

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI-12-2 NRC EXAMINATION SCENARIO 1

TITLE: LOI-12-2 NRC EXAMINATION SCENARIO 1

SCENARIO NUMBER: NRC 1

PATH: STAND ALONE

Validation: _____ **Training:** _____ **Operations:** _____

	CANDIDATES
CRS	
ATC	
BOP	

RECORD OF CHANGES

[illegible]

A. **TITLE:** LOI-12-2 NRC EXAMINATION SCENARIO 1

B. **SCENARIO SETUP:**

1. IC-156

2. Special Instructions:

- a. The Plant is operating at approximately 100% power.
- b. APRM A is bypassed due to erratic indication.
- c. CRD pump A is out of service for maintenance.
- d. Feedwater level control is selected to level column A, and is to be swapped to level column B.
- e. Reactor power is to be lowered to 95% with recirculation flow in preparation for Turbine Valve testing.
- f. Ensure LOI Pull Sheets Binder is staged at the 09-5 Panel (CRAM Rods at 08)

3. Preset Conditions:

- a. Preset, M:RD06:A CRD Hydraulic Pump Trip A
- b. Preset, OL:RD ZLO3BS3A(1) CRD Feed Pump Green Light, off
- c. Preset, R:EP04 Lake Ontario Water Temperature, 48
- d. TRIGGER 1, M:RR10:A RWR MG Set A Flow Controller Failure, 52%, Rmp=60s
- e. Preset, M:SW15 Service Water Pump A Auto Start Failure
- f. TRIGGER 2, M:SW05:B Service Water Pump B Trip
- g. TRIGGER 3, M:FW19:A Condensate PMP 33P-8A Trip
- h. TRIGGER 4, M:FW19:B Condensate PMP 33P-8B Trip
- i. TRIGGER 4, M:FW19:C Condensate PMP 33P-8C Trip
- j. Preset, M:RP01:A Reactor Protection System Automatic Scram Failure
- k. Preset, M:RP09 ARI Fails to Actuate
- l. TRIGGER 5, M:RR15:A Coolant (A) Leakage Inside Primary Containment, 25%, Ramp=12:00
- m. TRIGGER 20, R:MS22, Mn Steam To Rblr
- n. Preset, M:HP07 HPCI Valve MOV-19 Fails to Auto Open
- o. Preset, OS:HP ZDI23AS5 HPCI Injection Valve Control Switch, close
- p. Event Trigger 1, RWR Pump A Flow, rrfpa(1)<4635

4. Consumable Forms and Procedures:

- ◆ OP-2A Sections G.29 and G.40
- ◆ Reactivity Maneuvering sheets
- ◆ AOP-1
- ◆ AOP-8
- ◆ AOP-10
- ◆ AOP-32
- ◆ AOP-39
- ◆ AOP-41

C. SCENARIO SUMMARY:

The scenario will begin with the plant operating at 100% Power. The Crew will begin by swapping Feedwater level control from level column A to B per OP-2A. Once this is complete, the Crew will begin lowering Reactor power to 95% in preparation for Turbine valve testing.

When RWR pump A flow lowers to approximately 4250 gpm, the RWR A speed controller will fail such that loop flow abruptly rises, and then lowers. Pump A flow will stabilize significantly below Pump B flow. The Crew will lockup the RWR pump A scoop tube and take action to restore RWR flow mismatch to an acceptable level.

Service Water pump B will trip and Service Water pump A will fail to auto-start. The Crew will execute AOP-10 and manually start Service Water pump A.

Condensate pump A will trip. The Crew will execute AOP-41. The Crew will enter RAP-7.3.16 and OP-65 to lower Reactor power within the capacity of the remaining Condensate pumps. As power is lowered, the Crew will transfer Reboiler steam supply, secure a Condensate Booster pump and may secure a Circulating Water pump.

Once plant conditions are stable, the remaining Condensate pumps will trip. Reactor water level will lower due to the complete loss of Condensate and Feedwater, however automatic scrams and ARI will fail to insert control rods. The Crew will manually scram the Reactor to insert control rods. AOP-1 will be executed to stabilize the plant after the scram.

A coolant leak will develop inside Primary Containment. The Crew will execute AOP-39, EOP-2, and EOP-4. Containment Sprays will be required to mitigate degrading containment parameters. The HPCI injection valve, MOV-19, will fail to automatically open and will not be able to be manually opened. Combined with the loss of all Feedwater, this will limit high pressure injection capacity to less than the flow rate of the coolant leak. Reactor water level will continue to lower. An RPV Blowdown will be required based on low Reactor water level. As Reactor pressure lowers, the Crew will restore and maintain Reactor water level with low pressure systems.

The Scenario will be terminated when all control rods are inserted, the RPV Blowdown has been performed, and Reactor water level is being controlled above TAF with low pressure injection systems.

Shift Turnover

The Plant is operating at approximately 100% power.

APRM A is bypassed due to erratic indication.

CRD pump A is out of service for maintenance.

Feedwater level control is selected to level column A following calibrations affecting level column B.

When you take the shift, complete the following:

1. Swap Feedwater level control from level column A to level column B per OP-2A. Due to previous Feedwater level control issues, place Feedwater level control in MANUAL during the swap and restore Feedwater level control to AUTOMATIC after the swap.
2. Then, lower Reactor power to 95% with recirculation flow in preparation for Turbine Valve testing, per OP-65 and RAP-7.3.16.

Critical Tasks/Standards

Critical Task #1: Given the need for a Reactor scram and failure of automatic actions to insert control rods, the crew will manually scram the Reactor, in accordance with AOP-1.

Critical Task #2: Given a coolant leak, a loss of high pressure injection systems, and the inability to restore and maintain RPV water level above the Top of Active Fuel (TAF), the crew will initiate actions for an RPV Blowdown before RPV water level lowers below -19", in accordance with EOP-2.

EVENT NO.	EVENT SEQUENCE
1.	Swap Feedwater Level Control from Level Column A to B (Normal: BOP)
2.	Lower Reactor Power to 95% with Recirculation Flow (Reactivity: BOP)
3.	RWR MG A Speed Controller Failure Low (Instrument: BOP)
4.	Service Water Pump Trip with Failure to Auto-Start (Component: BOP)
5.	Trip of Condensate Pump A (Component: All)
6.	Trip of Condensate Pumps B and C (Component: All)
7.	Automatic Scram and ARI Fail to Insert Control Rods (Instrument: ATC)
8.	Coolant Leak Inside Containment (Major: All)
9.	HPCI Injection Valve Fails to Open (Component: All)

D. TERMINATION CUES:

- All control rods are inserted
- RPV Blowdown has been performed
- Reactor water level is being controlled above TAF with low pressure injection systems

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1) After the shift turnover, allow no more than five minutes for panel walkdown	All	<ul style="list-style-type: none"> Walkdown the control panels and assume the watch 	
<u>Event 1</u>	SRO	<ul style="list-style-type: none"> Perform Crew Brief Direct BOP to swap Feedwater level columns per OP-2A Provide oversight 	
Note: If the crew requests another operator to assist in monitoring the plant during this evolution, provide an additional person.	BOP	<ul style="list-style-type: none"> Obtain OP-2A Section G.29 Place Feedwater level control in MANUAL per Section G.40.2 <ul style="list-style-type: none"> Balance RX WTR LVL CNTRL 06LC-83 controller Place RX WTR LVL CNTRL 06LC-83 controller in MAN Place RX WTR LVL COLUMN SEL 06-S1 switch in B-LEVEL Observe RPV water level stable Place Feedwater level control in AUTO per Section G.40.7 <ul style="list-style-type: none"> Balance RX WTR LVL CNTRL 06LC-83 controller by adjusting SP ADJUST knob Place RX WTR LVL CNTRL 06LC-83 controller in BAL 	
<u>Event 2</u>	SRO	<ul style="list-style-type: none"> Direct ATC to lower power to 95% with Recirc flow Provide oversight for reactivity manipulation 	
Note: Trigger 1 automatically	BOP		

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<p>inserts the RWR A speed controller failure low when RWR loop A flow is approximately 45.2 Kgpm.</p>		<ul style="list-style-type: none"> • Lower Recirc flow alternately with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level 	
<p><u>Event 3</u></p>	<p>BOP</p>	<ul style="list-style-type: none"> • Recognize / report RWR A speed controller is malfunctioning 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<p>Note: The decision to restore loop flow mismatch may be made from OP-27 precaution C.2.14 or Tech Specs.</p> <p>Role Play: If asked as Reactor Engineering how to respond, recommend restoring loop flow mismatch by rapidly lowering RWR loop B flow.</p>	SRO	<ul style="list-style-type: none"> • Acknowledge report • Direct lock-up of RWR A scoop tube per OP-27 Section G.6 • Enter AOP-8 (Loss or Reduction in Reactor Coolant Flow) • Enter AOP-32 (Unexplained/Unanticipated Reactivity Change) • Direct lowering RWR B flow to restore loop flow mismatch 	
	BOP	<ul style="list-style-type: none"> • Place RWR A SCOOP TUBE control switch to TRIP • Place SCOOP TUBE A AUTO UNLOCK control switch in ON • Lower RWR B flow to restore loop flow mismatch less than or equal to either 5% of rated core flow (if >70% flow) or 10% of rated core flow (if <70% flow) 	
	ATC	<ul style="list-style-type: none"> • Monitor for Thermal Hydraulic Instabilities • Monitor Feedwater response 	
<p><u>Event 4</u></p> <p>On Lead Examiner Cue: ACTIVATE TRIGGER 2 Service Water pump B trips Service Water pump A fails to auto-start</p>	BOP	<ul style="list-style-type: none"> • Recognize / report annunciator(s): <ul style="list-style-type: none"> ○ 09-6-2-13, SERV WTR PMP 46P-1B OVERLOAD OR TRIP ○ 09-6-2-34, SERV WTR HDR PRESS LO (possible) • Recognize / report trip of Service Water pump B • Recognize / report failure of Service Water pump A to auto-start 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	SRO	<ul style="list-style-type: none"> • Acknowledge reports • Enter AOP-10 (Loss of Service Water Cooling) • Direct start of Service Water pump A 	
Booth Operator: If requested as NPO, maintenance, etc., wait 3 minutes and then report that Service Water pump B breaker has tripped on overcurrent, but there are no other abnormal indications at the Service Water pumps or breakers.	BOP	<ul style="list-style-type: none"> • Start Service Water pump A • Review AOP-10 actions for degraded Service Water 	
<u>Event 5</u> On Lead Examiner Cue: ACTIVATE TRIGGER 3 Condensate pump A trips	BOP / ATC	<ul style="list-style-type: none"> • Recognize / report annunciator 09-6-3-1, COND PMP 33P-8A OVERLOAD OR TRIP • Recognize / report trip of Condensate pump A • Monitor Condensate and Feedwater pressures and flows • Monitor Reactor water level, Feedwater flow, and Reactor power 	
Booth Operator: If requested as NPO, maintenance, etc., wait 3 minutes and then report that Condensate pump A breaker has tripped on overcurrent and the motor is hot to the touch.	SRO	<ul style="list-style-type: none"> • Acknowledge report • Enter AOP-41 (Feedwater Malfunction) • Direct power reduction to approximately 65% power per OP-65 and RAP-7.3.16 • Provide oversight for reactivity manipulation • Direct Reboiler steam supply swapped to Main Steam per OP-72 Section G • Direct securing one Condensate Booster pump 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Crew may direct RWR A flow locally reduced. If directed to lower RWR A flow, use REMOTE RR07 "RECIRC PUMP A M/G SCOOP TUBE MANUAL ADJUSTMENT".		per OP-3 Section F <ul style="list-style-type: none"> May direct securing one Circulating Water pump per OP-4 Section G 	
Note: Due to RWR A speed control malfunction, use of recirculation flow for power reduction is limited.	ATC	<ul style="list-style-type: none"> Lower Reactor power with recirculation flow, as available Insert CRAM rods Monitor Reactor power 	
Role Plays: When dispatched to swap Reboiler steam supply, wait 1 minute, insert Trigger 20, then report task completion. When dispatched to check 31PCV-100 position, report 31PCV-100 is open.	BOP	<ul style="list-style-type: none"> Swap Reboiler steam supply to Main Steam per OP-72 Section G.4.1: <ul style="list-style-type: none"> Direct operator to place Reboiler Source Selector Switch in MAIN STEAM TO REBOILER Verify open 31MOV-153 Direct operator to verify open 31PCV-100 Verify closed 31MOV-145A Verify closed 31MOV-145B Secure one Condensate Booster pump per OP-3 Section F.1 May secure one Circulating Water pump per OP-4 Section G.5 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<p><u>Events 6, 7, & 9</u></p> <p>On Lead Examiner Cue: ACTIVATE TRIGGER 4 Trip of Condensate pumps B and C</p>	BOP / ATC	<ul style="list-style-type: none"> • Recognize / report trip of Condensate pumps B and C • May recognize / report failure of automatic Reactor scram to insert control rods 	
<p>Note: Preset malfunctions prevent automatic Reactor scram and ARI from inserting control rods.</p> <p>Note: RPV water level will likely go below 126.5" due to loss of Feedwater and scram. This will cause both HPCI and RCIC initiation signals. Preset malfunctions will cause the HPCI injection valve, MOV-19, to fail closed.</p>	SRO	<ul style="list-style-type: none"> • Acknowledge report • Direct Reactor scram • Enter AOP-1 (Reactor Scram) • Enter EOP-2 (RPV Control) on low RPV water level • Direct RPV water level restored and maintained 177-222.5" using CRD and RCIC • Direct RPV pressure controlled 900-1000 psig using Turbine Bypass Valves • Enter AOP-15 (Isolation Verification and Recovery) 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<p>Critical Task #1</p> <p>Critical Task #1 Standard:</p>			
		<p>Given the need for a Reactor scram and failure of automatic actions to insert control rods, the crew will manually scram the Reactor, in accordance with AOP-1.</p> <p>All control rods inserted by:</p> <p>Depressing manual Scram pushbuttons</p> <p>Or</p> <p>Placing Mode Switch to Shutdown</p>	<p>Pass / Fail</p>
	ATC	<ul style="list-style-type: none"> • Depress manual Scram pushbuttons • Place Mode Switch to Shutdown • Report all control rods have inserted • Enter AOP-1 <ul style="list-style-type: none"> ○ Fully insert IRMs and SRMs ○ Observe Reactor power downscale on APRMs ○ Observe SDIV vent and drain valves closed ○ Ensure Main Turbine is tripped ○ Verify 4 KV loads transfer to reserve power ○ Transfer APRM/IRM recorders to IRMs ○ Down-range IRMs ○ Monitor Reactor pressure control on the Turbine Bypass Valves 	<p>Critical Task #1</p>
<p>Booth Operator:</p> <p>If requested as NPO, maintenance, etc. to investigate HPCI injection valve, wait 3 minutes and then report that there is an acrid odor near the motor and the breaker is tripped.</p> <p>If requested to manually open HPCI injection valve, wait 2 minutes and report the valve is stuck closed.</p>	BOP	<ul style="list-style-type: none"> • Enter AOP-1 <ul style="list-style-type: none"> ○ Operate RCIC per OP-19 Section D ○ Recognize / report failure of HPCI injection valve to open ○ May attempt to manually open HPCI injection valve (23MOV-19) ○ May trip HPCI ○ May initiate SLC injection, as directed • Verify Group 2 isolation per AOP-15 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<u>Event 8</u> On Lead Examiner Cue: ACTIVATE TRIGGER 5 Coolant leak inside Primary Containment	BOP / ATC	<ul style="list-style-type: none"> Recognize / report degrading Primary Containment conditions (leakage, temperature, pressure). 	
	SRO	<ul style="list-style-type: none"> Acknowledge report Enter AOP-39 (Loss of Coolant) Direct Control Room and Relay Room Ventilation isolated per OP-55B Section G within 30 minutes Direct TSC filtered ventilation started per Section D of OP-59B within 60 minutes Re-enter EOP-2 (RPV Control) on high Drywell pressure Enter EOP-4 (Primary Containment Control) on high Drywell pressure May direct Core Spray and RHR injection Terminated and Prevented per EP-2. When Primary Containment pressure exceeds 2.7 psig and before Torus pressure exceeds 15 psig, direct initiation of Torus Spray When Torus pressure exceeds 15 psig: <ul style="list-style-type: none"> Verify Recirculation pumps tripped Direct trip of Drywell cooling fans Direct initiation of Drywell Spray 	
	BOP / ATC	<ul style="list-style-type: none"> Dispatches operator to isolate Control Room and Relay Room Ventilation per OP-55B Section G.1 Terminate and Prevent injection from Core Spray and RHR as follows: <u>Core Spray</u>	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
		<ul style="list-style-type: none"> ○ Place 10MOV-27B AUTO CONTROL BYPASS 10A-S23B ○ Verify white light above 10MOV-27B AUTO CONTROL BYPASS 10A-S23B is on ○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27B ○ Ensure RHR Loop B pumps which are not required to be running are stopped ○ Direct NPO to rotate Timers fully counterclockwise 	
	BOP / ATC cont.	<ul style="list-style-type: none"> ● Initiate Torus Spray per OP-13B Posted Attachment 2 <ul style="list-style-type: none"> ○ Place SPRAY CNTRL 10A-S17A(B) switch to MANUAL ○ Verify white SPRAY PERM 10A-DS67A(B) light is on ○ Ensure available RHR pumps in RHR Loop A(B) are running ○ Open RHR TEST TORUS CLG & SPRAY 10MOV-39A(B) ○ Throttle TORUS SPRAY INBD VLV 10MOV-38A(B) to establish desired torus spray flow rate ○ When RHR Loop A(B) flow is greater than 1500 gpm, ensure closed MIN FLOW VLV 10-MOV-16A(B) ○ Throttle RHR TEST & TORUS CLG 10MOV-34A(B) to divert excess flow to the torus to maintain at least 6500 gpm RHR Loop A(B) flow with one RHR pump operating or at least 13000 gpm RHR Loop A(B) flow with two RHR pumps operating ○ Establish RHRSW flow and temperature 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
		<p>control</p> <ul style="list-style-type: none"> • Establish RHRSW flow per OP-13C Posted Attachment 1 <ul style="list-style-type: none"> ○ Start one RHRSW pump ○ Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm ○ Start second RHRSW pump in selected loop ○ RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm 	
<p>Note: When RPV water level lowers below 59.5", Torus and Drywell Spray are automatically secured as LPCI receives an initiation signal. The SRO will direct Torus and Drywell Spray re-established at a later time.</p>	<p>BOP / ATC cont.</p>	<ul style="list-style-type: none"> ○ If drywell or torus sprays are in service, then establish 4000 gpm per RHRSW pump ○ Close HX A(B) BYP VLV 10MOV-66A(B) • Initiate Drywell Spray per OP-13B Posted Attachment 3 <ul style="list-style-type: none"> ○ Ensure RWR pumps are tripped ○ Ensure Drywell cooling fans are tripped ○ Verify Drywell temperature and pressure are within the Drywell Spray Initiation Limit ○ Place SPRAY CNTRL 10A-S17A(B) switch to MANUAL ○ Verify white SPRAY PERM 10A-DS67A(B) light is on ○ Ensure available RHR pumps in RHR Loop A(B) are running ○ Open DW SPRAY OUTBD VLV 10MOV-26A(B) ○ Throttle DW SPRAY INBD VLV 10MOV-31A(B) to establish desired Drywell spray flow rate ○ When RHR Loop A(B) flow is greater than 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16A(B) ○ Establish RHRSW flow and temperature control per OP-13C Posted Attachment 1 (see above) 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	SRO	<ul style="list-style-type: none"> • Determine available Group 1 high pressure injection systems (CRD, RCIC) are not capable of maintaining RPV water level • Direct injection of SLC • Determine RPV water level cannot be maintained above 0" (TAF) • Transition to the Alternate RPV Level Control leg of EOP-2 • Direct ADS overridden • Wait until RPV water level drops to 0" TAF • Determine RPV injection source lined up and running • Determine RPV water level cannot be restored and maintained above -19" • Direct open 7 ADS valves • Direct RPV water level restored and maintained 177 to 222.5" using available injection systems • Transition back to EOP-2 normal RPV level leg 	

