Job Performance Measure "A"

Facility: **Vogtle**

Task No: V-LO-TA-09029

Task Title: Emergency Borate from the RWST

JPM No: V-RQ-JP-13009-005

K/A Reference: 004A2.14

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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 rapid down power per AOP 18013-C, "Rapid Power Reduction" has just been performed by the operating crew. Boric Acid Transfer Pump 1 is Danger Tagged.**

Initiating Cue: **The SS has directed you to emergency borate the RCS using SOP 13009-1 to clear the rod bank Lo-Lo Limit alarm.**

Task Standard: Student initiates emergency boration from the RWST using SOP 13009-1.

Required Materials:
1. SOP 13009-1 Ver. 46.1
2. Control Room Simulator

General References: None

Time Critical Task: No

Validation Time: 6 minutes

SIMULATOR SETUP:

Simulator Setup:

1. Reset to IC # 237 for HL-16 NRC Exam
2. Place a Red Danger Tag on HS-0276A (Boric Acid Transfer # 1)

Simulator Setup from Scratch:

1. Reset to IC # 14 (100% MOL)

2. Insert the following overrides:

LV-112D	closed
HS-276A	stop
HS-276A	green light – off
HS-276A	Red Danger Tag on hand switch
HS-277A	stop – on Trigger 1 (T1)
HS-277A	amber light on – on Trigger 1 (T1)
ALB37 window D01 (BBD Trouble) on - on Trigger 1 (T1)	

3. Select the following hand switch positions:

HS-277A	auto

4. Place 75 gpm letdown in service and adjust charging flow as appropriate to maintain PRZR level stable.

5. Reduce reactor power to ~ 70% power and stabilize the plant, ensure that CBD rods are below the RIL to ensure ALB-10, D04 for ROD BANK LO-LO LIMIT is illuminated. (Recommend 5 to 10 steps below the RIL to ensure the alarm does not inadvertently clear, some patience is required to accomplish this (~ 106 steps on CBD should be pretty close).

6. Acknowledge / Reset alarms

7. Freeze

Setup time: 10 minutes

Performance Information

Critical steps denoted with an asterisk

***Student selects section 4.9 of SOP 13009-1**

Standard: Section 4.9 referenced

Comment:

---:

Reviews note at beginning of section 4.9 and may refer to table 1 for available flow paths

TABLE 1

EMERGENCY BORATION FLOW PATH ALTERNATIVES

Flow path	BATP	Valve Alignments	Other Pump Required	Flows	Flow	Note
HV8104	At least one	**OPEN** 1HV-8104	Any charging pump	**>42 GPM** 1FI-0121C	**>30 GPM** 1FI-0183A	Operate heaters
Charging Flow path	At least one	**OPEN** 1FV-0110A 1FV-0110B	Any charging pump	**>42 GPM** 1FI-0121C	**>30 GPM** 1FI-0110A	Operate heaters
RWST to Regen Hx	NA	**OPEN** 1LV-0112D 1LV-0112E **CLOSE** 1LV-0112B 1LV-0112C 1LV-0112A	Any charging pump	**>100 GPM** 1FI-0121C	**8 to 13 GPM** seal injection flow 1HV-0182	Operate heaters
RWST to BIT	NA	**OPEN** 1HV-8801A 1HV-8801B	Any charging pump	BIT flow (1FI-0917A) + total seal flow - seal return flow **>87.5 GPM**	Adjust 1FIC-0121C to **<13 GPM** per RCP	Operate heaters
RHR (Mode 6)	NA	**OPEN** HV-8812A/B HV-8809A/B	RHR other than S/D Cooling	>100 gpm	See Proc.	Establish water removal path to prevent vessel overflow
SI (Mode 6)	NA	**OPEN** HV-8923A/B HV-8821A/B HV-8835	SI	>100 gpm	See Proc.	Establish water removal path to prevent vessel or cavity overflow

Student may use any of the first four methods. Most likely method will be using HV-8104 or the charging flow path

Standard: N/A

Comment:

4.9.1 Emergency Boration through 1-HV-8104

OR

4.9.2 Emergency Boration through The Normal Charging Flow Path

***4.9.1.1 OR 4.9.2.1 Start one (1) Boric Acid Transfer Pump.**

Standard: Boric acid transfer pump hand switch placed in START
Red light – ON
Green light - OFF

Comment:

CUE: Simulator operator actuates trigger 1

*** Determines that boric acid transfer pump has tripped**

Standard: Boric acid transfer pump:
Red light – OFF
Green light – ON
Amber light – ON
1BBD Trouble Alarm

Comment:

*** Determines that sections 4.9.1 and 4.9.2 are N/A due to both boric acid transfer pumps being unavailable.**

Standard: Refers to section 4.9.3

Comment:

4.9.3 Emergency Boration From The RWST Through The Normal Charging Flow Path

4.9.3.1 **Verify** one (1) Charging Pump is running and supplied with cooling water.

CUE: IF asked, Auxiliary Building Operator reports NCP is supplied with cooling water.

Standard: NCP: Red light – ON
Green light – OFF
Amber light - OFF

Comment:

***4.9.3.2 Open the following Charging Pump Suctions from the RWST:**

- 1-LV-0112D
- **1-LV-0112E**

Standard: Places 1-LV-112D in open position: **Green light – stays ON**
Red light - stays OFF

Places 1-LV-112E in open position: Green light – OFF
Red light - ON

Comment:

***4.9.3.3 Close the following VCT Outlet Isolations:**

- **1-LV-0112B**
- **1-LV-0112C**

Standard: Places 1-LV-112B to close position: Green light - ON
Red light - OFF

Places 1-LV-112C to close position: Green light - ON
Red light - OFF

Comment:

***4.9.3.4 Place 1-LV-0112A to the HUT position.**

Standard: Places 1-LV-0112A to the HUT position: Red light - OFF
Amber light - ON

Comment:

4.9.3.5 Place 1-FIC-0121 in MANUAL,

Standard: Checks 1-FIC-0121 in MANUAL
Auto light – OFF
Manual light - ON

Comment:

***4.9.3.6 Adjust Charging Line Flow Controller 1-FIC-0121 to obtain Charging Flow 1-FI-0121C greater than 100 gpm,**

Standard: Charging Flow 1-FI-0121C greater than 100 gpm

Comment:

4.9.3.7 **Adjust** Charging Seal Flow Control 1-HV-0182 as necessary to maintain RCP seal injection flow at approximately 40 gpm (between 8 and 13 gpm per pump).

Standard: RCP seal injection flows between 8 and 13 GPM per pump

Comment:

4.9.3.8 IF required for RCS inventory control, **place** an additional letdown orifice in service per 13006-1.

CUE: The extra operator will place an additional letdown orifice in service.

Standard: This Step is N/A

Comment:

4.9.3.9 **Operate** the Pressurizer Backup Heaters as necessary to equalize boron concentrations between the RCS and the Pressurizer.

Standard: Turns on Pressure back up heaters as needed:
1HS-10469A
1HS-10470A
1HS-10472

Comment:

4.9.3.10 **Check** for indications consistent with RCS boration:

RCS Tavg may be dropping.

NIS may be dropping.

CUE: The extra operator will monitor boron concentration and terminate emergency boration flow when the rod bank Lo-Lo Limit Alarm is clear.

Standard: N/A

Comment:

Reports to the SS that emergency boration from the RWST has been initiated per 13009-1.

Standard: N/A

Comment:

Terminating cue: Student returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-RQ-JP-13009-005

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **A rapid down power per AOP 18013-C, "Rapid Power Reduction" has just been performed by the operating crew. Boric Acid Transfer Pump 1 is Danger Tagged.**

Initiating Cue: **The SS has directed you to emergency borate the RCS using SOP 13009-1 to clear the rod bank Lo-Lo Limit alarm.**

Job Performance Measure "B"

Facility: **Vogtle**

Task No: V-LO-TA-37002

Task Title: **Establish Safety Grade Letdown**

JPM No: V-NRC-JP-19001-001

K/A Reference: 004A2.11

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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 was manually tripped due to an unisolable instrument air break. Unable to prevent instrument air header depressurization, the compressors have been stopped. The crew has transitioned from EOP 19000-C to EOP 19001-C.**

Safety Grade Charging has been placed in service.

Initiating Cue: **The SS has directed you to "Establish safety grade letdown flow at 40 gpm using EOP 19001-C step 10 a RNO."**

Task Standard: Safety grade letdown flow established at 35 to 45 gpm.

Required Materials: EOP 19001-C, Reactor Trip Response

Time Critical Task: No

Validation Time: 5 minutes

SIMULATOR SETUP:

Simulator Setup:

1. Reset to IC # 236 for HL-16 NRC Exam

Simulator Setup from Scratch:

1. Reset to IC # 14 (MOL 100%)
2. Initiate manual reactor trip.
3. Close MSIVs.
4. Throttle total AFW flow to stabilize RCS temperature.
5. Verify PRZR level and pressure stable or rising.
6. Insert malfunction IA01 (instrument air leak) at 100%.
7. Place all air compressor handswitches in STOP.
8. Ack/Reset alarms.
9. Verify instrument air pressure ~ 0 psig.
10. Place Train B Safety grade charging in service per 13006-C
11. Freeze simulator.

