TASK TITLE: **Perform a Local Reactor Trip**

JPM No.:	**IP-104**	REV:	**NRC 2014**
TPO No.:	4.D.FR-01	K&A No.:	029000G2.1.20
TASK No.:	R-FR-018, Respond to an ATWS	K&A IMP:	4.6/4.6

EXAMINEE: _____ RO SRO (Circle One)

EVALUATOR: _____ DATE: _____

The Examinee: PASSED _____ this JPM. TIME STARTED: _____

FAILED _____ TIME FINISHED: _____

JPM TIME: _____ MINUTES

CRITICAL ELEMENTS: **(*) 3, 4** APPROX COMPLETION TIME: **6 MINUTES**

CRITICAL TIME: **9 minutes to complete the JPM including transit time.**

EVALUATION METHOD:
___ PERFORM
__X__ SIMULATE

LOCATION:
__X__ IN PLANT
___ SIMULATOR

GENERAL REFERENCES:

1. 1(2)BwFR-S.1, Rev. 201 (202) , Response to Nuclear Power Generation/ATWS

MATERIALS:

1. 1(2)BwFR-S.1, Copy posted in Unit 1(2) MEER)

TASK STANDARDS:

1. Correctly perform the actions of 1(2)BwFR-S.1, step 8 RNO.

TASK CONDITIONS:

1. You are an EO in the Shift Office.
2. Unit 1(2) has experienced a Turbine Trip from 100% power.
3. The Unit 1(2) reactor DID NOT TRIP.
4. Attempts to trip Unit 1(2) reactor from the Control Room have been unsuccessful.
5. **This is a time critical JPM.**

INITIATING CUES:

1. You have been directed by the US to trip Unit 1(2) reactor locally per 1(2)BwFR-S.1, step 6.a, RNO.

RECORD START TIME:_____

Note: Hand the student a copy of 1(2)BwFR-S.1, step 6 after it has been located. Critical time starts after the student has reviewed initiating cues and has no questions.

	PERFORMANCE STEP	STANDARD	Circle applicable
1.	Refer to 1(2)BwFR-S.1 step 6.a and proceed to U-1(2) reactor trip switchgear panel.	Locate and open 1(2)BwFR-S.1, step 6 and proceed to Unit 1(2) Reactor Trip Switchgear Panel (1(2) RD05E) at U-1 (2) MEER elev 451'.	SAT UNSAT N/A **Comments:**
2.	Attempt to open reactor trip breakers locally. **CUE: Manual trip buttons for Rx Trip Breakers are depressed. Breakers did not open.** **Manual trip buttons for Rx Trip Bypass Breakers are depressed (breakers are racked out.)**	Attempt to open reactor trip breakers locally as follows: • DEPRESS switchgear manual TRIP buttons for Reactor Trip Breakers A and B. ○ DEPRESS switchgear manual TRIP buttons for Reactor Trip Bypass Breakers A and B.	SAT UNSAT N/A **Comments:**
*****Alternate Path Begins Here******			

Note: During the performance of JPM step 3 and 4, opening of one breaker (motor or generator) per MG set will meet the requirements of the Critical Step.

***3.**	**Locally shutdown the 1(2)A MG set.** **CUE: As switches are simulated being placed in pull out, cue that they are in pull out.**	De-energize 1(2)A MG set by opening at least one breaker on the 1(2)A MG set as follows: • PLACE the 1(2)A Rod Drive MG Set Generator Output brkr control switch and/or the 1(2)A Rod Drive MG Set Motor brkr control switch in PULL OUT.	SAT UNSAT N/A **Comments:**
***4.**	**Locally shutdown the 1(2)B MG set.** **CUE: As switches are simulated being placed in pull out, cue that they are in pull out.** **When at least one breaker per MG set is in pullout, critical time stops.** **Upon successful completion of this step, provide cue of announcement over page "Unit 1(2) Reactor Trip."** **Record time second RD MG set C/S is placed in Pull Out** _____	De-energize 1(2)B MG set by opening at least one breaker on the 1(2)B MG set as follows: • PLACE the 1(2)B Rod Drive MG Set Generator Output brkr control switch and/or the 1(2)B Rod Drive MG Set Motor brkr control switch in PULL OUT. • Critical Time Met: – Subtract second Rod Drive MG set C/S pull out time from JPM start time. – Record actual time here: _____. – Verify time is < 9 minutes.	SAT UNSAT N/A **Comments:**

CUE: THIS COMPLETES THIS JPM.