Critical Task #2

Given a coolant leak, a loss of high pressure injection systems, and the inability to restore and maintain RPV water level above the Top of Active Fuel (TAF), the crew will initiate actions for an RPV Blowdown before RPV water level lowers below -19", in accordance with EOP-2.

Pass / Fail

**Critical Task #2
Standard:**

Open 7 ADS valves

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<p>Note: 10MOV-27A (B) cannot be throttled until LPCI has had an injection signal for 5 minutes unless Timers were ordered to be rotated to zero. Before this time has elapsed, RHR pumps may need to be secured to control RPV injection.</p>	BOP / ATC	<ul style="list-style-type: none"> • Override ADS <ul style="list-style-type: none"> ○ Place ADS LOGIC OVERRIDE & RESET LOGIC A 2E-S2A in OVERRIDE ○ Place ADS LOGIC OVERRIDE & RESET LOGIC B 2E-S2B in OVERRIDE ○ Verify annunciator 09-4-1-27 ADS OVERRIDE SW IN OVERRIDE is in alarm ○ Verify white ADS LOGIC OVERRIDDEN 2E-DS10 light is on • Verify Group I Isolation per AOP-15 • Open 7 ADS valves • Restore and maintain RPV water level 177 to 222.5" using available injection systems • Control Core Spray injection <ul style="list-style-type: none"> ○ Throttle 14MOV-12A(B) • Control LPCI injection <ul style="list-style-type: none"> ○ Throttle 10MOV-27A(B) ○ Secure RHR pumps if running 	<p>Critical Task #2</p>

Termination Criteria:

- All control rods are inserted
- RPV Blowdown has been performed
- Reactor water level is being controlled above TAF with low pressure injection systems

Shift Turnover

The Plant is operating at approximately 100% power.

APRM A is bypassed due to erratic indication.

CRD pump A is out of service for maintenance.

Feedwater level control is selected to level column A following calibrations affecting level column B.

When you take the shift, complete the following:

1. Swap Feedwater level control from level column A to level column B per OP-2A. Due to previous Feedwater level control issues, place Feedwater level control in MANUAL during the swap and restore Feedwater level control to AUTOMATIC after the swap.
2. Then, lower Reactor power to 95% with recirculation flow in preparation for Turbine Valve testing, per OP-65 and RAP-7.3.16.

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI-12-2 NRC EXAMINATION SCENARIO 2

TITLE: LOI-12-2 NRC EXAMINATION SCENARIO 2

SCENARIO NUMBER: NRC 2

PATH: STAND ALONE

Validation: _____ **Training:** _____ **Operations:**

	CANDIDATES
CRS	
ATC	
BOP	

RECORD OF CHANGES

[illegible]

B. **TITLE:** LOI-12-2 NRC EXAMINATION SCENARIO 2

B. **SCENARIO SETUP:**

2. IC-157

4. Special Instructions:

- a. The Plant is operating at approximately 85% power.
- b. RCIC is out of service for maintenance.
- c. Reactor power is to be raised to 90% with Recirculation flow.

5. Preset Conditions:

- a. Preset, M:RC03 RCIC System Turbine Trip
- b. Preset, R:EP04 Lake Ontario Water Temperature, 48
- c. TRIGGER 1, M:RD06:B CRD Hydraulic Pump Trip (B)
- d. TRIGGER 2, M:TU04E Main Turbine High Bearing #5 Vibration, Initial=21%, Final=27%, Ramp=5:00
- e. TRIGGER 2, M:TU04F Main Turbine High Bearing #6 Vibration, Initial=21%, Final=28%, Ramp=5:00
- f. TRIGGER 3, M:MC01 Main Condenser Air In Leakage, 30%
- g. Preset, M:RP01:AA RPS Automatic Scram Failure A Side Only
- h. Preset, M:RP01:BA RPS Manual Scram Failure A Side Only
- i. Preset, M:RP09 ARI Fails to Actuate
- j. TRIGGER 4, M:SL03:A SBLC pump A Relief 11-RV-39A Lifts
- k. TRIGGER 5, M:SL03:B SBLC pump B Relief 11-RV-39B Lifts
- l. TRIGGER 6, M:EG01 Main Generator Trip
- m. TRIGGER 7, M:TC04:A Turbine Bypass Valve Failure (A), 0%
- n. TRIGGER 25, M:IA01 Vent Scram Air Header, 100%, Ramp=30 sec
- o. Event Trigger 4, SLC Pump A Running, sl:pumpona==1
- p. Event Trigger 5, SLC Pump B Running, sl:pumponb==1
- q. Event Trigger 6, APRM Less than 42%, nmaprmfx(1)<0.42
- r. Event Trigger 7, APRM Less than 24%, nmaprmfx(1)<0.24

5. Consumable Forms and Procedures:

- ◆ Reactivity Maneuvering sheets
- ◆ AOP-1, AOP-31, AOP-66A, OP-69

C. SCENARIO SUMMARY:

The scenario will begin with the plant operating at 85% Power. The Crew will begin by raising Reactor power to 90% with Recirculation flow. During the power ascension, CRD pump B will trip. The Crew will enter AOP-69 and start CRD pump A.

As Reactor power is being raised, Turbine vibrations will develop. The Crew will enter AOP-66 to address the vibrations. The vibrations will subside as Reactor power is lowered, however the vibrations will have caused damage resulting in Main Condenser air in-leakage. Main Condenser vacuum will degrade. The Crew will enter AOP-31 and eventually insert a manual Reactor scram.

RPS B will fail to process the scram and ARI will also fail to insert control rods. The Crew will enter EOP-2 and EOP-3. The Crew will lower Recirculation flow to minimum and then trip the RWR pumps. The Crew will terminate and prevent injection except CRD, SLC and RCIC. The SLC pump discharge relief valves will both lift, diverting boron injection from the RPV. The Main Turbine will be available until power lowers to approximately 40%, when a spurious turbine trip occurs. As power lowers, one Turbine Bypass Valve will fail closed, challenging RPV pressure control and Primary Containment control. The Crew will be able to manually insert control rods. Either pulling RPS fuses or venting the scram air header will result in all rods inserting.

The Scenario will be terminated when control rods are being inserted or are all inserted and RPV water level is being restored / maintained 177-222.5".

Shift Turnover

The Plant is operating at approximately 85% power.

RCIC is out of service for maintenance (LCO 3.5.3, day 1 of planned 3 day maintenance window).

When you take the shift, raise Reactor power to 90% with Recirculation flow per OP-65 and RAP-7.3.16.

Critical Tasks/Standards
<p>Critical Task #1: Given a failure to scram with Reactor power above 2.5%, the crew will terminate and prevent all RPV injection except SLC, RCIC and CRD, in accordance with EOP-3.</p> <p>Critical Task #2: Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.</p>

EVENT NO.	EVENT SEQUENCE
1.	Raise Reactor Power to 90% with Recirculation Flow (Reactivity: BOP)
2.	Trip of CRD Pump B (Component: ATC)
3.	Turbine Vibrations (Component: BOP)
4.	Loss of Main Condenser Vacuum (Component: ATC)
5.	Failure of RPS and ARI to Actuate (Major: All)
6.	SLC Discharge Relief Valves Lift (Component: All)
7.	Main Generator Trip and One Turbine Bypass Valve Fails Closed (Component: All)

D. TERMINATION CUES:

- Control rods are being inserted or are all inserted.
- RPV water level is being restored / maintained 177-222.5".

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	<ul style="list-style-type: none"> Walkdown the control panels and assume the watch 	
<u>Event 1</u>	SRO	<ul style="list-style-type: none"> Perform Crew Brief Direct BOP to raise power to 90% with Recirc flow Provide oversight of reactivity manipulation 	
	BOP	<ul style="list-style-type: none"> Raise Recirc flow alternately with RWR MG A(B) SPEED CNTRL Monitor APRMs, CTP, Recirc flow, Reactor water level 	
<u>Event 2</u>	ATC		

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
When Reactor power reaches 90%: ACTIVATE TRIGGER 1 CRD pump B trips		<ul style="list-style-type: none"> • Recognize / report annunciators: <ul style="list-style-type: none"> ○ 09-5-1-9, CRD CHARGING WTR PRESS LO ○ 09-5-1-40, CRD PMP 3P-16B OVERLOAD ○ 09-5-1-50, CRD PMP 39-16B TRIP • Recognize / report trip of CRD pump B 	
	SRO	<ul style="list-style-type: none"> • Acknowledge report • Enter AOP-69 (Control Rod Drive Pump Trouble) • Direct start of CRD pump A 	
Role Play; If dispatched to investigate pump trip, wait 2 minutes, then report CRD pump B breaker is tripped and there are no abnormal indications at the pump.	ATC	<ul style="list-style-type: none"> • Execute AOP-69 • Note override conditions for RPV pressure above 900 psig and required scram • Monitor ACCUM alarm lights on full core display • Ensure CRD FLOW CNTRL 03FIC-301 is in MAN • Rotate manual control knob on CRD FLOW CNTRL 03FIC-301 fully counterclockwise • Verify in-service CRD flow control valve (03FCV-19A or B) is closed • Start CRD PMP 03P-16A 	
	ATC cont.	<ul style="list-style-type: none"> • Slowly adjust manual control knob on CRD FLOW CNTRL 03FIC-301 to establish 59 to 61 gpm on 03-FI-310 or 03FIC-301 • Place CRD FLOW CNTRL 03FIC-301 in automatic as follows: <ul style="list-style-type: none"> ○ Balance controller by adjusting setpoint tape ○ Place controller in AUTO ○ Adjust setpoint to BETWEEN 59 and 61 gpm 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<u>Event 3</u> On Lead Examiner Cue: ACTIVATE TRIGGER 2 Turbine Vibrations	BOP / ATC	<ul style="list-style-type: none"> • Recognize / report high Turbine vibrations • Monitor Turbine vibrations • Report vibrations on bearing 5 & 6 are greater than 9 mils but less than 12 mils 	
	SRO	<ul style="list-style-type: none"> • Acknowledge report • Enter AOP-66 (Main Turbine High Vibration) • Direct power reduction per RAP-7.3.16 to lower 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
		vibrations to less than 9 mils	
Booth Operator: Once Reactor power is lowered to approximately 85%, ramp malfunctions TU04:E and TU04:F from current value to 15% over 2 minutes.	BOP	<ul style="list-style-type: none"> • Lower Recirc flow with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level • Monitor Turbine vibrations • Report Turbine vibrations are less than 9 mils 	
<u>Event 4</u> On Lead Examiner Cue: ACTIVATE TRIGGER 3 Loss of Main Condenser vacuum	BOP / ATC	<ul style="list-style-type: none"> • 09-3-1-28 Offgas Recombiner Trouble • Recognize / report lowering Main Condenser vacuum 	
	SRO	<ul style="list-style-type: none"> • Acknowledge reports • Enter AOP-31 (Loss of Condenser Vacuum) • Direct power reduction per RAP-7.3.16 to maintain Main Condenser vacuum within Normal Operating Region • Direct Reactor scram 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	BOP	<ul style="list-style-type: none"> • Monitor Main Condenser vacuum • Trip Recombiner • Attempt to determine cause of vacuum degradation • Lower Recirc flow with RWR MG A(B) SPEED CNTRL if Core Flow is >55%. 	
	ATC	<ul style="list-style-type: none"> • May insert CRAM rods • Depress manual Scram pushbuttons • Place Mode Switch to Shutdown 	
<u>Events 5, 6, & 7</u>	ATC	<ul style="list-style-type: none"> • Recognize / report failure to scram • Manually initiate ARI 	
Note: As condenser vacuum degrades, the Turbine may trip, Turbine Bypass Valves may close, and MSIVs may go shut. Additionally, malfunctions will: <ul style="list-style-type: none"> ○ Trip the Main Generator when Reactor power lowers to approximately 42% ○ Fail closed one 	SRO	<ul style="list-style-type: none"> • Acknowledge report • Enter EOP-2 (RPV Control) on Reactor power above 2.5% or unknown when a scram is required • Determine the Reactor will NOT remain shutdown under all conditions without boron • Exit EOP-2 • Enter EOP-3 (Failure to Scram) • Direct EP-3 Failure to Scram Actions • Direct bypassing MSIV low RPV water level isolation interlocks per EP-2 • Direct terminate and prevent all injection except SLC, RCIC and CRD per EP-5 • Direct RPV water level controlled between -19" and 110" with only Group 1 Water Level Control Systems (Condensate/Feedwater, CRD, HPCI, RCIC, LPCI) • Direct RPV pressure controlled 900-1000 psig with Turbine Bypass Valves 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Turbine Bypass Valve when Reactor power lowers to approximately 24%		<ul style="list-style-type: none"> • May direct RPV pressure controlled 800-1000 psig with Turbine Bypass Valves and SRVs, as required 	
	ATC	<ul style="list-style-type: none"> • Perform EP-3 Failure to Scram Actions <ul style="list-style-type: none"> ○ Ensure Rx Mode Switch in SHUTDOWN ○ Ensure ARI initiated ○ Run Recirc flow to minimum ○ Determine Rx power greater than 2.5% ○ Ensure Recirc pumps tripped ○ Override ADS <ul style="list-style-type: none"> ○ Place ADS LOGIC OVERRIDE & RESET LOGIC A 2E-S2A in OVERRIDE ○ Place ADS LOGIC OVERRIDE & RESET LOGIC B 2E-S2B in OVERRIDE ○ Verify annunciator 09-4-1-27 ADS OVERRIDE SW IN OVERRIDE is in alarm ○ Verify white ADS LOGIC OVERRIDDEN 2E-DS10 light is on ○ Obtain CRS concurrence to inject SLC ○ Inject SLC <ul style="list-style-type: none"> ○ Verify white SQUIB VLVS READY lights are on ○ Note level on TK LVL 11LI-66 ○ Place SLC pup keylock switch in START SYS-A or START SYS-B ○ Verify red SLC pump running light is on ○ Verify SLC pump discharge pressure on DISCH PRESS 11PI-65 is greater than or equal to RPV pressure 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	ATC cont.	<ul style="list-style-type: none"> ○ Verify the following: <ul style="list-style-type: none"> ○ CLN UP SUCT 12MOV-18 is closed ○ CLN UP RETURN ISOL VALVE 12MOV-69 is closed ○ Recognize / report failure of SLC pump to inject ○ Inject with other SLC pump ○ Recognize / report failure of second SLC pump to inject • Insert IRMs and SRMs • Range IRMs as necessary 	
<div> <div> Critical Task #1 </div> <div> Critical Task #1 Standard: </div> </div> <div> <p>Given a failure to scram with Reactor power above 2.5%, the crew will terminate and prevent all RPV injection except SLC, RCIC and CRD, in accordance with EOP-3.</p> <p>Terminate and prevent all injection except SLC, RCIC and CRD per EP-5</p> </div> <div> Pass / Fail </div>			
Booth Operator: When directed to install MSIV low water level jumpers, wait 2 minutes and run MSIVLEVEL.cae.	BOP	<ul style="list-style-type: none"> • Direct NPO to bypass MSIV low RPV water level isolation interlocks per EP-2 Section 5.1 • Terminate and prevent all injection except SLC, RCIC and CRD per EP-5 <ul style="list-style-type: none"> ○ Feedwater 	Critical Task #1