Setup time: 10 minutes

Performance Information

Critical steps denoted with an asterisk

Step 10 RNO a 1): Establish Safety Grade Charging by initiating 13006, CHEMICAL AND VOLUME CONTROL SYSTEM

CUE: IF ASKED, "Refer back to initial conditions."

Standard: N/A

Comment:

***Step 10 RNOa 2)a): Open Rx Head Vent to LETDOWN ISOLATION VLVs:**
-HV-8095A
-HV-8096A
-HV-8095B
-HV-8096B

Standard: Places 1-HV-8095A handswitch to open Green light – OFF Red light - ON
Places 1-HV-8096A handswitch to open Green light – OFF Red light - ON
Places 1-HV-8095B handswitch to open Green light – OFF Red light - ON
Places 1-HV-8096B handswitch to open Green light – OFF Red light - ON

NOTE to examiner: Annunciator ALB12-D02 RV VENT HI TEMP will alarm after valves are opened.

Comment:

***Step 10 RNOa 2)b): Open REACTOR HEAD VENT TO PRT flow control valves as necessary:**
-HV-0442A
-HV-0442B

NOTE to examiner: FI-406A and FI-407A are in series and each will read the total flow.

Standard: Depress up/down arrow pushbuttons on controllers 1HC-0442A and/or 1HC-442B to attain a 35 to 45 gpm letdown flow rate.

Comment:

Report completion to SS.

Standard: Report letdown flow established at rate to the SS.

Comment:

Terminating cue: Student returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-NRC-JP-19001-001

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **The plant was manually tripped due to an unisolable instrument air break. Unable to prevent instrument air header depressurization, the compressors have been stopped. The crew has transitioned from EOP 19000-C to EOP 19001-C.**

Safety Grade Charging has been placed in service.

Initiating Cue: **The SS has directed you to "Establish safety grade letdown flow at 40 gpm using EOP 19001-C step 10 a RNO."**

Job Performance Measure "C"

Facility: **Vogtle**

Task No: V-LO-TA-37011

Task Title: Depressurize RCS to Reduce Break Flow to Ruptured Steam Generator—Normal Pressurizer Spray Not Available and 1st PORV block valve fails shut. (Alternate Path)

JPM No: V-NRC-JP-19030-004

K/A Reference: 038EA1.04

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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 tube rupture has occurred on SG-1. The crew has transitioned from EOP 19000-C to 19030-C. Steps 1 through 33 of EOP 19030-C have been performed. Normal pressurizer spray was not available.**

Initiating Cue: **The SS has directed you to "Depressurize the RCS beginning with EOP 19030-C step 34."**

Task Standard: RCS depressurized using a PORV to at or slightly below ruptured SG pressure per EOP 19030-C.

Required Materials: 1. EOP 19030-C Ver 37.1, “Steam Generator Tube Rupture”.

General References: None

Time Critical Task: No

Validation Time: 11 minutes

SIMULATOR SETUP:

Simulator Setup:

1. Reset to IC # 234 for HL-16 NRC Exam.

Simulator Setup from Scratch:

1. Reset to IC # 14 (100% MOL).
2. Override: PIC 455B to “CNT DN.”
3. Override: PIC-455C to “CNT DN.”
4. Insert malfunction SG01A at 50%.
5. Initiate manual Rx Trip and SI.
6. Throttle AFW flow to ~ 200gpm per SG.
7. Verify ruptured SG level > 10% NR.
8. Perform 19030 steps 1 through 33.
9. Insert Override HS-8000G to Block
10. Insert Override HS-8000H to Block
11. Ack/Reset alarms.
12. Freeze simulator

Setup time from scratch: 20 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

***Step 34: Depressurize RCS using a PRZR PORV to refill PRZR:**

a) Arm one available train of COPS and check PRZR PORV Block Valve – OPEN.

NOTE to sim operator: After candidate arms COPS, remove the override from the other train of COPS**.**

Standard: **The candidate recognizes that the PRZR PORV Block Valve did not OPEN.**

Comment:

Step 34.a RNO Open PRZR PORV Block Valve.

Standard: The candidate recognizes that the PRZR PORV Block Valve did not remain open when Handswitch released.

Comment:

***Step 34.a Arm one available train of COPS and check PRZR PORV Block Valve – OPEN.**

Standard: The candidate now arms the opposite train of COPS and checks the Block Valve OPEN. If the candidate does not use the second PORV and goes to Auxiliary Spray , then performance is unsatisfactory.

NOTE to examiner: The candidate may block the first train of COPS before arming the opposite train.

CUE: If asked,"SS desires the COPS train placed in Block."

Comment:

***Step 34.b** **Open one PRZR PORV.**

Standard: **The candidate opens one PRZR PORV.**

Comment:

Step 34.c Go To Step 37.

Standard: The candidate goes to Step 37.

Comment:

***Step 37:** **Check if ANY of the following conditions are satisfied:**

BOTH of the following:

-RCS pressure – LESS THAN RUPTURED SG(s) PRESSURE.
-PRZR level – GREATER THAN 9% [37% ADVERSE.]

OR

-RCS Subcooling – LESS THAN 24ºF [38 ºF ADVERSE.]

OR

-PRZR level – GREATER THAN 75% [52% ADVERSE.]

Standard: The candidate monitors these parameters to until one of the criteria is satisfied.

Comment:

***Step 38:** **Terminate RCS depressurization:**

a) Verify Normal PRZR Spray valve(s) – CLOSED.

b) Verify PRZR PORV(s) – CLOSED.

c) Block COPS.

d) Check Auxiliary Spray – IN SERVICE.

Standard: The candidate checks Normal PRZR Spray valves CLOSED.
The candidate shuts the open PORV.
The candidate blocks both trains of COPS.
The candidate checks auxiliary spray NOT IN SERVICE.

NOTE To Examiner: One train of COPS may have been previously blocked prior to arming the opposite train**.**

Comment:

***Step 39:** **Check RCS pressure – RISING.**

Standard: **Candidate notes that RCS pressure is RISING.**

Comments:

Terminating Cue: **"Another operator will continue this procedure."**

Verification of Completion

Job Performance Measure No. V-RQ-JP-19030-004

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **A tube rupture has occurred on SG-1. The crew has transitioned from EOP 19000-C to 19030-C. Steps 1 through 33 of EOP 19030-C have been performed. Normal pressurizer spray was not available.**

Initiating Cue: **The SS has directed you to "Depressurize the RCS beginning with EOP 19030-C step 34."**

Job Performance Measure "D"

Facility: **Vogtle**

Task No: V-LO-TA-37010

Task Title: Isolate a Faulted Steam Generator—Alternate Path.

JPM No: V-NRC-JP-19020-20

K/A Reference: WE12EA2.2

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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 Safety Injection has occurred. The crew has transitioned from EOP 19000-C to EOP 19020-C.**

Initiating Cue: **The SS has directed you to "Isolate the Faulted SG using EOP 19020-C."**

Task Standard:	Faulted generator isolation attempted then 19121-C implemented to mimimize cooldown.
Required Materials:	EOP 19020-C Ver 18 EOP 19121-C Ver 26
General References:	None
Time Critical Task:	No
Validation Time:	15 minutes

SIMULATOR SETUP:

Simulator Setup:

1. Reset to IC # 246 for HL-16 NRC Exam

Simulator Setup from Scratch:

1) Reset to IC14 (MOL 100%).
2) Insert malfunctions ES10 and ES11.
3) Insert malfunction MS02A at 5%
4) Insert malfunction MS02B at 5%
5) Insert malfunction MS02C at 5%
6) Insert malfunction MS02D at 5%
7) Trip reactor and actuate SI.
8) Throttle total AFW flow to ~ 200gpm per SG (Do not isolate AFW flow to faulted SG.)
9) Ack/Reset alarms.

Setup time: 7 minutes

Performance Information

Critical steps denoted with an asterisk

19020-C
Step 1 Initiate critical safety function status trees per 19200 C, F-0 CRITICAL SAFETY FUNCTION STATUS TREE

CUE: "The STA is initiating critical safety function status trees per 19200-C.

Standard: Student reads step and ensures procedure is initiated. .

Comment:

19020-C
Step 2 Initiate NMP EP 110, EMERGENCY CLASSIFICATION DETERMINATION AND INITIAL ACTION.

CUE: "Shift Manager is initiating Emergency Classification Determination per NMP-EP-110."

Standard: Student reads step and informs Shift Manager to initiate NMP-EP-110.

Comment:

19020-C
Step 3 Verify MSIVs and BSIVs Valves CLOSED.

Standard: Train A and B MSIVs and BSIVs are open.
Student manually actuates SLI or manually closes all valves.
Student verifies all MSIVs and BSIVs are closed.

Comment:

:

Step 4 RNO: IF all SG pressures are lowering in an uncontrolled manner, THEN go to 19121- C ECA-2.1 UNCONTROLLED DEPRESSURIZATION OF ALL STEAM GENERATORS.

Standard: Checks all S/G pressure indications.
Determines all S/G pressures are lowering uncontrollably.
Transitions to 19121-C.

CUE: IF SS notifed of transition, "SS acknowledges transition to 19121-C."

Comment:

19121-C
Step 1 Initiate the Continuous Actions and Foldout Page.

