Facility: **BVPS Unit 2** Task No.: 0071-025-01-013

Task Title: Perform Manual Makeup to the VCT JPM No.: 2005 NRC JPM S8

K/A Reference: 004A4.01 (3.8/3.9) 004A4.07 (3.9/3.7)
004A4.04 (3.2/3.6)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: X Actual Performance: _____

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% power.
- RCS boron concentration is 1550 ppm.
- The inservice Boric Acid Tank concentration is 7450 ppm.
- VCT level is 22%.

Task Standard: Makeup flow initiated at 75 gpm through the blender.

Required Materials: None

General References: 2OM-7.4.N, Blender Manual Makeup Operations, Rev. 4

Handouts: 2OM-7.4.N, Blender Manual Makeup Operations, Rev. 4

Initiating Cue: The Unit Supervisor directs you to raise VCT level to 40% at 75 gpm by performing a manual makeup in accordance with 2OM-7.4.N, Blender Manual Makeup Operations. All Initial Conditions are met. The addition is to be batched, therefore the total volume change does not need to be calculated.

Time Critical Task: No

Validation Time: 11 minutes

Simulator Setup:	Initialize IC-10. PW = NJPM To set VCT level to 22%: Set AVCTLIQ = 6720. Mark inservice BAST placard to 7450 ppm. Reset Boric Acid and Total Flow Totalizers to ZERO.

(Denote Critical Steps with a check mark)

Performance Step: 1 Obtain the reactor coolant system boron concentration from the last Chemists analysis.
(Step IV.A.1)
Standard: No action required per JPM Initial Conditions.

CUE: If asked, inform Candidate that current RCS boron is 1550 ppm.

Comment:

√ **Performance Step: 2** Place the Boric Acid Makeup Blender Control switch in the Stop position. (BB-A).
(Step IV.A.2)
Standard: Candidate locates and places boric acid makeup blender control switch in Stop.

Standard: Candidate verifies makeup control green light is on.

Comment:

Performance Step: 3 If in Mode 4, 5 or 6, align PG water to the blender by unlocking and opening one of the following valves:
(Step IV.A.3)
Standard: No action required. Plant is in Mode 1.

Comment:

√ **Performance Step: 4**
(Step IV.A.4)
Standard:

Place the makeup Mode Selector switch in the Manual position. (BB-A)

- Candidate locates and places mode selector switch in Manual.

Comment:

Performance Step: 5
(Step IV.A.5)
Standard:

Set the Total Makeup From Blender Flow Totalizer, to the desired total volume in gallons of makeup water to be added. (BB-A)

Candidate locates and adjusts total makeup from blender flow totalizer to desired value.

NOTE: Batch amounts are set at the operator's discretion. Total volume change is approximately 290 gallons (1% VCT level ~ 16 gallons).

CUE: If necessary, inform the Candidate that the total volume may be set at their discretion.

Comment:

Performance Step: 6
(Step IV.A.6.a)
Standard:

Determine Boric Acid flow from the following calculation:

Candidate calculates the required boric acid flow as:

$$\frac{1550 ppm\ X\ 75 gpm}{7450} = 15.6 gpm$$

Comment:

√ **Performance Step: 7** (Step IV.A.6.b)
Set [2CHS*FCV113A] as follows:

Standard: Candidate calculates the desired flow setpoint as:

$$\frac{15.6gpm}{4gpm} = 3.9$$

Standard: Candidate locates and sets 2CHS*FCV113A for the desired flow setpoint: approximately 390 units (± 2 units).

Comment:

√ **Performance Step: 8** (Step IV.A.7)
Adjust [2CHS*HIC168], Blender Total Flow Auto Setpoint, to the blender total flow used in Step IV.A.6.

Standard: Candidate calculates the desired setpoint as:

$$\frac{75.0gpm}{16gpm} = 4.68$$

Standard: Candidate locates and sets 2CHS*HIC168 for the value calculated: 468 units (± 2 units)

Comment:

√ **Performance Step: 9** (Step IV.A.8)
Adjust [2CHS-FCV114A] pot setting to the same as [2CHS*HIC168].

Standard: Candidate locates and sets 2CHS-FCV114A setpoint for 468 units (± 2 units).

Comment:

√ **Performance Step: 10** (Step IV.A.9) Set Boric Acid Flow To Blender Flow Totalizer, to the total volume in gallons of boric acid to be added from the following equation:

Standard: Candidate adjusts boric acid flow to blender flow totalizer to the desired value.

$$15.6 \text{ gpm} \times \frac{288 gal.}{75} = 59$$

Comment:

Performance Step: 11 (Step IV.A.10) Verify the inservice Boric Acid Transfer Pump is in Auto. (BB-A)

Standard: Candidate locates and verifies inservice boric acid transfer pump in Auto.

Comment:

√ **Performance Step: 12** (Step IV.A.11) Open [2CHS*FCV113B], Boric Acid Blender Disch To Chg Pumps. (BB-A)

Standard: Candidate locates and places 2CHS*FCV113B switch in Open.

Standard: Candidate verifies red open light is on and green closed light is off.

Comment:

Performance Step: 13 (Step IV.A.12)

Prior to the start of AND at least once every hour during a reduction in the RCS boron concentration: (Tech. Spec. 4.1.1.3, 4.9.8.1.b) (N/A if raising or maintaining RCS boron concentration)

Standard: No action required. Step is N/A.

Comment:

√ **Performance Step: 14** (Step IV.A.13 & 14)

To initiate makeup, place the Boric Acid Makeup Control switch to the Start position. (BB-A)

Standard: Candidate locates and places boric acid makeup control switch in Start.

Standard: Candidate verifies red running light on for the boric acid transfer pump in auto.

Comment:

Performance Step: 15 (Step IV.A.15)

Verify proper operation at recorder [2CHS-FR113]: (VB-A)

a. Boric Acid To Blender

b. Total M/U Flow From Blender

Standard: Candidate locates and verifies 2CHS-FR113 indicates boric acid flow and total flow to blender of approximately 15.6 gpm and 75 gpm respectively.

Comment:

Terminating Cue: When the Candidate verifies flow to the blender, the evaluation for this JPM is complete.

Facility: **BVPS Unit 2** Task No.: 0461-012-01-012

Task Title: Locally Startup a Containment Hydrogen Analyzer JPM No.: 2005 NRC JPM P1

K/A Reference: 028 A1.01 (3.4/3.8)
028 A4.01 (4.0/4.0)

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 plant is in Mode 1.
- A containment hydrogen concentration level for containment atmosphere has been requested, in support of an upcoming containment entry.

Task Standard: Containment hydrogen analyzer powered up and sample pump in operation.

Required Materials: None

General References: 2OM-46.4.F, Containment Hydrogen Analyzer - Startup, Rev. 4

Handouts: 2OM-46.4.F, Containment Hydrogen Analyzer - Startup, Rev. 4

Initiating Cue: The Unit Supervisor directs you to locally startup the Train "B" hydrogen analyzer using 2OM-46.4.F, beginning at Step 3.

Time Critical Task: No

Validation Time: 10 minutes

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 (Step IV.A.3.a)
Open [2HCS*PNL100B], Containment H2 Monitoring Control Panel.
Standard: Candidate locates and opens [2HCS*PNL100B] (DF SWGR).

Comment:

√ **Performance Step: 2** (Step IV.A.3.b)
Place the ON/OFF power switch to the ON position.
Standard: Candidate locates the OFF/ON switch and positions to ON.