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<p>Note: RCIC is out of service as part of the scenario setup, so RCIC actions may not be taken.</p>	BOP cont.	<ul style="list-style-type: none"> ○ If RFP A is running: <ul style="list-style-type: none"> ○ Ensure RFP A FLOW CNTRL 06-84A is in MAN ○ Lower RFP A FLOW CNTRL 06-84A to minimum ○ Ensure open RFP A MIN FLOW 34FCV-135A ○ If RFP B is running: <ul style="list-style-type: none"> ○ Ensure RFP B FLOW CNTRL 06-84B is in MAN ○ Lower RFP BFLOW CNTRL 06-84B to minimum ○ Ensure open RFP B MIN FLOW 34FCV-135B ○ Ensure closed: <ul style="list-style-type: none"> ○ RFP A DISCH 34MOV-100A ○ RFP B DISCH 34MOV-100B ○ Ensure FDWTR STARTUP VLV 34FCV-137 in MANUAL ○ Ensure closed FDWTR STARTUP VLV 34FCV-137 ○ HPCI <ul style="list-style-type: none"> ○ Trip HPCI by depressing TURB TRIP 23A-S19 pushbutton ○ RCIC <ul style="list-style-type: none"> ○ Place 13MOV-16 AUTO CONTROL BYPASS 13A-S2A keylock switch in BYPASS at panel 09-4 ○ Verify white light above 13MOV-16 AUTO CONTROL BYPASS 13A-S2A keylock switch is on ○ Ensure closed OUTBD STM SUPP VLV 13MOV-16 ○ Core Spray Loop A <ul style="list-style-type: none"> ○ Place 14MOV-11A AUTO ACTUATION BYPASS SW 14A-S16A switch in bypass ○ Verify white 14MOV-11A AUTO ACTUATION BYPASS LT 14A-DS35A light is on ○ Ensure closed OUTBD INJ VLV 14MOV-11A ○ Ensure PMP 14P-1A is stopped ○ Core Spray Loop B 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	BOP cont.	<ul style="list-style-type: none"> ○ Place 14MOV-11B AUTO ACTUATION BYPASS SW 14A-S16B switch in bypass ○ Verify white 14MOV-11B AUTO ACTUATION BYPASS LT 14A-DS35B light is on ○ Ensure closed OUTBD INJ VLV 14MOV-11B ○ Ensure PMP 14P-1B is stopped ○ RHR Loop A <ul style="list-style-type: none"> ○ Place 10MOV-27A AUTO CONTROL BYPASS 10A-S23A ○ Verify white light above 10MOV-27A AUTO CONTROL BYPASS 10A-S23A is on ○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27A ○ Ensure RHR Loop A pumps which are not required to be running are stopped ○ RHR Loop B <ul style="list-style-type: none"> ○ Place 10MOV-27B AUTO CONTROL BYPASS 10A-S23B ○ Verify white light above 10MOV-27B AUTO CONTROL BYPASS 10A-S23B is on ○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27B ○ Ensure RHR Loop B pumps which are not required to be running are stopped ● Report RPV water level is less than 110" to CRS 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
<div> <div>Critical Task #2</div> <div>Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.</div> <div>Pass / Fail</div> </div> <div> <div>Critical Task #2 Standard:</div> <div>Perform EP-3 Backup Control Rod Insertion Actions to insert control rods.</div> </div>			
<p><u>Booth Operator:</u> If requested to pull RPS fuses, wait 30 seconds, then run SCRAMFUSEOUT.cae and report task completion.</p> <p>If directed to vent Scram Air Header, wait 2 minutes, then activate Trigger 25, Scram Air Header pressure to 0 psig, and report task completion.</p> <p><u>Booth Operator:</u> When directed to reset ARI, insert Remote RP20.</p>	ATC	<ul style="list-style-type: none"> • Perform EP-3 Backup Control Rod Insertion Actions <ul style="list-style-type: none"> ○ De-energize scram solenoids per Subsection 5.2 <ul style="list-style-type: none"> ○ Determine fuses to be pulled based on lit RPS Scram Group lights ○ Direct NPO to pull fuses 5A-F18B, 5A-F18F, 5A-F18D, and 5A-F18H ○ Direct NPO to vent scram air header per Subsection 5.3 ○ Direct NPO to reset ARI per Subsection 5.4 	Critical Task #2

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	ATC cont.	<ul style="list-style-type: none"> ○ Insert Rods using RMCS per Subsection 5.7 <ul style="list-style-type: none"> ○ Ensure ARI is reset ○ Place RWM keylock switch in BYPASS ○ Select control rod on ROD SEL matrix ○ Insert control rod using ROD MOVEMENT CNTRL or ROD EMERG IN NOTCH OVERRIDE ○ Raise dP using CRD cooling water per Subsection 5.8 <ul style="list-style-type: none"> ○ Direct NPO to close 03CRD-91 ○ Ensure open CRD DRV WTR PRESS VLV 03MOV-20 ○ Ensure closed CRD CLG WTR PRESS CNTRL VLV 03MOV-22 ○ Raise CRD system flow rate to maximum by adjusting CRD FLOW CNTRL 03FIC-301 in automatic or manual ● Report progress of control rod insertion to CRS 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	BOP	<ul style="list-style-type: none"> • Control RPV water level between -19" and 110" with only Group 1 Water Level Control Systems (Condensate/Feedwater, CRD, HPCI, RCIC, LPCI) <ul style="list-style-type: none"> ○ Feedwater <ul style="list-style-type: none"> ○ If any Reactor feed pump is running: <ul style="list-style-type: none"> ○ Ensure feedwater pump discharge pressure is less than RPV pressure by adjusting reactor feed pump speed ○ Lineup injection flow path by performing on or both of the following: <ul style="list-style-type: none"> ○ Adjusting FDWTR STARTUP VLV 34FCV-137 ○ Ensure open or throttled open Reactor feed pump discharge valve for running pump (34MOV-100A or B) ○ Control feed flow to RPV by performing any of the following: <ul style="list-style-type: none"> ○ Adjust RFP speed ○ Adjust FDWTR STARTUP VLV 34FCV-137 ○ Close feed pump discharge valves ○ If both Reactor feed pumps are shutdown, and feedwater discharge header pressure is greater than RPV pressure, then control feed flow to RPV by performing one or both of the following: <ul style="list-style-type: none"> ○ Throttling FDWTR STARTUP VLV 34FCV-137 	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	BOP cont.	<ul style="list-style-type: none"> ○ Throttling one or both of the following valves, only if APRMs are on scale: <ul style="list-style-type: none"> ○ RFP A DISCH 34MOV-100A ○ RFP B DISCH 34MOV-100B ○ HPCI <ul style="list-style-type: none"> ○ Preparation for injection: <ul style="list-style-type: none"> ○ Ensure SGT is running per OP-20 ○ Ensure open one of the following valves: <ul style="list-style-type: none"> ○ HPCI GLAND SEAL SUCT 01-125MOV-13A ○ HPCI GLAND SEAL SUCT 01-125MOV-13B ○ Ensure HPCI FLOW CNTRL 23FIC-108-1 setpoint is adjusted to minimum ○ Ensure HPCI FLOW CNTRL 23FIC-108-1 is in AUTO ○ Injection with initiation signal: <ul style="list-style-type: none"> ○ Depress INITIATION SIG/MAN TURB TRIP RESET 23A-S17 pushbutton ○ Verify annunciator 09-3-3-28 HPCI TURB TRIP SOLENOID ENERGIZED is clear ○ Verify HPCI auto-initiation ○ Control HPCI turbine speed in manual or automatic ○ Periodically verify HPCI turbine speed is greater than 2100 rpm 	
	ATC	<ul style="list-style-type: none"> • Report all control rods are inserted 	
	SRO	<ul style="list-style-type: none"> • Acknowledge report • Exit EOP-3 • Enter EOP-2 • Direct RPV water level restored and maintained 177-222.5" 	
	BOP		

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
		<ul style="list-style-type: none"> Begins restoring and / or maintaining RPV water level 177-222.5" 	

Termination Criteria:

- Control rods are being inserted or are all inserted
- Reactor water level is being restored / maintained 177-222.5"

Shift Turnover

The Plant is operating at approximately 85% power.

RCIC is out of service for maintenance (LCO 3.5.3, day 1 of planned 3 day maintenance window).

When you take the shift, raise Reactor power to 90% with Recirculation flow per OP-65 and RAP-7.3.16.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO NRC A1 LOI-12-2 TASK TITLE: Manually Calculate Core Thermal Power
APPL. TO JPM NUMBER

REV: DATE: NRC K/A SYSTEM NUMBER: 2.1.7 4.4/4.7

JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:

ESTIMATED COMPLETION TIME: 30 Minutes

SUBMITTED: OPERATIONS REVIEW:

APPROVED:

~~~~~

CANDIDATE NAME: LOGIN ID:

JPM Completion Performed

Location: Classroom

DATE PERFORMED: TIME TO COMPLETE: Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: SIGNATURE/PRINTED

CANDIDATE REVIEW: SIGNATURE

REVIEWED BY: PROGRAM ADMINISTER DOC. COMPLETE:

RO	NRC A1 LOI-12-2	TASK TITLE:	Manually Calculate Core Thermal Power
APPL. TO	JPM NUMBER		

By: _____
Int

- ☐ Technical Review
- ☐ Questions and Answers
- ☐ Procedural Change Required

- ☐ Additional Information
- ☐ Validation
- ☒ None

Comments:

By: _____
Int

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A1 LOI-12-2
JPM NUMBER

TASK TITLE: Manually Calculate Core Thermal Power

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. RAP-7.3.03, Core Thermal Power Evaluation

III. TOOLS AND EQUIPMENT

- A. Calculator
- B. Steam Tables

IV. SET UP REQUIREMENTS

A. Provide a copy of RAP-7.3.03 Attachment 1 with the following values filled in for steps 1-15:

Step #	Value	Step #	Value	Step #	Value
1	502	6	0.85	11	625
2	420	7	47	12	3.95
3	159	8	1026	13	4.00
4	155	9	59	14	392 / 392
5	0.85	10		15	391.9 / 391.9

V. EVALUATOR NOTES

- The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

VI. TASK CONDITIONS

- A. A plant startup is in progress.
- B. Verification of Core Thermal Power is required.
- C. Data has been recorded by another operator for RAP-7.3.03, Core Thermal Power Evaluation, Attachment 1 Items 1-15.
- D. EPIC computer points are not available.
- E. Items 14 and 15 were obtained from 02TT-168A/C and B/D on Attachment 3.

*** - CRITICAL STEP**

VII. INITIATING CUE

TASK TITLE: Manually Calculate Core Thermal Power

Inform the candidate, "Calculate Core Thermal Power manually per section 9.2 of RAP-7.3.03, Core Thermal Power Evaluation."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Calculates Feedwater correction factors.	Records the following on RAP-7.3.03 Attachment 1: Item 16: 392 Item 17: 391.9 Item 18: -28 Item 19: -28.1 Item 20: 1.01031 (1 – 1.02) Item 21: 1.01034 (1 – 1.02)	
2.	Calculates Feedwater compensated flows.	Records the following on RAP-7.3.03 Attachment 1: Item 22: 3.99 (3.95 – 4.05) Item 23: 4.04 (3.99 – 4.09)	
3.	Determines enthalpy values.	Records the following on RAP-7.3.03 Attachment 1: Item 24: 1191.56 (1190.6 – 1192.6) Item 25: 645.06 (640.45 – 650.04) Item 26: 366.47 (364.31 – 369.7) Item 27: 366.47 (364.31 – 369.7) Item 28: 490.27 (487.89 – 493.84) Item 29: 396.89 (394.15 – 399.64) Item 30: 63.046 (60.55 – 65.54)	
4.	Calculates Feedwater flow, Feedwater enthalpy, and Steam enthalpy.	Records the following on RAP-7.3.03 Attachment 1: Item 31: 8.032 (7.94 – 8.14) Item 32: 366.4 (364.3 – 369.7) Item 33: 1191.56 (1190.6 – 1192.6)	
*5.	Calculates Q to Feedwater.	Records the following on RAP-7.3.03 Attachment 1: Item 34: 1941.9 (1909.7 – 1975.5)	CRITICAL STEP

TASK TITLE: Manually Calculate Core Thermal Power

	STEP	STANDARD	EVALUATION / COMMENT
6.	Calculates CRD flow.	Records the following on RAP-7.3.03 Attachment 1: Item 35: 0.0369 (0.03-0.04)	
*7.	Calculates Q to CRD.	Records the following on RAP-7.3.03 Attachment 1: Item 36: 12.19 (9.8 – 13.3)	CRITICAL STEP
8.	Calculates RWCU flow and enthalpy change.	Records the following on RAP-7.3.03 Attachment 1: Item 37: 0.156 (0.15 – 0.16) Item 38: 93.38 (88.2 – 99.7)	
*9.	Calculates Q to RWCU.	Records the following on RAP-7.3.03 Attachment 1: Item 39: 4.28 (3.8 – 4.7)	CRITICAL STEP
*10.	Calculates QPUMP.	Records the following on RAP-7.3.03 Attachment 1: Item 41: 1.58 (1.57 – 1.59)	CRITICAL STEP
*11.	Calculates Core Thermal Power.	Records the following on RAP-7.3.03 Attachment 1: Item 42: 1957.9 (1922 – 1993.1) Item 43: 77.2 (75.7 – 78.6)	CRITICAL STEP
EVALUATOR: Terminate the task at this point.			

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A2 LOI-12-2
JPM NUMBER

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

HANDOUT

- **A plant startup is in progress.**
- **Verification of Core Thermal Power is required.**
- **Data has been recorded by another operator for RAP-7.3.03, Core Thermal Power Evaluation, Attachment 1 Items 1-15.**
- **EPIC computer points are not available.**
- **Items 14 and 15 were obtained from 02TT-168A/C and B/D on Attachment 3.**

Calculate Core Thermal Power manually per section 9.2 of RAP-7.3.03, Core Thermal Power Evaluation.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO NRC A2 LOI-12-2 TASK TITLE: Perform HPCI Lineup Verification Per ST-4B
APPL. TO JPM NUMBER

REV: DATE: NRC K/A SYSTEM NUMBER: 2.1.31 4.6/4.3

JAF TASK NUMBER: JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: OPERATIONS REVIEW: _____

APPROVED: _____

~~~~~

CANDIDATE NAME:                      LOGIN ID:                      \_\_\_\_\_

JPM Completion                      Performed

Location:                      Simulator

DATE PERFORMED:                      TIME TO COMPLETE:                      \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION:                      ☐ Satisfactory                      ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: DOC. COMPLETE: _____

PROGRAM ADMINISTER

ENTERGY NUCLEAR NORTHEAST JOB PERFORMANCE MEASURE

RO
APPL. TO

NRC A2 LOI-12-2
JPM NUMBER

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

Current Update: _____
Date

By: _____
Int

Outstanding Items

- ☐ Technical Review
 - ☐ Questions and Answers
 - ☐ Procedural Change Required

- ☐ Additional Information
 - ☐ Validation
 - ☒ None

Comments:

Current Update _____
Date

By: _____
Int

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A2 LOI-12-2
JPM NUMBER

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-4B, HPCI Monthly Operability Test

III. TOOLS AND EQUIPMENT

C. None

IV. SET UP REQUIREMENTS

- B. Provide a copy of ST-4B completed up to step 8.2.
- C. Reset the simulator to an IC (IC-152) with HPCI in a normal standby lineup, except for the following:
 - a. Set HPCI FLOW CNTRL setpoint between 3800-3900 gpm on panel 09-3.
 - b. Close INBD STM SUPP VLV 23MOV-15 on panel 09-3.
 - c. Close COND PMP DISCH TO RADW 23AOV-39 on panel 09-4.
 - d. Close STM LINE DRN TO RADW 23AOV-42 on panel 09-4.

V. EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

Should Candidate inform CRS that ST cannot be continued due to the out of position valve or out of spec readings, etc..., inform Candidate the deviation has been noted and for them to continue with the ST.

VI. TASK CONDITIONS

- F. ST-4B, HPCI Monthly Operability Test, is in progress.
- G. Other operators have completed ST-4B thru Section 8.1.

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "Complete ST-4B Section 8.2, HPCI Valve Lineup."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Record HPCI FLOW CNTRL output at	Records HPCI FLOW CNTRL output as	

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

	STEP	STANDARD	EVALUATION / COMMENT
	panel 09-3.	greater than or equal to 100%.	
2.	Verify the following lineup at panel 09-3: D. HPCI FLOW CNTRL setpoint - 4300 gpm E. HPCI FLOW CNTRL - AUTO F. TEST SPEED ADJUST - Full counterclockwise G. TURB GOV VLV 23HOV-2 - Closed H. TURB STOP VLV 23HOV-1 - Closed I. TURB TEST 23A-S23 - NORMAL J. TEST PWR 23A-S24 - OFF K. OUTBD STM SUPP VLV 23MOV-16 - Closed L. TURB STM SUPP VLV 23MOV-14 - Closed	Verifies the following lineup at panel 09-3 and documents in ST-4B: M. *HPCI FLOW CNTRL setpoint – 3800 – 3900 gpm N. HPCI FLOW CNTRL - AUTO O. TEST SPEED ADJUST - Full counterclockwise P. TURB GOV VLV 23HOV-2 - Closed Q. TURB STOP VLV 23HOV-1 - Closed R. TURB TEST 23A-S23 - NORMAL S. TEST PWR 23A-S24 - OFF T. OUTBD STM SUPP VLV 23MOV-16 - Closed U. TURB STM SUPP VLV 23MOV-14 - Closed EVALUATOR NOTE: The bolded item above is out-of-spec. Should Candidate inform CRS that ST cannot be continued due to the out of spec value, inform Candidate the deviation has been noted, continue with the ST and the deviation will be corrected by another Operator.	CRITICAL STEP (bolded items only)
2. (cont.)	Verify the following lineup at panel 09-3 (cont.): V. HPCI & RCIC TEST VLV TO CST 23MOV-24 - Closed W. MIN FLOW VLV 23MOV-25 - Closed X. INBD TORUS SUCT VLV 23MOV-58 - Closed Y. TEST VLV TO CST 23MOV-21 - Closed Z. STM LINE DRN TRAP BYP VLV 23AOV-53 - AUTO AA. TURB EXH COND DRN VLV 23AOV-54 - AUTO BB. INBD STM SUPP VLV	Verifies the following lineup at panel 09-3 and documents in ST-4B (cont.): HH. HPCI & RCIC TEST VLV TO CST 23MOV-24 - Closed II. MIN FLOW VLV 23MOV-25 - Closed JJ. INBD TORUS SUCT VLV 23MOV-58 - Closed KK. TEST VLV TO CST 23MOV-21 - Closed LL. STM LINE DRN TRAP BYP VLV 23AOV-53 - AUTO MM. TURB EXH COND DRN VLV 23AOV-54 - AUTO	

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

	STEP	STANDARD	EVALUATION / COMMENT
	23MOV-15 - Open CC. OUTBD TORUS SUCT VLV 23MOV-57 - Closed DD. PMP DISCH VLV 23MOV-20 – Open EE. STM LINE WARMING ISOL VLV 23MOV-60 - Open FF. CST SUCT VLV 23MOV-17 - Open GG. INJ VLV 23MOV-19 - Closed	NN.*INBD STM SUPP VLV 23MOV-15 - Closed OO. OUTBD TORUS SUCT VLV 23MOV-57 - Closed PP. PMP DISCH VLV 23MOV-20 – Open QQ. STM LINE WARMING ISOL VLV 23MOV-60 - Open RR.CST SUCT VLV 23MOV-17 - Open SS. INJ VLV 23MOV-19 - Closed EVALUATOR NOTE: The bolded item above is out-of-spec. Should Candidate inform CRS that ST cannot be continued due to the out of spec value, inform Candidate the deviation has been noted, continue with the ST and the deviation will be corrected by another Operator.	
2. (cont.)	Verify the following lineup at panel 09-3 (cont.): TT. COND PMP DISCH TO RADW 23AOV-40 - AUTO UU. STM LINE DRN TO RADW 23AOV-43 - Open VV. HPCI EXH VAC BKR 23MOV-59 - Open	Verifies the following lineup at panel 09-3 and documents in ST-4B (cont.): WW. COND PMP DISCH TO RADW 23AOV-40 - AUTO XX. STM LINE DRN TO RADW 23AOV-43 - Open YY. HPCI EXH VAC BKR 23MOV-59 - Open	
3.	Verify the following lineup at panel 09-4: <ul style="list-style-type: none"> COND PMP DISCH TO RADW 23AOV-39 - Open STM LINE DRN TO RADW 23AOV-42 - Open 	Verifies the following lineup at panel 09-4 and documents in ST-4B (cont.): <ul style="list-style-type: none"> *COND PMP DISCH TO RADW 23AOV-39 - Closed *STM LINE DRN TO RADW 23AOV-42 - Closed EVALUATOR NOTE: The bolded item above is out-of-spec. Should Candidate inform CRS that ST cannot be continued due to the out of spec value, inform Candidate the deviation has been noted, continue with the ST and the deviation will be corrected by another Operator.	CRITICAL STEP (bolded items only)

SRO/RO NRC A2 LOI-12-2

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

	STEP	STANDARD	EVALUATION / COMMENT
EVALUATOR: Terminate the task at this point.			

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A3 LOI-12-2
JPM NUMBER

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

HANDOUT

- **ST-4B, HPCI Monthly Operability Test, is in progress.**
- **Other operators have completed ST-4B thru Section 8.1.**

Complete ST-4

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO NRC A3 LOI-12-2 TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work
APPL. TO JPM NUMBER

REV: DATE: NRC K/A SYSTEM NUMBER: 2.2.13 4.1/4.3

JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:

ESTIMATED COMPLETION TIME: 30 Minutes

SUBMITTED: OPERATIONS REVIEW:

APPROVED:

~~~~~

CANDIDATE NAME: LOGIN ID:

JPM Completion Performed

Location: Simulator

DATE PERFORMED: TIME TO COMPLETE: Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

SIGNATURE/PRINTED

CANDIDATE REVIEW:

SIGNATURE

REVIEWED BY: PROGRAM ADMINISTER DOC. COMPLETE:

ENTERGY NUCLEAR NORTHEAST JOB PERFORMANCE MEASURE

RO
APPL. TO

NRC A3 LOI-12-2

JPM NUMBER

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

Current Update: _____
Date

By: _____
Int

Outstanding Items

- ☐ Technical Review
 - ☐ Questions and Answers
 - ☐ Procedural Change Required

- ☐ Additional Information
 - ☐ Validation
 - ☒ None

Comments:

Current Update _____
Date

By: _____
Int

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A3 LOI-12-2
JPM NUMBER

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

- A. EN-OP-102, Protective and Caution Tagging
- B. ESK-6AC
- C. FM-15A
- D. OP-40

III. TOOLS AND EQUIPMENT

ZZ. None

IV. SET UP REQUIREMENTS

- D. Ensure copies of the following references are available:
 - a. EN-OP-102
 - b. ESK-6AC
 - c. FM-15A
 - d. OP-40

V. EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

VI. TASK CONDITIONS

- H. Maintenance is required on Reactor Building Closed Loop Cooling Pump A.
- I. The maintenance activity will be intrusive to the pump motor and impeller casing.
- J. eSOMS is unavailable.

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A3 LOI-12-2
JPM NUMBER

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "Generate a tagout isolation boundary for RBCLC Pump A maintenance. Record the devices to be tagged and their required positions on the worksheet provided."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain required references.	Obtains and utilizes required references, which may include: e. EN-OP-102 f. FM-15A g. ESK-6AC h. OP-40 EVALUATOR NOTE: Component names and Required Position terminology may vary slightly from what is written below due to unavailability of eSOMS.	
2.	Determine RBCLC Pump A control switch tagged position.	Identifies RBCLC Pump A control switch should be tagged in the pull-to-lock position.	
*3.	Determine RBCLC Pump A breaker tagged position.	Identifies RBCLC Pump A breaker (71-11316) should be tagged in the racked out or removed position.	CRITICAL STEP
*4.	Determines RBCLC Pump A discharge isolation valve tagged position.	Identifies RBCLC Pump A discharge isolation valve (15RBC-2A) should be tagged in the closed position.	CRITICAL STEP
*5.	Determines RBCLC Pump A suction isolation valve tagged position.	Identifies RBCLC Pump A suction isolation valve (15RBC-40A) should be tagged in the closed position.	CRITICAL STEP
6.	Determines RBCLC Pump A venting path tagged position.	Identifies one or more of the following paths for venting RBCLC Pump A casing:	

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

<u>RO</u>	<u>NRC A3 LOI-12-2</u>	TASK TITLE:	
APPL. TO	JPM NUMBER		Determine Tagout Boundary For RBCLC Pump Work

	STEP	STANDARD	EVALUATION / COMMENT
		<ul style="list-style-type: none"> • RBCLC Pump A Discharge Pressure Indicator Root Valve (15RBC-645) open with either the Test/Drain valve open or the Pressure Indicator removed/uninstalled. • RBCLC Pump A Suction Pressure Indicator Root Valve (15RBC-607) open with the Pressure Indicator removed/uninstalled. • RBCLC Pump A Casing Vent Valve open. 	
EVALUATOR: Terminate the task at this point.			

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO
APPL. TO

NRC A3 LOI-12-2
JPM NUMBER

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

HANDOUT

- **Maintenance is required on Reactor Building Closed Loop Cooling Pump A.**
- **The maintenance activity will be intrusive to the pump motor and impeller casing.**
- **eSOMS is unavailable.**

Generate a tagout isolation boundary for RBCLC Pump A maintenance. Record the components to be tagged and their required positions on the worksheet provided.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO
APPL. TO

NRC A3 LOI-12-2
JPM NUMBER

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

WORKSHEET

Component	Required Position

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A3 LOI-12-2
JPM NUMBER

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

--	--

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO NRC A4 LOI-12-2 TASK TITLE: Conduct Emergency Announcement And
APPL. TO JPM NUMBER Protected Area Evacuation

REV: DATE: NRC K/A SYSTEM NUMBER: 2.4.43 3.2/3.8

JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: OPERATIONS REVIEW:

APPROVED:

~~~~~

CANDIDATE NAME: LOGIN ID:

JPM Completion Performed

Location: Simulator

DATE PERFORMED: TIME TO COMPLETE: Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

SIGNATURE/PRINTED

CANDIDATE REVIEW:

SIGNATURE

REVIEWED BY: DOC. COMPLETE:

PROGRAM ADMINISTER

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

<u>RO</u>	<u>NRC A4 LOI-12-2</u>	TASK TITLE:	Conduct Emergency Announcement And
APPL. TO	JPM NUMBER		Protected Area Evacuation

Current Update: _____
Date

By: _____
Int

Outstanding Items

- ☐ Technical Review
- ☐ Questions and Answers
- ☐ Procedural Change Required

- ☐ Additional Information
- ☐ Validation
- ☒ None

Comments:

Current Update _____
Date

By: _____
Int

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A4 LOI-12-2
JPM NUMBER

TASK TITLE: Conduct Emergency Announcement And
Protected Area Evacuation

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

- A. IAP-1, Emergency Plan Implementation Checklist
- B. EAP-10, Protected Area Evacuation
- C. OP-63, Intra-Plant Communications System

III. TOOLS AND EQUIPMENT

A. Simulator communications equipment (optional)

IV. SET UP REQUIREMENTS

E. None

V. EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

VI. TASK CONDITIONS

K. A Site Area Emergency has been declared due to high Drywell radiation.

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "The Shift Manager directs you to sound the Station Alarm and make the announcement for a Site Area Emergency (with accountability) per the OP-63 posted attachment twice."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-63 posted attachment.	Obtains a controlled copy of OP-63 posted attachment. EVALUATOR NOTE: The OP-63 posted attachment is kept at the SNO, SM, CRS desks and OP Binders. The candidate should locate and use one of these copies.	
*2.	Depress appropriate alarm pushbutton: <ul style="list-style-type: none"> STA for station alarm 	Depresses STA alarm pushbutton.	CRITICAL STEP
*3.	WHEN alarm is to be terminated, perform one of the following: a. Depress OFF pushbutton. OR b. Actuate and hold INSTR toggle switch. (Alarm will re-actuate when INSTR toggle switch is released.)	Depresses OFF pushbutton. OR Actuates and holds INSTR toggle switch.	CRITICAL STEP
*4.	Make announcement for Site Area Emergency with accountability.	Announces the following over site paging system: "Attention, Attention. A Site Area Emergency has been declared at JAF due to high Drywell radiation (or similar). Activate all facilities. All personnel in the Protected Area commence accountability using badge readers and sign-in sheets."	CRITICAL STEP
5.	Repeat announcement for Site Area Emergency with accountability.	Announces the following over site paging system: "Attention, Attention. A Site Area Emergency has been declared at JAF due to high Drywell radiation (or similar). Activate all facilities. All personnel in the Protected Area commence accountability using badge readers and sign-in sheets."	

	STEP	STANDARD	EVALUATION / COMMENT
6.	Ensure Station Alarm is secured.	<p>If STA alarm was previously interrupted only by INSTR toggle switch, depresses OFF pushbutton.</p> <p>EVALUATOR CUE: Provide JPM Handout #2 and inform the candidate, "The Shift Manager directs you to make the announcement for a Protected Area evacuation with normal egress per the OP-63 posted attachment."</p>	
*7.	Depress appropriate alarm pushbutton: <ul style="list-style-type: none"> • EVAC for evacuation alarm 	Depresses EVAC alarm pushbutton.	CRITICAL STEP
*8.	WHEN alarm is to be terminated, perform one of the following: a. Depress OFF pushbutton. OR b. Actuate and hold INSTR toggle switch. (Alarm will re-actuate when INSTR toggle switch is released.)	Depresses OFF pushbutton. OR Actuates and holds INSTR toggle switch.	CRITICAL STEP
*9.	Make announcement for Protected Area evacuation with normal egress.	Announces the following over site paging system: "Attention, Attention: all personnel. A high radiation level exists in the Drywell (or similar). All non-essential personnel evacuate the Protected Area and proceed to the Training building auditorium. All essential personnel inside the Protected Area fence proceed to your designated primary assembly area. Personnel outside the Protected Area fence proceed to the Training building auditorium."	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
10.	Repeat announcement for Protected Area evacuation with normal egress.	Announces the following over site paging system: “Attention, Attention: all personnel. A high radiation level exists in the Drywell (or similar). All non-essential personnel evacuate the Protected Area and proceed to the Training building auditorium. All essential personnel inside the Protected Area fence proceed to your designated primary assembly area. Personnel outside the Protected Area fence proceed to the Training building auditorium.”	
11.	Ensure Evacuation Alarm is secured.	If EVAC alarm was previously interrupted only by INSTR toggle switch, depresses OFF pushbutton.	
EVALUATOR: Terminate the task at this point.			

HANDOUT

A Site Area Emergency has been declared due to high Drywell radiation.

The Shift Manager directs you to sound the Station Alarm and make the announcement for a Site Area Emergency (with accountability) per the OP-63 posted attachment twice.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO
APPL. TO

NRC P1 LOI-12-2
JPM NUMBER

TASK TITLE: Restore H₂O₂ Monitors Following Isolation

HANDOUT #2

The Shift Manager directs you to make the announcement for a Protected Area evacuation with normal egress per the OP-63 posted attachmen

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO _____ NRC P1 LOI-12-2 _____ TASK TITLE: Restore H₂O₂ Monitors Following Isolation
APPL. TO _____ JPM NUMBER _____

REV: _____ DATE: _____ NRC K/A SYSTEM NUMBER: 223002 A2.09 3.6/3.7

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: _____ OPERATIONS REVIEW: _____

APPROVED: _____
~~~~~

CANDIDATE NAME: \_\_\_\_\_ LOGIN ID: \_\_\_\_\_

JPM Completion ☒ Simulated ☐ Performed  
Location: ☒ Plant ☐ Simulator

DATE PERFORMED: \_\_\_\_\_ TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory  
~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____
SIGNATURE/PRINTED

CANDIDATE REVIEW: _____
SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____
PROGRAM ADMINISTER

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

<u>S/RO</u>	<u>NRC P1 LOI-12-2</u>	TASK TITLE:	<u>Restore H₂O₂ Monitors Following Isolation</u>
APPL. TO	JPM NUMBER		

Current Update: _____
Date

By: _____
Int

Outstanding Items

- ☐ Technical Review
- ☐ Questions and Answers
- ☐ Procedural Change Required

- ☐ Additional Information
- ☐ Validation
- ☒ None

Comments:

1.

Current Update: _____
Date

By: _____
Int.

Previous Revision Date:

SAFETY CONSIDERATIONS

None

REFERENCES

OP-37, Containment Atmosphere Dilution System.

EP-2, Isolation/Interlock Overrides.

TOOLS AND EQUIPMENT

None

SET UP REQUIREMENTS

Obtain SM permission prior to performing this task.

Obtain a controlled copy of EP-2 Isolation/Interlock Overrides.

Obtain a controlled copy of OP-37, Reinitializing Hydrogen/Oxygen Monitor Panel.

EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

TASK CONDITIONS

A Primary Containment isolation has occurred due to High Drywell Pressure (2.7 psig).

The cause of the isolation has been determined.

EOP-4 directs restoration of H₂/O₂ monitors.

INITIATING CUE

Inform the candidate, "The CRS directs you to restore H₂O₂ monitors per Section 5.25 of EP-2 and then reinitialize 27PCX-101A per section D.2 of OP-37."

* - CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of EP-2, ISOLATION/INTERLOCK OVERRIDES.	Obtains a controlled copy of EP-2. EVALUATOR: Provide working copy of EP-2.	
	NOTE: Steps 2 & 3 may be performed in any order or concurrently per EP-2		
*2.	Place EMERG MANUAL OVERRIDE SYSTEM A keylock switch in OVER/RI at panel 27MAP.	At Panel 27MAP, places EMERG MANUAL OVERRIDE SYSTEM A switch in OVER/RI. EVALUATOR CUE: Inform candidate keylock switch is in override.	<u>CRITICAL STEP</u>
*3.	Place EMER MANUAL OVERRIDE SYSTEM B keylock switch in OVER/RI at panel 27MAP.	At Panel 27MAP, places EMERG MANUAL OVERRIDE SYSTEM b switch in OVER/RI. EVALUATOR CUE: Inform candidate keylock switch is in override.	CRITICAL STEP
4.	Reinitialize hydrogen/oxygen monitor panel per Section D of OP-37.	Exits EP-2 and enters OP-37. EVALUATOR: Provide working copy of OP-37.	
5.	Ensure LOCAL POWER switch is in OFF.	Observes LOCAL power switch in OFF.	
EVALUATOR: Inform the Candidate all valves referenced in Section D.2.2 are found with their green light on, red light off.			

	STEP	STANDARD	EVALUATION / COMMENT
*6.	<p>Ensure open one set of the following valve pairs:</p> <ul style="list-style-type: none"> SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E1 SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E2 	<p>EVALUATOR NOTE \ CUE: If Candidate asks which Sample Path to use: inform Candidate to use “normal path”.</p> <p>(The normal path is the Supp Pool 27SOV-119E1/E2)</p> <p>Attempts to open one of the following pairs of valve by placing control switches to OPEN:</p> <ul style="list-style-type: none"> SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E1 SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E2 <p>EVALUATOR CUE: When the candidate moves the first control switch to open, state the red light is on, green light off.</p> <p>When the second valve (of the pair) control switch is placed to open, state the red light is off and the green light remains on.</p>	CRITICAL STEP
6a.	<p>Note: Candidate may re-close first valve previously opened.</p>	<p>EVALUATOR CUE: When the first valve previously opened is taken to close, state the green light is on, the red light is off.</p>	
*7.	<p>Ensure open one set of the following valve pairs:</p> <ul style="list-style-type: none"> SAMPLE GAS DRYW MID SAMP VALVE 27SOV-120E1/E2 	<p>EVALUATOR CUE: If Candidate asks which Sample Path to use: inform Candidate to use “DW mid path”.</p> <p>Attempts to open a different pair of the following valves by placing control switches to OPEN:</p> <ul style="list-style-type: none"> SAMPLE GAS DRYW MID SAMP VALVE 27SOV-120E1 SAMPLE GAS DRYW MID 	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
		<p>SAMP VALVE 27SOV-120E2</p> <p>EVALUATOR CUE: For each valve in the second pair, when the candidate indicates the control switch is moved to open, then inform the candidate that the red light came on the green light is off.</p>	
*8.	<p>Ensure open the following valves at MAP:</p> <ul style="list-style-type: none"> SAMPLE GAS RETURN SAMP VALVE 27SOV-124E1 SAMPLE GAS RETURN SAMP VALVE 27SOV-124E2 	<p>Places the control switch to the OPEN position for:</p> <ul style="list-style-type: none"> SAMPLE GAS RETURN SAMP VALVE 27SOV-124E1 SAMPLE GAS RETURN SAMP VALVE 27SOV-124E2 <p>EVALUATOR CUE: For each valve, when the candidate indicates the control switch is moved to open inform the candidate that the red light is on, the green light is off.</p>	CRITICAL STEP
*9.	Ensure PUMP switch is in RUN.	<p>Places PUMP switch in RUN.</p> <p>EVALUATOR CUE: Inform the candidate it is in RUN.</p>	CRITICAL STEP
*10.	Ensure POWER keylock switch is in ON.	<p>Places POWER keylock switch in ON.</p> <p>EVALUATOR CUE: Inform the candidate the keylock switch is in ON.</p>	CRITICAL STEP
*11.	Depress 6.	<p>Depresses 6 on 27PCX-101A keypad.</p> <p>EVALUATOR CUE: When indicates 6 would be depressed, then inform the candidate "6 has been depressed and 'ENTER ACCESS CODE' appears on</p>	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
		CRT screen".	
*12.	When "ENTER ACCESS CODE" appears on CRT screen, perform the following: a) Depress 8. b) Depress 2. c) Depress ENTER.	Depresses 8, then 2, and then Enter key on 27PCX-101A keypad. EVALUATOR CUE: When the candidate indicates 8, 2 and Enter keys would be depressed, then state the "monitor" display appears on CRT screen.	CRITICAL STEP
*13.	WHEN monitor display appears on CRT screen, perform the following: a) Depress 1. b) Depress ESC.	Depresses 1 and then ESC key on 27PCX-101A keypad. EVALUATOR CUE: When the candidate states they would depress 1 then ESC, inform the candidate that the 27PCX-101 graphic display is now visible.	CRITICAL STEP
14.	Verify the following on 27PCX-101A display: <ul style="list-style-type: none"> SV-1 is open SV-6 is open Flow indication for P1 (red light on) 	Observes the following: <ul style="list-style-type: none"> SV-1 open SV-6 open P1 running EVALUATOR CUE: If asked, inform the candidate SV-1 and SV-6 indicate open and P1 red light is on.	
EVALUATOR: Terminate the task at this point.			

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO	NRC P2 LOI-12-2	TASK TITLE:	Cross-tie Fire Protection System To Inject To RHR Service Water
APPL. TO	JPM NUMBER		

- **A Primary Containment isolation has occurred due to High Drywell Pressure (2.7 psig).**
- **The cause of the isolation has been determined.**
- **EOP-4 directs restoration of H₂/O₂ monitors.**

The CRS directs you to override the High Drywell Pressure Isolation per Section 5.25 of EP-2 and then reinitialize 27PCX-101A per section D.2 of OP-37.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	NRC P2 LOI-12-2	TASK TITLE:	Cross-tie Fire Protection System To Inject To RHR Service Water
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 295031 EA1.08 3.8/3.9

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: OPERATIONS REVIEW:

APPROVED:

APPLICANT NAME: LOGIN ID:

JPM Completion	X	Simulated	<input type="checkbox"/>	Performed
Location:		Plant	<input type="checkbox"/>	Simulator
	X			

DATE PERFORMED: TIME TO COMPLETE: Minutes
PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: SIGNATURE/PRINTED

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO

NRC P2 LOI-12-2

TASK TITLE:

Cross-tie Fire Protection System To Inject To RHR
Service Water

APPL. TO

JPM NUMBER

SAFETY CONSIDERATIONS

Comply with JAF Safety Standards and Requirements.

REFERENCES

EP-8, Alternate Injection Systems

TOOLS AND EQUIPMENT

Emergency cross connect hose located in the North Safety Pump Room.
N1 key.

SET UP REQUIREMENTS

Make copy of EP-8 as handout for applicant.

EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO

NRC P2 LOI-12-2

TASK TITLE:

Cross-tie Fire Protection System To Inject To RHR
Service Water

APPL. TO

JPM NUMBER

TASK CONDITIONS

To maintain RPV water level above 0", water level control must be augmented by using the lake as a source.

The RHRSW pumps are unavailable.

INITIATING CUE

Inform the candidate, "The CRS directs you to align the Fire Protection System to RHR Service Water A per EP-8 Section 5.3."

* - CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
1.	Verify the following RHR pumps are stopped: <ul style="list-style-type: none"> RHR PMP 10P-3A RHR PMP 10P-3C 	Contacts control room to verify RHR pumps A and C are stopped. EVALUATOR CUE: RHR pumps A and C are stopped.	
*2.	Remove caps from the following valves: <ul style="list-style-type: none"> 10RHR-432 (RHRSW to fire protection cross-tie isol valve) 76FPS-720 (RHRSW/fire protection cross-tie isol valve) 	Rotates caps counterclockwise and removes from: <ul style="list-style-type: none"> 10RHR-432 (RHRSW to fire protection cross-tie isol valve) 76FPS-720 (RHRSW/fire protection cross-tie isol valve) EVALUATOR CUE: Both pipe caps are removed.	CRITICAL STEP
*3.	Connect hose (stored in cabinet 76CAB-1 on west wall of north emergency service water room, N1 Key) between the following valves: <ul style="list-style-type: none"> 10RHR-432 76FPS-720 	Connects hose between valves: <ul style="list-style-type: none"> 10RHR-432 76FPS-720 EVALUATOR CUE: The hose is connected between the indicated valves. NOTE: The candidate should locate the hose but not move it.	CRITICAL STEP
4.	Ensure closed RHRSW DISCH VLV FROM HX A 10MOV-89A.	Contacts control room to ensure closed RHRSW DISCH VLV FROM HX A 10MOV-89A. EVALUATOR CUE: 10MOV-89A is closed.	
5.	Start one or more of the following pumps: <ul style="list-style-type: none"> ELEC FIRE PMP 76P-2 DIESEL FIRE PMP 76P-1 DIESEL FIRE PMP 76P-4 	Contacts the control room to start a Fire Pump. EVALUATOR CUE: Report that the Electric Fire Pump has been started.	
*6.	Unlock and open the following valves:	Unlocks, removes locking mechanism	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
	<ul style="list-style-type: none"> • 10RHR-432 • 76FPS-720 	<p>and rotates handwheels counterclockwise to open the following valves:</p> <ul style="list-style-type: none"> • 10RHR-432 • 76FPS-720 <p>EVALUATOR CUE: The valves are unlocked and the valve stem is fully out. The hose is pressurized.</p>	
Terminate the task at this point.			

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO

NRC P3 LOI-12-2

TASK TITLE:

RCIC Turbine Trip/Throttle Valve Reset With Tappet
Failure

APPL. TO

JPM NUMBER

HANDOUT

- **To maintain RPV water level above 0", water level control must be augmented by using the lake as a source.**
- **The RHRSW pumps are unavailable.**

The CRS directs you to align the Fire Protection System to RHR Service Water

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	NRC P3 LOI-12-2	TASK TITLE:	RCIC Turbine Trip/Throttle Valve Reset With Tappet Failure
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 217000 A2.02 3.8/3.7

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: OPERATIONS REVIEW:

APPROVED:

APPLICANT NAME: LOGIN ID:

JPM Completion Location:	X	Simulated Plant	<input type="checkbox"/>	Performed Simulator
	X			

DATE PERFORMED: TIME TO COMPLETE: Minutes
PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: SIGNATURE/PRINTED

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO

NRC P3 LOI-12-2

TASK TITLE:

RCIC Turbine Trip/Throttle Valve Reset With Tappet
Failure

APPL. TO

JPM NUMBER

SAFETY CONSIDERATIONS

Comply with JAF Safety Standards and Requirements.

REFERENCES

OP-19, Reactor Core Isolation Cooling System

TOOLS AND EQUIPMENT

None

SET UP REQUIREMENTS

Make copy of OP-19 as handout for applicant.

EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO

NRC P3 LOI-12-2

TASK TITLE:

RCIC Turbine Trip/Throttle Valve Reset With Tappet
Failure

APPL. TO

JPM NUMBER

TASK CONDITIONS

A Reactor scram has occurred.

The MSIVs are closed.

An inadvertent local manual trip of the RCIC turbine has occurred.

INITIATING CUE

Inform the candidate, "The CRS directs you to reset 13HOV-1 per OP-19 Section G.6."

* - CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
*1.	Manually operate 13HOV-1 handwheel to closed position.	Rotates 13HOV-1 handwheel clockwise to closed position. EVALUATOR CUE: The valve stem is fully in.	CRITICAL STEP
2.	IF turbine trip was from overspeed or local manual, THEN perform the following:	Determines from task conditions that turbine trip was a local manual trip.	
*3.	Pull spring loaded emergency connecting rod against spring force, moving emergency head lever away from emergency tappet and tappet nut.	Pulls emergency connecting rod to move emergency head lever away from emergency tappet and tappet nut. EVALUATOR CUE: The emergency connecting rod has moved.	CRITICAL STEP
4.	Verify emergency tappet and tappet nut moves downward into "reset" position, engaging head lever and holding emergency connecting rod in position under spring tension.	Observes emergency tappet and tappet nut position. EVALUATOR CUE: The emergency tappet and tappet nut are in the up position.	
5.	IF emergency tappet and tappet nut did not move into the reset position per Step G.6.2b, THEN perform the following:	Recognizes that emergency tappet and tappet nut did not move into reset position and alternate steps are required.	
*6.	Lift up on RCIC manual trip lever while pulling spring loaded emergency connecting rod against spring force, moving emergency head lever away from emergency tappet and tappet nut.	Lifts up on RCIC manual trip level while pulling spring loaded emergency connecting rod to move emergency head lever away from emergency tappet and tappet nut.	CRITICAL STEP
7.	Verify emergency tappet and tappet nut moves downward into "reset" position, engaging head lever and holding emergency connecting rod in position under spring tension.	Observes emergency tappet and tappet nut position. EVALUATOR CUE: The emergency tappet and tappet nut are in the down	

	STEP	STANDARD	EVALUATION / COMMENT
		position.	
8.	Ensure trip hook engages latchup lever.	Observes trip hook and latchup lever. EVALUATOR CUE: Trip hook has engaged latchup lever.	
*9.	Manually open 13HOV-1 to full open.	Rotates 13HOV-1 handwheel counterclockwise to full open position. EVALUATOR CUE: The valve stem is fully out.	CRITICAL STEP
10.	Manually close one-quarter turn 13HOV-1 handwheel to allow for thermal expansion.	Rotates 13HOV-1 handwheel clockwise one-quarter turn. EVALUATOR CUE: 13HOV-1 handwheel is one-quarter turn closed.	
11.	Verify annunciator 09-4-1-14 RCIC TRIP is clear.	Contacts control room to verify annunciator 09-4-1-14 is clear. EVALUATOR CUE: Annunciator 09-4-1-14, RCIC TRIP, is clear.	
12.	Verify TURB TRIP & THROTTLE VLV 13HOV-1 indicates open at panel 09-4.	Contacts control room to verify TURB TRIP & THROTTLE VLV 13HOV-1 indicates open at panel 09-4. EVALUATOR CUE: TURB TRIP & THROTTLE VLV 13HOV-1 indicates open at panel 09-4.	
Terminate the task at this point.			

HANDOUT

- A Reactor scram has occurred.
- The MSIVs are closed.
- An inadvertent local manual trip of the RCIC turbine has occurred.

The CRS directs you to reset 13HOV-1 per OP-19 Section G.6.

**ENTERGY - FITZPATRICK
JOB PERFORMANCE MEASURE**

S/RO
APPL. TO

NRC S1 LOI-12-2
JPM NUMBER

TASK TITLE: EDG Load Run with Governor Failure (Alt Path)

REV: 0 DATE: 3/2012

NRC K/A SYSTEM NUMBER: 2640000 A4.04 3.7/3.7

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 18 Minutes

SUBMITTED: _____ OPERATION REVIEW: _____

APPROVED: _____

~~~~~

CANDIDATE NAME: \_\_\_\_\_

JPM Completion:      ( ) Simulated      (x) Performed

Location:      ( ) Plant      (x) Simulator

DATE PERFORMED: \_\_\_\_\_ TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION:      ( ) Satisfactory ( ) Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____
SIGNATURE/PRINTED

CANDIDATE REVIEW: _____
SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____
PROGRAM ADMINISTER

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

S/RO NRC S1 LOI-12-2 TASK TITLE: EDG Load Run with Governor Failure (Alt Path)
APPL. TO JPM NUMBER

Current Update: ____
Date

By: ____
Int.

Outstanding Items:

____ Technical Review

____ Additional Information

____ Questions and Answers

____ Validation

____ Procedural Change Required

____ None

Comments:

Current Update: ____
Date

By: ____
Int.

Previous Revision Dates:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO _____
APPL. TO

NRC S1 LOI-12-2
JPM NUMBER

TASK TITLE: EDG Load Run with Governor Failure (Alt Path)

I. SAFETY CONSIDERATIONS

- A. None

II. REFERENCES

- A. ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST
- B. OP-22, DIESEL GENERATOR EMERGENCY POWER

III. TOOLS AND EQUIPMENT

- A. Synchronizing Switch

IV. SET UP REQUIREMENTS

- A. Initialize the simulator to IC 151.
- B. Obtain a controlled copy of ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST. Initial as complete Section 4.0, 5.0 and Step 8.1 through and including Step 8.7.
- C. Copies of EDG Demand Log for EDG B & D forms from OP-22, DIESEL GENERATOR EMERGENCY POWER.
- D. Trigger 1 = EDG 'B' Governor Switch to Raise.
- E. Event trigger 1 = dgpdgen(2)>900000.
- F. Trigger 2 = EDG 'B' KW meter = 3000.
- G. Event Trigger 2 = dgpdgen(2) >3,000,000. Command = dor zdi1c1edgb11

V. EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, placekeeping and self checking.

VI. TASK CONDITIONS

- A. EDG B and D load testing is in progress with ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST complete through Step 8.7.

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "The CRS directs you to perform ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST, starting at Step 8.8 for EDGs B & D."

NOTE: All controls and indications located on panel 09-8 unless otherwise stated.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of procedure ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST	Obtains a controlled copy of ST-9BB	
2.	Reviews the precautions	Reviews the precautions, making note of any that are applicable	
3.	Select the correct section to perform the task.	Selects Section 8.8 of ST-9BB	
4.	Verify the following Annunciators are clear: <ul style="list-style-type: none"> 09-8-4-11 EDG B ENG TROUBLE OR SHUTDOWN 09-8-4-14 EDG D ENG TROUBLE OR SHUTDOWN 	Verifies 09-8-4-11 and 09-8-4-14 alarms are clear	
5.	<p>IF both of the following conditions exist:</p> <ul style="list-style-type: none"> Outside ambient temperature is GREATER THAN 88 deg F on 17WR-101K, CHAN A, digital indication at panel 17EMRP. <p>AND</p> <ul style="list-style-type: none"> Screenwell intake temperature is GREATER THAN 78 deg F on EPIC-A-1503 or EPIC-A-1504 <p>THEN</p>	<p>Request reading of outside air temperature on 17WR-101K, CHAN A, digital indication at panel 17EMRP.</p> <p>EVALUATOR: When asked for outside air temperature, inform the candidate that it is 60 deg F.</p>	
6.	<p>Station 3 operators with stopwatches to monitor/record times for:</p> <ul style="list-style-type: none"> Frequency Voltage Steady State Voltage and 	<p>Request Operators with stopwatches to monitor/record:</p> <ul style="list-style-type: none"> Frequency Voltage Steady State Voltage and 	

	STEP	STANDARD	EVALUATION / COMMENT
	Frequency	<p>Frequency</p> <p>EVALUATOR: When requested, inform candidate that the 3 operators are briefed on responsibilities and are stationed with stop watches.</p> <p>Candidate may inform CRS to declare EDG B system inoperable. Inform Candidate, CRS acknowledges report.</p>	
*7.	Simultaneously place the EDG B & D control switches to START and start all 3 stopwatches.	Simultaneously places the EDG B & D control switches in START.	CRITICAL STEP
8.	<p>Record stopwatch times for:</p> <ul style="list-style-type: none"> • Frequency • Voltage • Steady State Voltage and Frequency 	<p>Requests for and records stopwatch times.</p> <p>EVALUATOR: When requested, inform candidate that the stopwatch times are:</p> <ul style="list-style-type: none"> • Frequency – 6 secs • Voltage – 6 secs • Steady State Voltage and Frequency – 7 secs 	
9.	Record EDG B/D frequency and voltage.	For both B & D EDGs, records frequency and voltage.	
10.	<p>Verify the following:</p> <ul style="list-style-type: none"> • EDG B & D TIE BKR 10604 is closed • ESW pump 46P-2B is running 	<p>Verifies the following by observing the control switch red indicating light is on and the green light is off:</p> <ul style="list-style-type: none"> • EDG B & D TIE BKR 10604 is closed • ESW pump 46P-2B is running 	
*11.	Trip tie Breaker 10604 and allow switch to spring return to AUTO position and record the time.	Places the control switch for Breaker 10604, EDG B & D TIE BKR, to TRIP, allow switch to spring return to AUTO	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
		Records time the control switch for Breaker 10604, EDG B & D TIE BKR, is placed to TRIP	
12.	Record EDG B/D frequency	For both B & D EDGs, records frequency.	
13.	Verify EPIC-D-732 closed and open on alarm typer.	Verifies EPIC-D-732 closed and open on alarm typer.	
*14.	Place EDG B and D governor mode switches in the droop position	Places the EDG GOV MODE toggle switches for EDGs B&D to DROOP	CRITICAL STEP
15.	<p>IF an EDG functions improperly while paralleled with 10600 bus, THEN perform the following:</p> <ul style="list-style-type: none"> • Trip associated EDG load breaker. • Shut down malfunctioning EDG per Section G of OP-22 (Single EDG Shutdown from Control Room). 	<p>Reads the actions for an improperly functioning EDG.</p> <p>EVALUATOR NOTE: This step is to be used by the operator to trip the associated load breaker towards the end of this JPM.</p>	
16.	Steps 8.27 and 8.28 may be performed in any order per SM direction.	<p>Request direction from SM.</p> <p>EVALUATOR CUE: Inform the candidate that EDG B is to be paralleled first.</p>	
*17.	Place EDG B LOAD BKR SYNCH SW in ON	Places the EDG B LOAD BKR SYNCH SW to ON	CRITICAL STEP
*18.	Adjust EDG B VOLT REG to match INCOMING and RUNNING voltages	Matches INCOMING (EDG) and RUNNING (bus 10600) voltages with EDG B VOLT REG adjustments	CRITICAL STEP
*19.	Adjust EDG B GOV to rotate synchroscope slowly in the FAST direction (clockwise)	Adjusts EDG B GOV to rotate synchroscope slowly in fast direction	CRITICAL STEP
*20.	When EDG B and the 10600 BUS are in phase (synchroscope at 12 o'clock)	Places the control switch 10602, EDG B LOAD BKR, to CLOSE when	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
	close EDG B LOAD BKR 10602	synchroscope is at 12:00	
*21.	Adjust EDG B GOV to raise EDG B load to between 100 and 300 Kw	Places the EDG B GOV switch to RAISE and loads EDG B to between 100 and 300 kW	CRITICAL STEP
22.	Place EDG B LOAD BKR SYNCH SW in OFF and remove synch switch handle.	Places the EDG B LOAD BKR SYNCH SW to OFF and removes synch switch handle.	
	NOTE: When EDG B load reaches approximately 900 KW, the governor will malfunction and run to approximately 3050 KW. Further adjustments of the EDG B GOV switch will have no effect.		
23.	Adjust EDG B GOV to raise EDG B load to ≥ 2340 KW and ≤ 2600 kW over 3 to 5 minutes in approximately 800 kW increments	Adjusts EDG B GOV to raise EDG B load to ≥ 2340 KW and ≥ 2600 kW over 3 to 5 minutes in 800 kW increments.	
*24.	Recognize EDG B Governor malfunction.	Trips EDG B load breaker by either: <ul style="list-style-type: none"> Placing the control switch for 10602, EDG B LOAD BKR, to TRIP Placing the EDG B control switch in STOP 	CRITICAL STEP
<u>EVALUATOR:</u> Terminate the task at this point			

EDG B and D load testing is in progress with ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST complete through Step 8.7.

The CRS directs you to perform ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST, starting at Steps 8.8 for EDG B & D.

S/R O	NRC S2 LOI-12-2	TASK TITLE: Switching Relay Room Supply and Exhaust Fans	
APPL. TO	JPM NUMBER		
REV: <u>0</u>	DATE: <u>3/2012</u>	NRC K/A SYSTEM NUMBER:	<u>290003 A4.02 2.8/2.8</u>
JAF TASK NUMBER: _____		JAF QUAL STANDARD NUMBER:	<u>OP-56</u>
ESTIMATED COMPLETION TIME: <u>15</u> Minutes			
SUBMITTED: _____		OPERATIONS REVIEW: _____	
APPROVED: _____			
~~~~~			
CANDIDATE NAME: _____			
JPM Completion	<input type="checkbox"/> Simulated	<input checked="" type="checkbox"/> Performed	
Location:	<input type="checkbox"/> Plant	<input checked="" type="checkbox"/> Simulator	
DATE PERFORMED: _____	TIME TO COMPLETE: _____ Minutes		
PERFORMANCE EVALUATION:	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory	
~~~~~			
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)			
EVALUATOR: _____	SIGNATURE/PRINTED		
CANDIDATE REVIEW: _____	SIGNATURE		
REVIEWED BY: _____	DOC. COMPLETE: _____		
PROGRAM ADMINISTER			

JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

S/RO
APPL. TO

NRC S2 LOI-12-2

JPM NUMBER

TASK TITLE: Switching Relay Room Supply and Exhaust Fans

Current Update: _____
Date

By: _____
Int

Outstanding Items

- ☐ Technical Review
 - ☐ Questions and Answers
 - ☐ Procedural Change Required

- ☐ Additional Information
 - ☐ Validation
 - ☒ None

Comments:

Current Update: _____
Date

By: _____
Int.

Previous Revision Date:

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO
APPL. TO

NRC S2 LOI-12-2
JPM NUMBER

TASK TITLE: Switching Relay Room Supply and Exhaust Fans

SAFETY CONSIDERATIONS

None

REFERENCES

OP-56, Relay Room Ventilation and Cooling

TOOLS AND EQUIPMENT

None

SET UP REQUIREMENTS

Initialize the simulator to IC-153.

Control Room Ventilation Train 'A' in service.

Relay Room Ventilation Train 'B' in service.

EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

TASK CONDITIONS

Relay Room Ventilation train 'B' was placed in service last Shift to support maintenance on train 'A'.

Relay Room Ventilation train 'A' is now ready to be placed back in service.

*** - CRITICAL STEP**

INITIATING CUE

Inform the candidate, "The CRS directs you to switch Relay Room supply and exhaust fans to the 'A' train per OP-56 Relay Room Ventilation and Cooling."

NOTE: All actions performed at Panel 09-75

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-56 Relay Room Ventilation and Cooling.	Obtains a controlled copy of OP-56. Reviews Notes.	
2.	Select the correct section to perform the task.	Selects Section G.5 of OP-56, Switching Relay Room Supply and Exhaust Fans.	
3.	Place Relay Room ventilation in purge per Subsection G.3.	Selects Subsection G.3.	
4.	Place the following Relay Room Vent control switches in PURGE : <ul style="list-style-type: none"> Isol & Purge Cntrl A Isol & Purge Cntrl B 	Places Isol & Purge Cntrl A and Isol & Purge Cntrl B switches in Purge position.	
5.	Verify closed the following dampers: <ul style="list-style-type: none"> Recirc A 70MOD-104A Recirc B 70MOD-104B 	Verifies closed Recirc A 70MOD-104A and Recirc B 70MOD-104B . Green light on, Red light off	
6.	Verify open the following dampers: <ul style="list-style-type: none"> Exh 70MOD-103 Inlet 70MOD-100 	Verifies open Exh 70MOD-103 and Inlet 70MOD-100 . Red light on, Green light off	
7.	Place control switch for the following in Pull-to-Lock and verify associated damper is closed:	Note: Candidate returns to G.5.2.	
a.	Standby Control Room air handling unit 70AHU-3B	Places control switch for Fan 70AHU-3B in Pull-to-Lock (PTL). Green and Red light Off	

	STEP	STANDARD	EVALUATION / COMMENT
		Verifies closed Discharge Damper AHU-3B Disch 70MOD-106B. Green light on, Red light off	
b.	Standby Control Room exhaust fan 70FN-4B	Places control switch for Fan 70FN-4B in Pull-to-Lock (PTL). Green and Red light Off	
		Verifies closed Discharge Damper FN-4B Disch 70MOD-108B. Green light on, Red light off	
c.	Standby Relay Room exhaust fan 70FN-13A	Places control switch for Fan 70FN-13A in Pull-to-Lock (PTL). Green and Red light Off	
		Verifies closed Discharge Damper FN-13A Disch 70MOD-102A. Green light on, Red light off	
*d.	Running Relay Room air handling unit 70AHU-12B	Places control switch for Fan 70AHU-12B in Pull-to-Lock (PTL). Green and Red light Off	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
		Verifies closed Discharge Damper AHU-12B Disch 70MOD-101B . Green light on, Red light off	
*12.	Place control switch for the other Relay Room air handling unit to ON , spring return to normal, and verify the associated discharge damper opens.	Places the control switch for Fan 70AHU-12A to ON . Red light On, Green light Off	CRITICAL STEP
		Verifies open Discharge Damper AHU-12A Disch 70MOD-101A . Red light On, Green light Off	
*13.	Place control switch for the running Relay Room exhaust fan in Pull-to Lock and verify the associated discharge damper closes:	Places the control switch for Fan 70FN-13B to Pull-to Lock (PTL). Green and Red light Off	CRITICAL STEP
		Verifies closed Discharge Damper FN-13B Disch 70MOD-102B . Green light On, Red light Off	
*14.	Place control switch for the other Relay room exhaust fan to ON , spring return to normal, and verify the associated discharge damper opens:	Places the control switch for Fan 70FN-13A to ON . Red light On, Green light Off	CRITICAL STEP
		Verifies open Discharge Damper FN-13A Disch 70MOD-102A . Red light On, Green light Off	
*15.	Ensure the following control switches	Ensures the following control switches	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
	are restored from Pull-to-Lock to green flagged:	are restored from Pull-to-Lock to green flagged: <ul style="list-style-type: none"> • 70AHU-12B • 70FN-13B • 70AHU-3B • 70FN-4B Switch in center position, Flag green	
16.	Restore Relay Room ventilation from purge per Subsection G.4	Selects Subsection G.4 and begins at Step 1.	
*17.	Place the following Relay Room Ventilation control switches in AUTO : <ul style="list-style-type: none"> • Isol & Purge Cntrl A • Isol & Purge Cntrl B 	Places/verifies Isol & Purge Cntrl A and Isol & Purge Cntrl B switches in Auto position.	CRITICAL STEP
<p align="center"><u>EVALUATOR</u>: Terminate the task at this point.</p>			

HANDOUT

Relay Room Ventilation train 'B' was placed in service last Shift to support maintenance on train 'A'.

Relay Room Ventilation train 'A' is now ready to be placed back in service.

The CRS directs you to switch Relay Room supply and exhaust fans to the 'A' train per OP-56 Relay Room Ventilation and Cooling.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO APPL. TO	NRC S3 LOI-12-2 JPM NUMBER	TASK TITLE:	Start Reactor Recirc Pump - High Vib trip (Alt Path)
REV: 0	DATE: 3/2012	NRC K/A SYSTEM NUMBER:	202001 A4.01 3.7/3.7
JAF TASK NUMBER:		JAF QUAL STANDARD NUMBER:	OP-27
ESTIMATED COMPLETION TIME:	15	Minutes	
SUBMITTED:		OPERATIONS REVIEW:	
APPROVED:			
~~~~~			
CANDIDATE NAME:		LOGIN ID	
JPM Completion	<input type="checkbox"/> Simulated	<input checked="" type="checkbox"/> Performed	
Location:	<input type="checkbox"/> Plant	<input checked="" type="checkbox"/> Simulator	
DATE PERFORMED:		TIME TO COMPLETE:	Minutes
PERFORMANCE EVALUATION:	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory	
~~~~~			
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)			

EVALUATOR:		
	SIGNATURE/PRINTED	
CANDIDATE REVIEW:		
	SIGNATURE	
REVIEWED BY:		DOC. COMPLETE:
	PROGRAM ADMINISTER	

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO
APPL. TO

NRC S3 LOI-12-2
JPM NUMBER

TASK TITLE: Start Reactor Recirc Pump - High Vib trip (Alt Path)

SAFETY CONSIDERATIONS

None

REFERENCES

OP-27, Recirculation System

TOOLS AND EQUIPMENT

None

SET UP REQUIREMENTS

Initialize simulator to power operating IC (IC-152).
RWR Pump 'B' at minimum flow.
RWR Pump 'A' ready to start, up through OP-27 Step G.10.38.
Trigger 10 = Malfunction for high vibrations on RWR pump 'A'.
Event trigger 10 = 02MOV-53A near full open.
Ensure ST-26K requirements will be met.

EVALUATOR NOTES

The Candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
If simulating this task, then inform the Candidate that the conditions of each step need only be properly identified and not actually performed.
The Candidate should demonstrate proper use of HU tools such as procedure use, self checking and three-point communication.

TASK CONDITIONS

The Plant is operating in Mode 1.
RWR Pump 'B' is running.
RWR Pump 'A' is ready to start.

INITIATING CUE

The CRS directs you to start RWR Pump 'A' per OP-27, beginning at Step G.10.39.

* - CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-27, Recirculation System.	The Candidate obtains a controlled copy of OP-27.	
2.	Reviews the precautions.	Reviews the precautions associated with the procedure.	
3.	Select the correct section to perform the task.	Selects Section G of OP-27.	
*4.	Start RWR PMP 02-2P-1A.	Rotates RWR Pump 'A' control switch clockwise to START.	CRITICAL STEP
5.	Perform the following: a. Verify speed rises to approximately 80% on RWR MG A SPEED CNTRL. b. Verify RWR MG A GEN FIELD BKR closes. c. Ensure speed returns to approximately 26% on RWR MG A.	Observes normal start parameters.	

	STEP	STANDARD	EVALUATION / COMMENT
*6.	Slowly open RWR PMP A DISCH 02MOV-53A as follows:	<p>Slowly opens 02MOV-53A by rotating control switch clockwise.</p> <p>Evaluator Note: The procedure provides a “bump and wait” methodology with suggested operating and wait times. The valve should take approximately 1-2 minutes to open.</p> <p>Evaluator Note: When 02MOV-53A nears the full open position, high pump vibrations will be automatically inserted, leading to the JPM alternate path.</p>	CRITICAL STEP
7.	Observes annunciator for high motor vibs (09-4-2-18).	Candidate acknowledges alarm and reports condition to supervisor (examiner).	
8.	Refers to ARP 09-4-2-18.	Refers to ARP.	
9.	Attempt to clear alarm by depressing RWR PMP A VIB ALARM pushbutton.	Depresses RWR PMP A VIB ALARM pushbutton.	
10.	If annunciator 09-4-2-18 does not clear...	<p>Note: RWR vibs are read in Relay Room. Candidate may state they are going to the Relay Room.</p> <p>Evaluator Cue: Report that <u>all</u> X-Y RWR Pump A vibrations readings are 10 mils.</p> <p>Recognizes RWR Pump A vibrations are above RESTRICTED level.</p>	
11.	<p>If any “A” RWR 1A X or Y value reaches (RESTRICTED), then perform the following:</p> <p>Reduce “A” RWR pump speed to reduce seal area vibration to below ALERT trigger.</p>	<p>Recognizes RWR Pump A speed is already at minimum.</p> <p>Evaluator Cue: Report that all RWR Pump A vibrations readings are still 10 mils.</p>	

	STEP	STANDARD	EVALUATION / COMMENT
12.	<p>IF RWR Pump B is running, THEN perform the following:</p> <p>If RWR Pump A must be shutdown to protect plant equipment whose failure could adversely impact plant safety (example: RWR pump high temp alarm), THEN continue at Step G.2.2c.</p>	Continues at Step G.2.2c.	
13.	WHEN RWR Pump A trips, execute AOP-8 concurrently with this procedure.	<p>Evaluator Cue: Another operator will perform AOP-8.</p> <p>Acknowledges cue.</p>	
*14.	Close RWR PMP A DISCH 02MOV-53A.	Rotates 02MOV-53A control switch counterclockwise.	CRITICAL STEP
15.	Verify RWR PMP 02-2P-1A is tripped.	<p>Verifies RWR PMP 02-2P-1A tripped.</p> <p>Booth Operator: Remove hi Vib alarm when Recirc pump trips.</p>	
16.	Place RWR PMP 02-2P-1A control switch in PTL.	Places RWR PMP 02-2P-1A control switch in PTL.	
17.	Verify open RWR MG A GEN FIELD BKR.	Verifies field breaker opens 17 seconds after drive motor breaker trips.	
<p align="center"><u>EVALUATOR</u> Terminate the task at this point.</p>			

Handout

The Plant is operating in Mode 1.

RWR Pump 'B' is running.

RWR Pump 'A' is ready to start.

The CRS directs you to start RWR Pump 'A' per OP-27, beginning at Step G.10.39.

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

<u>S/RO</u> APPL. TO	<u>NRC S4 LOI-12-2</u> JPM NUMBER	TASK TITLE:	Initiate RCIC in Pressure Control with Speed Failure (Alt Path)
REV: <u>0</u>	DATE: <u>3/2012</u>	NRC K/A SYSTEM NUMBER:	<u>217000 A4.07 3.9 / 3.8</u>
JAF TASK NUMBER:	_____	JAF QUAL STANDARD NUMBER:	<u>OP-19</u>
ESTIMATED COMPLETION TIME:		<u>15</u>	Minutes
SUBMITTED: _____		OPERATIONS REVIEW: _____	
APPROVED: _____ ~~~~~			
CANDIDATE NAME: _____			
JPM Completion	<input type="checkbox"/> Simulated	<input checked="" type="checkbox"/> Performed	
Location:	<input type="checkbox"/> Plant	<input checked="" type="checkbox"/> Simulator	
DATE PERFORMED:	_____	TIME TO COMPLETE:	_____ Minutes
PERFORMANCE EVALUATION:	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory	
~~~~~			
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)			
EVALUATOR: _____			
SIGNATURE/PRINTED			
CANDIDATE REVIEW: _____			
SIGNATURE			
REVIEWED BY:	_____	DOC. COMPLETE:	_____
PROGRAM ADMINISTER			

**JOB PERFORMANCE MEASURE  
RECORD AND CHECKLIST**

<u>S/RO</u> APPL. TO	<u>NRC S4 LOI-12-2</u> JPM NUMBER	TASK TITLE:	Initiate RCIC in Pressure Control with Speed Failure (Alt Path)
Current Update:	<u>                    </u> Date	By:	<u>                    </u> Int
Outstanding Items			
<input type="checkbox"/>	Technical Review	<input type="checkbox"/>	Additional Information
<input type="checkbox"/>	Questions and Answers	<input type="checkbox"/>	Validation
<input type="checkbox"/>	Procedural Change Required	<input checked="" type="checkbox"/>	None
Comments:			

Current Update:	<u>                    </u> Date	By:	<u>                    </u> Int.
Previous Revision Date:			

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO  
APPL. TO

NRC S4 LOI-12-2  
JPM NUMBER

TASK TITLE: Initiate RCIC in Pressure Control with Speed Failure  
(Alt Path)

**SAFETY CONSIDERATIONS**

None

**REFERENCES**

- A. OP-19, Reactor Core Isolation Cooling System

**TOOLS AND EQUIPMENT**

None

**SET UP REQUIREMENTS**

- A. Plant in a post scram condition with RPV level between 177" and 222.5" (IC-153).
- B. RPV pressure between 700 psig and 1000 psig and rising slowly.
- C. Main Steam Isolation Valves closed.
- D. Insert malfunction RC07A (RCIC Governor Fails High).
- E. HPCI is not available.

**EVALUATOR NOTES**

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

**TASK CONDITIONS**

- 1. Plant is in a post-scram condition with RPV level between 177" and 222.5".
- 2. RPV pressure is between 700 psig and 1000 psig and rising slowly.
- 3. Main Steam Isolation valves are closed.
- 4. HPCI is not available.

*** - CRITICAL STEP**

**INITIATING CUE**

Inform the candidate, "The CRS directs you to start the RCIC System for RPV pressure control. Maximize heat removal with RCIC to minimize SRV operations per OP-19."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of Posted Attachment, RCIC MANUAL START UP FOR RPV PRESSURE CONTROL or OP-19, D.2.	Obtains a controlled copy of OP-19.	
2.	<b>Caution:</b> Operating RCIC in pressure control mode with suction from the CST and CST level below 79.5 inches could cause vortexing.	Reviews Caution.  Verifies that CST level is greater than 79.5 inches.	
3.	Verify HPCI auto-initiation condition is clear.	Verifies that there is no HPCI automatic initiating condition present of high drywell pressure or low RPV water level.	
4.	Verify Annunciator 09-4-0-32 RCIC LOGIC RX LVL HI is clear.	Verifies Annunciator 09-4-0-32 RCIC LOGIC RX LVL HI is clear.	
5.	Align RCIC to CSTs as follows. a. Ensure open CST SUCT b. Ensure closed the following <ul style="list-style-type: none"> <li>• INBD TORUS SUCT 13MOV-41</li> <li>• OUTBD TORUS SUCT 13MOV-39</li> </ul>	Ensures: <ul style="list-style-type: none"> <li>• CST SUCT VLV 13MOV-18 - open</li> <li>• INBD TORUS SUCT 13MOV-41 - closed</li> <li>• OUTBD TORUS SUCT 13MOV-39 - closed</li> </ul>	
*6.	Open HPCI & RCIC TEST VLV TO CST 23MOV-24.	At Panel 09-3, opens 23MOV-24 by placing its control switch to the OPEN position.	<b>CRITICAL STEP</b>
*7.	Start VAC PMP 13P-3.	At Panel 09-4, starts pump 13P-3 by placing its control switch to the START position.	<b>CRITICAL STEP</b>
*8.	Open OIL CLR WTR SUPP 13MOV-132.	At Panel 09-4, opens 13MOV-132 by placing its control switch to the OPEN position.	<b>CRITICAL STEP</b>
*9.	Throttle open TEST VLV TO CST 13MOV-30 approximately 10 seconds.	At Panel 09-4, throttles open 13MOV-30, by placing its control switch to the OPEN	<b>CRITICAL STEP</b>

	STEP	STANDARD	EVALUATION / COMMENT
		position and releasing after 10 seconds.	
*10.	Open TURB STM SUPP VLV 13MOV-131.	At Panel 09-4, opens 13MOV-131, by placing its control switch to the OPEN position.	<b>CRITICAL STEP</b>
11.	Verify RCIC Flow rate is approximately 400 gpm.	Observes RCIC flow rate is high. May attempt to adjust auto setpoint.	
	<b><u>EVALUATOR NOTE:</u></b> Applicant should recognize RCIC speed has failed high.	Informs the CRS of the failure of automatic speed control of the RCIC turbine; follow guidance of EN-OP-115 to place the RCIC turbine speed controller in manual.  <b>Examiner:</b> Role Play as CRS to direct the Candidate to take manual control and establish pressure control with RCIC.	
*12.	Place RCIC flow controller in manual to control speed	Places RCIC flow controller in manual to control speed.	<b>CRITICAL STEP</b>
13.	Ensure closed the following valves: <ul style="list-style-type: none"> <li>• MIN FLOW VLV 13MOV-27</li> <li>• STM LINE DRN TO RADW 13AOV-34</li> <li>• STM LINE DRN TO RADW 13AOV-35</li> </ul>	Observes that the green – closed indicating light is on for: <ul style="list-style-type: none"> <li>• 13MOV-27</li> <li>• 13AOV-34</li> <li>• 13AOV-35</li> </ul>	
14.	<b><u>NOTE:</u></b> As RPV pressure lowers, indicated level on 02-3LI-283A may rise and result in an undesired trip at the red line high level trip value. Posted Attachment 3 will give an equivalent trip level for 06LI-94/A/B/C indicators on panel 09-5.	Reviews Note.	
15.	<b><u>CAUTION:</u></b> Operating RCIC at less than 2200 rpm could cause improper oil system operation and insufficient exhaust flow resulting in check valve banging or steam flow reversals. Failure to closely monitor RCIC pump	Reviews Caution.	

	STEP	STANDARD	EVALUATION / COMMENT
	discharge pressure could result in exceeding RCIC piping design pressure of 1320 psig.		
*16.	<b>WHILE</b> controlling RPV pressure, maintain RCIC speed GREATER THAN 2200 rpm by throttling closed TEST VLV TO CST 13MOV-30.	At 09-4 Panel, monitors RCIC turbine speed on 13SPI-1 and throttles closed 13MOV-30 to ensure RCIC only runs below 2200 rpm during transient operation.  <b>NOTE:</b> RCIC flow control manual adjustment knob will need to be adjusted in tandem with 13MOV-30 to maintain RCIC flow near 400 gpm.	<b>CRITICAL STEP</b>
*17.	Throttle TEST VLV TO CST 13MOV-30, to obtain the desired RPV pressure control.	At Panel 09-4, throttles closed 13MOV-30 to begin the RPV depressurization to minimize SRV operation.  <b>Note to Evaluator:</b> RPV pressure may be approaching 1000 psig and Candidate may suggest opening an SRV. Inform Candidate that another Operator is assigned to SRVs.	<b>CRITICAL STEP</b>
18.	Startup RHR Torus cooling per Section D of OP-13B, as soon as practicable.	<b>EVALUATOR:</b> Inform the applicant that another operator has been tasked with initiating Torus cooling and monitoring Torus parameters.	
19.	<b>WHEN</b> time permits, verify the following RCIC parameters: <ul style="list-style-type: none"> <li>Oil pump discharge pressure: 12 to 15 psig.</li> <li>Oil temperature from cooler: <b>GREATER THAN 60°F.</b></li> <li>Oil temperature from the turbine bearings: <b>LESS THAN 160°F</b></li> </ul>	Dispatches an Operator to verify the following RCIC parameters: <ul style="list-style-type: none"> <li>Oil pump discharge pressure: 12 to 15 psig.</li> <li>Oil temperature from cooler: <b>GREATER THAN 60°F.</b></li> <li>Oil temperature from the turbine bearings: <b>LESS THAN 160°F</b></li> </ul>	
<b>EVALUATOR:</b> Terminate the task at this point.			



# HANDOUT

- **Plant is in a post-scrum condition with RPV level between 177" and 222.5".**
- **RPV pressure is between 700 psig and 1000 psig and rising slowly.**
- **Main Steam Isolation Valves are closed.**
- **HPCI is not available.**

**The CRS directs you to start the RCIC System for RPV pressure control. Maximize heat removal with RCIC to minimize SRV operations per OP-19.**

S/O	NRC S5 LOI-12-2	TASK TITLE:	Restore ESW after injection into RBCLC
APPL. TO	JPM NUMBER		

  

REV:         0                    DATE:          3/2012                     NRC K/A SYSTEM NUMBER:              400000 A4.01 3.1 / 3.0         

JAF TASK NUMBER:     _____                JAF QUAL STANDARD NUMBER:          OP-21     

ESTIMATED COMPLETION TIME:     _____     15     Minutes

SUBMITTED: _____                OPERATIONS REVIEW: _____

APPROVED: _____  
~~~~~

CANDIDATE NAME: \_\_\_\_\_

| | | |
|----------------|------------------------------------|---|
| JPM Completion | <input type="checkbox"/> Simulated | <input checked="" type="checkbox"/> Performed |
| Location: | <input type="checkbox"/> Plant | <input checked="" type="checkbox"/> Simulator |

DATE PERFORMED: \_\_\_\_\_ TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory
~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

  
  

EVALUATOR: _____  
                                SIGNATURE/PRINTED

CANDIDATE REVIEW: _____  
                                SIGNATURE

REVIEWED BY: _____                DOC. COMPLETE: _____

                                PROGRAM ADMINISTER

## JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

S/RO  
APPL. TO

NRC S5 LOI-12-2

---

JPM NUMBER

TASK TITLE: Restore ESW after injection into RBCLC

Current Update: _____  
Date

By: _____  
Int

## Outstanding Items

- ☐ Technical Review
- ☐ Questions and Answers
- ☐ Procedural Change Required

☐ Additional Information  
☐ Validation  
☒ None

Comments:

Current Update: _____  
Date

By: _____  
Int.

Previous Revision Date:

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO  
APPL. TO

NRC S5 LOI-12-2  
JPM NUMBER

TASK TITLE: Restore ESW after injection into RBCLC

**SAFETY CONSIDERATIONS**

None

**REFERENCES**

- B. OP-21, Emergency Service Water
- C. OP-40, Reactor Building Closed Loop Cooling

**TOOLS AND EQUIPMENT**

None

**SET UP REQUIREMENTS**

- B. Reset to IC-154.
- C. Place RBCLC pump control switches in PTL.

**EVALUATOR NOTES**

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

**TASK CONDITIONS**

- 5. The Plant is shutdown
- 6. All RBCLC pumps were placed in Pull to Lock.
- 7. ESW auto aligned to RBCLC.
- 8. RBCLC pumps are ready to be returned to service.
- 9. Attachment 3, STATUS CONTROL FORM FOR ESW RESET FOLLOWING INJECTION TO RBCLC, of OP-21 has been performed.

*** - CRITICAL STEP**

**INITIATING CUE**

Inform the candidate, "The CRS directs you to restore the ESW system to normal per OP-21 Section F.3."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-21, ESW.	Obtains a controlled copy of OP-21. Reviews Precautions.	
*2.	Reset ESW Logic A by depressing ESW SYS A INJ SIG RESET pushbutton.	Depresses ESW SYS A INJ SIG RESET pushbutton.	<b>CRITICAL STEP</b>
3.	Verify white ESW SYS A INJ SIG light is off.	Verifies white ESW SYS A INJ SIG light is off.	
*4.	Reset ESW Logic B by depressing ESW SYS B INJ SIG RESET pushbutton.	Depresses ESW SYS B INJ SIG RESET pushbutton.	<b>CRITICAL STEP</b>
5.	Verify white ESW SYS B INJ SIG light is off.	Verifies white ESW SYS B INJ SIG light is off.	
*6.	Close ESW RETURN TO SERV WTR 15MOV-175B.	Closes ESW RETURN TO SERV WTR 15MOV-175B by taking control switch CCW to Close.	<b>CRITICAL STEP</b>
*7.	Open ESW SYS B TEST VLV 46MOV-102B.	Opens ESW SYS B TEST VLV 46MOV-102B by taking control switch CW to Open.	<b>CRITICAL STEP</b>
*8.	Close ESW SYS B INJ VLV 46MOV-101B.	Closes ESW SYS B INJ VLV 46MOV-101B by taking control switch CCW to Close.	<b>CRITICAL STEP</b>
*9.	Close ESW RETURN TO SERV WTR 15MOV-175A.	Closes ESW RETURN TO SERV WTR 15MOV-175A by taking control switch CCW to Close.	<b>CRITICAL STEP</b>
*10.	Open ESW SYS A TEST VLV 46MOV-102A.	Opens ESW SYS A TEST VLV 46MOV-102A by taking control switch CW to Open.	<b>CRITICAL STEP</b>
*11.	Close ESW SYS A INJ VLV 46MOV-101A.	Closes ESW SYS A INJ VLV 46MOV-101A by taking control switch CCW to	<b>CRITICAL STEP</b>

	STEP	STANDARD	EVALUATION / COMMENT
		Close.	
12.	Ensure open 15RBC-41 RBCLC Makeup Tank TK-4 Outlet	<b><u>EVALUATOR CUE:</u></b> 15RBC-41 RBCLC Makeup Tank TK-4 Outlet is open.	
13.	Start up RBCLC System per Section D of OP-40.	<b><u>EVALUATOR CUE:</u></b> Time compression will be invoked and another Operator will restore RBCLC.  <b><u>SIMULATOR OPERATOR ACTION:</u></b> Start RBCLC pumps A & B. Inform Candidate RBCLC discharge pressure is stable and > 80 psig.	
14.	Candidate reads OP-21, Steps F.3.14, 15 & 16.	<b><u>EVALUATOR CUE:</u></b> Inform Candidate no ESW valves were manually re-positioned during AOP-11.  If asked about the position of Breaker 71MCC-152-0D4, report open.	
15.	<b>WHEN</b> RBCLC discharge header pressure is stable at <b>GREATER THAN OR EQUAL TO</b> 80 psig, perform Restoration section of Attachment 3.	<b><u>EVALUATOR CUE:</u></b> OP-21 Attachment 3, Restoration section, is complete.	
16.	Shut down ESW per Subsections F.1 and F.2.	Obtains Subsections F.1 and F.2.	
17.	Verify RBCLC System is in normal operation.	Verifies RBCLC system is in normal operation.  <b><u>EVALUATOR CUE:</u></b> RBCLC system is in normal operation.	
18.	Verify EDG A and C are shutdown.	Verifies EDG A and C are shutdown.	
19.	Verify ventilation loads downstream of 46MOV-101A do not require ESW.	<b><u>EVALUATOR CUE:</u></b> Ventilation loads downstream of 46MOV-101A do not require ESW.	
20.	Ensure open ESW SYS A TEST VLV 46MOV-102A.	Ensures open ESW SYS A TEST VLV 46MOV-102A.	

	STEP	STANDARD	EVALUATION / COMMENT
		<ul style="list-style-type: none"> <li>Red light on, Green light off</li> </ul>	
21.	Ensure closed ESW SYS A INJ VLV 46MOV-101A	Ensures closed ESW SYS A INJ VLV 46MOV-101A. <ul style="list-style-type: none"> <li>Red light off, Green light on</li> </ul>	
*22.	Stop ESW PMP A 46P-2A.	Stops ESW PMP A 46P-2A by taking control switch CCW to Stop.	<b>CRITICAL STEP</b>
<b><u>EVALUATOR:</u></b> Terminate the task at this point.			

# HANDOUT

1. The Plant is shutdown.
2. All RBCLC pumps were placed in Pull to Lock.
3. ESW auto aligned to RBCLC.
4. RBCLC pumps are ready to be returned to service.
5. Attachment 3, STATUS CONTROL FORM FOR ESW RESET FOLLOWING INJECTION TO RBCLC, of OP-21 has been performed.