Standard: Student initiates monitoring of continuous actions and foldout page.

Comment:

19121-C
Step 2a: Check SGs secondary pressure boundaries: Verify the following valves CLOSED:

-MSIVs
-MFIVs
-BFIVs
-MFRVs
-BFRVs

Standard: Verifies all valves are shut.

Comment:

19121-C
Step 2b: Verify BSIVs CLOSED.

Standard: Verifies valves CLOSED.

Comment:

---:

19121-C
Step 2c Verify SG Blowdown and Sample Valves CLOSED.

Standard: Verifies valves CLOSED.

Comment:

19121-C
Step 2d Verify SG ARVs CLOSED.

Standard: Verifies valves CLOSED.

Comment:

19121-C

*__Step 3:__ **Isolate steam supply to TDAFW Pump.**

Check one MDAFW running AND capable of feeding SG(s) needed for RCS Cooldown.

Close TDAFW Pump Steam Supply Valves:

-HV-3009.
-HV-3019.

Standard: **Checks that one MDAFW is running AND capable of feeding SG(s). Closes TDAFW Pump Steam Supply Valves.**

Comment:

19121-C

Step 4a Monitors Shutdown Margin

Standard: Step read.

CUE: When read, "An Extra RO will perform a Shutdown margin."

Comment:

19121-C

*Step 4b Checks cooldown in RCS cold legs LESS THAN 100F/hr

Standard: Monitors Wide Range Cold leg Temperatures on 1TR-431B or computer trend.

Determines cooldown greater than 100F/hr.

Goes to 4b. RNO

Comment:

19121-C
***Step 4b RNO** **Lowers AFW to 30 gpm in all SGs**

Standard: **Throttle 1HS-5139A (SG 1) to obtain 30 gpm on meter or computer trend.**
Throttle 1HS-5132A (SG 2) to obtain 30 gpm on meter or computer trend.
Throttle 1HS-5134A (SG 3) to obtain 30 gpm on meter or computer trend.
Throttle 1HS-5137A (SG 4) to obtain 30 gpm on meter or computer trend.

Goes to step 4d.

NOTE to examiner: The Simulator does not allow as fine a control of throttle valves as in the plant. This step may require several throttle attempts. Indicated flows of between 10 to 60 gpm to each generator is satisfactory performance.

Comment:

Step 4d. Checks NR level in all SGs GREATER THAN 10% [32% ADVERSE].

Standard: Checks CNMT pressures are zero and uses 10% setpoint.

Determines all SG NR levels are less than 10%

Goes to 4d RNO

Comment:

***Step 4d RNO** **Maintain a minimum flow of 30 gpm to SGs with less than 10% NR level.**

Standard: Checks flows to all SGs and Throttles as necessary to maintain a mimimum of 30 gpm per SG.

NOTE to examiner: The Simulator does not allow as fine a control of throttle valves as in the plant. Indicated flows of between 30 to 60 gpm to each generator is satisfactory performance.

Comment:

***Step 4e.** **Checks RCS WR Hot Leg temperatures STABLE or LOWERING.**

Standard: Monitors Wide Range Hot leg Temperatures on 1TR-413A or computer trend..

Determines temperatures are lowering and goes to Step 5,

Comment:

Terminating cue: **"The SS will have another operator complete the procedure".**

Verification of Completion

Job Performance Measure No. V-NRC-JP-19020-20

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **A Safety Injection has occurred. The crew has transitioned from EOP 19000-C to EOP 19020-C.**

Initiating Cue: **The SS has directed you to "Isolate the faulted SG using EOP 19020-C."**

Job Performance Measure "E"

Facility: **Vogtle**

Task No: V-LO-TA-29008

Task Title: Place Containment Hydrogen Monitors in service.

JPM No: V-NRC-JP-13130-20

K/A Reference: 028A1.01

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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 on Unit 1. The crew is performing EOP 19010-C.**

Initiating Cue: **The SS has directed you to "Place the Train A Containment Hydrogen Monitors in service using SOP 13130-1." The hydrogen monitors have been in standby for three days.**

Task Standard: Train A Containment hydrogen monitor in service.

Required Materials: 1. SOP 13130-1 Ver 19 ”Post Accident Hydrogen Control”.

General References: None

Time Critical Task: No

Validation Time: 8 minutes

SIMULATOR SETUP:

Simulator Setup:

1. Reset to IC # 249 for HL-16 NRC Exam

Simulator Setup from Scratch:

1. Reset to IC # 14 (MOL 100%)
2. Insert malfunction RC05C at 100% (Hot Leg Break).
3. Stop RCPs and Throttle AFW flow ~ 200gpm/SG.
4. Reset SI, Reset CIA, and Stop RHR pumps.
5. Energize Stub busses and establish Instr. Air to Cnmt.
6. Use Remote Function ED08 for target H_2 at 8.4%.
7. Use Remote Function ED07 for H_2 override.

13. Ack/Reset alarms.
14. Freeze simulator

Setup time from scratch: 10 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

Student determines that 13130-1, “Post-Accident Hydrogen Control” is applicable.

Standard: Student selects 13130-1, section 4.2.1 for “Containment Hydrogen Monitor A/B 1-1513-P5-HMA Operation (Hydrogen Measurement.)”

Cue: If asked, “Refer to intial conditions”

Comment:

NOTE: The Hydrogen Monitors require a 6 hour warm-up period in STANDBY before accurate readings may be obtained.

CUE: If asked, “Refer to initial conditions”

CAUTION: The Hydrogen Monitor Isolation Valves must remain closed except during Hydrogen Monitor operation while in Modes 5 or 6 or during post accident conditions to ensure containment integrity is maintained.

Standard: Student reviews NOTE and CAUTION prior to step 4.2.1.1 and determines that the standby requirement is met and that this is post-accident so that he may open the isolation valves.

Comment:

4.2.1.1.1 IF the following conditions exist, THEN **notify** maintenance to implement 28834-1, to provide power to Containment Isolation Valves 1-HV-2791B and 1-HV-2793B:

-A post accident condition (LOCA) exist AND
-125VDC Bus 1BD11 is not available AND
-Containment Hydrogen Concentration is required.

Standard: Student recognizes that 125VDC Bus 1BD11 is available.

Comment:

4.2.1.2 Verify the Hydrogen Monitor A sample line heat tracing temperature is greater than 260°F:

a. At Heat Tracing Panel 1-1817-U3-007B,(1AB-B07) read the temperature for circuit C1-7 and C1-8.

NOTE to examiner: The heat tracing panel is located in Aux bldg Room B07 train A piping penetration room. This would be a High Rad area post accident.

CUE: If asked, "The ABO reports C1-7 is 270°F, C1-8 reads 280°F.

b. IF less than 260°F, notify the Control Room immediately.

Standard: Student verifies that the sample line heat tracing temperature is greater than 260^{o}F.

Comment:

***4.2.1.3 Open the H_2 MONITOR A SPLY ISO IRC**

a) 1-HV-2792A

b) 1-HV-2792B

Standard: Student opens valves

Comment:

***4.2.1.4 Open H_2 MONITOR A SPLY ISO ORC 1-HV-2791B**

NOTE to examiner: ORC isolation valves are powered from the opposite train and are located as such on the QPCP**.**

Standard: Student opens valve 1-HV-2791B.

Comment:

***4.2.1.5 Open H_2 MONITOR A RTN ISO ORC 1-HV-2793B**

NOTE to examiner: ORC isolation valves are powered from the opposite train and are located as such on the QPCP.

Standard: Student opens valve 1-HV-2793B.

Comment:

***4.2.1.6 Place Mode Switch 1-HS-22900 in ANALYZE.**

Standard: Student places Switch 1-HS-22900 in ANALYZE.

Comment:

4.2.1.7 Verify Function Selector Switch 1-HS-22904 in Sample position.

Standard: Student verifies function selector switch 1-HS-22904 in SAMPLE.

Comment:

***4.2.1.8 Momentarily depress Remote Control Selector Pushbutton 1-HS-22944 and verify Sample Light LIT.**

Standard: Student momentarily depresses pushbutton.
Student verifies sample light is LIT.

Comment:

4.2.1.9 Note containment hydrogen concentration as indicated by CONTAIN H_2 MONITOR TRN A 1-AI-12979 on QMCB WHEN indications stabilize.

Standard: Student observes Hydrogen concentration on AI-12979.

Comment:

Terminating Cue: "Another operator will place the Train B Hydrogen Monitor in Service."

Verification of Completion

Job Performance Measure No. V-NRC-JP-13130-20

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **A LOCA has occurred on Unit 1. The crew is performing EOP 19010-C.**

Initiating Cue: **The SS has directed you to "Place the Train A Containment Hydrogen Monitors in service using SOP 13130-1." The hydrogen monitors have been in standby for three days.**

Job Performance Measure "F"

Facility: **Vogtle**

Task No: V-LO-TA-11014

Task Title: **Parallel DG with Voltage Regulator Failure**

JPM No: V-NRC-JP-13427-002

K/A Reference: 062A1.01

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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.