CUE: Panel lights are energized.

Comment:

√ **Performance Step: 3** (Step IV.A.3.c)
Place the Pump STOP/RUN/START switch in START. (Switch will return to RUN).
Standard: Candidate locates and places the Pump STOP/RUN/START switch to START and allows it to spring return to RUN.

CUE: The pump RED light is ON.

Comment:

Performance Step: 4 Verify ON the following red lights:
(Step IV.A.3.d)
Standard:

- Candidate locates and verifies red light SV1 LIT.
- Candidate locates and verifies red light SV6 LIT.

CUE: Both red lights are lit.

Comment:

√ **Performance Step: 5** At Control Panel, enter Pre-LOCA heat trace values:
(Step IV.A.4.a - h)
Standard:

- Enter monitor mode: Press <6>
- Enter access code: Press<82,ENTER>
- Select change: Press <3>
- Select calibration Array 6, Element 18: Press <1618,ENTER>
- Set Pre-LOCA setpoint to 89.6: Press <896,NXT>
- Select change: Press<3>
- Select calibration Array 5, Element 18: Press <1518,ENTER>
- Set Pre-LOCA reset to 89.5: Press <895,NXT>

CUE: Acknowledge entries, as performed.

Comment:

Performance Step: 6 (Step IV.A.5)

If desired, start recorder [2HCS*HR100], Cnmt H2 Concentration by placing the power switch on the left side of the recorder to ON, (VB-A)

Standard: No action required.

CUE: **It is not desired to start the recorder at this time.**

NOTE: **Recorder is located in the Control Room.**

Comment:

Terminating Cue: When the Candidate correctly enters the Pre-LOCA heat trace values, the evaluation for this JPM is complete.

STOP TIME: _____

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **BVPS Unit 2** Task No.: 0241-054-04-012
0532-010-05-043

Task Title: Align Service Water Supply to AFW Pumps JPM No.: 2005 NRC JPM P2

K/A Reference: 061 K1.07 (3.6/3.8)
G2.1.30 (3.9/3.4)

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 plant is an inadequate core cooling condition. EOP E-1, "Loss Of Reactor Or Secondary Coolant" is in effect. [2FWE*LI104A1] and [2FWE*LI104A2], Tk 210 Pri Plt Demin Wtr Stg Level both indicate 20".
Task Standard:	Service water aligned to the suction of the AFW Pumps in accordance with EOP Attachment A-1.8.
Required Materials:	Keys (Simulated)
General References:	2OM-53A.1.A-1.8, Makeup To PPDWST [2FWE*TK210], Issue 1C, Rev. 1
Handouts:	2OM-53A.1.A-1.8, Makeup To PPDWST [2FWE*TK210], Issue 1C, Rev. 1
Initiating Cue:	The Unit Supervisor directs you to supply all three auxiliary feedwater pumps from service water using EOP Attachment A-1.8 beginning at Step 8.
Time Critical Task:	No
Validation Time:	15 minutes

(Denote Critical Steps with a check mark)

START TIME: _____

Note:	**In accordance with EOP Attachment A-1.8, the AFW pumps may be aligned in any order. Use of keys for this JPM is simulated.**

Performance Step: 1 (Step 8.a)
In the Control Room, verify open or open [2SWS*MOV103B], Recirc Spray Hxs Serv Wtr Sup Hdr B Isol.

Standard:
Candidate contacts the Control Room to verify 2SWS*MOV103B in the Open position.

CUE: **Control Room reports that 2SWS*MOV103B is Open.**

Comment:

√ **Performance Step: 2** (Step 8.b.1)
With Key SR/14, open [2FWE*90], Service Water Supply Valve to [2FWE*P22], (South SFGDS - 718').

Standard:
Candidate locates, unlocks and opens 2FWE*90.

CUE: **2FWE*90 is open.**

Comment:

√ **Performance Step: 3** (Step 8.b.2)
With Key CRIT/17, close [2FWE*93], Primary DWST Supply Valve To [2FWE*P22], (South SFGDS - 718')

Standard:
Candidate locates, unlocks and closes 2FWE*93.

CUE: **2FWE*93 is closed.**

Comment:

Performance Step: 4 Observe AFW pump discharge pressure to ensure proper pump operation.
(Step 8.b.3)
Standard: Candidate locates and observes AFW pump discharge pressure.

CUE: Discharge pressure is normal.

Comment:

√ **Performance Step: 5** With Key SR/15, open [2FWE*91], Service Water Supply Valve to [2FWE*P23A], (South SFGDS - 718').
(Step 8.c.1)
Standard: Candidate locates, unlocks and opens 2FWE*91.

CUE: 2FWE*91 is open.

Comment:

√ **Performance Step: 6** With Key CRIT/18, close [2FWE*94], Primary DWST Supply Valve To [2FWE*P23A], (South SFGDS - 718')
(Step 8.c.2)
Standard: Candidate locates, unlocks and closes 2FWE*94.

CUE: 2FWE*94 is closed.

Comment:

Performance Step: 7 Observe AFW pump discharge pressure to ensure proper pump operation.
(Step 8.c.3)
Standard: Candidate locates and observes AFW pump discharge pressure.

CUE: Discharge pressure is normal.

Comment:

√ **Performance Step: 8** With Key SR/16, open [2FWE*92], Service Water Supply Valve to [2FWE*P23B], (South SFGDS - 718').
(Step 8.d.1)
Standard: Candidate locates, unlocks and opens 2FWE*92.

CUE: 2FWE*92 is open.

Comment:

√ **Performance Step: 9** With Key CRIT/19, close [2FWE*95], Primary DWST Supply Valve To [2FWE*P23B], (South SFGDS - 718')
(Step 8.d.2)
Standard: Candidate locates, unlocks and closes 2FWE*95.

CUE: 2FWE*95 is closed.

Comment:

Performance Step: 10 (Step 8.d.3) Observe AFW pump discharge pressure to ensure proper pump operation.

Standard: Candidate locates and observes AFW pump discharge pressure.

CUE: Discharge pressure is normal.

Comment:

Terminating Cue:	When the Candidate verifies pump discharge pressure, the evaluation for this JPM is complete.

STOP TIME: _____

Appendix C **JOB PERFORMANCE MEASURE** Form ES-C-1

Facility: **BVPS Unit 2** Task No: 0361-019-01-013

Task Title: BV-2 Actions To Establish Station Blackout Cross-tie to Unit 1 JPM No: 2005 NRC JPM P3

K/A Reference: 055 EA1.06 (4.1/4.5) 055 EA2.03 (3.9/4.7)
055 2.1.30 (3.9/3.4)

Examinee: _____ NRC Examiner: _____

Facility Evaluator: N/A 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 tornado strike has caused a partial loss of the switchyard. Unit 2 is without normal and emergency AC power. Unit 1 is prepared to cross-tie power from a 4KV bus emergency source.
Task Standard:	The station blackout cross-tie has been established in accordance with Attachment A-1.13DF.
Required Materials:	Cubicle Pictures
General References:	2OM-53A.1.A-1.13DF, Actions To Establish BV-1 Cross-tie To Bus 2DF During Station Blackout, Issue 1C, Rev. 1
Handouts:	2OM-53A.1.A-1.13DF, Actions To Establish BV-1 Cross-tie To Bus 2DF During Station Blackout, Issue 1C, Rev. 1
Tools:	Racking Tool and Gear (Simulated) Key No. 9 (Simulated)
Initiating Cue:	The Unit Supervisor directs you to perform EOP Attachment A-1.13DF, Steps 7 through 9 to establish a station blackout cross-tie from Unit 1. All preceding procedure steps have been completed.
Time Critical Task:	NO
Validation Time:	20 minutes

(Denote Critical Steps with a check mark)

START TIME: _____

Evaluator Note:	Remind Candidate to simulate all actions and **NOT** to reach inside any switchgear or relay panel cabinets.

