step: 9 The release package must be closed out by performing the following steps:

- Record the Vent Stack 5 Flow Rate (Log Item 27).

Standard:

- Reads and records Vent Stack 5 Process Flow Rate on Attachment 3.

Comment:

Step 8.37.2.7.b

Performance Step: 10 The release package must be closed out by performing the following steps:

- Record the Final Gas Decay Tank Pressure (Log Item 28).

Standard:

- Locates "A" Gas Decay Tank pressure indication and records on Attachment 3.

Examiners Cue: **Final Gas Decay Tank pressure is 23 psig.**

Comment:

Step 8.37.2.7.c

Performance Step: 11 The release package must be closed out by performing the following steps:

- Calculate the Actual Gas Decay Tank ΔP and record. (Log Item 29).

Standard:

- Actual Gas Decay Tank ΔP calculated and recorded on Attachment 3.

Comment:

PERFORMANCE INFORMATION

Step 8.37.2.7.d

Performance Step: 12 The release package must be closed out by performing the following steps:

- Shut 3WG-230, Gas Decay Tanks to Plant Vent Manual Isolation Valve and log on Attachment 3. (Log Item 30)

Standard:

- Locates 3WG-230 and shuts valve by rotating the handwheel in the clockwise direction.
- Records 3WG-230 position on Attachment 3.

Examiners Cue: **3WG-230 is shut.**

Comment:

PERFORMANCE INFORMATION

Step 8.37.2.7.e

Procedure Note: Independent verification of 3WG-230 position in the next step can be performed out of sequence.

Performance Step: 13 The release package must be closed out by performing the following steps:

- Perform independent verification that 3WG-230 is shut and log on Attachment 3. (Log Item 31)

Standard: Logs independent verification entry on Attachment 3 or delays action based on the Procedure Note.

Evaluator Cue: **Independent verification will be performed out of sequence in accordance with the procedure note.**

Comment:

Terminating Cue: **After the independent verification of 3WG-230 step has been read: Evaluation on this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2007 NRC JPM k

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

JPM CUE SHEET

INITIAL CONDITIONS:

- "A" Waste Gas Decay Tank is being released.
- Monitors REM-3546 and RM-3546-1 are OPERABLE.

INITIATING CUE:

You relieved the operator who commenced the release. The control room has just directed you to implement OP-120.07, Section 8.37, Actions for a REM Monitor Alarm During a Waste Gas Decay Tank Release, because an ALERT alarm has been received on REM-3546.