Instructions: ***Students should be pre-briefed to save simulator time for this JPM.***

Initial Conditions: **Following a 7 day D/G 1A outage, Maintenance and Engineering Support are standing by for a D/G 1A test run. D/G 1A was just started, and is now operating unloaded with the D/G output breaker open. You are relieving the UO, and will be performing the remainder of this test run. The outside area SO is stationed at the D/G to support the evolution.**

Initiating Cue: **The applicable portions of SOP 13145A-1 have been completed for starting DG-1A. In accordance with procedure SOP 13427A-1, parallel D/G 1A to 1AA02 and raise DG-1A load to 7000 kw per Section 4.2.1, starting with step 4.2.1.3.**

Task Standard: DG-1A paralleled to bus 1AA02 using 13427A-1, and DG-1A output breaker opened when KVAR load goes negative.

Required Materials: SOP 13427A-1 Ver. 6.2, 4160V AC BUS 1AA02 1E ELECTRICAL DISTRIBUTION SYSTEM

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR SETUP:

1. Reset to IC # 238 for HL-16 NRC Exam

Simulator Setup from Scratch:

1. Reset to IC 14 (100% MOL)
2. Start D/G 1A allow it to run unloaded until all annunicators are clear
3. Set **Trigger 1** with the following overrides:
   Override Lamps (voltage raise/lower PB lights)
   EAB-LO_DG1A_V_LWR VC-DG1A LOWER A533P28-C11 set to **OFF**
   EAB-LO_DG1A_V_R VC-DG1A RAISE A533P28-B6 set to **OFF**
   Override DI(voltage raise control won't work)
   EAB-DG1A_VC_INC VC_DI VC-DG1A RAISE A521P29-A3 set to **FALSE**
4. Set **Trigger 2** with the following overrides:
   Override DI (voltage lower control lower VARS)
   EAB-DG1A_VC_ VC_DEC_DI VC-DG1A LOWER A521P29-B10 set to **TRUE**
5. Acknowledge alarms and freeze simulation

6. Set Trigger 3 with the following overrides:
   Handswitch HS-1AA0219 to TRIP
   Lamp EAB-LO-HS 1AA0219_Y to ON
   Annunciator ALB35E01 DG1A Generator Trouble to ON.

7. Initial off the first two steps of procedure 13427A-1 section 4.2.1

Setup time: 5 minutes

Performance Information

Critical steps denoted with an asterisk

Student review precautions and limitations section of 13427A-1.

4.2.1.3 **Verify** DG1A SYNC MODE SELECTOR Switch 1TS-DG1A in AUTO.

Standard: 1TS-DG1A in AUTO

Comment:

Reviews CAUTION about synchronizing switches

4.2.1.4 **Verify** Breaker 1AA0205 and1AA0201 Synchronizing Switches are OFF:

- 1AA0205 SYNCHRONIZING SWITCH OFF
- 1AA0201 SYNCHRONIZING SWITCH OFF

Standard: 1AA0205 SYNCHRONIZING SWITCH OFF
1AA0201 SYNCHRONIZING SWITCH OFF

Comment:

***4.2.1.5 Place the BRKR 1AA0219 SYNCHRONIZING SWITCH to ON.**

Standard: 1AA0219 SYNCHRONIZING SWITCH - ON.
Synchroscope starts rotating.

Comment:

***4.2.1.6** **Momentarily place DSL GEN 1A UNIT/PARALLEL switch 1HS-4414B to PARALLEL/SLOW START and check blue DSL GEN 1A UNIT MODE/FAST START light NOT lit.**

Standard: **Blue light - OFF**

Comment:

4.2.1.7 **Set** DSL GEN 1A LOADING SET PT CONTROL 1SE-4915 to 1.00.

NOTE to examiner: The Control range is 1.0 to 11.0 and is normally left at 1.00.

Standard: Verify 1SE-4915 set at 1.00.

Comment:

4.2.1.8 **Select** the highest 1AA02 4160V Bus phase voltage on the QEAB Voltmeter by moving the BUS 1AA02 Normal Incoming Voltmeter Switch through all positions.

Standard: Highest reading 1AA02 bus voltage selected.

Comment:

Reviews CAUTION on bus voltage limits.

4.2.1.9 **Check** 1AA02 4160V Bus voltage between 4025V and 4250V.

a. IF NOT, **coordinate** with PCC to establish 1AA02 4160V Bus voltage between 4025V and 4250V.

NOTE to examiner: Adjustment should not have to be made.

Standard: 1AA02 4160V Bus voltage between 4025V and 4250V.

Comment:

4.2.1.10 **Select** the DG 1A voltage on the QEAB Voltmeter by moving the DG 1A Voltmeter Switch through all positions.

Standard: Lowest DG-1A voltage selected on voltmeter.

Comment:

NOTES

- It may be necessary to adjust DG speed slightly in order to verify the next step.
- Synchronizing lights are bright at the 6 o'clock position. Synchronizing lights are dark at the 12 o'clock position. The red AUTO SYNC PERMISSIVE light is lit near the 12 o'clock position.

4.2.1.11 **Check** Sync Scope Meter is rotating.

Standard: Sync Scope Meter - rotating

Comment:

NOTE

The following step adjusts DG voltage to slightly higher than bus voltage to ensure the DG kVAR loading will be positive.

4.2.1.12 **Adjust** DG voltage to approximately 50V above the highest phase of the bus voltage, as necessary.

Standard: DG-1A voltage ~ 50 V > 1AA02 bus voltage.

Comment:

NOTE

The following step adjusts DG frequency slightly higher than bus frequency to ensure the DG will start loading when the breaker is closed.

4.2.1.13 **WHILE** observing the Sync Scope, **adjust** the DG speed until the Sync Scope needle is rotating slowly in the clockwise (Fast) direction. (Greater than 10 seconds per revolution.)

Standard: Sync Scope needle is rotating in the clockwise (Fast) direction with at least a 10 second period.

Comment:

CAUTION

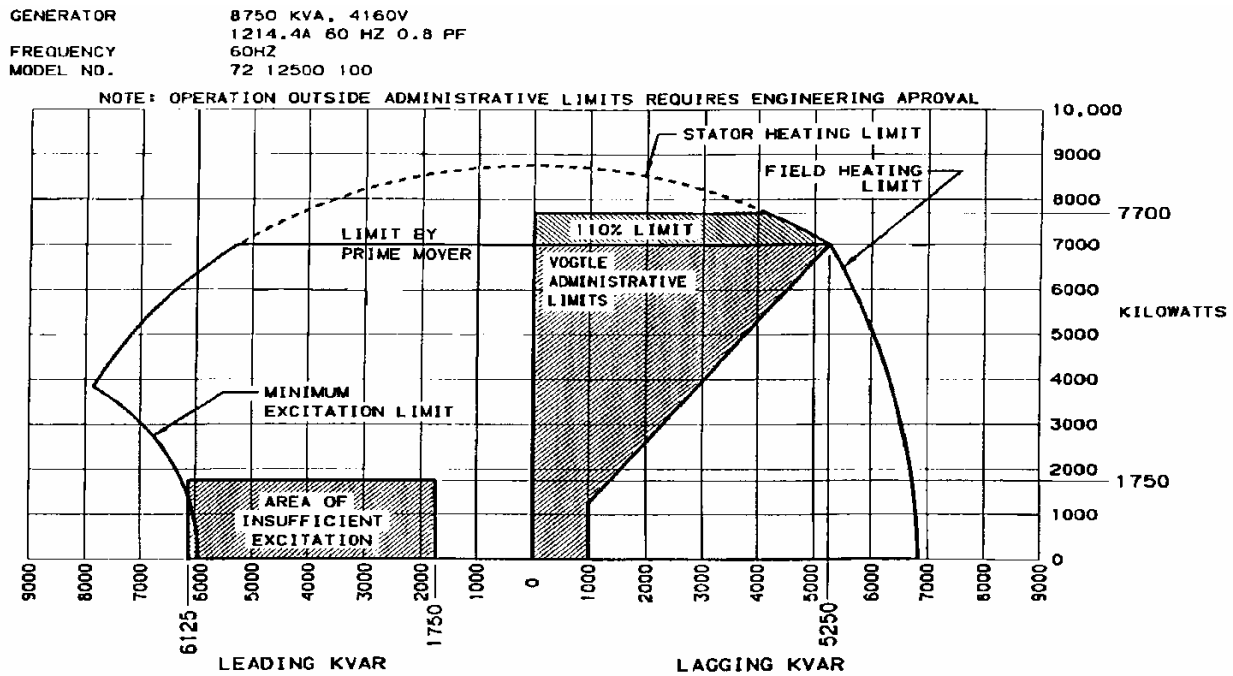
As soon as the DG Output breaker closes, kVAR must be controlled in the acceptable range specified in Figure 1, “Emergency Diesel Generator Operating Limits.”

***4.2.1.14** **<u>WHEN</u> Sync Scope needle reaches the 11 o’clock position, depress and hold the DG 1A AUTO SYNC PERMISSIVE pushbutton PB-DG1A.**

NOTE: **Concurrent Verification should be requested for this step.**

Standard: **PB-DG1A depressed when synch scope needle is at 11 o’clock.**

Comment:



EMERGENCY DIESEL GENERATOR
OPERATING LIMITS

4.2.1.15 **Check** DG1A OUTPUT BRKR 1AA02-19 closes WHEN Sync Scope needle reaches 12 o'clock position.

AND

a. IF Sync Scope needle passes the 12 o'clock position, **release** Auto Sync Permissive pushbutton.

Standard: 1AA02-19: Red light – ON
Green light – OFF
Amber light - OFF

Comment:

4.2.1.16 **Check** that DG loads to at least 700kW.

Standard: DG-1A load @ 700 KW

Comment:

4.2.1.17 **Adjust** DG voltage to obtain kVAR loading between 200 and 300 kVAR positive (Out).

a. IF kVAR loading goes negative (In) and NO adjustment can be made With the voltage control to restore kVAR load positive (Out), trip DG Breaker 1AA0219.

Standard: Candidate adjusts kVAR loading to between 200 and 300kVAR positive.

Comment:

4.2.1.18 **Place** BRKR 1AA0219 SYNCHRONIZING SWITCH to OFF.

Standard: 1AA0219 SYNCHRONIZING SWITCH - OFF.

Comment:

4.2.1.19 Record DG data required in 11885A-1 “DG 1A Operating Log.”

Cue: “An extra operator will record the data in the DG 1A Operating Log.”

Standard: N/A

Comment:

Notes and Caution prior to Step 4.2.1.20

NOTES

As DG load is adjusted in the following step, DG voltage should be adjusted concurrently to maintain kVAR loading positive (Out) and no more than half the kW load. Figure 1, “Emergency DG Operating Limits,” identifies the Vogtle administrative limits.

The DG should be loaded in increments of approximately 1000kW and 500kVAR in time increments of approximately 5 minutes between load changes.

DSL GEN 1A LOADING SET PT CONTROL 1SE 4915 has a range of 10% [1.00] to 110% [11.00] D/G LOAD which corresponds to 700kW 7700kW.

It is highly desirable to initially load the DG to 3000kW and maintain this load until cylinder exhaust temperatures stabilize or 15 minutes, whichever comes first, prior to further load increases.

With the DG paralleled to the SAT, DG voltage will tend to run high. The maximum voltage is 4326V AC. kVAR loading is expected to be at the lower end of the operating limits to maintain voltage below maximum.

Standard: Candidate reads notes and cautions.

Comment:

4.2.1.20 Load the DG to approx 3000 Kw

Standard: Candidate adjusts DG load using 1SE-4915 pot and voltage to maintain kVARs (OUT) at a value approximately one half DG load.

NOTE to Sim operator:

The following sequence must be done promptly or DG will trip:

When student raises DG load,

Insert Trigger 1 to disable lights and raise voltage

Then Insert Trigger 2 to lower VARS to -500 to -2000 kVARS

Unset Trigger 2 and set value to false to hold kVars at value.

If breaker is not opened after two minutes insert Trigger 3 to trip the DG output breaker

Comment:

***4.2.1.17.a IF kVAR loading goes negative (In) AND NO adjustment can be made with the voltage control control to restore restore kVAR load positive (Out), trip DG Breaker 1AA0219.**

Standard: Student recognizes that kVAR will or has gone negative and cannot be controlled and trips breaker 1AA0219. If student does not trip breaker it will trip after 2 minutes and is unsatisfactory performance.

Comment:

Terminating cue: Student returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-NRC-JP-13427-002

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **Following a 7 day D/G 1A outage, Maintenance and Engineering Support are standing by for a D/G 1A test run. D/G 1A was just started, and is now operating unloaded with the D/G output breaker open. You are relieving the UO, and will be performing the remainder of this test run. The outside area SO is stationed at the D/G to support the evolution.**

Initiating Cue: **The applicable portions of SOP 13145A-1 have been completed for starting DG-1A. In accordance with procedure SOP 13427A-1, parallel D/G 1A to 1AA02 and raise DG-1A load to 7000 kw per Section 4.2.1, starting with step 4.2.1.3.**

Job Performance Measure "G"

Facility: **Vogtle**

Task No: V-LO-TA-17007

Task Title: Perform NIS Power Range COT

JPM No: V-NRC-JP-14425-020

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

Examinee:_____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ Plant _____

NOTE: **For time considerations, the students may be allowed to "pre-brief" this JPM and allowed to review 14425C-1 prior to starting the JPM**

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: **Unit 1 is currently at 100% power and has been for 200 days.**

Initiating Cue: **You are the extra operator. The SS has directed you to "Perform the Power Range Quarterly Analog Channel Operability Test for N43, using procedure 14425C-1.**

Steps 5.1.1 to 5.1.4 have been completed.

The Extra RO will obtain the BTI keys and perform required actions for BTI

Task Standard: NIS Power Range COT completed for N43.

Required Materials: 1. Procedure 14425C-1 Power Range Quarterly Analog Channel NI 43 Operational Test

General References: None

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR SETUP:

Simulator Setup:

1. Reset to IC # 235 for HL-16 NRC Exam.

Simulator Setup from Scratch:

1. Reset to IC # 14 (100% MOL).

2. open Monitor and insert **yremfadd2(62)**
   (Type in and enter -should appear on line 1)

3. Type in 1=4.00 and enter. Line 1 should show **yremfadd2(62) =4.0000**
   (this sets N43 Hi flux trip setpoint to 113%)

4. Insert following remote functions on Trigger 1.

   BT04C NC43P PR High Flux Rx Trip Low Stpt Bypass to **BYPASS**

   BT05C NC43R PR High Flux Rx Trip High Stpt Bypass to **BYPASS**

   BT06C NC43U PR High Flux +ve Rate Rx Trip Bypass to **BYPASS**

   BT10C NC43M PR P-10 Permissive Bypass to **BYPASS**

   BT08C NC43N PR P-8 Permissive Bypass to **BYPASS**

   BT09C NC43S PR P-9 Permissive Bypass to **BYPASS**

   BT12C TB431C Loop 3 Over Temp Delta T Rx Trip Bypass- to **BYPASS**

   BT14C TB431D Loop 3 Over Temp Delta T Turb Runback Bypass- to **BYPASS**

5. Ack/Reset alarms.

6. Adjust N43 gain as necessary to set N43 power to 100% on the NIS drawer.

7. Freeze simulator

8. Initial steps 5.1.1 to 5.1.4 in procedure 14425C-1

Setup time from scratch: 10 minutes

Performance Information

Critical steps denoted with an asterisk

***Step 5.1.5 Place Control Rods in MANUAL.**

Standard: Student places Rod Bank Selector Switch to Manual:

NOTE to examiner: This step requires Concurrent Verification.

Comment:

Step 5.1.6 Record Test Start Date

Standard: Student records current Date (DATE) current Time (TIME) 1 or one (MODE).

Comment:

***Step 5.1.7 Defeat Channel N-43 by performing the following:**

NOTE to examiner: All parts of the following step require Concurrent Verification.

a. At the COMPARATOR RATE Drawer, position the COMPARATOR CHANNEL DEFEAT Switch to N43.

b. At the DETECTOR CURRENT COMPARTOR/MISCELLANEOUS CONTROL AND INDICATION PANEL, position the following switches as follows:

UPPER SECTION Switch to PRN43.

LOWER SECTION Switch to PRN43.

ROD STOP BYPASS to BYPASS PRN43.

POWER MISMATCH BYPASS Switch to BYPASS PRN43.

Standard: Switches positioned as listed above.

Comments:

Step 5.1.8 Verify PR OVERPWR ROD STOP MAN BYPASS I/N49A CH.III Status Light (BPLB 3.4) is lit.

Standard: PR OVERPWR ROD STOP MAN BYPASS I/N49A CH.III Light – LIT.

Comments:

Before step 5.1.9 CAUTION: Bypassing more than one NIS Channel will require entry into the Action Statement of Technical Specification 3.0.3.

Standard: Candidate reads caution.

Comments:

Step 5.1.9a Bypass NIS Channel 43 by performing the following at CHANNEL #3 NIS BTI TEST PANEL in Cabinet 13CQNIR:

CUE: “The extra RO and SS will perform steps 5.1.9 through 5.1.12"

Sim operator - Insert Trigger 1 and acknowledge alarms.

Note : Time compression is being used. Five Minutes has elapsed.

CUE: “Steps 5.1.9 through 5.1.12 complete consider those steps initialed in your procedure"

***Step 5.1.13** **At 1-N-43 POWER RANGE B Drawer, place the OPERATION SELECTOR Switch in the DET A&B position and verify 1-N-43 CHANNEL ON TEST Drawer Light is lit.**

Standard: **1N-43 POWER RANGE B Drawer OPERATION SELECTOR Switch placed in DET A&B position.**

Verify 1-N-43 CHANNEL ON TEST Drawer Light – LIT.

Comments:

Step 5.1.14 Verify ALB10-C06 NIS CHANNEL ON TEST is illuminated.

Standard: Verify ALB10-C06 CHANNEL ON TEST – LIT.

Comments:

NOTE: Rotating the potentiometers will generate a mismatch between the Power Range channels, which may cause a Radial Tilt alarm.

Standard: NOTE read.

Comments:

Step 5.1.15 On 1-N-43, rotate DETECTOR A and DETECTOR B TEST SIGNAL potentiometers fully counter-clockwise.

NOTE to examiner: Pots are normally left in this position.

Standard: DETECTOR A TEST SIGNAL potentiometer – Verified FULLY counter-clockwise.

DETECTOR B TEST SIGNAL potentiometer – Verified FULLY counter-clockwise.

Comments:

Step 5.1.16 At 1-N-43 POWER RANGE A Drawer, record PERCENT FULL POWER Meter reading.

Standard: Record 100% (99 to 101% acceptable).

Comments:

NOTES: If the DETECTOR A TEST SIGNAL Potentiometer is rotated fully clockwise before reaching the OVERPOWER ROD STOP (Step 5.1.17) or OVERPOWER TRIP HIGH RANGE (Step 5.1.19) setpoint, it will be necessary to rotate the DETECTOR B TEST SIGNAL Potentiometer.

If NI 43 OVERPOWER TRIP HIGH RANGE setpoint has been previously reduced to either 90% or 50% Power (i.e., after a plant shutdown or start-up,) then Steps 5.1.19 and 5.1.20 should be performed prior to Steps 5.1.17 and 5.1.18.

Following are the anticipated values for the OVERPOWER ROD STOP bistable trip:

EXPECTED VALUE:	105%
UPPER LIMIT:	106%
LOWER LIMIT:	104%

Standard: Notes read.

CUE: If asked, "Refer to initial conditions"

Comments:

***Step 5.1.17 Trip the OVERPOWER ROD STOP bistable as follows:**

a. Slowly rotate DETECTOR A UNTIL the OVERPOWER ROD STOP Drawer Light just illuminates OR UNTIL fully clockwise.

b. IF DETECTOR A is fully clockwise AND OVERPOWER ROD STOP light is NOT lit, slowly rotate DETECTOR B clockwise UNTIL the OVERPOWER ROD STOP Drawer light just illuminates.

c. Record “As Found” trip setpoint on 1-N-43 PERCENT FULL POWER Meter.

NOTE to examiner: The applicable parts of the step are in **BOLD**.

Standard: Pot rotated until OVERPOWER ROD STOP Drawer light just illuminates at 105%.

Record 105% (104-106% acceptable).

Comments:

***Step 5.1.18 Verify that trip-point value recorded in Step 5.1.17c is between 104% and 106%.**

Standard: Candidate initials step.

Comments:

***Step 5.1.19 Trip the OVERPOWER TRIP HIGH RANGE bistable as follows:**

a. IF DETECTOR A was NOT fully clockwise in Step 5.1.17, slowly rotate DETECTOR A clockwise UNTIL the OVERPOWER TRIP HIGH RANGE Drawer Light just illuminates OR fully clockwise.

b. IF DETECTOR A is fully clockwise AND OVERPOWER TRIP light is NOT lit, slowly rotate DETECTOR B clockwise UNTIL the OVERPOWER TRIP HIGH RANGE Drawer Light just illuminates.

c. Record the "As Found" trip setpoint on 1-N-43 PERCENT FULL POWER Meter.

NOTE to examiner: The applicable parts of the step are in **BOLD**.

Standard: Pot rotated until OVERPOWER ROD STOP Drawer light just illuminates at 113%.

Record 113% (111-115% acceptable).

Comments:

---

*__Step 5.1.20__ **Verify that the value recorded in Step 5.1.19.c is within applicable limits by performing the following: (ACCEPTANCE CRITERIA)**

a. IF the last calorimetric was performed when power was greater than 50%, verify trip-point value recorded in Step 5.1.19.c is between 108% and 109%.

b. IF the last calorimetric was performed between 20% and 50% power, verify trip-point value recorded in Step 5.1.19.c is between 89% and 91.9%.

c. IF the last calorimetric was performed at less than 20% power, verify trip-point value recorded in Step 5.1.19.c is between 49% and 51.1%.

Standard: **Candidate compares to a. and DOES NOT initial step as criteria is not met.**

NOTE to examiner: The applicable parts of the step are in **BOLD**. The candidate may attempt to inform SS of unacceptable result.

CUE: If candidate did not report the out of specification reading, “Were acceptance criteria met?”

CUE: “The SS directs you not to restore the channel to service to allow I&C to investigate. You have completed your task.

Comments:

Terminating cue: Student returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-RQ-JP-14425-020

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: Unit 1 is currently at 100% power and has been for 200 days**.**

Initiating Cue: You are the extra operator. The SS has directed you to "Perform the Power Range Quarterly Analog Channel Operability Test" for N43, using procedure 14425C-1.

Steps 5.1.1 to 5.1.4 have been completed.

The Extra RO will obtain the BTI keys and perform required actions for BTI.

Job Performance Measure "H"

Facility: **Vogtle**

Task No: V-LO-TA-29006

Task Title: Place Containment Main Purge in Service

JPM No: V-NRC-JP-13125-002

K/A Reference: 029A2.03

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ Plant _____

NOTE: **For time considerations, the students may be allowed to "pre-brief" this JPM and allowed to review 13125-1 prior to starting the JPM.**

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 5 with the Containment Equipment Hatch Open. 1-FT-2565 is out of service, 18,000 SCFM must be used as maximum flow rate during a purge per NOTE prior to step 4.1.2.8 f of 13125-1, Containment Purge System.**

Initiating Cue: **The SS has authorized Gaseous Release Permits with maximum discharge flow rates of 18,000 SCFM and has directed you to "Place Containment Main (Preaccess) Purge in service using procedure 13125-1".**

Checklist 1 for Main Purge isolation dampers and valves has been performed.

Task Standard: Student shuts down the mini-purge exhaust system and then starts the main purge exhaust system per 13125-1.

Required Materials: 13125-1, Containment Main Purge System

General References: None

Time Critical Task: No

Validation Time: 20 minutes

SIMULATOR SETUP:

Simulator Setup:

1. Reset to IC # 250 for HL-16 NRC Exam
2. Ensure handswitch handles are installed in Main Purge CVI valve handswitches.
3. Remove IPC point P 9871 from scan

Simulator Setup from Scratch:

1. Reset to mode 5 mid loop IC#1
2. Place Mini-Purge supply fan in service per 13125 and ensure Containment Pressure is atmospheric.
3. Verify Power to the Containment Main Purge dampers is on
4. Override meter PI 10945 to 0 psig
4. Acknowledge / Reset alarms
5. Freeze simulator

Setup time: 10 minutes

Performance Information

Critical steps denoted with an asterisk

Student refers to SOP 13125-1 and determines section 4.1.2 should be performed.

Standard: Section 4.1.2 used

Comment:

---:

Student reviews precautions and limitations of 13125-1

Student reviews notes and cautions at the beginning of section 4.1.2

CUE: IF asked, "The conditions stated in the note or caution have been met."

Standard: N/A

Comment:

4.1.2.1 IF the unit is in MODE 5, 6 OR defueled, AND the Containment Equipment Hatch is open, operate the Containment Main Purge System with the Exhaust Fan on, and Supply Fan off to verify airflow is maintained into the building.

Standard: Student determines this step IS applicable from initial conditions.

Comment:

4.1.2.2 **Perform** Checklist 1 as required, to restore power to the Main Purge Isolation dampers and fans.

Standard: Determines checklist 1 has been completed from initial conditions.

Comment:

_____:

Reviews NOTE concerning interlocks between main and mini-purge fans.

4.1.2.3 IF the Mini-Purge System is operating, **perform** the following:

a. **Notify** Chemistry that containment purge will be shifted from the Mini-Purge to the Main Purge System.

CUE: "Chemistry has been notified that containment purge will be shifted from mini to main purge."

b. **Go To** Section 4.3.2 and **shut down** the Mini-Purge System.

Standard: Determines that section 4.3.2 needs to be performed

Comment:

SECTION 4.3.2

Reviews note at beginning of section 4.3.2

4.3.2.1 **Terminate** Mini-Purge Supply flow as follows:

a. **Stop** the CTB MINI-PURGE SPLY FAN using 1-HS-2630B. (B32)

b. **Close** CTB NORM PURGE SPLY ORC ISO VLV-MINI 1-HV-2627B using 1-HS -2627B (D32).

c. **Close** CTB NORM PURGE SPLY IRC ISO VLV-MINI 1-HV-2626B using 1-HS -2626B (C32).

Standard: Determines that these steps are N/A from initial conditions given and control board indications.

Comment:

***4.3.2.2 Terminate Mini-Purge Exhaust flow as follows:**

a. Stop the CTB MINI-PURGE EXH FAN using 1-HS-2631B. (D34)

Standard: 1HS-2631B hand switch rotated counter clockwise.
Red light –OFF
Green light -ON

Comment:

***4.3.2.2b. Close CTB MINI PURGE EXH ORC ISO VLV-MINI 1-HV-2629B using 1-HS -2629B (B34).**

Standard: 1HS-2629B hand switch rotated counter clockwise.
Red light –OFF
Green light -ON

Comment:

***4.3.2.2c. Close CTB NORM PURGE EXH IRC ISO VLV-MINI 1-HV-2628B using 1-HS -2628B (A34).**

Standard: 1HS-2628B hand switch rotated counter clockwise.
Red light –OFF
Green light -ON

Comment:

***4.3.2.2d. Place CTB MINI-PURGE EXH DMPR 1-HV-12592 in CLOSE using 1-HS -12592 (C34).**

Standard: 1HS-12592 hand switch rotated counter clockwise.
Red light –OFF
Green light -ON

Comment:

4.3.2.2e. **Log** the Containment Mini-Purge Termination TIME and DATE on the Release Permit on the same line where flow is recorded.