RECORD STOP TIME:_____

COMMENTS:

Perform Local Reset of Containment Isolation Phase A

TASK TITLE: **Perform Local Reset of Containment Isolation Phase A**

JPM No.:	**IP-206**	REV:	**NRC 2014**
TPO No.:	4.D.EF-03	K&A No.:	013000G2.1.30
TASK No.:	R-EF-003, Reset the Engineered Safety Features	K&A IMP:	4.4/4.0

EXAMINEE: _____ RO SRO (Circle One)

EVALUATOR: _____ DATE:_____

The Examinee: PASSED _____ this JPM. TIME STARTED: _____

FAILED _____ TIME FINISHED:_____

JPM TIME:_____ MINUTES

CRITICAL ELEMENTS: **(*) 3, 4** APPROX COMPLETION TIME: **18 MINUTES**

CRITICAL TIME: **N/A**

EVALUATION METHOD:
___ PERFORM
_**X**_ SIMULATE

LOCATION:
_**X**_ IN PLANT
___ SIMULATOR

GENERAL REFERENCES:

1. 2BwOA PRI-5, Rev. 105, Attachment E, Control Room Inaccessibility Unit 2, ESF Manual Block or Reset

MATERIALS:

1. Cabinet Key for 2PA09J
2. Laser pointer
3. 2BwOA PRI-5, Attachment E

TASK STANDARDS:

1. Correctly reset Containment Isolation Phase A signal on Train A per 2BwOA PRI-5, Attachment E.

TASK CONDITIONS:

1. You are an extra NSO.
2. Unit 2 at full power and is responding to a spurious Containment Isolation Phase A signal.
3. 2BwOA PRI-13 is in progress at step 6.a.
4. Train A reset pushbutton for Containment Isolation Phase A does not work.

INITIATING CUES:

1. The Unit Supervisor has directed you to reset Train A of Containment Isolation Phase A per 2BwOA PRI-5, Attachment E. No habitability concerns exist for entry into the room for the Phase A reset.

Perform Local Reset of Containment Isolation Phase A

RECORD START TIME:_____

	PERFORMANCE STEP	STANDARD	Circle applicable
1.	Refer to 2BwOA PRI-5, Attachment E. **CUE: Provide copy of procedure to student.**	Locate and open 2BwOA PRI-5, Attachment E.	SAT UNSAT N/A **Comments:**

Note: If in the following JPM step, the student goes to the Remote Shutdown Panel to locate the keys and/ or jumpers, after locating the necessary items, DO NOT allow them to be removed from the Remote Shutdown Panel. Prompt to get keys elsewhere because the cabinet (2PA09J) will need to be opened. Jumpers will not actually be placed, so after locating the jumpers, cue the student that there is a pair of jumpers at the cabinet, and the actual placing of jumpers will be simulated by using a laser pointer. Keys may also be obtained from the key cabinet in the shift office or from the MCR rack.

2.	Obtain keys for 2PA09J and 2 jumpers.	From either the Remote Shutdown Panel or MCR, obtain the following: • Key for 2PA09J. • 2 jumpers from cabinet at RSP or MCR. • Safety equipment NOT required.	SAT UNSAT N/A **Comments:**

Note: Inform the student that all required actions in 2PA09J are to be simulated and to make every effort to NOT TOUCH any of the components in 2PA09J.