Evaluator Note:	Relay Panels and Bus UV cubicles are **NOT** to be opened. Provide Candidates with a picture of cabinet internals at the appropriate steps.

√ **Performance Step 1:** (Step 7.a) To defeat the 4KV emergency bus undervoltage trip, open 125 VDC control breaker "Bus UV Cont" in Cubicle 2F6 (2DF Bus).

Standard: Candidate locates and opens control breaker.

CUE: 125 VDC control breaker is open.

Comments:

√ **Performance Step 2:** (Step 7.b) To defeat the 480V emergency bus undervoltage trip, open Knife Switch 2-5505 "2P Bus UV Potential" in Cubicle 2 (2P Bus)

Standard: Candidate locates and opens Knife Switch 2-5505.

CUE: Knife Switch 2-5505 is open.

NOTE: Refer to attached picture.

Comments:

√ **Performance Step 3:** (Step 8.a)

Open all Bus 2P 480V breakers, except bus feeder breaker (Cubicle 3B, Transformer 2P)

Standard:

Candidate locates and opens all Bus 2P breakers, except the bus feeder breaker using the left trip pushbutton.

CUE: All bus 2P breakers, except the feeder breaker are open.

NOTE: If Candidate attempts to trip breakers using the right Side trip pushbutton, **CUE** that the breaker did not trip.

Comments:

√ **Performance Step 4:** (Step 8.b)

In Cubicle 10A, open "125VDC Bkr Control ACB 10D" to defeat automatic start of [2HVC*REF24B], CR ACU Refrig Unit.

Standard:

Candidate locates and opens 125VDC breaker for ACB10D.

CUE: 125VDC breaker ACB 10D is open.

NOTE: Breaker is located in cubicle for ACB 10A.

Comments:

√ **Performance Step 5:** (Step 9.a)

At 4KV Bus 2D, open [ACB-2D3], 480V Substation 2-2 Bus 2D And Tfmr 2-H4 480V Substation 2-4 Bus 2H Breaker.

Standard:

Candidate locates and opens ACB-2D3, using control switch or trip lever.

CUE: ACB-2D3 breaker is open.

Comments:

Performance Step 6: (Step 9.b) Open [ACB-2D6], A/C Chiller [2CDS-CHL23C].

Standard: Candidate locates and opens ACB-2D6 using control switch.

CUE: Breaker ACB-2D6 is open.

Comments:

Evaluator Note: Prior to racking in breaker, Candidate may verbalize obtaining racking gear. Candidate may open ACB-2D12 cubicle door to demonstrate actions to be taken, or provide the Candidate with a 4KV breaker diagram (attached).

√ **Performance Step 7:** (Step 9.c.1) With Key 10, [2D12] SBO Bkr, remove padlock from [ACB-2D12], Unit 1 To Bus 2D Cross-tie.

Standard: Candidate locates ACB-2D12, Unit 1 To Bus 2D Cross-tie.

Standard: Candidate obtains Key No. 10.

CUE: Simulate giving Key No. 10 to Candidate.

Standard: Candidate removes padlock from ACB-2D12 using Key 10.

CUE: Padlock is removed.

Comments:

√ **Performance Step 8:** (Step 9.c.2) Verify DC Control Power - Off.

Standard: Candidate locates and opens DC control power breaker.

CUE: Control power breaker is open.

Comments:

√ **Performance Step 9:** (Step 9.c.3, 4 & 5) Verify charging springs are discharged by pulling the manual close lever.

Standard: Candidate locates and then holds down the manual trip button.

Standard: Candidate locates and pulls the manual close lever.

Standard: Candidate releases the manual trip button.

CUE: Charging springs are discharged.

Comments:

Performance Step 10: (Step 9.c.6) Verify that the breaker mechanical indicator is in the OPEN position.

Standard: Candidate locates and verifies the mechanical flag indicates open.

CUE: Mechanical flag is in the open position.

Comments:

√ **Performance Step 11:** Rack the breaker to the CONNECT position.
(Step 9.c.7)

Standard: Candidate turns the lock release lever to the left, inserts racking tool and turns in the clockwise until reaching the connect position.

CUE: Breaker is in the connect position.

Comments:

√ **Performance Step 12:** Close DC control power breaker.
(Step 9.c.8)

Standard: Candidate locates and closes the DC control power breaker.

CUE: DC control power breaker is closed and the closing springs are charged.

Comments:

√ **Performance Step 13:** Manually close [ACB-2D12], Unit 1 To Bus 2D Cross-tie using breaker control switch.
(Step 9.c.9)

Standard: Candidate locates and closes ACB-2D12 using the control switch.

Standard: Candidate verifies red light is on.

CUE: Breaker is closed.

NOTE: Ensure the breaker door is shut and fastened.

Comments:

Terminating Cue:	When the Candidate completes the actions to close breaker ACB-2D12, the evaluation for this JPM is complete.

STOP TIME: _____

Facility:	**BVPS Unit 2**	Task No.:	0011-014-01-013 0535-006-04-013
Task Title:	Raise Reactor Power To 10^{-8} Amps	JPM No.:	2005 NRC JPM S1
K/A Reference:	001 A2.11 (4.4/4.7)		001 AA1.05 (4.3/4.2)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

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

Initial Conditions: A reactor startup is in progress in accordance with 2OM-50.4.D, Reactor Startup From Mode 3 To Mode 2. The following conditions exist:

- All shutdown bank rods are fully withdrawn.
- Control Bank "D" is at 90 steps.
- The estimated critical position is 101 steps on Control Bank "D".

Task Standard: The reactor is tripped in response to inappropriate continuous control rod motion.

Required Materials: Estimated Critical Position & 1/M Plot

General References: 2OM-50.4.D, Reactor Startup From Mode 3 To Mode 2, Rev. 43
2OM-53C.4.2.1.3, RCCA Control Bank Inappropriate Continuous Movement, Rev. 6

Handouts: 2OM-50.4.D, Reactor Startup From Mode 3 To Mode 2, Rev. 43
Estimated Critical Position & 1/M Plot

Initiating Cue: The Unit Supervisor directs you to withdraw control rods to criticality in accordance with 2OM-50.4.D, Reactor Startup From Mode 3 To Mode 2, beginning at Step IV.D.18.b.

Time Critical Task: NO

Validation Time: 15 minutes

Simulator Setup:	Initialize IC-197 PW = NJPM Select **FAST** speed on NR-45. Ensure NR-45 selected to one IR channel. Block Source Range Flux Doubling (BB-B). Verify [A12-3D] & [A12-3E] in alarm.

(Denote Critical Steps with a check mark)

START TIME: _____

NOTE:	**Provide Candidate with copy of 1/M Plot and ECP.**

NOTE:	**Inform the Candidate, that you will perform any independent verifications that are required by the procedure.**

Performance Step: 1
(Step 18.b)

When the Inverse Count Rate Ratio is less than 0.25, reduce rod withdrawal intervals to 25 step increments.

Standard:

Candidate initiates rod withdrawal at less than 25 step increments.

CUE: The ICRR is less than 0.25. Withdraw control rods to take the reactor critical.

Comment:

Performance Step: 2
(Step 19.a)

When Annunciator A12-3B, "P6 PERMISSIVE" is ON (1E-10 AMPS), Block the source range high flux trip by performing the following:

a. Record the SR Countrate.

N31 _____ CPS

N32 _____ CPS

Standard:

Candidate locates and records SR counts for N31 and N32.

Comment:

√ **Performance Step: 3**
(Step 19.b.1)

Deenergize the N31 Source Range High Voltage and block the N31 SR High Flux trip by performing the following:

1) Momentarily turn the switch, Source Range "A" Block, to the BLOCK position (BB-B).

Standard: Candidate locates and places SOURCE RANGE TRIP BLOCK/ RESET TRAIN A control switch in Block.

Comment:

√ **Performance Step: 4**
(Step 19.c.1)

Deenergize the N32 Source Range High Voltage and block the N32 SR High Flux trip by performing the following:

1. Momentarily turn the switch, Source Range "B" Block, to the BLOCK position (BB-B).

Standard: Candidate locates and places SOURCE RANGE TRIP BLOCK/ RESET TRAIN B control switch in Block.

Comment:

Performance Step: 5
(Step 19.c.2)

Check that both source range HV Manual ON/OFF switches are in the NORMAL position.

Standard: Candidate locates and checks both source range HV MANUAL CONTROL switches in NORMAL.

Comment:

Performance Step: 6 (Step 19.c.3)

Verify that the detector voltmeter on both source range drawers indicates zero volts.

Standard: Candidate locates and verifies Source Range DETECTOR VOLTS indicate zero.

Comment:

Performance Step: 7 (Step 20)

Select both IR range channels to indicate on recorder NR-45.

Standard: Candidate locates and UPPER 1N45 and LOWER 2N45 to record IR channels N35 and N36.

Comment:

Performance Step: 8 (Step 21.a)

When Tavg is less than 551°F AND the reactor is critical AND IF Annunciator A4-3C, "TAVG DEVIATION FROM TREF" comes ON (or becomes OOS), perform the following (TS 4.1.1.5.b) (Otherwise N/A):

Verify Tavg is greater than 541°F AND Record the results on Data Sheet 1.

Standard: Candidate locates and verifies 2RCS-TR408 indicates Tavg greater than 541°F.

NOTE: Candidate may choose to refer to PVC display to obtain Tavg value.

Standard: Candidate records Tavg value on Data Sheet 1.

Comment:

Performance Step: 9
(Step 21.b)

Make an entry in the Shift Log stating "Verify the lowest Tavg to be greater than or equal to 541°F at least once per 30 minutes while the Tavg deviation alarm (A4-3C,"TAVG DEVIATION FROM TREF") is NOT reset." Use Data Sheet 1.

Standard: Candidate initiates SOMS shift log entry.

CUE: **Inform the Candidate that Unit Supervisor will make the shift log entry.**

Comment:

√ **Performance Step: 10**
(Step 22)

Continue incremented rod withdrawal until the reactor is critical, as indicated by a stable positive startup rate with no rod motion, on the intermediate range instrumentation once the prompt jump has receded.

Standard: Candidate continues withdrawing control rods to obtain a stable startup rate.

CUE: **If asked, inform Candidate to withdraw rods at no more than 25 step increments to obtain a stable startup rate.**

Comment:

NOTE: The following step begins the alternate path portion of the JPM.

Performance Step: 11 Determine that rods are withdrawing with NO demand signal.

Standard: Candidate determines from CONTROL BANK D GROUP 1 and GROUP 2 ROD POSITION indication that rods are withdrawing with **NO** demand signal.

Comment:

√ **Performance Step: 12** (AOP-2.1.3, Step 1 RNO) Trip the reactor in response to inappropriate continuous rod motion.

Standard: Candidate trips the reactor in response to inappropriate continuous rod motion.

NOTE: Candidate may refer to AOP-2.1.3 and determine that a reactor trip is required based on Step 1 RNO.

Comment:

Terminating Cue: When the Candidate trips the reactor, the evaluation for this JPM is complete.

STOP TIME: _____

Facility: **BVPS Unit 2** Task No.: 0531-005-05-013

Task Title: Perform SI Termination IAW ES-1.1 JPM No.: 2005 NRC JPM S2

K/A Reference: E02 EA1.3 (3.8/4.0)

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 was tripped and safety injection was actuated due to low RCS pressure.
- The crew has entered ES-1.1, SI Termination.

Task Standard: High head safety injection is aligned to provide flow to the RCS.

Required Materials: None

General References: 2OM-53A.1.ES-1.1, SI Termination, Issue 1C, Rev. 2

Handouts: 2OM-53A.1.ES-1.1, SI Termination, Issue 1C, Rev. 2

Initiating Cue: The Unit Supervisor directs you to perform the steps to terminate safety injection in accordance with ES-1.1, SI Termination.

Time Critical Task: NO

Validation Time: 18 minutes

Simulator Setup:	Initialize IC-192 PW = NJPM Insert the following to increase the RCS leak size when Candidate takes action to stop LHSI pumps: ▪ IMF RCS02A 2000 30 ▪ Trigger xa2i036s = 1

(Denote Critical Steps with a check mark)

START TIME: _____

√ **Performance Step: 1** Reset SI

(Step 1)

Standard: Candidate locates and depresses SAFETY INJECTION SIGNAL TRAIN A/TRAIN B pushbuttons.

Standard: Candidate verifies A12-1D resets.

Comment:

√ **Performance Step: 2** Reset CIA and CIB

(Step 2)

Standard: Candidate locates and depresses

Comment:

Performance Step: 3 Stop all but ONE Charging Pump

(Step 3)

Standard: Candidate locates and places 2CHS*P21A or 21B control switch in Stop.

Standard: Candidate verifies white trip light on and red running light.

Comment:

Performance Step: 4 Check RCS Pressure - STABLE or RISING

(Step 4)

Standard: Candidate locates RCS pressure indication and verifies stable or rising.

Comment:

Performance Step: 5 Close [2SIS*MOV867A, B, C, D] High Head SI Cold Leg Isol Vlvs

(Step 5)

Standard: Candidate locates 2SIS*MOV867A, B, C, D control switches and places in Close.

Standard: Candidate verifies green close light on and red open light off for each valve.

Comment:

Performance Step: 6 Open [2CC-AOV118], Domestic Water To Station Air Compressor Valve.

(Step 6.a)

Standard: Candidate locates and opens 2CC-AOV118.

Standard: Candidate verifies red open light on and green closed light off.

Comment:

Performance Step: 7 Close [2CCS-78, 83, 84], Station Air compressor Isolation Valves (Turb Bldg - 730').

(Step 6.b.1)

Standard: Candidate dispatches local operator to close valves.

CUE: 2CCS-78, 83, 84 are closed.

Comment:

Performance Step: 8 Open [2CCS-229, 230], Station Air Compressors Discharge Drain Valves (Turb Bldg - 730').

(Step 6.b.2)

Standard: Candidate dispatches local operator to open valve.

CUE: 2CCS-229 and 230 are open.

Comment:

Performance Step: 9 Check Station Air Compressors - ONE RUNNING.