CUE: Containment Mini-Purge Termination TIME and DATE have been entered on the Release Permit

Standard: N/A

Comment:

***4.3.2.3 Close CTB PREACCESS PURGE SPLY UNIT INLET DMPR, 1-HV-2593 using 1-HS -2593 (A31).**

Standard: Hand switch 1-HS-2593 rotated counter clockwise.
Green light – ON
Red light – OFF

Comment:

4.3.2.4 **Notify** Chemistry that Containment Mini-Purge has been terminated, and the Containment Gaseous Release Permit has been closed.

CUE: "Chemistry has been notified that containment mini-purge has been terminated and the containment gaseous release permit has been closed."

Standard: N/A

Comment:

4.3.2.5 **Record** the name of the person contacted in the Unit Control Log.

CUE: "Name of person contacted has been recorded in the unit control log."

Standard: N/A

Comment:

4.3.2.6 **Restore** the Mini-Purge System per Checklist 3:

COMPONENT	DESCRIPTION	POSITION
1-HS-2593 (A31)	CTB PREACCESS PURGE SPLY UNIT INLET DMPR	CLOSED
1-HS-2628B (A34)	CTB NORM PURGE EXH IRC ISO VLV-MINI	CLOSED/AUTO
1-HS-2629B (B34)	CTB NORM PURGE EXH ORC ISO VLV-MINI	CLOSED/AUTO
1-HS-2626B (C32)	CTB NORM PURGE SPLY IRC ISO VLV-MINI	CLOSED/AUTO
1-HS-2627B (D32)	CTB NORM PURGE SPLY ORC ISO VLV-MINI	CLOSED/AUTO

CUE: **If asked, "The extra operator will perform the independent verification of checklist 3".**

Standard: Each damper verified closed by Green light – ON and Red light OFF. Student requests an independent verification for these steps.

Comment:

4.3.2.7 IF the Main Purge System is being placed in service, **Return To** Step 4.1.2.4.

Standard: Determines that this step is applicable and returns to step 4.1.2.4

Comment:

Reviews note prior to next step

4.1.2.4 IF the Mini-Purge System is NOT operating, **perform** the following:

a. **Notify** Chemistry of the upcoming Main Purge operation:

Obtain the current approved Containment Gaseous Release Permit.

IF an updated permit is unavailable, **request** that Chemistry sample the containment atmosphere and prepare for the gaseous release.

b. WHEN a current approved Containment Gaseous Release Permit is obtained, **continue** with this section.

Standard: Determines release permit obtained from initial conditions given and proceeds.

Comment:

4.1.2.5 **Verify** all conditions that must be satisfied prior to the release are met.

Standard: Determines all conditions satisfied:

Release permit obtained

Comment:

4.1.2.6 Place CTB PREACCESS PURGE EXH DMPR 1-HS-2632A (C33) in AUTO.

Standard: 1-HS-2632A verified in the AUTO position

Comment:

Reviews CAUTION prior to step 4.1.2.7 for Rad Monitor Operability and Release Permit

4.1.2.7 To ensure accurate sampling by 1RE-2565, PRIOR to placing CTB Main Purge in service, **verify** the following sampling flow valves are in the required positions:

a. 1-1609-U4-052 CLOSED
b. 1-1609-U4-054 OPEN

CUE: "Chemistry has verified 1-1609-U4-052 is closed and 1-1609-U4-054 is open."

Standard: N/A

Comment:

Reviews cautions prior to next step

4.1.2.8 Initiate Main Purge Exhaust flow as follows:

***a. Open CTB PREACCESS PURGE SPLY UNIT INLET DMPR 1-HV-2593 using 1-HS -2593 (A31).**

Standard: 1-HS-2593 rotated clockwise
Red light – ON
Green light - OFF

Comment:

***4.1.2.8b Open CTB NORM PURGE EXH ORC ISO VLV-MAIN 1-HV-2629A using 1-HS -2629A (B33),**

Standard: 1-HS-2629A rotated clockwise
Red light – ON
Green light - OFF

Comment:

***4.1.2.8c.** **Open CTB NORM PURGE EXH IRC ISO VLV-MAIN 1-HV-2628A using 1-HS -2628A (A33),**

Standard: **1-HS-2628A rotated clockwise**
Red light – ON
Green light - OFF

Comment:

***4.1.2.8d.** **Start the CTB PREACCESS PURGE EXH FAN using 1-HS-2631A (D33),**

Standard: **1-HS-2631A rotated clockwise**
Red light – ON
Green light - OFF

Comment:

4.1.2.8e. **Log** the Release Start Time and Date on the Chemistry data sheet provided.

CUE: **Release start time and date has been logged on the Chemistry data sheet.**

Standard: N/A

Comment:

Reviews note prior to next step

4.1.2.8 f. **Note** the Main Purge Exhaust Flow rate, and **verify** it is within allowable value as stated on Release Permit,

CUE: **Main Purge Exhaust flow rate is within its allowable value on the release permit.**

Standard: N/A

Comment:

4.1.2.8 g. IF both Radiation Monitors 1-RE-12442C and 1-RE-12444C, become inoperable, immediately **shut down** the Main Purge System per section 4.3.1 and **notify** the SS.

Standard: N/A

Comment:

Reviews caution prior to next step

4.1.2.9 Initiate Main Purge Supply flow if desired as follows:

a. Open CTB NORM PURGE SPLY ORC ISO VLV-MAIN 1-HV-2627A using 1-HS -2627A (D31).

b. Open CTB NORM PURGE SPLY IRC ISO VLV-MAIN 1-HV-2626A using 1-HS -2626A (C31).

c. Start the CTB PREACCESS PURGE SPLY FAN using 1-HS-2630A (B31).

4.1.2.10 Note the Main Purge Exhaust Flow rate with Supply and Exhaust Fans in service, and verify it is within allowable value as stated on Release Permit.

4.1.2.11 Log flow rate on Chemistry data sheet provided.

CUE: If asked, "Flow rate is logged on the Chemistry data sheet".

Standard: These steps are determined to be N/A from initial conditions given. **If step 4.1.2.9 is performed, then it becomes critical and is unsatisfactory.**

Comment:

4.1.2.12 Notify Chemistry that the Main Containment Purge System is operating, and record the name of the person contacted in the Unit Control Log.

CUE: **Chemistry has been notified that the Main Containment Purge System is operating, and the name of the person contacted has been recorded in the Unit Control Log.**

Standard: N/A

Comment:

Student notifies SS that the main purge system has been placed in service per 13125-1.

Standard: N/A

Comment:

Terminating cue: Student returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-LO-JP-13125-002

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **The Plant is in Mode 5 with the Containment Equipment Hatch Open. 1-FT-2565 is out of service, 18,000 SCFM must be used as maximum flow rate during a purge per NOTE prior to step 4.1.2.8 f of 13125-1, Containment Purge System.**

Initiating Cue: **The SS has authorized Gaseous Release Permits with maximum discharge flow rates of 18,000 SCFM and has directed you to "Place Containment Main (Preaccess) Purge in service using procedure 13125-1".**

Checklist 1 for Main Purge isolation dampers and valves has been performed.

Job Performance Measure "I"

Facility: **Vogtle**

Task No: V-LO-TA-60025

Task Title: **Establish RWST Gravity Drain Through RHR Pumps to RCS Hot Legs**

JPM No: V-NRC-JP-18019-003

K/A Reference: 025G2.1.20

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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: **During mid-loop operations, Unit 2 experienced a loss of all AC power to the 1E buses. The crew is attempting to align the RWST for gravity drain to the RCS.**

The RCS is at 0 psig and the Reactor Vessel head removed.

Initiating Cue: **The SS has directed you to "perform AOP 18019-C Attachment A, 'Loss of RHR –RWST Gravity Drain to RCS; to align Train A for gravity drain at the greatest possible flowrate."**

Task Standard: RWST Gravity Drain aligned through RHR.

Required Materials:
1) AOP 18019-C Ver. 26.2
2) RWP and required dosimetry.

General References: None

Time Critical Task: No

Validation Time: 12 minutes

Performance Information

Critical steps denoted with an asterisk

ATTACHMENT A: RWST GRAVITY DRAIN TO RCS

NOTE: This attachment should not be used if an ECCS pump is available.

Standard: Determines ECCS pump not available due to loss of all AC power to 1E busses.

Comment:

ATTACHMENT A: RWST GRAVITY DRAIN TO RCS

CAUTION: An RCS pressure of 35 psig allows no RWST to RCS gravity drain.

Step 1: Check RCS pressure – LESS THAN 35 psig.

Standard: Determines RCS pressure < 35psig.

Comment:

Step 2: Verify at least one of the following RCS Vent Paths:

a RV head removed
b….. other conditions that are NOT applicable

Standard: Determines RV head off from initial conditions

Comment:

NOTE:

- It is desirable to gravity drain to a closed cold leg using Section A or B.
- If a closed cold leg is unavailable, then go to Section C or D for gravity drain to a hot leg.
- Gravity drain paths through the RHR loops are preferable since these can achieve the greatest flow rate.

Standard: Student reads note.