***3.**	**Reset Train A of Containment Isolation Phase A at 2PA09J.** CUE: Jumper installed across points 7 and 8 of TB504.	• In the rear of LOGIC cabinet 2PA09J, LOCATE and PLACE one jumper across TB504, points 7 and 8.	SAT UNSAT N/A **Comments:**
***4.**	**Unlatch Train A Containment Isolation Phase A Slave Relays at 2PA09J.** **CUE: Jumper installed across points 3 and 4 of TB644.**	• In the rear of OUTPUT cabinet 2PA09J, LOCATE and PLACE one jumper across TB644, points 3 and 4.	SAT UNSAT N/A **Comments:**

5.	Check K605 relay for Train A of Containment Isolation Phase A DEENERGIZED **CUE: K605 post is in its current state. K606 post is in its current state. K607 post is in its current state. K612 post is in its current state. K613 post is in its current state. K614 post is in its current state.**	In the front of cabinet 2PA09J, CHECK the following relays DEENERGIZED (not sucked in) • K605 • K606 • K607 • K612 • K613 • K614	SAT UNSAT N/A **Comments:**

Note: The student may choose to notify the control room of his/her progress. If he/she has performed the reset correctly, acknowledge the report with confirmation that the Phase A signal is reset.

6.	Remove jumpers. **CUE: As jumpers are removed, cue that the jumpers are removed**	Remove jumpers as follows: • In the rear of LOGIC cabinet 2PA09J, LOCATE and REMOVE one jumper across TB504, points 7 and 8. • In the rear of OUTPUT cabinet 2PA09J, LOCATE and REMOVE one jumper across TB644, points 3 and 4.	SAT UNSAT N/A **Comments:**

CUE: THIS COMPLETES THIS JPM.

RECORD STOP TIME: _____

COMMENTS:

TASK TITLE: **Local Start of 1(2)B AF Pump**

JPM No.: **IP-409S**
TPO No.: 4.C.AF-02
TASK No.: R-AF-012, Operate the diesel driven Auxiliary Feedwater Pumps

REV: **NRC 2014**
K&A No.: 061000A3.01
K&A IMP: 4.2/4.2

EXAMINEE: _____ RO SRO (Circle One)

EVALUATOR: _____ DATE: _____

The Examinee: PASSED _____ this JPM.
FAILED _____

TIME STARTED: _____
TIME FINISHED: _____
JPM TIME: _____ MINUTES

CRITICAL ELEMENTS: **(*) 4, 8**

APPROX COMPLETION TIME: **28 MINUTES**

CRITICAL TIME: **NA**

EVALUATION METHOD:
___ PERFORM
__X__ SIMULATE

LOCATION:
__X__ IN PLANT
___ SIMULATOR

GENERAL REFERENCES:

1. BwOP AF-7, Rev. 40, Auxiliary Feedwater Pump B (Diesel) Startup on Recirc

MATERIALS:

1. BwOP AF-7

TASK STANDARDS:

1. Perform a local emergency start of 1(2)B AF pump.

TASK CONDITIONS:

1. You are an extra NSO.
2. Unit 1(2) has just tripped in conjunction with an electrical fire in Unit 1(2) Remote Shutdown Panel.
3. 1(2)A AF pump is unavailable for operation due to maintenance.
4. 1(2)B AF pump did not auto start, nor will it manually start with the MCR switch.
5. Another EO is available to monitor the 1(2)B AF pump governor linkage during the startup.

INITIATING CUES:

1. The US has directed you to perform a local emergency start of the 1(2)B AF pump at 1(2)AF01J per BwOP AF-7. All Prerequisites, Precautions, and Limitations and Actions have been met, and steps 1-8 are complete.