(Step 7)

Standard: Candidate locates and verifies 2SAS-C21A or C21B running.

Standard: Candidate verifies red running light on and white trip light off.

Comment:

Performance Step: 10 (Step 8.a)

Cross-connect station instrument air with CNMT instrument air by opening the following valves:

- [2IAC-MOV131]
- [2IAC*MOV130]

Standard: Candidate locates and opens 2IAC-MOV131 and 2IAC*MOV130.

Standard: Candidate verifies red open light on and green closed light off for each valve.

Comment:

Performance Step: 11 (Step 8.b)

Check CNMT instrument air header pressure - GREATER THAN 85 PSIG.

Standard: Candidate locates and verifies 2IAC-PI106A indicates greater than 85 psig.

Comment:

Performance Step: 12 (Step 9.a)

Establish Normal Charging Flow

Close [2CHS*FCV122]

Standard: Candidate locates and closes 2CHS*FCV122.

Standard: Candidate verifies green closed light on and red open light off.

Comment:

Performance Step: 13	Establish Normal Charging Flow
(Step 9.b)	Open [2CHS*MOV310]
Standard:	Candidate locates and opens 2CHS*MOV310.
Standard:	Candidate verifies red open light on and green closed light off.

Comment:

Performance Step: 14	Establish Normal Charging Flow
(Step 9.c)	Open [2CHS*MOV289]
Standard:	Candidate locates and opens 2CHS*MOV289.
Standard:	Candidate verifies red open light on and green closed light off.

Comment:

Performance Step: 15	Establish Normal Charging Flow
(Step 9.d)	Adjust [2CHS*FCV122] to maintain PRZR level.
Standard:	Candidate locates 2CHS*FCV122 controller and opens valve to re-establish charging flow.

Comment:

Performance Step: 16 Control Charging Flow to Maintain PRZR Level

(Step 10)

Standard: Candidate observes PRZR level indication and adjusts charging flow, as necessary to maintain PRZR level greater than 17%.

Comment:

Performance Step: 17 Stop LHSI Pumps and place in AUTO.

(Step 11)

Standard: Candidate locates and places 2SIS*P21A and 21B control switches in Stop, then Auto.

Standard: Candidate verifies white trip light on and red running light off for each pump.

Comment:

Performance Step: 18 Reset SI Recirc Mode

(Step 12)

Standard: Candidate locates and depresses SI RECIRC MODE RESET TRAIN A/TRAIN B pushbuttons.

Comment:

Performance Step: 19 Verify SI Flow Not Required

(Step 13.a) RCS subcooling based on Core exit TCs - GREATER THAN 41°F [59°F ADVERSE CNMT]

Standard: Candidate locates PSMS display and verifies subcooling greater than 46°F.

Comment:

Performance Step: 20 Verify SI Flow Not Required

(Step 13.b) PRZR level - GREATER THAN 17% [38% ADVERSE CNMT]

Standard: Candidate locates and verifies PRZR level indicates less than 17%.

Comment:

NOTE: The following step begins the alternate path portion of the JPM.

√ **Performance Step: 21** Control charging flow to maintain PRZR level.

(Step 13.b RNO)

Standard: Candidate locates and adjusts FCV-1CH-122 to restore PRZR level.

Comment:

√ **Performance Step: 22**
(Step 13.b RNO)

IF PRZR level can NOT be maintained, THEN manually start SI pumps and align valves as necessary. GO TO E-1, "Loss Of Reactor Or Secondary Coolant", Step 1.

Standard: Candidate manually starts SI pumps and aligns valves, as necessary.

NOTE: Candidate may choose to manually re-initiate SI based on SI Reinitiation Criteria on Foldout Page.

Comment:

Terminating Cue: When the Candidate starts the SI pumps manually or re-initiates SI, the evaluation for this JPM is complete.

STOP TIME: _____

Facility: **BVPS Unit 2** Task No.: 0111-011-01-013

Task Title: Isolate SI Accumulators During a LOCA JPM No.: 2005 NRC JPM S3

K/A Reference: 009 EA1.13 (4.4/4.4)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

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

Initial Conditions: A LOCA has occurred. The crew is performing ES-1.2, Post LOCA Cooldown and Depressurization.

Task Standard: SI Accumulators A and B are isolated. SI Accumulator C is vented.

Required Materials: Shorting Bars (3)

General References: 2OM-53A.1.ES-1.2, Post LOCA Cooldown and Depressurization, Issue 1C, Rev. 3

2OM-11.4.G, Venting A Safety Injection Accumulator, Rev. 20

Handouts: 2OM-53A.1.ES-1.2, Post LOCA Cooldown and Depressurization, Issue 1C, Rev.

2OM-53A.1.A-5.1, 0F Plus Subcooling Based On Core Exit TCs

Initiating Cue: The Unit Supervisor directs you to isolate the SI accumulators in accordance with ES-1.2, Post LOCA Cooldown and Depressurization, Step 25.

Time Critical Task: NO

Validation Time: 12 Minutes

Simulator Setup:	Initialize IC-196 PW = NJPM VLV SIS06B

INITIAL CONDITIONS: A LOCA has occurred. The crew is performing ES-1.2, Post LOCA Cooldown and Depressurization.

INITIATING CUE: The Unit Supervisor directs you to isolate the SI accumulators in accordance with ES-1.2, Post LOCA Cooldown and Depressurization, Step 25.

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 RCS subcooling based on core exit TCs - GREATER THAN SUBCOOLING LISTED ON ATTACHMENT A-5.1

(Step 25.a)

Standard: Candidate locates PSMS display and verifies RCS subcooling based on core exit TCs is greater than subcooling listed on Attachment A-5.1.

CUE: Provide Candidate with a copy of Attachment A-1.5.

Comment:

Performance Step: 2 PRZR level - GREATER THAN 17% [38% ADVERSE CNMT]

(Step 25.b)

Standard: Candidate locates and verifies PRZR level indication is greater than 17%.

Comment:

Performance Step: 3 Power to [2SIS*MOV865A, B, C] - AVAILABLE

(Step 25.c)

Standard: Candidate locates and verifies power available to 2SIS*MOV865A, B and C.

Standard: Candidate verifies red open light on for each valve.

Comment:

√ **Performance Step: 4** Insert shorting bars into jacks for [2SIS*MOV865A, B, C]

(Step 25.d)

Standard: Candidate locates and inserts shorting bars into jacks for 2SIS*MOV865A, B and C.

CUE: Provide Candidate with shorting bars.

Comment:

√ **Performance Step: 5** Close [2SIS*MOV865A, B, C]

(Step 25.e)

Standard: Candidate locates 2SIS*MOV865A and B control switches and places in Close.

Standard: Candidate verifies green close light on and red open light off for each valve.

Comment:

√ **Performance Step: 6** Close [2SIS*MOV865A, B, C].

(Step 25.e)

Standard: Candidate locates 2SIS*MOV865C control switch and places in Close.

Standard: Candidate verifies red open light remains on indicating valve **NOT** closed.

NOTE: Valve is overridden in the Open position.

Comment:

NOTE: The following step begins the alternate path portion of the JPM.

Performance Step: 7
(Step 25.e. RNO)
Vent any unisolated accumulator. Refer to 20M-11.4.G, "Venting A Safety Injection Accumulator".

Standard: Candidate refers to 20M-11.4.G to vent 2SIS*TK21C.

CUE: Provide Candidate with a copy of 2OM-11.4.G.

CUE: *Direct Candidate to use Section B for direct venting to containment.*

Comment:

Performance Step: 8
(Step III.B.1)
If containment is not under vacuum, close [2SIS*367 (369) (399)] Accumulator [2SIS*TK21A (B), (C)] Level Isolation to prevent educting liquid into the vent line during venting. (Cnmt 692, 710 by the accumulator) (otherwise N/A).

Standard: Candidate dispatches local operator to close 2SIS*399.

CUE: Local operator reports 2SIS*399 is closed.

Comment:

Performance Step: 9
(Step III.B.2)
Check closed, [2GNS*AOV101-1 (101-2), SI ACC Nitrogen Makeup Outside (Inside) Cnmt Isol Vlv.

Standard: Candidate checks 2GNS*AOV101-1 (101-2) indicate closed.

Standard: Candidate verifies green closed light on and red open light off.

Comment:

√ **Performance Step: 10** (Step III.B.3)

Open [2GNS*SOV853A(D) (853B (E)) (853C (F))] 21A (B) (C) SI Accumulator Nitrogen Makeup Vlv.

Standard: Candidate locates and opens 2GNS*SOV853C (F).

Standard: Candidate verifies red open light on and green closed light off.

Comment:

√ **Performance Step: 11** (Step III.B.4)

Open [2GNS*SOV854A (854B)] SI Accumulator Vent Vlv until the Accumulator is lowered to the desired value, then close [2GNS*SOV854A (854B)].

Standard: Candidate locates and opens 2GNS*SOV854A (854B) to lower accumulator pressure.

Standard: Candidate verifies 2SIS-PI929 & 931 indicate accumulator pressure is lowering.

Comment:

Terminating Cue:	When the Candidate verifies that accumulator pressure is lowering, the evaluation for this JPM is complete.

STOP TIME: _____

Facility: **BVPS Unit 2** Task No.: 0211-012-01-013
0531-009-05-011

Task Title: Initiate Natural Circulation Cooldown JPM No.: 2005 NRC JPM S4

K/A Reference: 002 A4.02 (4.3/4.5)
E09 EA1.1 (3.5/3.5)

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:
- The plant has been tripped manually due to a component cooling water problem that required stopping all RCP's.
- The plant is now in natural circulation.
- The crew has completed E-0, ES-0.1, and ES-0.2 up to Step 5.
- The plant is stable with condenser steam dumps in automatic in the steam pressure mode.

Task Standard: RCS cooldown in progress using residual heat release valve.

Required Materials: None

General References: 2OM-53A.1.ES-0.2, Natural Circulation Cooldown, Issue 1C, Revision 2
2OM-53A.1.A-4.3 Issue 1C, Revision 2

Handouts: 2OM-53A.1.ES-0.2, Natural Circulation Cooldown, Issue 1C, Revision 2
2OM-53A.1.A-4.3,

Initiating Cue: The Unit Supervisor directs you to initiate an RCS cooldown in accordance with ES-0.2, Natural Circulation Cooldown, beginning at Step 5.

Time Critical Task: NO

Validation Time: 15 minutes

Simulator Setup:	Initialize IC-191 PW = NJPM TRG1 XC2I066H IMF CNH-PCS07A Display Rx Coolant System (Group 301) on PVC terminal and OP LIMITS on SPDS Terminal

(Denote Critical Steps with a check mark)

START TIME: _____

NOTE:	**It may be necessary to reduce letdown, manually operate 2CHS*FCV-122 or use a PORV to control pressure. Also, AFW starts are inhibited, so no actuation will occur if SG levels are low.**

Performance Step: 1 Maintain cooldown rate in RCS cold legs - LESS THAN 25°F/HR

(Step 5.a)

Standard: No action required.

Comment:

Performance Step: 2 Initiate a trend of RCS cold leg temperature and pressure

(Step 5.a.1)

Standard: Candidate initiates a trend of RCS cold leg temperature and pressure.

CUE: **Inform Candidate that SPDS has been setup to trend RCS temperature and pressure.**

Comment:

Performance Step: 3 Initial every half hour

(Step 5.a.2)

Standard: Candidate notes trending frequency requirement.

NOTE: **Inform Candidate that another operator will be responsible for trending and initialing.**

Comment:

Performance Step: 4 (Step 5.a.3) Maintain RCS temperature and pressure - WITHIN LIMITS OF ATTACHMENT A-4.3 IF AT LEAST TWO CRDM FANS RUNNING -OR- WITHIN LIMITS OF ATTACHMENT A-4.2 IF LESS THAN TWO CRDM FANS RUNNING

Standard: Candidate locates and verifies at least 2 CRDM fans running.

Standard: Candidate verifies red running light on and white trip light off for each CRDM fan.

Standard: Candidate refers to Attachment A-4.3 for temperature/pressure limits.

CUE: Provide Candidate with a copy of Attachment A-4.3.

Comment:

Performance Step: 5 (Step 5.b) Maintain S/G narrow range level - BETWEEN 30% and 50%.

Standard: No action required.

CUE: Inform Candidate that another operator will be responsible for controlling S/G levels.

Comment:

Performance Step: 6 (Step 5.c.1) Check MSIVs - AT LEAST ONE OPEN

Standard: Candidate locates and verifies at least one MSIV open.

Standard: Candidate verifies red open light on and green closed light off.

Comment:

Performance Step: 7 Check condenser available

(Step 5.c.2)

Standard: Candidate locates and checks A12-4C, "CONDENSER AVAILABLE (C-9) not in alarm.

Comment:

√ **Performance Step: 8** Place condenser steam dump in MANUAL.

(Step 5.c.3)

Standard: Candidate locates and places 2MSS-PK464, MAIN STEAM MANIFOLD PRESS CONTROL in Manual.

Standard: Candidate verifies red light on.

Comment:

Performance Step: 9 Verify demand - ZERO

(Step 5.c.4)

Standard: Candidate locates and verifies 2MSS-PK464 demand indicates zero.

Comment:

Performance Step: 10 Place steam dumps in STM PRESS Mode.

(Step 5.c.5)

Standard: No action required per JPM Initial Conditions.

Comment:

Performance Step: 11 Check Tavg - GREATER THAN 541°F

(Step 5.c.6)

Standard: Candidate locates and checks status lights A-11, B-11, C-11, "RCS LOOP A (B) (C) LO-LO TAVG INTERLOCK" (Panel 18) **NOT** on.

Comment:

√ **Performance Step: 12** Gradually raise steam dump rate.

(Step 5.c.7)

Standard: Candidate locates 2MSS-PK464 controller and depresses raise pushbutton to open steam dump valves.

Standard: Candidate determines that steam dump valves do **NOT** open.

NOTE: Candidate may attempt to open steam dump valves in AUTO. If so, valves will NOT open.

NOTE: Steam dump controller is overridden to prevent dump valves from opening.

CUE: As the Unit Supervisor, acknowledge steam dump failure and direct Candidate to use 2SVS*HCV104 to dump steam.

Comment:

NOTE: The following step begins the alternate path portion of the JPM.

√ **Performance Step: 13** Manually or locally dump steam using:

(Step 5.c RNO) SG Atm Stm Dump Valves -OR-

Residual Heat Release Valve

Standard: Candidate locates 2SVS*HCV104, Residual Heat Release Valve and depresses raise pushbutton to open valve.

Standard: Candidate verifies valve open indication.

CUE: As the Unit Supervisor, direct the Candidate to use the RHR valve to continue the cooldown.

Comment:

Terminating Cue: When the Candidate initiates a cooldown using the RHR valve, the evaluation for this JPM is complete.

STOP TIME: _____

Facility:	**BVPS Unit 2**	Task No.:	0011-006-01-013
Task Title:	Manually Actuate CIB	JPM No.:	2005 NRC JPM S5
K/A Reference:	026 A2.03 (4.1/4.4)	026 A2.04	(3.9/4.2)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: __X__

Classroom _____ Simulator __X__ Plant _____

READ TO THE EXAMINEE

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

Initial Conditions:
- A reactor trip and safety injection have occurred due to a large break LOCA.
- The actions of E-0 are being performed.

Task Standard: Manually initiate CIB, start 2QSS-P-21A & 21B, and stop the RCP's.

Required Materials: None

General References: 2OM-53A.1.A-0.11, Verification Of Automatic Actions, Issue 1C, Revision 3
2OM-53A.1.A-0.5, Containment Isolation Phase B Checklist, Issue 1C, Rev. 1

Handouts: 2OM-53A.1.A.0-11, Verification Of Automatic Actions, Issue 1C, Revision 3
2OM-53A.1.A-0.5, Containment Isolation Phase B Checklist, Issue 1C, Rev. 1

Initiating Cue: The Unit Supervisor directs you to perform Attachment A-0.11, Verification Of Automatic Actions, Step 7 to check CIB and Containment Spray status.

Time Critical Task: NO

Validation Time: 10 minutes

Simulator Setup:	Initialize IC-184
	PW = NJPM
	Enter IMF PPL07A = 6
	Enter IMF PPL07B = 6
	Enter BST-PCS048 Inhibited
	Enter BST-PCS049 Inhibited
	Enter BST-PCS052 Inhibited
	Enter BST-PCS055 Inhibited

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1	Check CIB and Containment Spray Status
(Step 7)	Containment pressure - HAS REMAINED LESS THAN 8 PSIG
Standard:	Candidate checks A1-2H "CONTAINMENT ISOLATION PHASE B" in alarm.
Standard:	Candidate locates 2LMS*PR950, Containment Pressure Recorder and determines that containment pressure has **NOT** remained less than 8 psig.
	NOTE: Containment pressure is > 8 psig.
Comment:	

NOTE: The following step begins the alternate path portion of the JPM.

Performance Step: 2	Verify CIB initiated:
(Step 7.a RNO)	Check BLUE CIB marks - LIT
Standard:	Candidate checks components properly aligned and determines CIB components not positioned as required, and CIB **NOT** actuated.
Comment:	

√ **Performance Step: 3** Verify CIB initiated:

(Step 7.a RNO) IF NOT, THEN manually initiate CIB (both switches for both trains). Check BLUE CIB marks - LIT

Standard: Candidate locates and positions both switches to actuate Train "A" CIB.

Standard: Candidate locates and positions both switches to actuate Train "B" CIB.

NOTE: Candidate may actuate either train first followed by the opposite train.

Comment:

Performance Step: 4 Verify CIB initiated:

(Step 7.a RNO) IF CIB NOT actuated, THEN manually align equipment. If necessary, refer to Attachment A-0.5, "Containment Isolation Phase B Checklist".

NOTE: If requested, provide Candidate with a copy of Attachment A-0.5.

Standard: Candidate checks all indicating lights with BLUE CIB marks LIT.

NOTE: The following components with BLUE CIB marks do not actuate on CIB and will not be LIT:

- **2QSS-P24, Chemical Injection Pump**
- **2QSS-SV-100A, Chem Injection Pump Discharge To CNMT Sump**
- **2QSS-SV-100B, Chem Injection Pump Discharge To CNMT Sump**

√	**Performance Step: 4**	Verify CIB initiated:
	(Step 7.a RNO cont.)	IF CIB NOT actuated, THEN manually align equipment. If necessary, refer to Attachment A-0.5, "Containment Isolation Phase B Checklist".
	Standard:	Candidate determines 2QSS*P21A & 21B, Quench Spray Pumps not running.
	Standard:	Candidate locates and places 2QSS*P21A & 21B control switches in Start.
	Standard:	Candidate verifies red running light on and white trip light off for each pump.
	Standard:	Candidate verifies 2QSS*PI101A & B indicate discharge pressure.
	Standard:	Candidate verifies 2QSS*I121A & B indicate motor amps.
	Comment:	

√	**Performance Step: 5**	Verify CIB initiated:
	(Step 7.RNO b)	Stop all RCP's.
	Standard:	Candidate determines that all RCP's are running.
	Standard:	Candidate locates and places control switches for 2RCS*P21A, 21B and 21C in Stop.
	Standard:	Candidate verifies white trip light on and red running light off for each pump.
	Comment:	

Terminating Cue: When the Candidate stops the RCP's, the evaluation for this JPM is complete.

STOP TIME: _____

Facility: **BVPS Unit 2** Task No.: 0362-005-06-013

Task Title: Synchronize and Load EDG 2-1 JPM No.: 2005 NRC JPM S6

K/A Reference: 064 A4.06 (3.9/3.9)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

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

Initial Conditions: The plant is operating at 100% power. 2OST-36.1, Emergency Diesel Generator [2EGS*EG2-1] Monthly Test is in progress.

Task Standard: 2-1 diesel generator synchronized and running at minimum load.

Required Materials: None

General References: 2OST-36.1, Emergency Diesel Generator [2EGS*EG2-1] Monthly Test Rev. 44

Handouts: 2OST-36.1, Emergency Diesel Generator [2EGS*EG2-1] Monthly Test Rev. 44

Initiating Cue: The Unit Supervisor directs you to synchronize and load EDG 2-1 in accordance with 2OST-36.1, Emergency Diesel Generator [2EGS*EG2-1] Monthly Test, Steps 25 - 33. All of the preceding procedure steps have been completed.

Time Critical Task: NO

Validation Time: 15 minutes

Simulator Setup:	Initialize IC-183 PW = NJPM Place Synchroscope Power Control Switch to ON (Located behind VB-C) Ensure correct Synch Selector Switch handle for EDG is in its NSA position.

(Denote Critical Steps with a check mark)

START TIME: _____

√ **Performance Step: 1** (Step 25)
Position the 2-1 EMERG GEN SYNCHRONIZING SELECTOR switch to the BUS 2AE position (BB-C).

Standard: Candidate locates and places 2-1 EMERG GEN SYNCHRONIZING SELECTOR in 2AE position.

Comment:

√ **Performance Step: 2** (Step 26)
Adjust EDG speed using the 2-1 EMERG GEN GOVERNOR switch (BB-C) UNTIL the EDG 2-1 Synchroscope needle is rotating slowly in the FAST direction (VB-C).

Standard: Candidate locates and adjusts 2-1 EMERG GEN GOVERNOR control switch.

Standard: Candidate verifies synchroscope needle is rotating slowly in the fast direction.

Comment:

√ **Performance Step: 3** (Step 27)
Ensure 2-1 EMERGENCY GENERATOR VOLTAGE REGULATOR control switch is in AUTO the position (BB-C).

Standard: Candidate locates and verifies 2-1 EMERGENCY GENERATOR VOLTAGE REGULATOR control switch in AUTO.

Comment:

Performance Step: 4 Record voltage reading from 2-1 EMERG GEN Voltmeter (BB-C).

(Step 27.a)

Standard: Candidate locates and records 2-1 EMERG GEN voltage.

Comment:

Performance Step: 5 Record voltage reading from 4160V BUS 2AE Voltmeter (VB-C).

(Step 27.b)

Standard: Candidate locates and records 4160V BUS 2AE voltage.

Comment:

Performance Step: 6 If aligned to the SSST, Place Bus 2A Load Tap Changer in MANUAL. (Otherwise N/A).

(Step 28)

Standard: No action required per JPM Initial Conditions.

Comment:

√ **Performance Step: 7** (Step 29)

Using the 2-1 EMERG GEN VOLTAGE ADJUST switch, match EDG voltage with the voltage on Bus 2AE, ± 1 volt.

Standard: Candidate locates and adjusts 2-1 EMERG GEN VOLTAGE ADJUST switch to match voltages.

Standard: Candidate verifies incoming and running voltages indicate approximately 120 - 122 volts.

Comment:

√ **Performance Step: 8** (Step 30)

Place the 2-1 EMERG GEN MTR OPERATED GND DISCONNECT switch in the CLOSE position. Before releasing the switch, verify that the green light goes out AND the red light is lit (VB-C).

Standard: Candidate locates and closes 2-1 EMERG GEN MTR OPERATED GND DISCONNECT switch.

Standard: Candidate verifies red close light on and green open light off.

Comment:

√ **Performance Step: 9** (Step 31.a)

When <u>both</u> synchronizing lights are completely dark **AND** the synchroscope needle is at the 12 o'clock position, place 2-1 Emergency Generator Output Breaker ACB 2E10 control switch in the CLOSE position.

Standard: Candidate locates and places 2-1 Emergency Generator Output Breaker ACB 2E10 control switch in Close at 12 o'clock position.

Comment:

Performance Step: 10 (Step 31.b)

When the red light above the switch turns ON, release the switch (BB-C).

Standard: Candidate locates and releases 2-1 Emergency Generator Output Breaker ACB 2E10 control switch when red light is on.

Standard: Candidate verifies red close light on and green open light off.

Comment:

√ **Performance Step: 11** (Step 32)

Increase the load to on EDG 2-1 to approximately 450 Kw as follows:

Load the EDG to approximately 450 Kw by moving the 2-1 EMERG GEN GOVERNOR control switch intermittently to RAISE.

Standard: Candidate locates 2-1 EMERG GEN GOVERNOR control switch and places in the Raise position.

Comment:

√ **Performance Step: 12** (Step 32)

Increase the load to on EDG 2-1 to approximately 450 Kw as follows:

Observe increasing indications on the EDG 2-1 Wattmeter (VB-C) and Ammeter (BB-C) while increasing load.

Standard: Candidate verifies 2-1 EMERGENCY GENERATOR WATTS indicates increasing Kw.

Standard: Candidate verifies 2-1 EMERGENCY GEN 4KV BUS 2AE AMPS indicates increasing load.

Comment:

Performance Step: 13 Place the 2-1 EMERG GEN SYNCHRONIZING SELECTOR switch in the OFF position.

(Step 33)

Standard: Candidate locates and places 2-1 EMERG GEN SYNCHRONIZING SELECTOR in Off.

Comment:

Terminating Cue: When the Candidate turns the synchroscope selector switch off, the evaluation for this JPM is complete.

STOP TIME: _____

Facility: **BVPS Unit 2** Task No.: 0021-004-01-013

Task Title: Remove Power Range Instrument From Service JPM No.: 2005 NRC JPM S7

K/A Reference: 015 A3.03 (3.9/3.9)
015 A4.03 (3.8/3.9)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

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

Initial Conditions: The plant is operating at power.

All systems are normal with the exception of one Power Range Nuclear Instrument which has failed.

The required actions to stabilize the plant have been taken. Reactor, turbine power and T_{AVG} are stable. T_{AVG} is within one degree of T_{REF}.

Control Rods are in Manual.

Task Standard: The failed nuclear channel is bypassed in accordance with AOP-1.2.1C.

Required Materials: None

General References: 2OM-53C.4.2.2.1C, Power Range Channel Malfunction, Issue 1A, Rev. 6

Handouts: 2OM-53C.4.2.2.1C, Power Range Channel Malfunction, Issue 1A, Rev. 6

Initiating Cue: The Unit Supervisor directs you to bypass the failed power range channel using AOP-2.2.1C and report when completed.

Time Critical Task: NO

Validation Time: 10 Minutes

Simulator Setup:	Initialize IC-182 PW = NJPM IMF NIS03A 0

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Check If Malfunction Of One Power Range Channel (N-41, N-42, N-43, N-44) Has Occurred.

(Step 1)

Standard: Candidate locates and determines that 2NMP-NI41B and/or NIS Rack N41, drawer A indicates channel has failed.

Standard: Candidate verifies that no other power range channel has failed.

NOTE: Power Range channels read as follows:

N-41: 0%

N-42: 48%

N-43: 48%

N-44: 48%

Comment:

Performance Step: 2 IF Power Range Channel 4 (N-44) fails, THEN perform the following:

(Step 1.b.1)

Place Control Rod Group Selector switch in MAN.

Standard: No action required.

NOTE: Candidate may choose to verify that Control Rod Group Selector switch is in Manual.

Comment:

Performance Step: 3
(Step 1.b.2)

IF Power Range Channel 4 (N-44) fails, THEN perform the following:

Place [2FWS*FCV479, 489, 499], 21A (B) (C) SG Feedwater Bypass Control Vlvs in MANUAL.

Standard: No action required.

NOTE: Candidate may choose to verify that 2FWS*FCV479, 489, 499 are in Manual.

Comment:

√ **Performance Step: 4**
(Step 1.c)

At NIS Rack N50, "Detector Current Comparator," turn Rod Stop Bypass Switch to BYPASS on the failed channel.

Standard: Candidate locates and places rod stop bypass switch in Bypass PR N-41 position.

Comment:

Performance Step: 5
(Step 1.c.1)

Verify appropriate Status Light, "Overpwr Rod Stop Bypass" (Status Light Panel 308, A-14, B-14, C-14, D-14) - LIT FOR FAILED CHANNEL

Standard: Candidate locates and verifies A-14 status light on.

Comment:

Performance Step: 6 Check reactor power - GREATER THAN 50%.

(Step 1.d)

Standard: Candidate locates and verifies reactor power indicates less than 50%.

Comment:

√ **Performance Step: 7** At NIS Rack N37/N46, "Comparator and Rate", turn Comparator Channel Defeat Switch to failed channel.

(Step 1.g)

Standard: Candidate locates and places comparator channel defeat switch in N41 position.

Comment:

Performance Step: 8 Ensure vertical board recorders are selected to monitor only operable detectors.

(Step 1.g)

Standard: Candidate locates and places NIS RECORDER SELECTOR UPPER 1N45 or LOWER 2N45 in N42, N43, or N44 position.

NOTE: Normally, only 1 recorder is set to monitor power range indication.

Comment:

Performance Step: 9 Report task complete to the Unit Supervisor.

Standard: Candidate reports Power Range Channel N-41 is bypassed.

NOTE: As Unit Supervisor, acknowledge report that channel is bypassed.

Comment:

Terminating Cue: When the Candidate selects an operable recorder to the detector, the evaluation for this JPM is complete.

STOP TIME: _____