Comment:

---

3. If desired to gravity drain from RWST through RHR pumps to cold legs, then go to Section A of this attachment.

CUE: "Flow paths using the cold leg are UNAVAILABLE."

Standard: Student determines Section A should not be used due to flow path to cold leg not available.

Comment:

---

4. If desired to gravity drain from RWST through SI pumps to cold legs, then go to Section B of this attachment.

Standard: Determines Section B should not be used due to a closed cold leg being unavailable from cue in previous step.

Comment:

---

5. IF desired to gravity drain from RWST through RHR pumps to hot legs, THEN Go to Section C of this attachment.

Standard: Determines Section C should be used.

Comment:

ATTACHMENT A SECTION C: RWST GRAVITY DRAIN THROUGH
RHR PUMPS TO HOT LEGS

NOTE to examiner: this valve is not accessible, the path of ingress should be to the closest point allowed by radiological conditions. Use attached pictures or flow loop valve for student to indicate valve position and describe operation. The first three pictures are for this valve. (Closed)

***C1. Locally throttle open the following RWST TO RHR PMP-A(B) SUCTION VALVES.**

2-HV-8812A (AB-D22)

Standard: Locates valves and determines current position is closed based on valve position indicator

Throttles open 2-HV-8812A (AB-D22).

NOTE to examiner: The student should indicate he would depress the manual lever down to engage the handwheel and turn the handwheel counterclockwise

Comment:

NOTE to examiner: This valve is inaccessible, the path of ingress should be to the closest point allowed by radiological conditions. Use attached pictures or flow loop valve for student to indicate valve position and describe operation. The fourth and fifth pictures are for this valve. (Open)

*C2 Locally close the following RHR PMP-A(B) TO COLD LEG ISO VLV valve:

- 2-HV-8809A (AB-A103)

Standard: Locates valve and determines current position is open based on valve position indicator

Determines valve position then closes valve 2-HV-8809A (AB-A103).

NOTE to examiner: The student should indicate he would depress the manual lever down to engage the handwheel and turn the handwheel clockwise

Comment:

C3. Verify RHR PMP-A SUCTION FROM HOT LEG LOOP isolation valves open:

CUE: "The RHR Suction from hot leg loop isolation valves have been verified open."

Standard: None.

Comment:

C4. Maintain RV level

Standard: Valves are left open to achieve greatest flow per initial conditions

Comment:

Terminating cue: Student returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-RNC-JP-18019-003

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

INSERT PICTURES HERE

Initial Conditions: **During mid-loop operations, Unit 2 experienced a loss of all AC power to the 1E buses. The crew is attempting to align the RWST for gravity drain to the RCS.**

The RCS is at 0 psig and the Reactor Vessel head removed.

Initiating Cue: **The SS has directed you to "perform AOP 18019-C Attachment A, 'Loss of RHR –RWST Gravity Drain to RCS; to align Train A for gravity drain at the greatest possible flowrate."**

Job Performance Measure "J"

Facility: **Vogtle**

Task No: V-LO-TA-37005

Task Title: Response To Inability To Reset Or Block SI

JPM No: V-NRC-JP-19011-003

K/A Reference: 013A4.02

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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: **An inadvertent SI has occurred on Unit 2 and Train A will not reset using the Handswitch in the Main Control Board.**

Initiating Cue: **The SS directs you to, "Reset SI on Unit 2 Train A using EOP 19011-C Attachment D".**

Task Standard: SI Train A is reset using 19011-C Attachment D

Required Materials: 1. EOP 19011-C Ver. 28.1

General References: None

Time Critical Task: No

Validation Time: 5 minutes

Performance Information

Critical steps denoted with an asterisk

Step 1: Identify the affected train.

Standard: Train A Circled.

Comment:

NOTE: De-energizing the two 48 VDC power supplies to a train of SSPS will result in the following:

- -General Warning
- -ALB05-E06 or ALB05-F06 will illuminate.
- -Undervoltage Driver output de-energizes.
- -Reactor Trip condition (Reactor Trip Breaker OPEN) on the affected train (already initiated from Turbine Trip.)
- -48VDC removed from all master relays.

Standard: Student should read note before continuing.

Comment:

***Step 2** **At the affected train SSPS Logic Cabinet, de-energize both 48 VDC power supplies (located in the upper 2 sections) by placing the ON/OFF switch to the OFF position.**

NOTE to examiner: Only the 48 VDC power supplies should be turned off. If the 15V power supplies are turned off an additional critical step is created and the JPM would be unsatisfactory.

Standard: Student places toggle switch on the right to OFF(down) position on both power supplies.

Comment:

***Step 3** **At the affected train Safeguards Test Cabinet (STC) #1, reset SSPS Slave Relays by momentarily turning TEST RESET SWITCH S-821 to the RESET position.**

NOTE to examiner: Audible click would be heard from SSPS output cabinets as slave relays reset.

Standard: **Student momentarily rotates the switch clockwise to RESET position and releases.**

Comment:

***Step 4** **At the affected train Safeguards Test Cabinet (STC) #2, reset SSPS Slave Relays by momentarily turning TEST RESET SWITCH S-921 to the RESET position.**

NOTE to examiner: Audible click would be heard from SSPS output cabinets as slave relays reset

Standard: **Student momentarily rotates the switch clockwise to RESET position and releases.**

Comment:

***Step 5** **At the affected train, locate and open the Output Cabinet and place the MODE SELECTOR Switch in the TEST position and check the OPERATE lamp NOT lit.**

Standard: **Student rotates the switch counterclockwise to the TEST position**

Verifies OPERATE lamp goes out.

CUE: Provide indication that the lamp is OUT.

Comment:

Step 6: Notify I&C to investigate the affected train SSPS to determine the source of the SI signal.

Terminating Cue: "The SS will notify I&C."

Verification of Completion

Job Performance Measure No. V-RQ-JP-19011-003

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Initial Conditions: **An inadvertent SI has occurred on Unit 2 and Train A will not reset using the Handswitch in the Main Control Board.**

Initiating Cue: **The SS directs you to, “Reset SI on Unit 2 Train A using EOP 19011-C Attachment D”.**

Job Performance Measure "K"

Facility: **Vogtle**

Task No: LO-TA-60040

Task Title: **Locally Remove Diesel Generator From Service**

JPM No: V-NRC-JP-18034-001

K/A Reference: 058G2.1.20

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ 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 125VDC Bus 2BD1 has occurred. The plant has been stabilized in Mode 3, and the crew is responding per AOP 18034-2. Diesel Generator 2B was paralleled to the grid for the monthly surveillance prior to the transient and continues to run.**

Initiating Cue: **The SS has directed you to "Locally remove Diesel Generator 2B from service by performing step B6 of AOP 18034-2."**

Task Standard: Diesel Generator stopped with the DG output breaker open per 18034-2.

Required Materials: 1. AOP 18034-2 Ver 10.0 , Loss of Class 1E 125V DC Power pages 37 and 38.

2. Hearing Protection

General References: None

Time Critical Task: No

Validation Time: 15 minutes

Performance Information

Critical steps denoted with an asterisk

NOTE to examiner: Student may state that arc flash suit is necessary. The suits are kept at Clearance and Tagging office in the Ready Room. The use of the suit may be waived during tasks requiring expeditious completion to assure Public Health and Safety per NMP-SH-003.

***STEP B6a: Verify 2BA03-19 breaker-OPEN.**

Standard: Student locates breaker 2BA03-19.

CUE: If asked about light indication on the cubicle or local controls, "Lights are Dark"

NOTE to examiner: The cubicle door would have to be opened to check breaker status. Breaker can only be tripped by the mechanical trip button and the only breaker position indication will be the mechanical flag. Discussion of location of trip button and mechanical flag is satisfactory performance for this step.

Breaker cubicle door should not be opened. Use attached photographs for student to simulate pressing mechanical trip.

Determines 2BA03-19 breaker is Closed by closed indicator flag to the right of the mechanical trip pushbutton.

Student pushes mechanical trip and verifies Green flag.

CUE: When the trip pushed by the student, "the mechanical flag is now GREEN."

Comment:

NOTE to examiner: If the DG engine control panel is referenced the only light that will be lit is C power indicating light. The Annunciator drawing included with the pictures have the expected alarms colored yellow, these function due to C (Non-1E) power still present. The indicators will still work. The generator control panel will have no lights lit.

***Step B6b: Stop the Diesel Generator by placing the "Pull-To-Run/Push-to-Stop Handswitch" at the south end of the engine in STOP.**

Standard: Student pushes handswitch in STOP and verifies that DG is slowing.

CUE: If the student states he is listening to diesel speed, "DG speed is decreasing "

CUE: If the student references the RPM indicator on the engine control panel, "DG RPM is lowering."

Comment:

Report Diesel Generator stopped to SS.

Standard: Report Made to SS.

Comment:

Terminating cue: Student returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-NRC-JP-18034-001

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

Insert pictures here

Initial Conditions: **A loss of 125VDC Bus 2BD1 has occurred. The plant has been stabilized in Mode 3, and the crew is responding per AOP 18034-2. Diesel Generator 2B was paralleled to the grid for the monthly surveillance prior to the transient and continues to run.**

Initiating Cue: **The SS has directed you to "Locally remove Diesel Generator 2B from service by performing step B6 of AOP 18034-2."**