RECORD START TIME:_____

	PERFORMANCE STEP	STANDARD	Circle applicable
1.	Refer to BwOP AF-7. **CUE: Give a marked up copy of BwOP AF-7 to the student.**	Locate and open BwOP AF-7.	SAT UNSAT N/A **Comments:**
2.	Perform actions at 1(2)AF01J. **CUE: Reset pushbutton has been depressed.** **Select Switch is in Auto.** **Engine Ready light is lit. Governor switch is off.**	Perform the following at 1(2)AF01J: • PUSH the Reset Pushbutton to clear circuit. • VERIFY the Select Switch is in AUTO position. • VERIFY "Engine Ready" light is LIT. • VERIFY Diesel Governor Switch is in OFF position.	SAT UNSAT N/A **Comments:**
3.	Verify the Air Box Trip is reset. **CUE: Air Box Trip annunciator is not lit.** **Another EO reports Air Box Trip lever is in normal position, limit switch is made up.**	VERIFY the Air Box Trip is Reset as follows: • CHECK "AIR BOX TRIP" annunciator NOT LIT. - OR - • Air Box Trip Lever (on back side of engine) in Normal position.	SAT UNSAT N/A **Comments:**
***4.**	**Start Lube Oil systems.** **CUE: Gear box lube oil pump control switch is in start.** **Aux lube oil pump control switch is pointing to the right. Lube Oil within sight glass (pump sump).** **After the student locates inlet and outlet pressure gages, indicate that the inlet is 28 psig, and the outlet is 26 psig.**	START Lube Oil Auxiliary Systems as follows at the local control panel: • Aux FW Pp 1(2)B Gear Box Lube Oil Pp, 1(2)AF01PB-C. • Aux FW Pp 1(2)B Lube Oil Pp, 1(2)AF01PB-A o VERIFY Lube Oil inventory in pump sump is within sightglass. o VERIFY Lube Oil Filter Differential Pressure is < 4 psid.	SAT UNSAT N/A **Comments:**

	PERFORMANCE STEP	STANDARD	Circle applicable
5.	RECORD the following oil pressure: **CUE: Aux FW Pump 1(2)B LO After Filter Pressure Indicator (1(2)PI-AF106) = 12 psig.** **CUE: Aux FW Pump 1(2)B Gear Box LO Pressure Indicator (1(2)PI-AF124) = 20 psig.**	RECORD the following oil pressure: • Aux FW Pump 2B LO After Filter Pressure Indicator (1(2)PI-AF106) _____psig. • Aux FW Pump 2B Gear Box LO Pressure Indicator (2PI-AF124) _____psig.	SAT UNSAT N/A **Comments:**
6.	Verify/place VC in M/U mode per BwOP VC-5, at SM discretion. **CUE: Another operator has performed BwOP VC-5.**	Verify/place VC in M/U mode per BwOP VC-5, at SM discretion.	SAT UNSAT N/A **Comments:**
7.	Align AF system discharge flowpath. **CUE: As US, if asked, direct that step 17 will not be performed.**	ALIGN 1(2)B AF pump discharge flowpath in accordance with US direction: • Contact US to determine if CLOSURE of B Train 1(2)AF013s or 1(2)AF004B will be necessary.	SAT UNSAT N/A **Comments:**
***8.**	**Start 1(2)B AF pump locally.** **CUE: Per task conditions, an EO is standing by.** **CUE: Engine start selector switch is pointing to the left (POS 1).** `Start pushbutton is being depressed and held.` **Engine start noises are heard.** **(Engine starting) light is lit.** **As RPM rising above 350 RPM, (Engine running) light is lit.** **Start pushbutton is released.** **Indicate speed at 1805 RPM.**	START 1(2)B AF Pump locally at 1(2)AF01J as follows: o Verify personnel in position at front of diesel to monitor governor linkage during start. • PLACE the Engine Start Control Switch to MANUAL. • DEPRESS and HOLD the START pushbutton. o VERIFY Engine Starting Light indicates starting sequence is in process. o VERIFY Engine Running Light is ILLUMINATED when speed indicates 350 RPM. o Release the START pushbutton. o CHECK Speed between 1795-1845 RPM.	SAT UNSAT N/A **Comments:**

	PERFORMANCE STEP	STANDARD	Circle applicable
9.	Verify AF pump recirc flow > 85 gpm. **NOTE: Large black gauge located on wall to left of door.** **CUE: Recirc flow is 110 GPM.** **CUE: Another EO will complete the rest of the procedure.**	• VERIFY Recirc Flow is > 85 GPM on 1(2)FI-AF096.	SAT UNSAT N/A **Comments:**

CUE: THIS COMPLETES THIS JPM.

RECORD STOP TIME:_____

COMMENTS: