ENTERGY NUCLEAR

JOB PERFORMANCE MEASURE

Number: GJPM-OPS-C11220
Revision: 1
Page: 1 of 12
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QA Record
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TRAINING PROGRAM:

OPERATIONS TRAINING

***LESSON PLAN TITLE:**

Operate CRD System/RCIS to Achieve Criticality and Commence Reactor Heatup

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/3/09***
	**Preparer	Date
Ops Review[++]**:**	***R. Thompson***	***4/20/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
	Training Representative	Date
Approved By:		
	[+]Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
** The requirements of the Training Material Checklist have been met.
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FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Operate CRD System/RCIS to Achieve Criticality and Commence Reactor Heatup

Setting:	Simulator
Type:	RO
Task:	CRO-C11(2)-004, CRO-C11(1)-005
K&A:	201005 - A3.01: 3.5/3.5; A3.04: 3.3/3.3; A4.01: 3.7/3.7; A4.02: 3.7/3.7 295022 – AK1.01: 3.3/3.4; AK2.03: 3.4/3.4; AK3.01: 3.7/3.9 AA2.01: 3.5/3.6 201001 – A2.01: 3.2/3.3
Safety Function:	1 – Control Rod Drive Hydraulic System, Rod Control and Information System
Time Required:	30 minutes
Time Critical:	No
Faulted:	**YES**
Performance:	Actual
Reference(s):	SOI 04-1-01-C11-2; IOI 03-1-01-1; Control Rod Movement Sequence 1-16-00000-A2-01; ARI 04-1-02-1H13-P680-4A2-D4; ARI 04-1-02-1H13-P601-22A-C3&D3; SOI 04-1-01-C51-1; ONEP 05-1-02-IV-1
Handout(s):	none
# Manipulations:	6
# Critical Steps:	5
Group:	2

Simulator / **Low Power**

Simulator Setups:

- Reset the simulator to IC-4
- Mark up 03-1-01-1 complete through step 5.32 (step 5.32 signed off but not step 5.32.1)
- Mark up the Cycle 16 BOC Startup Sequence complete through step 131a.
- On the Summary and Event screens ensure:
  - malfunction **c11165** CRD Suction Filter Clogging is assigned to **Trigger 1**
  - Malfunction **z024024_44_57** HCU Fault on 44-57 is assigned to **Trigger 2**

Complete entries for IOI 03-1-01-1 Step 5.27 for Startup information.

Safety Concerns:

- None

Task: Operate CRD System/RCIS to Achieve Criticality and Commence Reactor Heatup

Initial Condition(s):

- A plant startup is in progress following a refueling outage.
- Control Rod withdrawal is in progress.
- IOI 03-1-01-1 is completed up to step 5.32.1.
- Estimated Criticality is step 135
- Control rod movement is complete through step 130b. Step 131a has not been started.
- Another Reactor Operator is monitoring Reactor Pressure and Level.
- A Reactor Engineer is verifying Control Rods per the Movement Sequence.
- SRM initial count rate was 80 cpm.

Initiating Cue(s):

- You have been directed to withdraw control rods beginning at pull sheet step 131a to achieve criticality and raise power to the heating range of the Intermediate Range Monitors (IRMs) and establish approximately 80°F/hr heatup rate.

Task: Operate CRD System/RCIS to Achieve Criticality and Commence Reactor Heatup

Notes

1. All controls will be from panels P680 or P601 in the Main Control Room.

Task Overview:

- This task withdraws control rods per the Control Rod Movement Sequence in an effort to achieve criticality. The fault occurs before criticality is reached.

- The fault in this task is the in-service CRD pump suction filter will clog, causing the running CRD pump to trip on low suction pressure. This will require the candidate to suspend control rod withdrawals and take the required Immediate Actions IAW step 2.1.2 of ONEP 05-1-02-IV-1, "Control Rod/Drive Malfunctions" to start the standby CRD pump. With the suction filter clogged, the standby CRD pump will trip moments after the operator starts it. With no CRD pump in operation, HCU charging water pressure will be lost and HCU pressures will slowly deplete to below 1520 psig, the Tech Spec operability limit. The first HCU fault received will be associated with a withdrawn control rod, and the HCU accumulator will be declared inoperable. This will require the candidate to take the required Immediate Action IAW step 2.1.1 of ONEP 05-1-02-IV-1, "Control Rod/Drive Malfunctions" to place the Reactor Mode Switch in SHUTDOWN, since reactor pressure is below 600 psig.

After completion of Step 131a of the Control Rod Movement Sequence, the evaluator has the option of ordering Trigger 1 activated.

Task: Operate CRD System/RCIS to Achieve Criticality and Commence Reactor Heatup

Tasks: critical steps are underlined, italicized and denoted by (*)

☐* *Withdraw control rods per the Control Rod Movement Sequence step 131a.*

Standard: Withdraws control rods per the Control Rod Movement Sequence step 131a (four rod gang) to the appropriate position per the movement plan. Select the correct control rod. Moves the control rod to the specified target position. Notch motion is delineated on the Control Rod Movement Sequence Sheet.

Control rods may be moved in any order within the step. This is NOT critical.

____ Control Rod 28-21 position 04 to 06
____ Control Rod 36-45 position 04 to 06
____ Control Rod 44-29 position 04 to 06
____ Control Rod 20-37 position 04 to 06

Cue: If asked, cue the candidate that the STA/RxEng has verified the control rod selection and position.

Notes: Indications are on P680 section 6D Full Core Display.

Steps 131a, 131b and 132a of the pull sheets denote a “N” in the MODE column. When the Control Rod Movement Sequence denotes a “N” Notch movement is required. A Caution before 03-1-01-1 step 5.30 restricts this allowance, requiring individual notch mode until criticality is achieved, once SRM count rate on the highest reading SRM exceeds 10 times the initial average SRM count rate, given in the initial condition. For present conditions this is 800 cpm.

When the highest SRM will be in excess of 800 cpm, control rod movement is required to be executed in individual notch mode. The rod movement allowances should be determined by the candidate.

The evaluator may request Trigger 1 be activated at ANY point following this step when the evaluator has observed sufficiently that the candidate is capable of properly moving control rods.

☐* *Withdraw control rods per the Control Rod Movement Sequence step 131b.*

Standard: Withdraws control rods per the Control Rod Movement Sequence step 131b (four rod gang) to the appropriate position per the movement plan. Select the correct control rod. Moves the control rod to the specified target position.

Control rods may be moved in any order within the step. This is NOT critical.

____ Control Rod 36-21 position 04 to 06
____ Control Rod 28-45 position 04 to 06
____ Control Rod 20-29 position 04 to 06
____ Control Rod 44-37 position 04 to 06

Cue: If asked, cue the candidate that the STA/RxEng has verified the control rod selection and position.

Notes: Indications are on P680 section 6D Full Core Display.

☐* *Withdraw control rods per the Control Rod Movement Sequence step 132a.*

Standard: Withdraws control rods per the Control Rod Movement Sequence step 132a (four rod gang) to the appropriate position per the movement plan. Select the correct control rod. Moves the control rod to the specified target position.

Control rods may be moved in any order within the step. This is NOT critical.

____ Control Rod 20-13 position 04 to 06
____ Control Rod 44-53 position 04 to 06
____ Control Rod 52-21 position 04 to 06
____ Control Rod 12-45 position 04 to 06

Cue: If asked, cue the candidate that the STA/RxEng has verified the control rod selection and position.

Notes: Indications are on P680 section 6D Full Core Display.

SIMULATOR OPERATOR - ACTIVATE TRIGGER 1 CRD suction filter clogs and CRD Pump A trips by observing CRD PMP A/B SUCT FLTR dP HI and CRD PMP A/B AUTO TRIP Annunciators (P601-22A-C3 and D3).

When the CRD pump trips, as CRS direct the candidate to take the immediate operator action for the CRD pump trip in accordance with the Control Rod/Drive Malfunctions ONEP. State the Reactor Engineer will monitor for HCU faults.

☐ Observes CRD pump A tripped

Standard: Observes CRD Pump A tripped as indicated by CRD PMP A/B SUCT FLTR dP HI and CRD PMP A/B AUTO TRIP Annunciators (P601-22A-C3 and D3)and other annunciators on panel 1H13-P601.

Cue: IF asked respond as CRS and order candidate to take the immediate actions of the Control Rod/Drive Malfunctions ONEP.

Notes:

☐ Closes the in-service CRD FCV

Standard: Takes manual control of CRD FCV controller C11-R600 on panel 1H13-P601, places its mode switch in the MAN position, depresses the OUTPUT DOWN position, and watches controller output drop to zero percent as indicated on the controller's horizontal output meter.

Cue: none

Notes:

NOTE: When the candidate starts standby CRD pump B, a few seconds later CRD pump B will trip due to low suction pressure.

☐ * *Starts the standby CRD pump(CRD Pump B)*

Standard:

1) Starts the standby CRD pump by turning its control handswitch on panel 1H13-P601 clockwise until it snaps in the ON as indicated by a red target appearing directly above the handswitch handle.

2) Observes the CRD Pump's red status light energizes and its green status light de-energizes.

3) Observes the CRD Pump trips and CRD PMP A/B SUCT FLTR dP HI (P601-22A-D3) alarms and reports inability to maintain a CRD pump running to the CRS.

Cue: As the CRS, direct the candidate to monitor P680 for CRD HCU faults and to consider the associated CRD HCU inoperable if an HCU fault is received. Tell the candidate you will send an operator to rotate CRD suction filters.

Notes: CRD Pump B will trip almost immediately following start of the pump.

SIMULATOR OPERATOR – ACTIVATE TRIGGER 2 – 30 seconds after CRD pump B trips and malfunction z024024_44_57 HCU/Accumulator Fault.

☐ Recognizes HCU fault indications received on P680

Standard: Observes and acknowledges HCU TROUBLE alarm (P680-4A2-D4) HCU FAULT status light is on (P680-6C). May depress ACKN HCU FAULT to allow the alarm to reflash, but not required. Depresses HCU FAULT pushbutton and observes a red LED is lit beside control rod 44-57 on the full core display (P680-6D). Determines the associated control rod is "withdrawn" by either position 48 indicated on the full core display when ALL RODS pushbutton is depressed or by absence of a green full-in LED beside 44-57 on the full core display.

Cue: none

Notes: If the HCU Fault pushbutton is depressed before the ACKN HCU FAULT pushbutton, the red LED will flash on the full core display beside 44-57, otherwise, the red LED will be solid.

Note: The Candidate may report the receipt of the HCU Fault to the CRS, Acknowledge the report and cue the operator to take appropriate actions for plant conditions.

☐ * *Places the Reactor Mode Switch in SHUTDOWN*

Standard: IF no CRD pumps are operating with Reactor pressure < 600 psig, when one scram accumulator associated with a withdrawn Control Rod is declared INOP, the candidate immediately rotates the Reactor Mode Switch counter-clockwise to the SHUTDOWN position on P680-11E per Immediate Action 2.1.1 of ONEP 05-1-02-IV-1.

Cue: When the Reactor Mode Switch is placed in SHUTDOWN, the evaluator will end the JPM

Notes:

Task Standard(s):

- Control rods were being withdrawn during plant startup during which CRD pump suction filter clogging and CRD Pump Trip occurred.
- CRD Pump "B" was started IAW step 2.1.2 of 05-1-02-IV-1, "Control Rod/Drive Malfunctions" and subsequently tripped.
- The Reactor Mode Switch was placed in SHUTDOWN IAW step 2.1.1 of 05-1-02-IV-1 when the first HCU fault for a withdrawn control rod was received.

Name: _____Time Start: _____Time Stop: _____

Task: Operate CRD System/RCIS to Achieve Criticality and Commence Reactor Heatup

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Operate CRD System/RCIS to Achieve Criticality and Commence Reactor Heatup

Initial Condition(s):

- A plant startup is in progress following a refueling outage.
- Control Rod withdrawal is in progress.
- IOI 03-1-01-1 is completed up to step 5.32.1.
- Estimated Criticality is step 135
- Control rod movement is complete through step 130b. Step 131a has not been started.
- Another Reactor Operator is monitoring Reactor Pressure and Level.
- A Reactor Engineer is verifying Control Rods per the Movement Sequence.
- SRM initial count rate was 80 cpm.

Initiating Cue(s):

- You have been directed to withdraw control rods beginning at pull sheet step 131a to achieve criticality and raise power to the heating range of the Intermediate Range Monitors (IRMs) and establish approximately 80°F/hr heatup rate.

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LESSON PLAN

Number: GJPM-OPS-E2216
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TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Raise Suppression Pool Level Using HPCS

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/9/09***
	**Preparer	Date
Ops Review++:	***R. Thomson***	***4/20/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
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	+Discipline Training Supervisor	Date

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Task: Raise Suppression Pool Level Using HPCS

Setting:	Simulator
Type:	RO
Task:	CRO-E22-006, CRO-E22-011
K&A:	295030 EA1.03: 3.4/3.4
	223001: A2.113.6/3.8
Safety Function:	5 – Containment Integrity
Time Required:	20 minutes
Time Critical:	No
Faulted:	**YES**
Performance:	Actual
Reference(s):	04-1-01- E22-1 sections 6.4 and 5.4
Handout(s):	None
# Manipulations:	6
# Critical Steps:	6
Group #:	1/2

Simulator Setup/Required Plant Conditions:

- Reset to any IC.
- Lower Suppression Pool level to ~ 18.1 feet
- Align HPCS Suction E22-F015 HPCS PMP SUCT FM SUPP POOL – OPEN
- Manually initiate HPCS and override the HPCS Pump – OFF
- Override E22-F004 HPCS Injection Valve - CLOSED
- Trigger 1 Malfunction for loss of power to E22-F023
- Set Trigger 1 to go true when Suppression Pool Level reaches 18.2 feet with E22-F023 Full open.

Safety Concerns:

- None

Initial Condition(s):

- A plant transient has occurred.
- EP-2 and EP-3 have been entered.
- HPCS automatically initiated during the transient and has been manually overridden.
- Feedwater is controlling reactor water level and all ECCS systems are available.
- SSW C is in operation.
- Suppression Pool water level is approximately 18.1 feet.

Initiating Cue(s):

- The SRO with the Command Function has directed you to raise Suppression Pool water level to the normal band using HPCS using gravity flow via HPCS TEST RTN TO SUPP POOL valve E22F023 in accordance with 04-1-01-E22-1 section 6.4.

Task: Raise Suppression Pool Level Using HPCS

Notes

1. Unless otherwise noted, all controls and indications are located on section 16 of panel 1H13-P601.

Task Overview

- This task is raise Suppression Pool using gravity flow from the CST via HPCS TEST RTN TO SUPP POOL valve E22F023. The HPCS Initiation signal will not be capable of being reset in this JPM; therefore, E22F023 will automatically close when the operator releases its handswitch from OPEN (spring return to AUTO). The operator will have to repeatedly cycle the valve from full closed to full open to attempt to achieve the target Suppression Pool level band.
- The fault in this task is E22F023 will trip in the open position, and HPCS suction will have to be realigned from the CST to the Suppression Pool to prevent uncontrolled draining of the CST.

Tasks: critical steps are underlined, italicized and denoted by (*)

NOTE: **EVALUATOR** - If asked by the candidate at any time during this JPM whether it is desired to reset the HPCS initiation signal, **provide a cue** as the CRS not to reset the initiation logic. If the candidate elects to reset the logic on his own, it will not reset.

☐* *Closes E22-F015, HPCS PMP SUCT FM SUPP POOL.*

Standard: Candidate closes E22-F015, HPCS PMP SUCT FM SUPP POOL.

Cue: none

Notes:

☐* *As soon as E22-F015 has left Full Open position, opens E22-F001, HPCS PMP SUCT FM CST.*

Standard: As soon as E22-F015 has left Full Open position, candidate opens E22-F001, HPCS PMP SUCT FM CST.

Cue: none

Notes:

NOTE: In the following step, since a HPCS auto initiation signal is present, E22F023 WILL auto-close when the handswitch is returned to AUTO or valve reaches full OPEN position. If the candidate attempts to reset the HPCS initiation signal, it will not reset. This is by design of the JPM. The candidate will have to repeatedly cycle E22F023 in an attempt to attain the normal Suppression Pool level band of between 18.34 feet and 18.81 feet.

NOTE: The following three steps are provided based on validation that the candidate will hold the handswitch for E22F023 in the OPEN position until the valve reaches fully open, at which time it will automatically closed. However, it is **not** critical that the valve be opened fully, only that it is opened some, which will produce flow from the CST to the Suppression Pool. In the event it is not opened fully, more cycles may be required to produce the automatic fault trigger which occurs above 18.2 feet Suppression Pool level. In validation, it took three cycles to achieve >18.2 feet Suppression Pool level.

☐* *Opens E22F023, HPCS TEST RTN TO SUPP POOL to attain the desired flow rate or amount of level rise in the Suppression Pool.*

Standard: Opens E22F023 by holding handswitch HPCS TEST RTN TO SUPP POOL (P601-16C) in the open position.

Cue: none

Notes:

☐* *Re-opens E22F023, HPCS TEST RTN TO SUPP POOL to attain the desired flow rate or amount of level rise in the Suppression Pool.*

Standard: Opens E22F023 by holding handswitch HPCS TEST RTN TO SUPP POOL (P601-16C) in the open position.

Cue: none

Notes:

NOTE: When E22F023 is fully opened with Suppression Pool level above 18.2 feet, a loss of power to the valve actuator will occur, resulting in uncontrolled draining of the CST to the Suppression Pool. **SIMULATOR OPERATOR,** ensure this occurs.

☐* *Re-opens E22F023, HPCS TEST RTN TO SUPP POOL to attain the desired flow rate or amount of level rise in the Suppression Pool.*

Standard: Opens E22F023 by holding handswitch HPCS TEST RTN TO SUPP POOL (P601-16C) in the open position. Determines and reports to the CRS E22F023 has lost power by observing:

- Loss of red and green position indicating lights above the valve handswitch.
- Receipt of HPCS SYS OOSVC annunciator (P601-16A-H5)
- Receipt of status light HPCS MOV PWRLOSS (P601-16B)

Cue: As the CRS, direct the candidate to swap HPCS suction to the CST per 04-1-01-E22-1 section 5.4 to terminate uncontrolled draining of the CST to the Suppression Pool.

Notes:

☐ Verifies HPCS suction is aligned to the CST.

Standard: Observes E22-F001, HPCS PMP SUCT FM CST, is Open, and E22-F015, HPCS PMP SUCT FM SUPP POOL, is Closed on P601-16C.

Cue: none

Notes:

☐* *Opens E22-F015, HPCS PMP SUCT FM SUPP POOL.*

Standard: Opens E22-F015 by placing handswitch HPCS PMP SUCT FM SUPP POOL to OPEN (P601-16C).

Cue: none

Notes:

☐ Verifies E22-F001, HPCS PMP SUCT FM CST automatically closes.

Standard: Observes E22-F001, HPCS PMP SUCT FM CST (P601-16C) automatically closes when E22-F015 began opening. Reports to the CRS HPCS suction is aligned to the Suppression Pool.

Cue: When E22F001 has started closing, the evaluator may end the JPM.

Notes:

Task Standard(s):

E22F023 was opened to raise Suppression Pool level IAW 04-1-01-E22-1 section 6.4, and when E22F023 failed, HPCS suction was aligned to the Suppression Pool IAW 04-1-01-E22-1 section 5.4.

Name: _____Time Start: _____ Time Stop: _____

Task: Raise Suppression Pool Level Using HPCS

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Raise Suppression Pool Level Using HPCS

Initial Condition(s):

- A plant transient has occurred.
- EP-2 and EP-3 have been entered.
- HPCS automatically initiated during the transient and has been manually overridden.
- Feedwater is controlling reactor water level and all ECCS systems are available.
- SSW C is in operation.
- Suppression Pool water level is approximately 18.1 feet.

Initiating Cue(s):

- The SRO with the Command Function has directed you to raise Suppression Pool water level to the normal band using HPCS using gravity flow via HPCS TEST RTN TO SUPP POOL valve E22F023 in accordance with 04-1-01-E22-1 section 6.4.

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LESSON PLAN

Number: GJPM-OPS-E5106
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TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Restore RCIC to Standby following Steam Supply Isolation

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/10/09***
	**Preparer	Date
Ops Review++:	***R. Thompson***	***4/20/2010***
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Task: Restore RCIC to Standby following Steam Supply Isolation

Setting:	Simulator
Type:	RO
Task:	CRO-E51-013; CRO-E51-001
K&A:	217000: K1.02 – 3.5/3.5; A4.03 – 3.4/3.3; 239001: K1.19 – 3.1/3.2
Safety Function:	2 – Inventory Control / 4 – Heat Removal
Time Required:	20 minutes
Time Critical:	No
Faulted:	No
Performance:	Actual
Reference(s):	04-1-01- E51-1 section 4.1
Handout(s):	None
# Manipulations:	13
# Critical Steps:	9
Group #:	1

Simulator Setup/Required Plant Conditions:

- Reset to any IC.
- Manually initiate RCIC.
- Insert malfunction **e51048** Spurious RCIC isolation. Once isolation is complete remove malfunction.
- Ensure E51-F063; F064; F076; F077; and F078 are closed.

Safety Concerns:

- None

Initial Condition(s):

- A plant transient has occurred.
- RCIC automatically initiated during the transient.
- A RCIC isolation occurred.
- The handswitches for RCIC Steam Supply Isolation Valves have been placed in closed. No other actions for RCIC have been taken.
- The spurious isolation signal has cleared.
- Reactor water level is being maintained in the normal band by Feedwater System.
- Reactor pressure is approximately 950 psig.

Initiating Cue(s):

- The SRO with the Command Function has directed you to return RCIC to standby alignment in accordance with 04-1-01-E51-1 section 4.1. All prerequisites of section 4.1.1 have been completed. Prerequisite 4.1.1i was not required (i.e. Leak Detection System transmitters for RCIC are not isolated.)

Task: Restore RCIC to Standby following Steam Supply Isolation

Notes

1. Unless otherwise noted, all controls and indications are located on section 21 of panel 1H13-P601.

Task Overview

- This task is warm and unisolate RCIC steam lines and reposition components to place RCIC in standby configuration following automatic RCIC initiation and isolation .

Tasks: critical steps are underlined, italicized and denoted by (*)

☐ Place RCIC DIV1 MOV TEST and RCIC DIV2 MOV TEST switches to TEST.

Standard: Places RCIC DIV1 MOV TEST and RCIC DIV2 MOV TEST switches to TEST.

Cue: none

Notes:

☐ Checks closed the RCIC Steam Supply Isolation MOVs and their respective handswitches in the CLOSE position.

Standard: Observes light indication above the valve handswitches on P601-21C indicate closed MOVs and their respective handswitches in the CLOSE position for the following valves:

- F063 RCIC STM SPLY DRWL INBD ISOL
- F064 RCIC STM SPLY DRWL OTBD ISOL
- F076 RCIC STM LINE WARMUP VLV, spring return to Auto.

Cue: none

Notes:

☐* *Resets Division1 RCIC Isolation logic.*

Standard: Resets RCIC Division 1 isolation logic with RCIC DIV 1 ISOL RESET handswitch (P601-21B) by taking handswitch to RESET, then back to NORM and observes the white light above the handswitch is off.

Cue: none

Notes: Division 1 and 2 logic resets are NOT sequence critical.

☐* *Resets Division 2 RCIC Isolation logic.*

Standard: Resets RCIC Division 2 isolation logic with RCIC DIV 2 ISOL RESET handswitch (P601-21B) by taking handswitch to RESET, then back to NORM and observes the white light above the handswitch is off.

Cue: none

Notes: Division 1 and 2 logic resets are NOT sequence critical.

☐* *Resets RCIC initiation logic.*

Standard: Depresses the RCIC INIT RESET pushbutton (P601-21B) and observes the white indicating light above pushbutton is Off.

Cue: none

Notes:

☐ Verifies E51F068, RCIC TURB EXH TO SUPP POOL is open.

Standard: Observes F068, RCIC TURB EXH TO SUPP POOL, is Open, by indicating lights above its handswitch on P601-21C.

Cue: none

Notes:

☐* *Opens E51F064, RCIC STM SPLY DRWL OTBD ISOL.*

Standard: Opens E51F064 by placing handswitch RCIC STM SPLY DRWL OTBD ISOL to OPEN (P601-21C).

Cue: none

Notes:

☐ Verifies RCIC steam supply drain valves are open.

Standard: Verifies the following valves are open by observing indicating lights above their handswitches on P601-21C:

- E51F025, RCIC STM SPLY INBD DR VLV
- F026, RCIC STM SPLY OTBD DR VLV

Cue: none

Notes:

☐ Opens E51F054, Steam Supply Trap Bypass.

Standard: Opens E51F054 by placing handswitch RCIC STM SPLY DR TRAP BYP to OPEN (P601-21C).

Cue: none

Notes: If E51F054 is allowed to remain open before proceeding to the next step, pressure within the RCIC steam lines will deplete.

☐* *Begins warming RCIC steam supply lines by jogging open E51F076, RCIC STM LINE WARMUP VLV.*

Standard: Slowly jogs open E51F076, RCIC STM LINE WARMUP VLV by placing handswitch to OPEN (P601-21C) and quickly releasing it to allow it to spring return to AUTO.

Cue: none

Notes: The minimal movement in the open direction of the E51F076 handswitch will initially produce about a 50 psig/minute rise in RCIC steam line pressure for the initial plant conditions for this JPM.

NOTE: The following step is not critical because the initial RCIC steam line pressure is approximately 500 psig, so raising pressure to 950 psig, reactor pressure, would only result in about 70°F increase, well below 90°F limit for one hour. However, if the student allows F054 to remain open for an extended period before openin E51F076, or if the student fully closes E51F076 while steam trap bypass valve E51F054 is open in the next step, RCIC steam line pressure could degrade below 410 psig. Raising pressure from 410 psig to 950 psig would result in a temperature rise of >90°F, and would make the following step critical.

☐ Determines heatup rate limitations and controls RCIC steam line heatup to within limits.

Standard: Monitors RCIC Turbine Inlet (Steam) Pressure on E51R602 (P601-21B). Uses Figure 4 (steam table) to corrolate the pressure read on E51R602 to temperature and determine heatup rate limitations using Figure 3 in order to limit heatup to below 90^{O}F/HR. .

Cue: none

Notes:

☐ Closes E51F054, Steam Supply Trap Bypass.

Standard: Allows steam to free flow through E51F054 for approximately two minutes and then closes E51F054 using RCIC STM SPLY DR TRAP BYP handswitch (P601-21C):

Cue: none

Notes:

☐* *Opens E51F063, RCIC STM SPLY DRWL INBD ISOL.*

Standard: When RCIC inlet pressure, as read on E51R602 (P601-21B), equals reactor pressure, as read on any wide range or narrow range reactor pressure indicator, opens E51F063 by placing handswitch RCIC STM SPLY DRWL INBD ISOL to OPEN (P601-21C).

Cue: none

Notes:

☐* *Closes E51F076, RCIC STM LINE WARMUP VLV.*

Standard: Closes E51F076 by holding handswitch RCIC STM LINE WARMUP VLV in CLOSE (P601-21C) until fully closed indication is attained.

Cue: none

Notes: E51F076 is a jog type valve.

☐* *Opens E51F077 RCIC TURB EXH INBD VAC BRKR.*

Standard: Opens E51F077 using handswitch RCIC TURB EXH INBD VAC BRKR to OPEN (P601-21C).

Cue: none

Notes:

☐* *Opens E51F078 RCIC TURB EXH OTBD VAC BRKR.*

Standard: Opens E51F078 using handswitch RCIC TURB EXH OTBD VAC BRKR to OPEN (P601-21C).

Cue: none

Notes: If asked, Transmitters E31-N084A & B are in-service.

☐* *Opens RCIC TURB TRIP/THROTTLE VLV.*
Standard: Opens trip/throttle valve using RCIC TURB TRIP/THROTTLE VLV handswitch (P601-21C) by first placing it to CLOSE, and when the RCIC TURB TRIP/THROTTLE VLV indicating lights shows fully closed, placing it to OPEN.

Cue: none

Notes:

☐ Observes open indication for RCIC TURB TRIP/THROTTLE VLV.
Standard: Verifies the following indicate fully open (red) on P601-21C:

- RCIC TURB TRIP/THROTTLE VLV
- RCIC TURB TRIP/THROTTLE SUPV
- RCIC TURB GOV VLV

Cue: none

Notes:

☐ Checks RCIC Flow Controller settings are in standby configuration.

Standard: Verifies RCIC Flow Controller E51R600 (P601-21B) is selected to AUTO with the thumbwheel setpoint set at 800 gpm.

Cue: none

Notes:

☐ Stops RCIC Gland Seal Compressor.

Standard: Momentarily places RCIC GL SEAL COMPR handswitch to STOP (P601-16C).

Cue: When the candidate requests an operator verify alignment of RCIC controls outside the Control Room, the evaluator will end the JPM.

Notes:

Task Standard(s):
RCIC has been warmed within heatup rate limitations and aligned to standby IAW 04-1-01-E51-1 section 4.1.

Name: _____Time Start: _____ Time Stop: _____

Task: **Restore RCIC to Standby following Steam Supply Isolation**

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Restore RCIC to Standby following Steam Supply Isolation

Initial Condition(s):

- A plant transient has occurred.
- RCIC automatically initiated during the transient.
- A spurious Division 2 RCIC isolation occurred.
- The handswitches for RCIC Steam Supply Isolation Valves have been placed in closed. No other actions for RCIC have been taken.
- The spurious isolation signal has cleared.
- Reactor water level is being maintained in the normal band by Feedwater System.
- Reactor pressure is approximately 950 psig.

Initiating Cue(s):

- The SRO with the Command Function has directed you to return RCIC to standby alignment in accordance with 04-1-01-E51-1 section 4.1. All prerequisites of section 4.1.1 have been completed. Prerequisite 4.1.1i was not required (i.e. Leak Detection System transmitters for RCIC are not isolated.)

ENTERGY NUCLEAR

LESSON PLAN

Number: GJPM-OPS-B3316
Revision: 00
Page: 1 of 9
Rtype: _____
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Rapid Restart of Recirc Pump A to Mitigate Thermal Stratification

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/14/09***
	**Preparer	Date
Ops Review++:	***S. Bohling***	***2/15/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
** The requirements of the Training Material Checklist have been met.
+ Indicates that the LP has been reviewed by the Training Supervisor for inclusion of Management Expectations and items referenced on TQJA-201- DD06, Training Material Checklist.
++ Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Rapid Restart of Recirc Pump A to Mitigate Thermal Stratification

Setting:	Simulator
Type:	RO
Task:	CRO-B33(1)-002, CRO-C71-006
K&A:	202001: A4.01 – 3.7/3.7; A4.02 – 3.5/3.4
Safety Function:	4 – Heat Removal from Reactor Core / 1 – Reactivity Control
Time Required:	15 minutes
Time Critical:	No
Faulted:	No
Performance:	Actual
Reference(s):	05-1-02-I-1 step 3.9.4 and Attachment II
Handout(s):	None
# Manipulations:	6
# Critical Steps:	6
Group #:	2

LOW POWER

Simulator Setup/Required Plant Conditions:

- Reset to any power IC.
- Manually scram the reactor and establish stable RPV parameters
- Feedwater Startup Level Control in Automatic at +36 inches.
- RPV Pressure on Bypass Valves at 950 psig.
- Close Recirc A Flow Control Valve to just above MIN ED (~22%)
- Manually Initiate ATWS ARI/RPT.
- RESET ATWS ARI/RPT
- Reclose CB-4A & 4B.

Safety Concerns:

- None

Initial Condition(s):

- A plant transient has occurred resulting in an ATWS ARI/RPT initiation on low reactor water level.
- The Reactor Scram ONEP has been entered.
- Reactor water level is now being controlled in the normal band by Feedwater system.
- The ATWS ARI/RPT initiation logic has been reset.
- Reactor Recirc pump breaker CB-4A has been reclosed.
- Neither Reactor Recirc pump is in operation.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform a rapid restart of Recirc pump A in accordance with Reactor Scram ONEP 05-1-02-I-1 step 3.9.4 and Attachment II.

- All prerequisites of Attachment II have been completed.

- Another operator is currently performing 06-OP-1B33-V-0005, Idle Recirculation Loop Startup, for Recirc Loop A.

Task: Rapid Restart of Recirc Pump A to Mitigate Thermal Stratification

Notes

1. Unless otherwise noted, all controls and indications are located on section 3 of panel 1H13-P680.

Task Overview

- This task is restart the first Recirc pump during Hot Shutdown following an ATWS RPT initiation to mitigate thermal stratification within the RPV.

Tasks: critical steps are underlined, italicized and denoted by (*)

☐* *Close Recirc Flow Control Valve A to MIN ED position*.

Standard: Closes FCV A by moving the OPEN/CLOSE control switch to the left to its slow (first) detent position on the RECIRC LOOP A FLO CONT until the MIN-ED position is just indicated on computer point B33N027B (approximately 20% valve position indicated on B33R621A on P680-3B).

Cue: none

Notes: The candidate should repeatedly click the left cursor button to cause PDS to frequently update the FCV position.

☐* *Set Bus 11HD voltage at approximately 7.2 KV*

Standard: Raise the tap setting on transformer 12B by turning the BOP XFMR 12B Y-WDG TO BUS 11HD/21HD LTC (on P807-4C) clockwise to the "RAISE" position until approximately 7.2 KV is indicated on meter R22-R600 (P807-1B). The candidate should then return the tap changer handswitch to AUTO.

Cue: none

Notes:

☐ Perform surveillance 06-OP-1B33-V-0005.

Standard: Verifies results of surveillance 06-OP-1B33-V-0005 are satisfactory for starting Recirc pump A.

Cue: As the CRS, tell the candidate 06-OP-1B33-V-0005 was completed satisfactorily one minute ago, which allows for starting Recirc pump A as long as it is started within the next 14 minutes.

Notes:

☐* *Resets RX WTR LVL LO INTLK A.*

Standard: Depresses RX WTR LVL LO INTLK A RESET pushbutton (P680-3C).

Cue: none

Notes: The candidate may also reset the B channel at this time.

☐ Observes white light extinguishes.

Standard: Observes the white light above the pushbutton extinguishes.

Cue: none

☐* *Resets Recirc pump A start logic.*

Standard: Depresses STOP and then RELEASE pushbutton on STOP/STOP LOCK handswitch for Recirc Pump A (P680-3C).

Cue: none

Notes:

☐ Observes annunciators and indications of the Recirc Pump A logic reset.

Standard: Observes annunciator RECIRC PMP A LO SP AUTO XFER NOT AVAIL (P680-3A-A4) momentarily alarms while the STOP pushbutton is depressed and can then be reset. Observes annunciator RECIRC PUMP A AUTO XFER INC/CONT PWRLOSS clears (P680-3A-D3).

Cue: none

Notes:

☐* *Starts Recirc pump A.*

Standard: Depresses START pushbutton on TRANS TO LFMG/START handswitch (P680-3C) for Recirculation Pump A.

Cue: none

Notes:

☐ Verifies proper Recirc pump A slow speed start sequence.

Standard: Observes the following for Recirc pump A:

- CB-5A, RECIRC PMP A FDR 252-1103, Closes (on P680-3C)
- CB1-A LFMG A FDR 152-1308, Closes (on P680-3C)
- Momentary rise in RECIRC PMP A AMPS indicated on B33R609A (on P680-3B)
- Rise in RECIRC PMP A RPM indicated on B33R651A (on P680-3B)
- CB-5A RECIRC PUMP A FDR 252-1103, Opens at approximately 1700 rpm and pump starts coasting down
- CB-2A, LFMG A FDR 252-1103A, Closes between 360-470 rpm and pump speed stabilizes

Cue: none

Notes:

□* *Opens Recirc FCV A to its maximum position.*

Standard: Opens FCV A by moving the OPEN/CLOSE control switch to the right to its slow (first) detent position on the RECIRC LOOP A FLO CONT until approximately 97% valve position indicated on B33R621A (P680-3B).

Cue: Since in slow detent the FCV initially moves at an initial rate of about 10%/minute,

The EVALUATOR will end the JPM when he is satisfied the operator intends to open the FCV in slow detent to approximately 97% open.

This may be accomplished by evaluator questioning of the candidate once proper FCV motion has begun.

Notes: An operator aid placard near the FCV manual controller on P680-3B states the FCV should not be opened beyond 97% to prevent tripping FCV HPUs.

Task Standard(s):
Recirc pump A is operating in slow speed IAW 05-1-02-I-1 Attachment II.

Name: _____Time Start: _____ Time Stop: _____

Task: **Rapid Restart of Recirc Pump A to Mitigate Thermal Stratification**

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Rapid Restart of Recirc Pump A to Mitigate Thermal Stratification

Initial Condition(s):

- A plant transient has occurred resulting in an ATWS ARI/RPT initiation on low reactor water level.
- The Reactor Scram ONEP has been entered.
- Reactor water level is now being controlled in the normal band by Feedwater system.
- The ATWS ARI/RPT initiation logic has been reset.
- Reactor Recirc pump breaker CB-4A has been reclosed.
- Neither Reactor Recirc pump is in operation.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform a rapid restart of Recirc pump A in accordance with Reactor Scram ONEP 05-1-02-I-1 step 3.9.4 and Attachment II.

- All prerequisites of Attachment II have been completed.

- Another operator is currently performing 06-OP-1B33-V-0005, Idle Recirculation Loop Startup, for Recirc Loop A.

ENTERGY NUCLEAR

LESSON PLAN

Number: GJPM-OPS-R2734
Revision: 00
Page: 1 of 16
Rtype: _____
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Align Buses 16AB and 17AC to ESF Transformer 21

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/15/09***
	**Preparer	Date
Ops Review++:	***S. Bohling***	***3/15/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
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++ Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Align Buses 16AB and 17AC to ESF Transformer 21

Setting:	Simulator
Type:	RO
Task:	CRO-R20/27-003, 004, 010
K&A:	262001: A4.01 – 3.4/3.7; A4.02 – 3.4/3.4
Safety Function:	6 – Electrical
Time Required:	15 minutes
Time Critical:	No
Faulted:	**YES**
Performance:	Actual
Reference(s):	04-1-01-R21-16 section 4.3; 04-1-01-R21-17 section 4.3; 05-1-02-I-4 Loss of AC Power
Handout(s):	None
# Manipulations:	15
# Critical Steps:	12
Group #:	1

Simulator Setup/Required Plant Conditions:

- Reset to any Power IC.
- Place malfunction r21133b on TRIGGER 1 with a 3 second time delay
- Align ESF Buses with:
  - 16AB powered from ESF 12 Transformer
  - 17AC powered from ESF 11 Transformer
- When buses 16AB and 17AC are transferred to ESF 21, activate Trigger 1 for Service Transformer 21 Lockout.

Safety Concerns:

- None

Initial Condition(s):

- The plant is at rated power.
- ESF Transformer 21 has undergone preventive maintenance and has been re-energized.
- Bus 16AB is currently aligned to ESF Transformer 12.
- Bus 17AC is currently aligned to ESF Transformer 11.

Initiating Cue(s):

- The SRO with the Command Function has directed you to re-align buses 16AB and 17AC to be supplied by ESF Transformer 21 in accordance with sections 4.3 of 04-1-01-R21-16 and 04-1-01-R21-17.

- The prerequisites of sections 4.3.1 of both 04-1-01-R21-16 and 04-1-01-R21-17 have been verified to be met.

Task: Align Buses 16AB and 17AC to ESF Transformer 21

Task Overview

- This task is to align ESF Transformer 21 to supply ESF buses 16AB and 17AC, the normal alignment.
- The fault in this task is when the alignment is completed, Service Transformer 21 supplying ESF buses 16AB and 17AC and BOP buses 11HD, 14AE, and 28AG will trip. Division 2 and 3 Diesel Generators will automatically re-energize buses 16AB and 17AC. The candidate will be required to manually re-energize BOP buses in accordance with Loss of AC Power ONEP 05-1-02-I-4 section 2.0.

Tasks: critical steps are underlined, italicized and denoted by (*)

NOTE: Either bus 16AB or 17AC may be transferred to ESF Transformer 21 in any order, that sequence is not critical. Regardless of which bus is transferred first/last, once both buses have been transferred, their sync switches returned to OFF, and the handswitch for breaker 152-1706 placed in TRIP to reset the alarm, activate TRIGGER 1, Service Transformer 21 to trip after a short delay.

Bus 16AB

☐ Ensure ESF XFMR 21 energized up to Bus 16AB Feeder Breaker.

Standard: Verifies ESF XFMR 21 is energized up to Bus 16AB Feeder Breaker 152-1614 by checking the following:

- Checks indicating lights for disconnect SVC XFMR 21 DISC J5206 indicate closed (P807-3B)
- Checks indicating lights for circuit breaker 552-2105 BUS 21R FDR FM XFMR ST-21 indicate closed (P807-4C)
- Observes indicator 34.5KV BUS 21R VOLTS 2R25-R603 indicates approximately 34.5KV (P807-4B)
- Checks indicating lights for circuit breaker 552-2104 ESF XFMR 21 FDR FM BUS 21R indicate closed (P807-5C)
- Checks indicating lights for circuit breaker 152-2901 BUS 27AC/15AA/16AB FDR FM ESF XFMR 21 indicate closed (P807-5C)
- Checks status light (purple light) ESF XFMR NO. 21 ENERGIZED is on for 152-1614 (P864-2C)

Cue: none

Notes:

☐* *Turn on the Sync switch for breaker 152-1614 BUS 16AB FDR FRM ESF XFMR 21*

Standard: Turns on Sync Switch for 152-1614 by turning handswitch SYNC CONT FDR 152-1614 clockwise to ON (P864-2C).

Cue: none

Notes:

☐ Check sync scope indicates ESF Transformer 21 and bus 16AB voltages are in phase.

Standard: Observes sync scope for breaker 152-1614 comes to 12 o'clock ± 10° position (P864-2B).

Cue: none

Notes:

☐ **Close 152-1614 BUS 16AB FDR FM ESF XFMR 21*

Standard: Closes circuit breaker 152-1514 by turning handswitch BUS 16AB FDR FM ESF XFMR 21 (P864-2C) to CLOSE and observing breaker closes, then releases the handswitch.

Cue: none
Notes:

☐ Observes circuit breaker 152-1611 BUS 16AB FDR FM ESF XFMR 12 opens

Standard: Checks circuit breaker 152-1611 BUS 16AB FDR FM ESF XFMR 12 opens (P864-2C).

Cue: none

Notes:

NOTE: If bus 16AB is the last bus transferred, ST21 will trip after the following step.

☐ Turn off the Sync switch for breaker 152-1614.

Standard: Turns off Sync Switch for 152-1614 by turning handswitch SYNC CONT FDR 152-1614 counter-clockwise to OFF (P864-2C).

Cue: none

Notes:

NOTE: If buses 16AB and 17AC are energized from ESF Transformer 21 and annunciators cleared, ACTIVATE Trigger 1.

Bus 17AC

NOTE: The first four items in the following step are identical to the ESF Transformer 21 energization check performed for bus 16AB. The duplicated portions may not be re-performed by the candidate.

☐ Ensure ESF XFMR 21 energized up to Bus 16AB Feeder Breaker.

Standard: Verifies ESF XFMR 21 is energized up to Bus 16AB Feeder Breaker 152-1614 by checking the following:

- Checks indicating lights for disconnect SVC XFMR 21 DISC J5206 indicate closed (P807-3B)
- Checks indicating lights for circuit breaker 552-2105 BUS 21R FDR FM XFMR ST-21 indicate closed (P807-4C)
- Observes indicator 34.5KV BUS 21R VOLTS 2R25-R603 indicates approximately 34.5KV (P807-4B)
- Checks indicating lights for circuit breaker 552-2104 ESF XFMR 21 FDR FM BUS 21R indicate closed (P807-5C)
- Checks indicating lights for circuit breaker 152-2902 BUS 25AA/26AB/17AC FDR FM ESF XFMR 21 indicate closed (P807-5C)
- Checks status light (purple light) ESF XFMR #21 ENERGIZED is on for 152-1705 (P601-16C)

Cue: none

Notes:

☐* *Turn on the Sync switch for breaker 152-1705 BUS 17AC FDR FRM ESF XFMR 21*

Standard: Turns on Sync Switch for 152-1705 by turning handswitch SYNC CONT FDR 152-1705 clockwise to ON (P601-16C).

Cue: none

Notes:

☐ Check sync scope indicates ESF Transformer 21 and bus 17AC voltages are in phase.

Standard: Observes sync scope for breaker 152-1705 comes to 12 o'clock ± 10° position (P864-2B).

Cue: none

Notes:

☐ * *Close 152-1705 BUS 17AC FDR FRM ESF XFMR 21*

Standard: Closes circuit breaker 152-1705 by turning handswitch 17AC FDR FRM ESF XFMR 21 (P601-16C) to CLOSE and observing breaker closes, then releases the handswitch.

Cue: none

Notes:

☐ Observes circuit breaker 152-1706 BUS 17AC FDR FM XFMR ESF 11 opens

Standard: Checks circuit breaker 152-1706 BUS 17AC FDR FM XFMR ESF 11 opens (P601-16C) and annunciator 4.16KV BUS 17AC INCM FDR 152-1706 TRIP (P601-16C-D1) alarms.

Cue: none

Notes:

☐ Clears annunciator 4.16KV BUS 17AC INCM FDR 152-1706 TRIP (P601-16C-D1).

Standard: Places handswitch for circuit breaker 152-1706 BUS 17AC FDR FRM XFMR ESF 11 opens (P601-16C) to TRIP and then releases it, and verifies annunciator 4.16KV BUS 17AC INCM FDR 152-1706 TRIP (P601-16C-D1) resets.

Cue: none

Notes:

NOTE: If bus 17AC is the last bus transferred, ST21 will trip after the following step.

☐ Turn off the Sync switch for breaker 152-1705 BUS 17AC FDR FM XFMR ESF 21

Standard: Turns off Sync Switch for 152-1705 by turning handswitch SYNC CONT FDR 152-1705 counter-clockwise to OFF (P601-16C).

Cue: As Indicated

Notes:

NOTE: If buses 16AB and 17AC are energized from ESF Transformer 21 and annunciators cleared, ACTIVATE Trigger 1.

☐ Recognizes loss of Service Transformer 21 and resulting loss of power to major buses 16AB, 17AC, 11HD, and 14AE.

Standard: Candidate diagnoses loss of Service Transformer 21 by any of a variety of methods such as observing ST21 feeder breakers are open on the switchyard mimic (P807-3B), ST21 lockout alarms (P807-4A), loss of power alarms for buses 16AB and 17AC on P864-2A and P601-16A along with undervoltage alarms for buses 11HD and 14AE on P807-1A and 2A.

Cue: If necessary, cue the candidate to respond to the power loss, including panel P807. As CRS, direct the candidate to take the immediate operator actions of the Loss of AC Power ONEP.

Notes:

NOTE: Buses 11HD and 14AE may be re-energized in any order. The only portion that is sequence critical is the bus 11HD Load Control Centers (LCCs) can only be re-energized after bus 11HD is re-energized

☐ * *Re-energizes bus 11HD using an alternate feeder breaker.*

Standard: Closes circuit breaker 252-1101 by turning handswitch BUS 11HD FDR FM BOP XFMR 11B to CLOSE (P807-1C).

Cue: none

Notes:

☐ Observes breaker 252-1108 BUS 11HD FDR FM BOP XFMR 12B opens.

Standard: Observes breaker 252-1101 closes and breaker 252-1108 BUS 11HD FDR FM BOP XFMR 12B opens.

Cue: none

Notes:

☐ * *Re-energize affected Load Control Centers (LCCs) fed by bus 11HD*

Standard: Closes the following LCC feeder breakers using their respective handswitches on P807 and observes breakers close:

- Breaker 52-11701 LCC 11BD7 FDR FM BUS 11HD/21HD (P807-1C)
- Breaker 52-11401 LCC 11BD4 FDR FM BUS 11HD/21HD (P807-1C)
- Breaker 52-11301 LCC 11BD3 FDR FM BUS 11HD/21HD (P807-1C)
- Breaker 52-11201 LCC 11BD2 FDR FM BUS 11HD/21HD (P807-1C)
- Breaker 52-21401 LCC 21BD4 FDR FM BUS 21HD/11HD (P807-5C)
- Breaker 52-21301 LCC 21BD3 FDR FM BUS 21HD/11HD (P807-5C)

Cue: none

Notes:

☐ * *Re-energizes bus 14AE using an alternate feeder breaker*

Standard: Closes circuit breaker 152-1415 by turning handswitch BUS 14AE FDR FM BOP XFMR 11A to CLOSE (P807-1C).

Cue: none

Notes:

☐ Observes breaker 152-1402 BUS -14AE FDR FM BOP XFMR 12A opens.

Standard: Observes breaker 152-1415 closes and breaker 152-1402 BUS 14AE FDR FM BOP XFMR 12A opens.

Cue: none

Notes:

☐ Verifies bus 16AB has been automatically re-energized by Division 2 Diesel Generator.

Standard: Verifies bus 16AB has been re-energized by Division 2 Diesel Generator by various indications which may include observing bus 16AB undervoltage alarms on P864-2A are slow flashing and/or approximately 4.2 KV indicated on 4.16KV BUS 16AB voltmeter R21R615B (P864-2B).

Cue: none

Notes:

☐ Verifies bus 17AC has been automatically re-energized by Division 3 Diesel Generator.

Standard: Verifies bus 17AC has been re-energized by Division 3 Diesel Generator by various indications which may include observing alarm HPCS SYS UNDERVOLT (P601-16-F2) is slow flashing and/or approximately 4.2 KV indicated on 4.16KV BUS 17AC voltmeter E22R610 (P601-16B)).

Cue: none

Notes:

☐ Orders Turbine Building Operator to reset Bus Undervoltage Lockouts for BOP Buses 11HD and 14AE

Standard: Contacts Turbine Building Operator to reset Bus Undervoltage Lockouts for buses 11HD and 14AE

Cue: When the Turbine Building Operator is dispatched to reset undervoltage lockout relays and after buses 11HD and 14AE and the LCCs associated with bus 11HD are re-energized, the evaluator will end the JPM.

Notes:

Task Standard(s):

ESF buses 16AB and 17AC were aligned to ESF Transformer 21 IAW section 4.3 of 04-1-01-R21-16 and 04-1-01-R21-17, respectively, and bus 11HD,.its associated Load Control Centers (LCCs), and bus 14AE have been re-energized following trip of Service Transformer 21 IAW 05-1-02-I-4 section 2.0.

Name: _____Time Start: _____ Time Stop: _____

Task: Align Buses 16AB and 17AC to ESF Transformer 21

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Align Buses 16AB and 17AC to ESF Transformer 21

Initial Condition(s):

- The plant is at rated power.
- ESF Transformer 21 has undergone preventive maintenance and has been re-energized.
- Bus 16AB is currently aligned to ESF Transformer 12.
- Bus 17AC is currently aligned to ESF Transformer 11.

Initiating Cue(s):

- The SRO with the Command Function has directed you to re-align buses 16AB and 17AC to be supplied by ESF Transformer 21 in accordance with sections 4.3 of 04-1-01-R21-16 and 04-1-01-R21-17.

- The prerequisites of sections 4.3.1 of both 04-1-01-R21-16 and 04-1-01-R21-17 have been verified to be met.

ENTERGY NUCLEAR

LESSON PLAN

Number: GJPM-OPS-C7104
Revision: 00
Page: 1 of 11
Rtype: _____
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Transfer RPS B to Normal Power Source and RPS A to Alternate Power Source

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/16/09***
	**Preparer	Date
Ops Review++:	***R. Thompson***	***4/20/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
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++ Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Transfer RPS B to Normal Power Source and RPS A to Alternate Power Source

Setting:	Simulator
Type:	RO
Task:	CRO-C71-004
K&A:	212000: A2.02 – 3.7/3.9; A4.14 – 3.8/3.8; Generic 2.1.30: 4.4/4.0
Safety Function:	7 – Instrumentation
Time Required:	15 minutes
Time Critical:	No
Faulted:	**YES**
Performance:	Actual
Reference(s):	04-1-01-C71-1 sections 5.1 and 5.2;
Handout(s):	None
# Manipulations:	6
# Critical Steps:	6
Group #:	1

Simulator Setup/Required Plant Conditions:

- Reset to any IC
- Insert Remote Function c71206 TRIPPED on Trigger 2
- Align RPS B on the Alternate Power Source and RESET Division 2 Half Scram.

Safety Concerns:

- None

Initial Condition(s):

- The plant is at rated power.
- Electrical Maintenance is taking readings on all RPS EPA breakers under a routine preventive maintenance task.
- RPS A is aligned to its Normal source.
- RPS B is aligned to its Alternate source.

Initiating Cue(s):

- The SRO with the Command Function has directed you to re-align RPS B to its Normal source in accordance with section 5.2 of 04-1-01-C71-1. THEN align RPS A to its Alternate source in accordance with section 5.1 of 04-1-01-C71-1. Notify Electrical Maintenance via the Plant Paging System when the alignments are complete.

- RPS B Motor Generator Set has been verified to be operating normally in accordance with 04-1-01-C71-1 section 4.1.

- It has been verified no other work is in progress that could cause half scrams or half isolations.

- MSIV solenoids have been verified to be energized

Task: Transfer RPS B to Normal Power Source and RPS A to Alternate Power Source

Task Overview

- This task is to align RPS B power to be supplied from its Normal source, the Motor Generator Set, and to align RPS A power to be supplied from its Alternate source, 480V ESF breaker 52-154204.
- The fault in this task is when the alignment is completed, breaker 52-154204 supplying RPS A will trip. RPS A will then be realigned to its Normal source, the Motor Generator Set, in accordance with the SOI. The Loss of One or Both RPS Buses ONEP is not used since it does not provide instructions loss of RPS bus Alternate power.

Tasks: critical steps are underlined, italicized and denoted by (*)

NOTE: RPS B must be aligned first and the half scram reset prior to proceeding with RPS A. Failure to reset the half scram will result in a full scram on transfer of RPS A. RPS B must be performed first per 04-1-01-C71-1 section 3.5 and FSAR 8.3.1.1.5.4 s4. The only portion of the sequence that is critical is one division's half scram must be reset before the other division's power supply is transferred to avert a full scram.

RPS B SOI 04-1-01-C71-1 section 5.2

☐ Verifies power is available to RPS B via its Motor Generator Set and EPA breakers.

Standard: Checks GENERATOR B NORMAL FEED AVAILABLE white light is lit on back panel P610.

Cue: none

Notes:

NOTE: The following step causes a Division 2 half scram due to break-before-make contacts on the power source transfer switch.

☐* *Transfers RPS B to its normal power source.*

Standard: Places handswitch MG SET B TRANSFER to MG B on P610.

Cue: none

Notes:

☐* *Resets the Division 2 half scram.*

Standard: Places handswitches RPS DIV 2 SCRAM RESET and RPS DIV 4 SCRAM RESET in RESET on P680-7C1.

Cue: none
Notes:

☐ Verifies half scram reset.

Standard: Verifies half scram resets by observing annunciator RX SCRAM TRIP (P680-7A-A2) clears and the following continuity lights above manual scram pushbuttons illuminate:

- RPS DIV 1, SCRAM SOL VLV 1B (P680-5C1)
- RPS DIV 3, SCRAM SOL VLV 3B (P680-5C1)
- RPS DIV 2, SCRAM SOL VLV 2B (P680-7C1)
- RPS DIV 4, SCRAM SOL VLV 4B (P680-7C1)

Cue: none
Notes:

If needed acknowledge transfer as CRS.

RPS A SOI 04-1-01-C71-1 section 5.1

☐ Verifies alternate power is available to RPS A via breaker 52-154204 and EPA breakers.

Standard: Checks GENERATOR A ALTERNATE FEED AVAILABLE white light is lit on back panel P610.

Cue: none

Notes:

NOTE: The following step causes a Division 1 half scram due to break-before-make contacts on the power source transfer switch.

☐* *Transfers RPS A to its Alternate power source.*

Standard: Places handswitch MG SET A TRANSFER to ALT A on P610.

Cue: none

Notes:

NOTE: RPS A Alternate power will trip after a short delay when the Division 1 half scram is reset in the following step.

☐* *Resets the Division 1 half scram.*

Standard: Places handswitches RPS DIV 1 SCRAM RESET and RPS DIV 3 SCRAM RESET in RESET on P680-5C1.

Cue: none

Notes:

☐ Verifies half scram reset.

Standard: Verifies half scram resets by observing annunciator RX SCRAM TRIP (P680-7A-A2) clears and the following continuity lights above manual scram pushbuttons illuminate:

- RPS DIV 1, SCRAM SOL VLV 1A (P680-5C1)
- RPS DIV 3, SCRAM SOL VLV 3A (P680-5C1)
- RPS DIV 2, SCRAM SOL VLV 2A (P680-7C1)
- RPS DIV 4, SCRAM SOL VLV 4A (P680-7C1)

Cue: none

Notes:

NOTE: Simulator operator, activate TRIGGER 2 when Division 1 Half Scram is reset.

As CRS, CUE the candidate to respond to the Half Scram Annunciator.

☐ Recognizes half scram and loss of RPS A alternate power.

Standard: Diagnoses and reports Division 1 half scram by observing receipt of annunciator RX SCRAM TRIP (P680-7A-A2) and the following continuity lights extinguished:

- RPS DIV 1, SCRAM SOL VLV 1A (P680-5C1)
- RPS DIV 3, SCRAM SOL VLV 3A (P680-5C1)
- RPS DIV 2, SCRAM SOL VLV 2A (P680-7C1)
- RPS DIV 4, SCRAM SOL VLV 4A (P680-7C1)

Diagnoses and reports the Division 1 half scram is due to loss of RPS A power by observing GENERATOR A ALTERNATE FEED AVAILABLE white light is extinguished on back panel P610.

Cue: As the CRS, direct the candidate to return RPS A to Normal power per section 5.2 of 04-1-01-C71-1.

Notes:

☐ Verifies power is available to RPS A via its Motor Generator Set and EPA breakers.

Standard: Checks GENERATOR A NORMAL FEED AVAILABLE white light is lit on back panel P610.

Cue: none

Notes:

☐* *Transfers RPS A to its normal power source.*

Standard: Places handswitch MG SET A TRANSFER to MG A on P610.

Cue: none

Notes:

☐* *Resets the Division 1 half scram.*

Standard: Places handswitches RPS DIV 1 SCRAM RESET and RPS DIV 3 SCRAM RESET in RESET on P680-5C1.

Cue: none

Notes:

☐ Verifies half scram reset.

Standard: Verifies half scram resets by observing annunciator RX SCRAM TRIP (P680-7A-A2) clears and the following continuity lights above manual scram pushbuttons illuminate:

- RPS DIV 1, SCRAM SOL VLV 1A (P680-5C1)
- RPS DIV 3, SCRAM SOL VLV 3A (P680-5C1)
- RPS DIV 2, SCRAM SOL VLV 2A (P680-7C1)
- RPS DIV 4, SCRAM SOL VLV 4A (P680-7C1)

Cue: none

Notes:

Task Standard(s):

RPS B has been transferred to its Normal power source and RPS A was transferred to its Alternate power source, then back to its normal source IAW 04-1-01-C71-1 sections 5.1 and 5.2, causing NO full scram.

NOTE: If candidate's actions result in a FULL Scram, this constitutes a failure of the JPM.

Name: _____ Time Start: _____ Time Stop: _____

Task: **Transfer RPS B to Normal Power Source and RPS A to Alternate Power Source**

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Transfer RPS B to Normal Power Source and RPS A to Alternate Power Source

Initial Condition(s):

- The plant is at rated power.
- Electrical Maintenance is taking readings on all RPS EPA breakers under a routine preventive maintenance task.
- RPS A is aligned to its Normal source.
- RPS B is aligned to its Alternate source.

Initiating Cue(s):

- The SRO with the Command Function has directed you to re-align RPS B to its Normal source in accordance with section 5.2 of 04-1-01-C71-1. THEN align RPS A to its Alternate source in accordance with section 5.1 of 04-1-01-C71-1. Notify Electrical Maintenance via the Plant Paging System when the alignments are complete.

- RPS B Motor Generator Set has been verified to be operating normally in accordance with 04-1-01-C71-1 section 4.1.

- It has been verified no other work is in progress that could cause half scrams or half isolations.

- MSIV solenoids have been verified to be energized

ENTERGY NUCLEAR

JOB PERFORMANCE MEASURE

Number: GJPM-OPS-P4202
Revision: 00
Page: 1 of 10
Rtype: _____
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Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Align CCW to FPCCU Heat Exchanger A

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: New Material
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***11/25/09***
	**Preparer	Date
Ops Review[++]**:**	***D. Brown***	***3/16/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
	Training Representative	Date
Approved By:		
	[+]Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
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[+] Indicates that the LP has been reviewed by the Training Supervisor for inclusion of Management Expectations and items referenced on TQJA-201- DD06, Training Material Checklist.
[++] Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Align CCW to FPCCU Heat Exchanger A

Setting:	Simulator
Type:	RO
Task:	CRO-P42-003, CRO-P42-005
K&A:	400000: K1.02: 3.2/3.4; A4.01: 3.1/3.0; Generic 2.1.30: 4.4/4.0
Safety Function:	8 – Plant Service Systems
Time Required:	20 minutes
Time Critical:	No
Alternate Path:	**Yes**
Performance:	Actual
Reference(s):	04-1-01-P42-1 section 4.2 & 6.3 04-1-02-1H13-P870 -2A-B1
Handout(s):	None
# Manipulations:	6
# Critical Steps:	6
Group:	2

Simulator Setup/Required Plant Conditions:

- Reset simulator to any IC.
- Verify closed **P42-F028A, P42-F032A, P42F105, P42F203, P42F204, and P42F205** on H13P870 section 2C.
- Insert malfunction p870_2a_b_1 1, FP HX CCW FLO LO annunciator ON.
- On **TRIGGER 1** override handswitches for P42F105 and P42F205 to CLOSE.
- Place remote function **r21218**, Div 2 LSS Panel status, on a manual **TRIGGER 10** at a value of **INOP**

Safety Concerns:
None

Initial Condition(s):

- The Inadequate Decay Heat Removal ONEP has been entered due to Spent Fuel Pool temperature.
- CCW Cooling to both FPHXs is Out of Service.

Initiating Cue(s):

- The SRO with the Command Function has directed you to place CCW in service to only the A FPCCU Heat Exchanger in accordance with 04-1-01-P42-1 section 4.2.
- The prerequisites of section 4.2.1 have been verified to be met.

Task: Align CCW to FPCCU Heat Exchanger A

Notes

1. All controls and indications for this task are on panel 1H13-P870.

Task Overview

- This task is to align CCW to Fuel Pool Cooling and Cleanup (FPCCU) Heat Exchanger A.
- The fault in this task is the failure of the Division 1 CCW to FPCCU Heat Exchangers flow circuit, which is simulated to fail to a low flow condition. This causes CCW to FPCCU Heat Exchangers inlet and outlet valves, P42F105 and P42F205, to automatically close when the operator releases their handswitches and they spring return to the AUTO position.
- The operator will then be redirected to align SSW B to the B FPCCU Heat Exchanger. This will require initiation of SSW B and alignment of Division 2 valves to FPCCU B Heat Exchanger.

.

Task: Align CCW to FPCCU Heat Exchanger A

Tasks: critical steps are underlined, italicized and denoted by (*)

Note: Sequence of the next two steps with respect to one another is not critical.

NOTE: To place **ONLY** the A heat exchanger in service, performs the following **(Initial Condition: CCW Cooling to both FPHXs is OOSVC)**:

☐* *Opens P42F028A, FPHX A Inlet valve, using its respective handswitch.*

Standard: Opens P42F028A, FPHX A Inlet valve, using its respective handswitch CLG WTR INL TO FPHX A [2C].

Cue: none

Notes:

☐* *Opens P42F032A, FPHX A Outlet valve, using its respective handswitch.*

Standard: Opens P42F032A, FPHX A Outlet valve, using its respective handswitch CLG WTR OUTL TO FPHX A [2C].

Cue: none

Notes:

NOTE: A sensed low flow condition prevents opening F105 and F205 if F028A and F032A are OPEN. To allow the opening of F105 and F205, their handswitches must be held to the OPEN position until the low flow condition clears for the Division 1 flow circuit. In this JPM, the low flow condition will not clear in the Division 1 circuit, and the valves will automatically close when their handswitches are released (spring return to NORMAL). The Division 2 CCW to FPCCU Heat Exchangers flow circuit is unaffected, so the Div 2 low CCW to FPCCU Hx flow alarm will clear when P42F105 and P42F205 are both opened.

SIMULATOR OPERATOR: Pull up RNI Panel section for P870 2C and observe P42-F105 and F205 full Open.

SIMULATOR OPERATOR Activate TRIGGER 1 to close P42F105 and P42F205 when they both indicate full open.

☐* *OPENS CCW to FPCCU Heat Exchanger Supply and Return valves F105 and F205 to establish flow to FPCCU Heat Exchanger A.*

Standard: OPENS F105 and F205 by simultaneously holding both of their respective handswitches, CCW SPLY TO FPHX A/B [2C] and CCW RTN FM FPHX A/B [2C], to the OPEN position until alarm Clears (1H13-P870 Section 2A Grid B-1). Recognizes and reports F105 and F205 reached fully open but the FPCCU Hx A low flow alarm did not clear, and F105 and F205 stroked closed when their hand switches were released. The operator should report the FPCCU Hx **B** low flow alarm (1H13-P870 Section 8A) did clear when the valves were open but came back in when the valves automatically closed.

Cue: The CRS directs you to manually initiate SSW B using the hard card and align SSW B to FPCCU Heat Exchanger B in accordance with 04-1-01-P42 section 6.3.

Notes: The candidate may close P42F028A and P42F032A before proceeding to the next step, but this is not necessary.

☐* *Manually initiates SSW B using the hard card.*

Standard: Initiates SSW B by simultaneously depressing both SSW Div 2 MAN INIT pushbuttons on P870-7C.

Cue: none

Notes: Hard card 04-1-01-P41-1 Att. VIII.

SIMULATOR OPERATOR: When requested to shutdown Division 2 Load Shedding and Sequencing Panel, insert **remote function r21218** as **INOP on TRIGGER 10**.

☐ Request Division 2 Load Shedding and Sequencing panel to be shutdown in accordance with the SOI.

Standard: Request Division 2 Load Shedding and Sequencing panel to be shutdown in accordance with 04-1-01-R21-1

Cue: When the simulator operator has inserted remote function r21218 as indicated by receipt of alarm P864-2A-H1, report back as the local operator that the Div 2 LSS Panel has been shutdown per the SOI.

Notes:

☐ Checks closed CCW valves to FPCCU Heat Exchanger B.

Standard: Checks close the following valve on H13P870 sections 2C and 8C:

- P42F028B
- P42F032B
- P42F203
- P42F204

Cue: none

Notes:

☐* *Opens P42F200B, FPHX B Inlet valve, using its respective handswitch.*

Standard: Opens P42F200B, FPHX B Inlet valve, using its respective handswitch SSW B INL TO FPHX B [8C].

Cue: none

Notes:

☐* *Opens P42F201B, FPHX B Outlet valve, using its respective handswitch.*

Standard: Opens P42F201B, FPHX B Outlet valve, using its respective handswitch SSW B OUTL FM FPHX B [8C] The operator should report FPCCU Hx low flow alarm clears.

Cue: When the candidate has opened P42 F200B and F201B, the evaluator will end the JPM

Notes:

Task Standard(s):

SSW B is aligned to FPCCU Heat Exchanger B in accordance with 04-1-01-P42-1 section 6.3.

Name: _____Time Start: _____Time Stop: _____

Task: Align CCW to FPCCU Heat Exchanger A

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Align CCW to FPCCU Heat Exchanger A

Initial Condition(s):

- The Inadequate Decay Heat Removal ONEP has been entered due to Spent Fuel Pool temperature.
- CCW Cooling to both FPHXs is Out of Service.

Initiating Cue(s):

- The SRO with the Command Function has directed you to place CCW in service to only the A FPCCU Heat Exchanger in accordance with 04-1-01-P42-1 section 4.2.
- The prerequisites of section 4.2.1 have been verified to be met.

ENTERGY NUCLEAR

JOB PERFORMANCE MEASURE

Number: GJPM-OPS-D2101
Revision: 00
Page: 1 of 14
Rtype: _____
QA Record
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Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Perform Area Radiation Monitor Functional Test

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: New Material
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/17/09***
	**Preparer	Date
Ops Review++:	***R. Thompson***	***4/20/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

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++ Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Perform Area Radiation Monitor Functional Test

Setting:	Simulator
Type:	RO
Task:	CRO-D21-003
K&A:	272000: A4.02 – 3.0/3.0
Safety Function:	9 – Radioactivity Release / 7 - Instrumentation
Time Required:	20 minutes
Time Critical:	No
Alternate Path:	No
Performance:	Actual
Reference(s):	04-1-03-D21-1 Attachment I
Handout(s):	04-1-03-D21-1 Attachment I, pages 1-3, marked up to perform test for D21K601
# Manipulations:	11
# Critical Steps:	8
Group:	2

Simulator Setup/Required Plant Conditions:

- Reset simulator to any IC
- Override annunciator P680-4A1-E6 **OFF**.

Safety Concerns:
None

Initial Condition(s):

- The plant is at rated power.
- I&C has completed repair work on D21K601, RHR Room A Area Radiation Monitor, and the ARM is ready for Operations retest.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform EPI 04-1-03-D21-1 Attachment I for D21K601 as a retest.
- Use the retest package provided.
- Another operator is assigned to manage any associated alarms on H13-P680.

Task: Perform Area Radiation Monitor Functional Test

Notes

1. All controls and indications for this task are on backpanel 1H13-P844.

Task Overview

- This task is to perform the Monthly Area Radiation Monitors Functional Test for RHR Room A ARM.
- The evaluator will role play as the P680 operator responding to the expected AREA RAD PANEL P844 alarm (P680-4A1-E6) that occurs as a result of this testing. That alarm is overridden OFF in this JPM to prevent interrupting concurrent JPMs within the control room main panel area.

.

Task: Perform Area Radiation Monitor Functional Test

Tasks: critical steps are underlined, italicized and denoted by (*)

NOTE: Cue the candidate you will be role playing as the ACRO responding to P680 alarms that occur as a result of this test. Tell him not to go to p680 during this JPM.

☐ Signs Test Performer on the data package cover sheet of 04-1-03-D21-1 Attachment I.

Standard: Signs, dates, and times Test Performer block on the Data Package Cover Sheet.

Cue: none

Notes:

☐* *SELECT OFF on Function switch of D21K601.*

Standard: Selects OFF on Function switch of D21K601 by rotating the switch counter-clockwise to OFF, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐ Observes AREA RADIATION MONITORING SYSTEM FAILURE annunciates.

Standard: Observes annunciator AREA RADIATION MONITORING SYSTEM FAILURE alarms (P844-2A-A5), then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐ Observes AREA RAD PNL P844 TROUBLE annunciates on P680.
Standard: Requests the ACRO to verify AREA RAD PNL P844 TROUBLE annunciates on P680.

Cue: As ACRO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is in alarm.

Notes:

☐ Checks Fail Safe green light extinguished.

Standard: Observes the green FAIL SAFE indicator/CHECK SOURCE pushbutton on the monitor face of D21K601 backlight is off, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐* *SELECT OPERATE on Function switch of D21K601.*

Standard: Selects OPERATE on Function switch of D21K601 by rotating the switch clockwise to OPERATE, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐ Checks Fail Safe green light illuminated.

Standard: Observes the green FAIL SAFE indicator/CHECK SOURCE pushbutton on the monitor face of D21K601 backlight is on, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐ Observes annunciator AREA RAD PNL P844 TROUBLE resets on P680.

Standard: Requests the ACRO to verify annunciator AREA RAD PNL P844 TROUBLE resets on P680.

Cue: As ACRO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is reset.

Notes:

☐ Displays recorder point #1 on recorder D21R600.

Standard: Displays recorder point #1 on recorder D21R600 on P844 by depressing the up or down arrow keys until PT#1 is displayed, or by depressing 01 on the number keypad and depressing enter, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐* *Depresses and holds the yellow TEST ALARM pushbutton to electronically test the high alarm function*

Standard: Depresses and holds the yellow TEST ALARM pushbutton on the bottom of the monitor face, and verifies the following:

- meter indication on D21K601 and point # 1 on Recorder D21R600 on P844 travel fully upscale.
- annunciator EMERGENCY CORE COOLING ROOM RADIATION HIGH alarms (P844-A-D4).

Cue: none

Notes:

☐ Observes AREA RAD PNL P844 TROUBLE annunciates on P680.

Standard: Requests the ACRO to verify AREA RAD PNL P844 TROUBLE annunciates on P680.

Cue: As ACRO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is in alarm.

Notes:

☐* *Releases the yellow TEST ALARM pushbutton*

Standard: Releases the yellow TEST ALARM pushbutton on the bottom of the monitor face, then initials the associated steps on the EPI Attachment I.

Cue: none

Notes:

☐ Checks High Alarm red light illuminated.

Standard: Observes the red HIGH ALARM indicator/RESET pushbutton on the monitor face of D21K601 backlight is on, then initials the step on the EPI Attachment I.

Cue: As ACRO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is in alarm.

Notes:

☐* *Resets the High Alarm*

Standard: Depresses and releases the red HIGH ALARM indicator/RESET pushbutton on the bottom of the monitor face, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐ Checks High Alarm red light extinguished.

Standard: Observes the red HIGH ALARM indicator/RESET pushbutton on the monitor face of D21K601 backlight is off, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐ Resets AREA RAD PNL P844 TROUBLE annunciator on P680.

Standard: Requests the ACRO to reset AREA RAD PNL P844 TROUBLE annunciator on P680.

Cue: As ACRO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is reset.

Notes:

☐ Resets EMERGENCY CORE COOLING ROOM RADIATION HIGH annunciator.

Standard: Resets annunciator EMERGENCY CORE COOLING ROOM RADIATION HIGH (P844-A-D4), then initials the step on the EPI Attachment I.

Cue: none

Notes:

NOTE: The following step will cause a high alarm if the check source pushbutton is held long enough to produce 100 mr/hr, which actually takes only a few seconds.

☐* *Depresses and holds green FAIL SAFE indicator/CHECK SOURCE pushbutton to perform check source test of the detector*.

Standard: Depresses and holds the green FAIL SAFE indicator/CHECK SOURCE pushbutton on the monitor face of D21K601 and verifies that meter indication and point # 1 on Multipoint Recorder R600 both indicate an increase in count rate, then releases the green FAIL SAFE indicator/CHECK SOURCE pushbutton and initials the step on the EPI Attachment I.

Cue: none

Notes:

☐* *Places the function switch in ALARM to check the alarm setpoint.* .

Standard: Rotates the function switch clockwise to ALARM and holds it and verifies that meter indication travels to the alarm setpoint of 100 mr/hr (+/- 20 mr/hr) Then returns the function switch to OPERATE and verifies the meter indication returns to normal and initials the step on the EPI Attachment I.

Cue: none

Notes: The SOI step implies the switch will spring return to OPERATE, but depending on the particular ARM, the switch may have to be rotated manually back to OPERATE, as is true for this ARM.

☐* *Resets the High Alarm*

Standard: Depresses and releases the red HIGH ALARM indicator/RESET pushbutton on the bottom of the monitor face, then initials the step on the EPI Attachment I.

Cue: none

Notes:

☐ Resets EMERGENCY CORE COOLING ROOM RADIATION HIGH annunciator.

Standard: Resets annunciator EMERGENCY CORE COOLING ROOM RADIATION HIGH (P844-A-D4).

Cue: none

Notes: This step only applies if a high alarm was produced during the check source test.

☐ Resets AREA RAD PNL P844 TROUBLE annunciator on P680.

Standard: Requests the ACRO to reset AREA RAD PNL P844 TROUBLE annunciator on P680.

Cue: As ACRO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is reset.

Notes:

☐ Completes the data package cover sheet of 04-1-03-D21-1 Attachment I.

Standard: Signs and dates Test Performed by blocks and checks Acceptable or Acceptable with Comments on the Data Package Cover Sheet.

Cue: none

Notes:

Task Standard(s):

ARM D21K601 has been tested IAW 04-1-03-D21-1 Attachment I.

Name: _____Time Start: _____Time Stop: _____

Task: Perform Area Radiation Monitor Functional Test

Follow-Up Questions & Answers:

Comments:

Give this page to the student

Perform Area Radiation Monitor Functional Test

Initial Condition(s):

- The plant is at rated power.
- I&C has completed repair work on D21K601, RHR Room A Area Radiation Monitor, and the ARM is ready for Operations retest.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform EPI 04-1-03-D21-1 Attachment I for D21K601 as a retest.
- Use the retest package provided.
- Another operator is assigned to manage any associated alarms on H13-P680.

ENTERGY NUCLEAR

JOB PERFORMANCE MEASURE

Number: GJPM-OPS-C6122
Revision: 00
Page: 1 of 1
Rtype: _____
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Perform Remote Shutdown Panel Area Actions for Security Code Orange

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: New Material
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/17/09***
	**Preparer	Date
Ops Review++:	***D. Brown***	***3/16/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/17/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
** The requirements of the Training Material Checklist have been met.
+ Indicates that the LP has been reviewed by the Training Supervisor for inclusion of Management Expectations and items referenced on TQJA-201- DD06, Training Material Checklist.
++ Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

The content of this JPM has been redacted due to its providing content of site-specific security procedures.

ENTERGY NUCLEAR

JOB PERFORMANCE MEASURE

Number: GJPM-OPS-EOP022
Revision: 1
Page: 1 of 10
Rtype: _____
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

EP Attachment 22 - Locally Scram Control Rods

☐ New Material ☒ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: Updated for 2010 NRC Exam
THIS DOCUMENT REPLACES: GJPM-OPS-EOP022.00

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/18/09***
	**Preparer	Date
Ops Review++:	***D. Brown***	***3/16/10***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***1/20/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
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FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: EP Attachment 22 - Locally Scram Control Rods

Setting:	Plant (inside CAA)
Type:	RO
Task:	CRO-EP-022
K&A:	295015 AA1.02: 4.0/4.2
	201003 Generic 2.1.30: 4.4/4.0
Safety Function:	1 - Reactivity Control
Time Required:	15 minutes
Time Critical:	No
Faulted:	No
Performance:	Simulate
Reference(s):	05-S-01-EP-1 Attachment 22
Handout(s):	Copy of 05-S-01-EP-1 Attachment 22
# Manipulations:	9
# Critical Steps:	9
Group #:	1

Emergency/Abnormal Actions inside CAA.

Required Plant Conditions:

- Containment HCU floor at Area 11, 135' is accessible

Safety Concerns:

- **Wear appropriate personal protective equipment.**
- **Don't forget ALARA**
- **No climbing. Point up or down while you explain what you are going to do.**

Initial Condition(s):

- A scram occurred from rated power.
- Three control rods failed to insert.
- EP-2A has been entered.
- EP Attachments 18 and 19 are installed.
- The scram is reset.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform steps 2.2 and 2.3 of EP Attachment 22 for control rods 20-09, 36-09, and 28-05.

EOP Task 22: Opening Individual Scram Test Switches

Notes

1. This task is performed on the HCU floor in Containment, El. 135'.
2. Control Rod 36-09 is on the first HCU bank on the right as you enter El. 135' from the Containment airlock at El. 119.

3. Control Rod 28-05 is on the first HCU bank on the left as you enter El. 135’ from the Containment airlock at El. 119’.

4. Control Rod 20-09 is directly behind 28-05.

Task Overview

- This task provides a scram signal for individual control rods. Each HCU has two Scram Test Switches: "A" for the Div. 1 scram solenoid and "B" for the Div. 2 scram solenoid. Each Scram Test Switch has three positions. The upper position is NORM; this is where each switch normally stays to supply the respective scram solenoid with power. The middle position, "TEST", disconnects power from the respective scram solenoid. The lower position, "SRI", is for a feature that is not used at GGNS. Both switches must be taken to the TEST position to deenergize the associated scram solenoids to insert the control rod.

EOP Task 22: Opening Individual Scram Test Switches

Tasks : Critical steps are underlined, italicized, and denoted by an (*)

Note : Control rods 36-09, 28-05, and 20-09 may be scrammed in any order, and scram test switches for multiple control rods may be placed in TEST before returning any of them to NORMAL.

Note to Evaluator: Minimize the time spent near HCU 36-09 for ALARA.

36-09

☐ Locates HCU 36-09

Standard: Control Rod 36-09 is on the first HCU bank on the right as you enter El. 135' from the Containment airlock at El. 119

Cue: None

Notes:

☐* *Place the "A" Scram Test Switch in TEST*

Standard: Places the "A" Scram Test Switch in the TEST position by pulling outward on the switch's operating handle, then taking the handle down to the center TEST position until it snaps into place

Cue: The "A" Scram Test Switch for rod 36-09 is in the TEST position

Notes:

☐* *Place the "B" Scram Test Switch in TEST*

Standard: Places the "B" Scram Test Switch in the TEST position by pulling outward on the switch's operating handle, then taking the handle down to the TEST position until it snaps into place

Cue: The "B" Scram Test Switch for rod 36-09 is in the TEST position

Notes:

☐* *Returns both Scram Test Switches to the NORM position*

Standard: When the sound of rod motion stops, returns both Scram Test Switches to the NORM position by pulling outward on the switch's operating handle, then taking the handle up to the NORM position until it snaps into place

Cue: Rod motion has stopped. Both Scram Test Switches at HCU 36-09 are in the NORM position

Notes:

28-05

☐ Locates HCU 28-05.

Standard: Control Rod 28-05 is on the first HCU bank on the left as you enter El. 135' from the Containment airlock at El. 119.

Cue: None

Notes:

☐* *Place the "A" Scram Test Switch in TEST*

Standard: Places the "A" Scram Test Switch in the TEST position by pulling outward on the switch's operating handle, then taking the handle down to the center TEST position until it snaps into place

Cue: The "A" Scram Test Switch for rod 28-05 is in the TEST position

Notes:

☐* *Place the "B" Scram Test Switch in TEST*

Standard: Places the "B" Scram Test Switch in the TEST position by pulling outward on the switch's operating handle, then taking the handle down to the TEST position until it snaps into place

Cue: The "B" Scram Test Switch for rod 28-05 is in the TEST position

Notes:

☐* *Returns both Scram Test Switches to the NORM position*

Standard: When the sound of rod motion stops, returns both Scram Test Switches to the NORM position by pulling outward on the switch's operating handle, then taking the handle up to the NORM position until it snaps into place

Cue: Rod motion has stopped. Both Scram Test Switches at HCU 28-05 are in the NORM position

Notes:

20-09

☐ Locates HCU 20-09.

Standard: Control Rod 20-09 is on the rear of the first HCU bank on the left as you enter El. 135' from the Containment airlock at El. 119, directly behind 28-05.

Cue: None

Notes:

☐* *Place the "A" Scram Test Switch in TEST*

Standard: Places the "A" Scram Test Switch in the TEST position by pulling outward on the switch's operating handle, then taking the handle down to the center TEST position until it snaps into place

Cue: The "A" Scram Test Switch for rod 20-09 is in the TEST position

Notes:

☐* *Place the "B" Scram Test Switch in TEST*

Standard: Places the "B" Scram Test Switch in the TEST position by pulling outward on the switch's operating handle, then taking the handle down to the TEST position until it snaps into place

Cue: The "B" Scram Test Switch for rod 20-09 is in the TEST position

Notes:

☐* *Returns both Scram Test Switches to the NORM position*

Standard: When the sound of rod motion stops, returns both Scram Test Switches to the NORM position by pulling outward on the switch's operating handle, then taking the handle up to the NORM position until it snaps into place

Cue: Rod motion has stopped. Both Scram Test Switches at HCU 20-09 are in the NORM position

Notes:

Task Standard(s):
Control rods 36-09, 28-05, and 20-09 have been scrammed locally IAW 05-S-01-EP-1 Attachment 22 steps 2.2 through 2.

Name: _____Time Start: _____Time Stop: _____

EOP Task 22: Opening Individual Scram Test Switches

Follow-Up Questions & Answers:

Comments:

Give this page to the student

EP Attachment 22 - Locally Scram Control Rods

Initial Condition(s):

- A scram occurred from rated power.
- Three control rods failed to insert.
- EP-2A has been entered.
- EP Attachments 18 and 19 are installed.
- The scram is reset.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform steps 2.2 and 2.3 of EP Attachment 22 for control rods 20-09, 36-09, and 28-05.

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

INSTALL NITROGEN BOTTLE ON ADS AIR SUPPLY

☐ New Material ☒ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: Remove Generic Instructions Sheet. This was removed from 14-S-2-18.

THIS DOCUMENT REPLACES: GJPM-OPS-EOP007 Rev 1

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	Jonathan W. Sparks **Preparer	11/25/09 Date
Ops Review[++]**:**	Brian Blanche Technical Reviewer (e.g., SME, line management)	7/17/07 Date
Validated By:	Steve Reeves Training Representative	7/23/06 Date
Approved By:	Steve Reeves [+]Discipline Training Supervisor	7/24/07 Date

Approval Date:* 11/25/09

* Indexing Information
** The requirements of the Training Material Checklist have been met.
[+] Indicates that the LP has been reviewed by the Training Supervisor for inclusion of Management Expectations and items referenced on TQJA-201- DD06, Training Material Checklist.
[++] Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

EOP Task 7: Install Nitrogen Bottle on ADS Air Supply

Setting:	Plant (inside Containment)
Type:	NLO
Task:	AON-EP-002
K&A:	295019 AA1.01: 3.5/3.3
Safety Function:	Reactor Pressure Control (3)
Time Required:	15 minutes
Time Critical:	No
Faulted:	No
Performance:	Simulate
Reference(s):	05-S-01-EP-1/Att. 7
Handout(s):	Copy of Att. 7
# Manipulations:	5
# Critical Steps:	5
Group #:	1

Required Plant Conditions:

- 9/139' and 9/166' are accessible

Safety Concerns:

- Wear appropriate personal protective equipment.
- No climbing. Point up or down while you explain what you are going to do.

Initial Condition(s):

- EOP's have been entered
- Valves P53-F001, F007, F026A and F026B are open.
- Four nitrogen bottles are installed at the connection downstream of P53-FA01, with regulators attached.
- B21-F702A and B indicate < 125 psig

Initiating Cue(s):

- You have been directed to perform step 2.4.2 of EP Attachment 7.
- Another operator will complete the remaining steps of this attachment when directed
- This task is not time critical.

EOP Task 7: Install Nitrogen Bottle on ADS Air Supply

Notes

1. Valve P53-FA01 is located in Area 9, El. 139'. Valves P53-FA02 and P53-F043 are located in Area 9, El. 166'.

Task Overview

- This task provides a back-up source of Safety/relief valve operating air when the normal air source is either isolated or otherwise unavailable.
- This task was utilized during the Loss of Offsite Power Scram in April 2003 to facilitate RPV Pressure Control when no air compressors were operating.

EOP Task 7: Install Nitrogen Bottle on ADS Air Supply

Tasks : Critical tasks are underlined, italicized, and denoted by an (*)

Note : The sequence for the following steps *is* critical.

☐ Check closed 1P53-F003
Standard: Contacts Control Room to verify 1P53-F003 is closed
Cue: The Control Room reports that 1P53-F003 is closed
Notes:

☐* *Close 1P53-FA02* (9/166')
Standard: Checks closed valve 1P53-FA02 by turning the valve's handwheel in the clockwise direction
Cue: For valve 1P53-FA02, resistance is felt in the clockwise direction
Notes:

☐* *Open gas cylinder valve* (9/139')
Standard: Rotates gas cylinder outlet valve in the counter-clockwise direction until resistance if felt
Cue: Resistance is felt in the counter-clockwise direction
Notes:

☐* *Adjust gas cylinder regulator to approximately 125 psig output pressure*
Standard: Adjust gas cylinder regulator by rotating the regulator pressure adjustment valve in the clockwise direction until pressure is approximately 125 psig
Cue: Gas cylinder regulator is indicating 125 psig
Notes:

☐* *Open 1P53-FA01* (9/139')
Standard: Opens valve 1P53-FA01 by turning the valve's handwheel in the counter-clockwise direction
Cue: For valve 1P53-FA01, resistance is felt in the counter-clockwise direction
Notes:

☐* *Unlock and slowly open 1P53-F043, while monitoring pressure on P53-R028* (9/166')
Standard: Removes the tie-wrap from valve 1P53-F043 and opens the valve by turning its handwheel in the counter-clockwise direction, while monitoring pressure on 1P53-PI-R028
Cue:
- **For valve 1P53-F043, resistance is felt in the counter-clockwise direction**
- **Pressure on 1P53-PI-R028 is 125 psig.**

Notes:

Task Standard(s):
Step 2.4.2 of EOP Att. 7 is complete in accordance with the procedure.

Name: _____ Time Start: _____ Time Stop: _____

EOP Task 7: Install Nitrogen Bottle on ADS Air Supply

Follow-Up Questions & Answers:

Comments:

Install Nitrogen Bottle on ADS Air Supply

Give this page to the student

Initial Condition(s):

- EOP's have been entered
- Valves P53-F001, F007, F026A and F026B are open.
- Four nitrogen bottles are installed at the connection downstream of P53-FA01, with regulators attached.
- B21-F702A and B indicate < 125 psig

Initiating Cue(s):

- You have been directed to perform step 2.4.2 of EP Attachment 7.
- Another operator will complete the remaining steps of this attachment when directed
- This task is not time critical.

ENTERGY NUCLEAR

JOB PERFORMANCE MEASURE

Number: GJPM-OPS-C11209
Revision: 00
Page: 1 of 1
Rtype: _____
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Control Rod Operability Surveillance

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/2/09***
	**Preparer	Date
Ops Review++:	***D. Brown***	***3/16/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/19/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

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FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Control Rod Operability Surveillance

Setting:	Simulator
Type:	RO
Task:	CRO-C11(1)-05, 10
K&A:	201005 A2.12: 3.7/3.8; A3.01: 3.5/3.5; A3.02:-3.5/3.5; A4.01: 3.7/3.7 201003 A4.02: 3.5/3.5
Safety Function:	1 – Reactivity Control; 7 - Instrumentation
Time Required:	15 minutes
Time Critical:	No
Alternate Path:	**Yes**
Performance:	Actual
Reference(s):	06-OP-1C11-M-0001, 04-1-01-C11-2, 05-1-02-IV-1
Handout(s):	Copy of 06-OP-1C11-M-0001; **Not Initially,** but at the point specified in the JPM, a marked-up copy of a Control Rod Movement Sequence sheet for recoupling control rod 28-61(attached)
# Manipulations:	17
# Critical Steps:	16
Group:	1

Simulator Setup/Required Plant Conditions:

- Reset to IC-23
- Select the GANG DRIVE mode
- Select either CH 1 DATA or CH 2 DATA (do NOT select ALTERNATE)
- On Data Sheet I, N/A step $5.3.4b for all rods not residing at notch 48
- Complete/sign Steps 2.1 and 2.2 on Page 1 of Att. I.
- Insert malfunction **z023023_28_61** Control Rod 28-61 Uncoupled

Safety Concerns:

- None

Initial Condition(s):

- The CRD System is operating IAW SOI 04-1-01-C11-1.
- RC&IS is operating IAW SOI 04-1-01-C11-2.
- Reactor Engineering has been notified that this test is about to be performed.
- An edit of control rod positions has been obtained.
- N/A has been entered on Step $5.3.4b of Data Sheet I for all rods not at notch 48.
- Simulate the presence of all permission/page check signatures and data stamps.
- This test is **not** being performed in conjunction with a control rod pattern adjustment or sequence exchange.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform test 06-OP-1C11-M-0001.

Task: Control Rod Operability Surveillance

Notes

1. Peer Checks/Verifications.
   - If asked for a peer check, the evaluator should simply concur with whatever the candidate expects.
   - If asked for verification, initial the indicated space.
2. Unless otherwise noted, all controls and indications are on various sections of panel 1H13-P680.
3. Excerpts from surveillance's instructions and data sheets are on the next page.

Task Overview

- The purpose of this task is to examine attention to detail in preparing and conducting a routine control rod stroke test..
- Subtasks and skills include the following:
  - Properly configure rod motion controls and position data display before actually starting the test.
  - Demanding action verification
  - Record-keeping
  - Place-keeping
  - 3-part communication
- When performing the coupling check for control rod 28-61, the control rod overtravel annunciator will alarm indicating **control rod 28-61 is uncoupled**.
  - This will require the candidate to suspend the stroke test and take the required Subsequent Actions IAW Section 3.6 of ONEP 05-1-02-IV-1, Control Rod/Drive Malfunctions to fully insert the control rod to attempt to recouple it and then fully withdraw it to determine if the effort was successful. Indications will then show the control rod is coupled.

Task: Control Rod Operability Surveillance

Tasks : critical steps are underlined, italicized and denoted by (*)

Critical actions in a step are *italicized.* Other information in standards are indications the candidate will be observing.

NOTE: Sequence of steps which exercise each control rod is critical, but the order in which control rods are selected and exercised is not critical. Control rods may be tested in any order. The first two tasks must be done before exercising any control rod.

☐ Selects ALTERNATE position data on H13-P680 section 6C

Standard: At the RC&IS Operator Control Module on panel 1H13-P680-6C, depress the DATA MODE pushbutton as required to illuminate both the CH 1 DATA and CH 2 DATA halves of the status light above the pushbutton (Step 4.7)

Cue: none

Notes:

☐* *Selects INDIV DRIVE on H13-P680 section 6C*

Standard: At the RC&IS Operator Control Module on panel 1H13-P680-6C, depress the DRIVE MODE pushbutton as required to illuminate the INDIV DRIVE half of the GANG DRIVE/INDIV DRIVE status light above the pushbutton (Step 5.2)

Cue: none

Notes:

Control Rod 20-61

☐* *Selects rod 20-61*

Standard:
- *Selects control rod 20-61 by simultaneously depressing the pushbuttons marked 20 and 61 on the RC&IS Operator Control Module*
- Observes the rod's notch position appearing on the RC&IS Rod Display Panel

Cue: none

Notes:

☐ Records the As Found position of rod 20-61

Standard: Records the notch position of rod 20-61 in the space provided

Cue: none

Notes:

☐ * *Inserts control rod 20-61 one notch*

Standard:
- *Inserts control rod 20-61 one notch by depressing the INSERT control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe that the rod's notch position goes down and settles on notch 46
- Observes the rod's red FULL OUT LED next to its position indicating digits de-energizes
- Initials the IN ONE NOTCH block for rod 20-61

Cue: none

Notes:

☐ * *Withdraws control rod 20-61*

Standard:
- *Withdraws control rod 20-61 one notch to its original position by depressing the WITHDRAW control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe that the rod's notch position goes up and settles on notch 48
- Observes the rod's red FULL OUT LED next to its position indicating digits energizes
- Initials the 'OUT' ONE NOTCH block for rod 20-61

Cue: none

Notes:

☐ * *Performs a coupling check on control rod 20-61*

Standard:
- *Attempts to further withdraw control rod 20-61 by again depressing the WITHDRAW control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe rod's notch position remains at notch 48 and the absence of both the ROD UNCOUPLED status light (P680-6C) and the CONT ROD OVERTRAVEL annunciator (P680-4A2-E5).
- Observes the presence of an energized FULL OUT LED from either Channel 1 or 2
- Observes the presence of a digital indication of notch 48 from either Channel 1 or 2
- If the coupling check was successful, initials the ROD COUPLED/FULL OUT INDICATION block for rod 20-61

Cue: none

Notes:

☐ Records the final position of rod 20-61

Standard: Records the AS LEFT POSITION of rod 20-61 in the space provided

Cue: none

Notes:

☐ Initials as PERFORMER

Standard: Initials in the space provided.

Cue: none

Notes:

Control Rod 24-61

☐* *Selects rod 24-61*

Standard:
- *Selects control rod 24-61 by simultaneously depressing the pushbuttons marked 24 and 61 on the RC&IS Operator Control Module*
- Observes the rod's notch position appearing on the RC&IS Rod Display Panel

Cue: none

Notes:

☐ Records the As Found position of rod 24-61

Standard: Records the notch position of rod 24-61 in the space provided

Cue: none

Notes:

☐ * *Inserts control rod 24-61 one notch*

Standard:
- *Inserts control rod 24-61 one notch by depressing the INSERT control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe that the rod's notch position goes down and settles on notch 46
- Observes the rod's red FULL OUT LED next to its position indicating digits de-energizes
- Initials the IN ONE NOTCH block for rod 24-61

Cue: none

Notes:

☐ * *Withdraws control rod 24-61*

Standard:
- *Withdraws control rod 24-61 one notch to its original position by depressing the WITHDRAW control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe that the rod's notch position goes up and settles on notch 48
- Observes the rod's red FULL OUT LED next to its position indicating digits energizes
- Initials the 'OUT' ONE NOTCH block for rod 24-61

Cue: none

Notes:

☐ * *Performs a coupling check on control rod 24-61*

Standard:
- *Attempts to further withdraw control rod 24-61 by again depressing the WITHDRAW control pushbutton on the RC&IS Operator Control Mod*ule
- Monitors the RC&IS Rod Display Panel to observe rod's notch position remains at notch 48 and the absence of both the ROD UNCOUPLED status light (P680-6C) and the CONT ROD OVERTRAVEL annunciator (P680-4A2-E5).
- Observes the presence of an energized FULL OUT LED from either Channel 1 or 2
- Observes the presence of a digital indication of notch 48 from either Channel 1 or 2
- If the coupling check was successful, initials the ROD COUPLED/FULL OUT INDICATION block for rod 24-61

Cue: none

Notes:

☐ Records the final position of rod 24-61

Standard: Records the AS LEFT POSITION of rod 24-61 in the space provided

Cue: none

Notes:

☐ Initials as PERFORMER

Standard: Initials in the space provided.

Cue: none

Notes:

Control Rod 28-61

☐* *Selects rod 28-61*

Standard:
- *Selects control rod 28-61 by simultaneously depressing the pushbuttons marked 28 and 61 on the RC&IS Operator Control Module*
- Observes the rod's notch position appearing on the RC&IS Rod Display Panel

Cue: none

Notes:

☐ Records the As Found position of rod 28-61

Standard: Records the notch position of rod 28-61 in the space provided

Cue: none

Notes:

☐ * *Inserts control rod 28-61 one notch*

Standard:
- *Inserts control rod 28-61 one notch by depressing the INSERT control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe that the rod's notch position goes down and settles on notch 46
- Observes the rod's red FULL OUT LED next to its position indicating digits de-energizes
- Initials the IN ONE NOTCH block for rod 28-61

Cue: none

Notes:

☐ * *Withdraws control rod 28-61*

Standard:
- *Withdraws control rod 28-61 one notch to its original position by depressing the WITHDRAW control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe that the rod's notch position goes up and settles on notch 48
- Observes the rod's red FULL OUT LED next to its position indicating digits energizes
- Initials the 'OUT' ONE NOTCH block for rod 28-61

Cue: none

Notes:

Note: Control Rod Overtravel Annunciator (P680-4A2-E5) will be received during the next step.

☐ * *Performs a coupling check on control rod 28-61*

Standard:
- *Attempts to further withdraw control rod 28-61 by again depressing the WITHDRAW control pushbutton on the RC&IS Operator Control Module.*
- Monitors the RC&IS Rod Display Panel to observe rod's notch position remains at notch 48 and the absence of both the ROD UNCOUPLED status light (P680-6C) and the CONT ROD OVERTRAVEL annunciator (P680-4A2-E5).
- Observes the red FULL OUT LED for control rod 28-61 extinguishes during the withdraw sequence.
- Observes **receipt** of the ROD UNCOUPLED status light (P680-6C) and the CONT ROD OVERRTRAVEL annunciator (P680-4A2-E5)**.**
- **Informs the CRS of indication control rod 24-61 is UNCOUPLED**.

Cue: As CRS, direct the candidate to perform Section 3.6 of the Control Rod/Drive Malfunctions ONEP.

Notes:

☐ Obtains Reactor Engineering permission to attempt recoupling Control Rod and withdrawing drive to full-out position.

Standard: Obtains Reactor Engineering permission to attempt recoupling Control Rod by first fully inserting control rod 28-61 and then withdrawing control rod 28-61 to full-out position.

Cue: As the Reactor Engineer, state that you have performed predictions using 3D Monicore and that you concur with performing a recoupling attempt by first fully inserting control rod 28-61 and then fully withdrawing it.
State continuous insert should be used to fully insert the control rod and continuous withdraw should be used to fully withdraw the control rod.

Give the candidate the copy of an authorized Control Rod Movement Sequence sheet attached to this JPM.

Notes:

☐ * *Attempts to recouple Control Rod 28-61 by inserting the drive.*

Standard: Advises the CRS/SRO to enter Tech Spec 3.1.3. *Fully inserts control rod 28-61 in individual, continuous drive mode per Reactor Engineering's instructions.*

Cue: As the CRS, tell the student LCO 3.1.3 has been started for control rod 28-61 and to consider that the reactivity brief has been performed.

As the Reactor Engineer, tell the student you are ready to attempt recoupling of the control rod.

Notes:

SIMULATOR OPERATOR REMOVE MALFUNCTION FOR CONTROL ROD 28-61.

☐ * *Withdraws control rod 28-61*

Standard:
- *Withdraws control rod 28-61 to position 48 per the Control Rod Movement Sequence sheet by depressing the WITHDRAW and CONT WITHDRAW control pushbuttons on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe that the rod's notch position goes up and settles on notch 48
- Observes the rod's red FULL OUT LED next to its position indicating digits energizes

Cue: none.

Notes:

☐ * *Performs a coupling check on control rod 28-61*

Standard:
- *Attempts to further withdraw control rod 28-61 by again depressing the WITHDRAW control pushbutton on the RC&IS Operator Control Module*
- Monitors the RC&IS Rod Display Panel to observe rod's notch position remains at notch 48 and the absence of both the ROD UNCOUPLED status light (P680-6C) and the CONT ROD OVERTRAVEL annunciator (P680-4A2-E5).
- Observes the presence of an energized FULL OUT LED from either Channel 1 or 2
- Observes the presence of a digital indication of notch 48 from either Channel 1 or 2
- If the coupling check was successful, initials the ROD COUPLED/FULL OUT INDICATION block for rod 28-61

Cue: none

Notes:

☐ Records the final position of rod 28-61

Standard: Records the AS LEFT POSITION of rod 28-61 in the space provided

Cue: none

Notes:

☐ Initials as PERFORMER

Standard: Initials in the space provided.

Cue: none

Notes:

EVALUATOR END THE JPM.

Task Standard(s):

- Control rods were exercised IAW surveillance 06-OP-1C11-M-0001 up to the point where control rod 28-61 indicated it was uncoupled.
- Control rod 28-61 has been recoupled IAW section 3.6 of 05-1-02-IV-1, Control Rod/Drive Malfunctions

Name: _____Time Start: _____Time Stop: _____

Task: **Control Rod Operability Surveillance**

Follow-Up Questions & Answers:

Comments:

AFTER directed by the JPM cue for the recoupling attempt, give this page to the student

Control Rod Movement Sequence

Doc. No. 1-16-00000-A2-02

Step Appr (1)	RCIS Gang Rxeng Group	Control Rod (XX-YY)	MODE (2)	Rods Select (3) Verf	Movements From CRD	Movements To	(4) Rods Full In LED Out $	Rods Coupled/ Full out Indicated $	Movement Performance (5) Perf	Movement Performance (5) Verf
1000a	4-1	28-61	I		48	00				
BM	4									
1000b	4-1	28-61	I		00	48				
BM	4									

(1) Reactor Engineer Approved Step Change
(2) RC&IS mode selection:
G - GANG Mode Allowed, Continuous W/D as allowed by RC&IS
I - INDIDUAL Mode Only, Continuous W/D as allowed by RC&IS
N - INDIDUAL Mode Only, NOTCH W/D only
S - INDIDUAL SCRAM Mode
(3) Proper rods/Mode selected prior to rod movement (Verifier Required)
(4) Applicable in Modes 3, 4, and 5 Only
(5) Selected rods to required position (Performer/Verifier Required)

Give this page to the student initially

Control Rod Operability Surveillance

Initial Condition(s):

- The CRD System is operating IAW SOI 04-1-01-C11-1.
- RC&IS is operating IAW SOI 04-1-01-C11-2.
- Reactor Engineering has been notified that this test is about to be performed.
- An edit of control rod positions has been obtained.
- N/A has been entered on Step $5.3.4b of Data Sheet I for all rods not at notch 48.
- Simulate the presence of all permission/page check signatures and data stamps.
- This test is **not** being performed in conjunction with a control rod pattern adjustment or sequence exchange.

Initiating Cue(s):

- The SRO with the Command Function has directed you to perform test 06-OP-1C11-M-0001.

ENTERGY NUCLEAR

LESSON PLAN

Number: GJPM-OPS-M7101
Revision: 00
Page: 1 of 12
Rtype: _____
QA Record
Number of pages _____
Date _____ Initials _____

TRAINING PROGRAM:

OPERATOR TRAINING

TITLE:

Isolate Division 2 Valves following Failure to Automatically Isolate

☒ New Material ☐ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: new JPM
THIS DOCUMENT REPLACES: NA

REVIEW / APPROVAL (Print Name): ☐ TEAR Approval (TEAR #)

Prepared By:	***Kyle Grillis***	***12/14/09***
	**Preparer	Date
Ops Review++:	***S. Bohling***	***3/15/2010***
	Technical Reviewer (e.g., SME, line management)	Date
Validated By:	***M. Rasch***	***3/19/2010***
	Training Representative	Date
Approved By:		
	+Discipline Training Supervisor	Date

Approval Date:* _____

* Indexing Information
** The requirements of the Training Material Checklist have been met.
+ Indicates that the LP has been reviewed by the Training Supervisor for inclusion of Management Expectations and items referenced on TQJA-201- DD06, Training Material Checklist.
++ Indicates that Operations has reviewed and approved this material for exam use.

FLEET/REGIONAL PROGRAM CONCURRENCE:

☐ Fleet ☐ ENS ☐ ENN ☒ Not Applicable

DATE TRANSMITTED TO RM	INITIAL RECEIPT BY RM (DATE/INITIAL)	RETURNED FOR CORRECTIONS (DATE/INITIAL)	RETURN RECEIPT (DATE/INITIAL)	FINAL ACCEPTANCE BY RM (DATE/INITIALS)

Task: Isolate Division 2 Valves following Failure to Automatically Isolate

Setting:	Simulator
Type:	RO
Task:	CRO-M71-004
K&A:	223002: A2.03: 3.0/3.3; A4.01: 3.6/3.5; A4.06: 3.6/3.7
Safety Function:	5 – Containment Integrity
Time Required:	15 minutes
Time Critical:	No
Faulted:	No
Performance:	Actual
Reference(s):	05-1-02-III-5 step 3.3 and Attachment III 02-S-01-27 Operations Philosophy
Handout(s):	None
# Manipulations:	32
# Critical Steps:	32
Group #:	1

Simulator Setup/Required Plant Conditions:

- Reset to any power IC
- Insert Malfunctions for failure of Division 1 and 2 to isolate
    - **ct174a** Drywell Pressure signal to C71-K4A & C
    - **ct174b** Drywell Pressure signal to C71-K4B & D
    - **ltb21n081a_c as-is** RPV Level 2 Signal
    - **ltb21n081b_c as-is** RPV Level 2 Signal
    - **ltb21n081c_c as-is** RPV Level 2 Signal
    - **ltb21n081d_c as-is** RPV Level 2 Signal
- Input a LOCA **rr063a@ 4** to cause RPV level to drop less than -41.6 inches.

Safety Concerns:

- None

Initial Condition(s):

- A plant transient occurred resulting in an actual Reactor Water Level Low, Level 2 condition.
- Automatic Isolations for Level 2 failed to occur.

Initiating Cue(s):

- The SRO with the Command Function has directed you to isolate Division 2 valves that should have closed due to the Reactor Water Level Low, Level 2 condition in accordance with Automatic Isolations ONEP 05-1-02-III-5 step 3.3 and Attachment III.

- Do **not** isolate Instrument Air, Plant Service Water, or Drywell Chilled Water system valves, as allowed by the ONEP, since they would be immediately unisolated in accordance with Attachment II.

Task: Isolate Division 2 Valves following Failure to Automatically Isolate

Notes

1. Unless otherwise noted, all controls and indications are located on section 16 of panel 1H13-P601.

Task Overview

- This task is manually close Division 2 Containment/Drywell/Auxiliary Building isolation valves that should automatically on a Reactor Water Level Low, Level 2 signal.

Tasks: critical steps are underlined, italicized and denoted by (*)

NOTE: Valve positions may be verified using handswitch indication or the Isolation Status Board (ISB) located above P870, if applicable.

SEQUENCE IS NOT CRITICAL.

☐* *Initiate SGTS B and verify associated ventilation isolation dampers on P870-8C close*.

Standard: Simultaneously depresses and releases SGTS DIV 2 MAN INIT LOGIC B AND LOGIC D pushbuttons (P870-8B) and verifies the following 6 dampers close (P870-8C):

T42F012	FH AREA O/A INTK AUX BLDG OTBD ISOL
T42F020	FP SWEEP O/A INTK AUX BLDG OTBD ISOL
T42F003	FH AREA VENT EXH AUX BLDG OTBD ISOL
M41F007	CTMT CLG O/A INTK AUX BLDG OTBD ISOL
M41F037	CTMT CLG VENT EXH AUX BLDG OTBD ISOL
T41F006	AUX BLDG O/A INTK AUX BLDG OTBD ISOL

Cue: none

Notes:

☐ Verify normally closed E61 isolation valves on P870-10C are closed.

Standard: Verifies the following valves are closed (P870-3C):

E61F010 CTMT PURGE SPLY INL CTMT INBD ISOL
E61F056 CTMT EXH FLTR TR INL CTMT INBD ISOL

Cue: none

Notes: These valves are normally fully closed during plant operation.

☐* *Closes Div 2 G41 isolation valve on P601-18C.*

Standard: Closes G41F044 using handswitch CTMT FP DR CTMT INBD ISOL (P601-18C) and verifies the valve fully closes:

Cue: none

Notes:

☐* *Closes Div 2 B33 isolation valve on P680-3C.*

Standard: Closes B33F019 using handswitch RW PROC SMPL DRWL INBD ISOL (P680-3C) and verifies the valve fully closes.

Cue: none

Notes:

☐ Verify normally closed B33 isolation valves on P680-3C are closed.

Standard: Verifies the following valves are closed (P680-3C):

B33F126	JP POST-ACC SMPL CTMT INBD ISOL
B33F128	RW POST-ACC SMPL CTMT INBD ISOL

Cue: none

Notes: These valves are normally fully closed during plant operation.

☐* *Closes Div 2 G33 isolation valve on P680-11C.*

Standard: Closes the following valves using handswitches on P680-11C and verifies the valves fully close:

G33F053	RWCU PMP DISCH CTMT INBD ISOL
G33F040	RWCU RTN CTMT INBD ISOL

Cue: none

Notes:

☐ Verify normally closed G33 isolation valves on P680-11C are closed.

Standard: Verifies the following valves are closed (P680-11C):

G33F001	RWCU PMP SUCT DRWL INBD ISOL
G33F028	RWCU BLWDN CTMT INBD ISOL

Cue: none

Notes: These valves are normally fully closed during plant operation.

☐ Close required instrument line manual isolation valves on P872.

Standard: Request another operator to close the following valves on backpanel P872:

D23F591	DRYWELL INST LINE ISOL VALVE
D21F593	DRYWELL INST LINE ISOL VALVE
M71F594	CTMT INSTRUMENT LINE ISOLATION

Cue: Valves D23F591, D23F593, and M71F594 are fully closed.

Notes: H13-P872 is not modeled in the simulator. The ONEP attachment being used by the candidate does not contain the noun name for these valves.

NOTE: For the following two steps, a mimic of P870-9C is provided as an attachment to this JPM as an evaluator aid.

☐* *Closes required remaining Div 2 isolation valves on P870-9C.*

Standard: Closes the following valves using handswitches on P870-9C and verifies the valves fully close:

G33F252	RWCU RTN TO RWCU PMPS
G33F251	RWCU SPLY TO RWCU HXS
P11F131	REFUEL WTR XFER PMP SUCT FM SUPP POOL
P11F063	CST WTR SPLY HDR TO AUX BLDG
P11F065	HPCS/RCIC TEST RTN TO CST
P11F067	RWST XFER TO CST
P11F061	REFUEL WTR XFER PMP SUCT FM RWST
B21F114	MSL DRS TO MN CNDSR
P66F029A	DOM WTR SPLY TO AUX BLDG
P71F149	PCW RTN FM SMPL WTR CLRS/CTMT CLRS
P21F024	MU WTR SPLY HDR TO AUX BLDG
P45F061	CTMT FLOOR DR SMP DISCH
P45F004	DRWL FLOOR DR SMP DISCH
P45F159	AUX BLDG EQUIP DR SMP XFER TO RADWST
P45F161	AUX BLDG FLOOR DR SMP XFER TO RADWST
P45F163	AUX BLDG CHEM WST SMP XFER TO RADWST
P21F018	MU WTR SPLY HDR TO CTMT
P45F067	CTMT EQUIP DR SMP DISCH
P45F010	DRWL EQUIP DR SMP DISCH
P52F221B	SVC AIR SPLY HDR #1 TO AUX BLDG
P52F160B	SVC AIR SPLY HDR #2 TO AUX BLDG
P45F098	CTMT CHEMWST SMP DISCH

Does NOT close the following valves on P870-9C (as instructed by CRS in the initiating cue):

P72F123	DWCW RTN HDR FM CTMT
P72F126	DWCW RTN HDR FM DRWL
P72F124	DWCW SPLY HDR TO DRWL
P53F007	INSTR AIR SPLY HDR TO DRWL

Cue: none

Notes:

☐ Verify normally closed isolation valves on P870-9C are closed.

Standard: Verifies the following valves are closed (P870-9C):

P60F004	SPCU SPLY TO CNDS PC FLTRS
P60F007	SPCU RTN FM CNDS PC FLTRS
M41F012	DRWL/CTMT SPLY AIR FM PURGE FANS
M41F034	CTMT CLG EXH TO CTMT VENT
P60F010	SPCU RTN FM CNDS PC FLTRS
M41F013	DRWL PURGE SPLY FM CTMT CLG
M41F017	DRWL PURGE EXH TO CTMT CLG
G36F106	RWCU BKW RCV TK XFER TO RADWST
G36F109	RWCU BKW RCU TK XFER TO RADWST
G46F253	FP BKW RCU TK XFER TO RADWST
E12F203	RHR SYS FLUSH TO LIQ RADWST
G33F234	RWCU BLWDN TO MN CNDSR
P45F274	AUX BLDG XFER TANKS CTMT ISOL VLV
P45F097	DRWL CHEMWST SMP DISCH
P52F195	SVC AIR SPLY HDR TO DRWL

Cue: none

Notes: These valves are normally fully closed during plant operation.

Task Standard(s):

Division 2 valves that should isolate on a Reactor Water Level Low, Level 2 signal have been manually closed IAW ONEP 05-1-02-III-5 step 3.3 and Attachment III.

Name: _____Time Start: _____ Time Stop: _____

Task: **Isolate Division 2 Valves following Failure to Automatically Isolate**

Follow-Up Questions & Answers:

Comments:

Do NOT give this page to the student

EVALUATOR AID

P870 PANEL 9C HANDSWITCH ARRANGEMENT

RED VALVES ARE THOSE THAT MUST BE CLOSED BY THE STUDENT

BLUE VALVES ARE THOSE THAT ARE OPEN AND SHOULD NOT BE CLOSED BY THE STUDENT

Green valves are normally closed

			☐ P60F004	☐ P60F007	☐ M41F012	☐ M41F034	☐ G33F252	☐ G33F251
					☐ P11F131	☐ P60F010	☐ M41F013	☐ M41F017
☐ P11F063	☐ P11F065	☐ P11F067	☐ P11F061	☐ B21F114				
				☐ P66F029A	☐ P71F149	☐ P72F123 *	☐ P72F126 *	☐ P72F124 *
				☐ P21F024	☐ G36F106	☐ P45F061	☐ P45F004	☐ P53F007 *
☐ G36F109	☐ P45F159	☐ P45F161	☐ P45F163	☐ G46F253	☐ P21F018	☐ P45F067	☐ P45F010	
☐ E12F203	☐ G33F234	☐ P52F221B	☐ P52F160B		☐ P45F274	☐ P45F098	☐ P45F097	☐ P52F195

* Valves not required to be isolated when there is no evidence of respective system piping break and valve would be immediately unisolated per Attachment II (as stated in the initiating cue).

Give this page to the student

Isolate Division 2 Valves following Failure to Automatically Isolate

Initial Condition(s):

- A plant transient occurred resulting in an actual Reactor Water Level Low, Level 2 condition.
- Automatic Isolations for Level 2 failed to occur.

Initiating Cue(s):

- The SRO with the Command Function has directed you to isolate Division 2 valves that should have closed due to the Reactor Water Level Low, Level 2 condition in accordance with Automatic Isolations ONEP 05-1-02-III-5 step 3.3 and Attachment III.
- Do **not** isolate Instrument Air, Plant Service Water, or Drywell Chilled Water system valves, as allowed by the ONEP, since they would be immediately unisolated in accordance with Attachment II.

TRAINING PROGRAM:

OPERATOR TRAINING

***LESSON PLAN TITLE:**

L1100 Task 9 – Battery Charger Startup

***COURSE NUMBER:**

GJPM-OPS-L11-9 **Revision 0**

☐ New Material ☒ Minor Revision ☐ Major Revision ☐ Cancellation

REASON FOR REVISION: Remove Generic Instructions Sheet. This was removed from 14-S-2-18.

THIS DOCUMENT REPLACES: GJPM-OPS-L11-9 Rev 0

REVIEW / APPROVAL (Print Name): ☐ Electronic Approval (TEAR #)

Prepared By:	Jonathan W. Sparks Preparer	11/30/09 Date
Ops Review By:	R. T. Errington Technical Reviewer (e.g., SME, line management)	7/9/07 Date
Validated By:	John Charles Bell Training Representative	7/17/07 Date
Approved By:	Steve Reeves ++Discipline Training Supervisor	7/24/07 Date
Approval Date:	11/30/09 *Date	

++Indicates that the LP has been reviewed by the Training Supervisor for inclusion of Management Expectations and items referenced on TQF-201-DD06, "Training Material Checklist"

FLEET / REGIONAL PROGRAM CONCURRENCE: ☐ Fleet ☐ ENN ☐ ENS ☒ Not Applicable

ANO		PNPS	
CNS		RBS	
ECH		VY	
GGNS		WF3	
IPEC		WPO	
JAF			

* Indexing Information

Rtype: ____

L1100 Task 9: Battery Charger Startup

Setting:	Plant (Outside CAA)
Type:	NLO
Task:	NOB-ADMIN-24
K&A:	263000: A3.01 - 3.2/3.3
Safety Function:	Electrical
Time Required:	10 minutes
Time Critical:	No
Faulted:	No
Performance:	Simulated
Reference(s):	04-1-01-L11-1
Handout(s):	04-1-01-L11-1
# Manipulations:	6
# Critical Steps:	6
Group :	1

Simulator Setup/Required Plant Conditions:

- Area is accessible

Safety Concerns:

- Operating a breaker with its cover on requires that the operator wear 100% cotton clothing. No other PPE is required.

Initial Condition(s):

- Bus 11DA is energized
- Battery charger 1A5 is in operation with its Load Sharing feature off
- For battery charger 1A4:
  - AC switch is off
  - DC switch is off
  - Equalizing timer set to 0
  - Normal/Equalize switch in NORMAL
  - Load Sharing switch is off

Initiating Cue(s):

- This Task *is not time critical*.
- You have been directed to startup charger 1A4 IAW the SOI.

L1100 Task 9: Battery Charger Startup

Notes:

1. All equipment associated with this task is located in the Div. 1 ESF switchgear room, Area 25A, El. 111'.
2. No circuit breaker should be actually operated during the performance of this JPM.
3. The following cues assume that both chargers 1A4 and 1A5 are actually in service.

Task Overview: Battery charger 1A4 is started up IAW section 4.6 and Attachments IIIA thru L of SOI 04-1-01-L11-1.

Tasks : Critical tasks are underlined, italicized, and denoted by an (*)

☐ Discuss electrical safety for operating breakers.
Standard: Ask candidate what electrical safety protective clothing applies to operating this breaker. Candidate should be aware that 100% cotton clothes should be worn when operating breakers for voltages < 600 volts and with the breaker's cover on/door closed.
Cue: **None**
Notes:

Note : The sequence for the following steps *is* critical.

☐* *Close the charger's DC output breaker.*
Standard: Closes breaker 72-11A02 by pushing upward on its operating handle until it snaps into the CLOSED position.
Cue: **Breaker is in the position indicated.**
Notes:

☐* *Close the charger's AC feeder breaker.*
Standard: Locates breaker 52-15602 on LCC 15BA6 and closes it by depressing its CLOSE pushbutton and verifying the breaker closes.
Cue: **Breaker is in the position indicated.**
Notes:

☐* *Close the DC switch to charger 1A4.*
Standard: Operates the paddle on charger 1A4's DC switch up until it snaps into the ON position...
Cue: DC switch is as indicated.
Notes:

☐ Check charger voltage.
Standard: Verifies the voltmeter on charger 1A 4 indicates approximately 125 VAC.
Cue: Voltage is as indicated.
Notes:

☐* *Close the AC switch to charger 1A4.*
Standard: Operates paddle on charger 1A4's AC switch up until it snaps into the ON position.
Cue: AC switch is as indicated.
Notes:

Note : The sequence for the following steps *is* not critical.

☐ Check charger voltage.
Standard: Verifies the voltmeter on charger 1A 4 indicates approximately 132 VAC.
Cue: Voltage is as indicated.
Notes:

☐ Check AC POWER ON.
Standard: Checks that the AC POWER ON status light energizes.
Cue: Light is as indicated.
Notes:

☐ Check charger current.
Standard: Checks that the charger's output amps is greater than 0
Cue: Amps as indicated.
Notes:

☐ Check charger 1A4 and 1A5 voltage.
Standard: Checks that both chargers' DC voltages are approximately the same.
Cue: Voltages as indicated.
Notes:

☐ Check charger 1A4 and 1A5 current.
Standard: Checks that both chargers' DC output amps are approximately the same.
Cue: Amps as indicated.
Notes:

☐* *Turn on the Load Sharing switch for 1A4*
Standard: Places the Load Sharing toggle switch on charger 1A4 in the ON position.
Cue: Switch is in the position indicated.
Notes:

☐* *Turn on the Load Sharing switch for 1A5.*
Standard: Places the Load Sharing toggle switch on charger 1A5 in the ON position.
Cue: Switch is in the position indicated.
Notes:

☐ Check charger 1A4 and 1A5 for stable current and voltage
Standard: Checks that both chargers' voltages and currents for stability.
Cue: Volts and amps as indicated.
Notes:

Task Standard(s):

Battery charger 1A4 is started up IAW section 4.6 of SOI 04-1-01-L11-1.

Name: _____Time Start: _____ Time Stop: _____

L1100 Task 9: Battery Charger Startup

Follow-Up Questions & Answers:

Comments:

Battery Charger Startup

Give this page to the student

Initial Condition(s):

- Bus 11DA is energized
- Battery charger 1A5 is in operation with its Load Sharing feature off.
- For battery charger 1A4:
    - AC switch is off
    - DC switch is off
    - Equalizing timer set to 0
    - Normal/Equalize switch in NORMAL
    - Load Sharing switch is off

Initiating Cue(s):

- You have been directed to startup charger 1A4 IAW the SOI.