**The CRS directs you to restore the ESW system to normal per OP-21 Section F.3.**



ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

<u>S/RO</u> APPL. TO	<u>NRC S6 LOI-12-2</u> JPM NUMBER	TASK TITLE:    Core Spray Loop A Shutdown
REV: <u>0</u>	DATE: <u>3/2012</u>	NRC K/A SYSTEM NUMBER: <u>209001 A4.01 3.8 / 3.6</u>
JAF TASK NUMBER:    _____	JAF QUAL STANDARD NUMBER: <u>OP-14</u>	
ESTIMATED COMPLETION TIME: <u>12</u> Minutes		
SUBMITTED:    _____		OPERATIONS REVIEW:    _____
APPROVED:    _____		
~~~~~		
CANDIDATE NAME: _____		
JPM Completion	<input type="checkbox"/> Simulated	<input checked="" type="checkbox"/> Performed
Location:	<input type="checkbox"/> Plant	<input checked="" type="checkbox"/> Simulator
DATE PERFORMED: _____	TIME TO COMPLETE: _____ Minutes	
PERFORMANCE EVALUATION:	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory
~~~~~		
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)		
EVALUATOR:    _____	SIGNATURE/PRINTED	
CANDIDATE REVIEW:    _____	SIGNATURE	
REVIEWED BY:    _____	PROGRAM ADMINISTER	DOC. COMPLETE:    _____

**JOB PERFORMANCE MEASURE  
RECORD AND CHECKLIST**

<u>S/RO</u> APPL. TO	<u>NRC S6 LOI-12-2</u> JPM NUMBER	TASK TITLE:	Core Spray Loop A Shutdown
Current Update:	<u>                    </u> Date	By:	<u>                    </u> Int
Outstanding Items			
<input type="checkbox"/>	Technical Review	<input type="checkbox"/>	Additional Information
<input type="checkbox"/>	Questions and Answers	<input type="checkbox"/>	Validation
<input type="checkbox"/>	Procedural Change Required	<input checked="" type="checkbox"/>	None
Comments:			

Current Update:	<u>                    </u> Date	By:	<u>                    </u> Int.
Previous Revision Date:			

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO  
APPL. TO

NRC S6 LOI-12-2  
JPM NUMBER

TASK TITLE: Core Spray Loop A Shutdown

**SAFETY CONSIDERATIONS**

None

**REFERENCES**

- D. OP-14, Core Spray System

**TOOLS AND EQUIPMENT**

None

**SET UP REQUIREMENTS**

- D. Reset to IC-154.
- E. Core Spray Loop A injecting into RPV.
- F. Core Spray Loop B in a standby lineup.
- G. DW pressure > 2.7 psig.

**EVALUATOR NOTES**

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

**TASK CONDITIONS**

- 10. The Plant has experienced a loss of coolant accident.
- 11. Core Spray is the only injection source available to the RPV.
- 12. Core Spray Loop A is currently injecting and maintaining RPV level > TAF.
- 13. Core Spray Loop B is in standby and available.
- 14. A report from the field states that failure of Core Spray Pump A is imminent.

*** - CRITICAL STEP**

**INITIATING CUE**

Inform the candidate, "The CRS directs you to start Core Spray Loop B then shutdown Core Spray Loop A per OP-14 while maintaining RPV level >0 inches <222.5 inches."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-14, Core Spray System	Obtains a controlled copy of OP-14. Reviews Precautions.	
2.	Select Section D.2 of OP-14	Selects Section D.2 of OP-14  <b>Role Play:</b> If asked if Core Spray was shutdown under EP-5 Terminate and Prevent, inform Candidate that Core Spray was <b>NOT</b> shutdown per EP-5 Terminate and Prevent.	
*3.	Ensure PMP 14P-1B is running.	Starts Core Spray Pump B by rotating control switch CW.	<b>CRITICAL STEP</b>
4.	Ensure open OUTBD INJ VLV 14MOV-11B.	Ensures open Core Spray Loop B outboard injection valve 14MOV-11B by observing red light on, green light off.	
*5.	When annunciator 09-3-1-27 RHR & CORE SPRAY INJ VLV PERM is in alarm, throttle INBD INJ VLV 14MOV-12B to control RPV water level as directed by Shift Manager.	Throttles Core Spray Loop B inboard injection valve to maintain RPV level > 0 inches and < 222.5 inches.  <b>EVALUATOR NOTE:</b> This step may be performed after subsequent steps are taken for shutdown of Core Spray Loop A, as required for Reactor water level control.	<b>CRITICAL STEP</b>
6.	When Core Spray Loop B flow rate is greater than 980 gpm, ensure closed MIN FLOW VLV 14MOV-5B.	Ensures closed MIN FLOW VLV 14MOV-5B when flow rate > 980 gpm by observing green light on, red light off.  <b>EVALUATOR NOTE:</b> This step may be performed after subsequent steps are taken for shutdown of Core Spray Loop A, as required for Reactor water level	

	STEP	STANDARD	EVALUATION / COMMENT
		control.	
7.	Select Section F.1 of OP-14	Selects Section F.1 of OP-14	
*8.	Ensure closed INBD INJ VLV 14MOV-12A	Closes INBD INJ VLV 14MOV-12A by rotating control switch CCW.	<b>CRITICAL STEP</b>
9.	Ensure open MIN FLOW VLV 14MOV-5A	Ensures open MIN FLOW VLV 14MOV-5A by observing red light on, green light off.	
*10.	Stop PMP 14P-1A	Stops PMP 14P-1A by rotating control switch CCW.	<b>CRITICAL STEP</b>
11.	If Core Spray auto-initiated and Core Spray initiation conditions are no longer present then...	N/A. Core Spray initiation conditions are still present (Drywell pressure >2.7 psig).	
12.	Ensure Core Spray Loop A is in the standby lineup per Section E, as soon as practicable.	<b><u>EVALUATOR CUE:</u></b> Another Operator will place Core Spray Loop A in a standby lineup.	
<b>Evaluator:</b> Terminate JPM at this point.			

# HANDOUT

1. The Plant has experienced a loss of coolant accident.
2. Core Spray is the only injection source available to the RPV.
3. Core Spray Loop A is currently injecting and maintaining RPV level > TAF.
4. Core Spray Loop B is in standby and available.
5. A report from the field states that failure of Core Spray Pump A is imminent.

The CRS directs you to start Core Spray Loop B then shutdown Core Spray Loop A per OP-14 while maintaining RPV level >0 inches <222.5 inches.

ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

<u>S/RO</u> APPL. TO	<u>NRC S7 LOI-12-2</u> JPM NUMBER	TASK TITLE:     Perform APRM Gain Adjust
REV: <u>0</u>	DATE: <u>3/2012</u>	NRC K/A SYSTEM NUMBER: <u>215005 A1.07 3.0 / 3.4</u>
JAF TASK NUMBER:    _____	JAF QUAL STANDARD NUMBER: <u>ST-5D</u>	
ESTIMATED COMPLETION TIME: <u>20</u> Minutes		
SUBMITTED:    _____		OPERATIONS REVIEW:    _____
APPROVED:    _____ ~~~~~		
CANDIDATE NAME:    _____		LOGIN ID
JPM Completion	<input type="checkbox"/> Simulated	<input checked="" type="checkbox"/> Performed
Location:	<input type="checkbox"/> Plant	<input checked="" type="checkbox"/> Simulator
DATE PERFORMED:    _____	TIME TO COMPLETE:    _____ Minutes	
PERFORMANCE EVALUATION:	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory
~~~~~		
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)		
EVALUATOR: _____	SIGNATURE/PRINTED	
CANDIDATE REVIEW: _____	SIGNATURE	
REVIEWED BY: _____	PROGRAM ADMINISTER	DOC. COMPLETE: _____

S/RO		NRC S7 LOI-12-2		TASK TITLE:		Perform APRM Gain Adjust	
APPL. TO		JPM NUMBER					
Current Update:		_____		By:		_____	
		Date				Int	
Outstanding Items							
<input type="checkbox"/>		Technical Review				<input type="checkbox"/> Additional Information	
<input type="checkbox"/>		Questions and Answers				<input type="checkbox"/> Validation	
<input type="checkbox"/>		Procedural Change Required				<input checked="" type="checkbox"/> None	
Comments:							

Current Update: _____ By: _____
Date Int.
Previous Revision Date: _____

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO
APPL. TO

NRC S7 LOI-12-2
JPM NUMBER

TASK TITLE: Perform APRM Gain Adjust

SAFETY CONSIDERATIONS

None

REFERENCES

E. ST-5D, APRM Calibration

F.OP-16, NEUTRON MONITORING

TOOLS AND EQUIPMENT

Jewelers screwdriver

SET UP REQUIREMENTS

- H. Approximately 100% power (IC-151)
- I. EPIC/3D available and plant conditions stable.
- J. Adjust all APRMs to an acceptable value per ST-5D.
- K. Adjust "D" APRM to 3-4% below desired value of ST-5D.
- L. Prepare a working copy of ST-5D complete up to section 8.0.

EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

TASK CONDITIONS

The Plant is operating at approximately 100% power.

ST-5D, APRM Calibration, is required.

The plant has been stable for several hours.

3D Monicore is available.

*** - CRITICAL STEP**

INITIATING CUE

Inform the candidate, "The CRS directs you to perform ST-5D."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of ST-5D	Obtains a controlled copy of ST-5D. Reviews Precautions.	
2.	Determine the applicable procedure subsection to perform as follows: <ul style="list-style-type: none"> • IF reactor power is LESS THAN 25%, THEN perform Subsection 8.2. • IF reactor power is GREATER THAN OR EQUAL TO 25%, AND the 3D MONICORE Core Power and Flow Log program is operable, THEN perform Subsection 8.3. • IF reactor power is GREATER THAN OR EQUAL TO 25%, AND the 3D MONICORE Core Power and Flow Log program is not operable, THEN perform Subsection 8.4 with Reactor Engineering assistance as required. 	Selects Section 8.3.	
*3.	Demand Core Power and Flow Log to determine APRM DR. DR = CORE POWER = %	Determines APRM DR (desired reading) is approximately 100% power	CRITICAL STEP
4.	Adjust APRMs per Subsection 8.5.	Goes to Subsection 8.5.	
5.	Record initial APRM readings in Table 1.	Initial APRM readings are recorded in Table 1.	
6.	Record DR in Table 1.	DR is recorded in Table 1.	
7.	Identify any APRM(s) requiring adjustment in Table 1. APRM shall be adjusted to indicate within $\pm 2\%$ of the DR.	APRM D is identified as requiring adjustment.	
8.	IF APRM adjustment is required, THEN perform the following for each APRM requiring adjustment: NOTE: Bypassing APRM may be omitted per SM.	EVALUATOR CUE: The Shift Manager directs APRM D to be bypassed per OP-16. Candidate acknowledges SM direction.	
9.	Bypass the APRM channel requiring calibration per Section E of OP-16.	OP-16 Section E.16 (Bypassing an APRM) obtained.	

	STEP	STANDARD	EVALUATION / COMMENT
10	Place APRM BYP switch in ().	Places APRM BYP switch in D position.	CRITICAL STEP
11.	Verify APRM (*) is bypassed using one or both of the following: <ul style="list-style-type: none"> • APRM (*) BYPASS indicating light is on • APRM (*) EPIC alarm indicates bypassed 	APRM D verified bypassed by: <ul style="list-style-type: none"> • APRM D BYPASS indicating light is on and \ or • APRM D EPIC alarm indicates bypassed 	
12.	Verify the other two APRM channels associated with the same APRM BYP switch are in service using one or both of the following: <ul style="list-style-type: none"> • APRM BYPASS indicating lights are off for the other two APRMs • No EPIC bypassed alarms for the other two APRMs 	APRMs B and F verified to be in service by: <ul style="list-style-type: none"> • APRM BYPASS indicating lights are off for the other two APRMs and \ or • No EPIC bypassed alarms for the other two APRMs 	
13.	ST-5D, 8.5.4 continued: Ensure METER FUNCTION switch is set to AVERAGE.	Observes APRM D METER FUNCTION switch set to AVERAGE.	
14.	Ensure APRM MODE switch is in the OPERATE position.	Observes APRM D MODE switch in OPERATE position.	
15.	NOTE: Clockwise turn raises meter reading; counterclockwise turn lowers meter reading.	Candidate reviews Note concerning manipulation of gain adjust control.	
*16.	Turn gain adjustment control (R16) on LPRM card Z-31 to obtain a meter reading within $\pm 2\%$ of DR.	Gain adjustment control (R16), on LPRM card Z-31, adjusted to obtain a meter reading within $\pm 2\%$ of DR.	CRITICAL STEP
Evaluator: Terminate JPM at this point			

HANDOUT

The Plant is operating at approximately 100% power.

ST-5D, APRM Calibration, is required.

The plant has been stable for several hours.

3D Monicore is available.

"The CRS directs you to The CRS directs you to perform ST-5D."

S/RO	NRC S8 LOI-12-2	TASK TITLE:	Initiate Torus Cooling With LPCI Signal Present
APPL. TO	JPM NUMBER		
REV: 	DATE: 	NRC K/A SYSTEM NUMBER:	219000 A4.02 3.7/3.5
JAF TASK NUMBER: 		JAF QUAL STANDARD NUMBER: 	
ESTIMATED COMPLETION TIME: 15 Minutes			
SUBMITTED: 		OPERATIONS REVIEW: 	
APPROVED: 			
~~~~~			
CANDIDATE NAME: <span style="border-bottom: 1px solid black; width: 350px;"></span>		LOGIN ID: <span style="border-bottom: 1px solid black; width: 100px;"></span>	
JPM Completion	<input type="checkbox"/> Simulated	<input checked="" type="checkbox"/> Performed	
Location:	<input type="checkbox"/> Plant	<input checked="" type="checkbox"/> Simulator	
DATE PERFORMED: <span style="border-bottom: 1px solid black; width: 100px;"></span>		TIME TO COMPLETE: <span style="border-bottom: 1px solid black; width: 50px;"></span> Minutes	
PERFORMANCE EVALUATION:		<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory
~~~~~			
COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)			
EVALUATOR: 			
SIGNATURE/PRINTED			
CANDIDATE REVIEW: 			
SIGNATURE			
REVIEWED BY: 	DOC. COMPLETE: 		
PROGRAM ADMINISTER			

**JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST**

<u>S/RO</u> APPL. TO	<u>NRC S8 LOI-12-2</u> JPM NUMBER	TASK TITLE:	Initiate Torus Cooling With LPCI Signal Present
Current Update:	<u> </u> Date	By:	<u> </u> Int
Outstanding Items			
<input type="checkbox"/> Technical Review		<input type="checkbox"/>	Additional Information
<input type="checkbox"/> Questions and Answers		<input type="checkbox"/>	Validation
<input type="checkbox"/> Procedural Change Required		<input checked="" type="checkbox"/>	None
Comments:			

Current Update:	<u> </u> Date	By:	<u> </u> Int.
Previous Revision Date:			

**JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION**

S/RO
APPL. TO

NRC S8 LOI-12-2
JPM NUMBER

TASK TITLE: Initiate Torus Cooling With LPCI Signal Present

SAFETY CONSIDERATIONS

None

REFERENCES

OP-13B, RHR – Containment Control

OP-13C, RHR Service Water

TOOLS AND EQUIPMENT

None

SET UP REQUIREMENTS

Initialize the simulator to an IC (IC-155) with the following:

- Elevated Torus water temperature
- LPCI auto-initiation signal sealed in due to high Drywell pressure
- RPV water level controlled above 10" on fuel zone indications by a system other than RHR A

EVALUATOR NOTES

The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

TASK CONDITIONS

Torus cooling is required due to elevated torus water temperature.

Drywell pressure is above 2.7 psig.

*** - CRITICAL STEP**

INITIATING CUE

Inform the candidate, "The CRS directs you to place RHR A in the torus cooling lineup per OP-13B and OP-13C. Maximize torus cooling from this loop of RHR."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of procedures OP-13B, RHR – Containment Control, and OP-13C, RHR Service Water.	Determines where to obtain a controlled copy of OP-13B and OP-13C.	
2.	Select the correct section to perform the task.	Selects Posted Attachment 1 or Section D.1 OP-13B.	
3.	IF a LPCI auto-initiation signal is sealed in, THEN perform the following:	Determines a LPCI auto-initiation signal is sealed in.	
4.	IF RPV water level is LESS THAN 10 inches on fuel zone water level indication, AND the EOPs permit diverting LPCI flow, THEN place DW & TORUS SPRAY VLV OVERRIDE OF FUEL ZONE LVL 10A-S18A keylock switch in MANUAL OVERRD.	Determines RPV water level is above 10 inches on fuel zone water level indication.	
*5.	Place SPRAY CNTRL 10A-S17A switch to MANUAL, spring return to normal.	Places SPRAY CNTRL 10A-S17A switch to MANUAL, then releases to normal.	CRITICAL STEP
6.	Verify white SPRAY PERM 10A-DS67A light is on.	Observes white SPRAY PERM 10A-DS67A light is on.	
7.	Ensure at least one of the following RHR pumps is running: <ul style="list-style-type: none"> RHR PMP 10P-3A RHR PMP 10P-3C 	Observes red light on, green light off for: <ul style="list-style-type: none"> RHR PMP 10P-3A RHR PMP 10P-3C 	
*8.	Open RHR TEST TORUS CLG & SPRAY 10MOV-39A.	Places RHR TEST TORUS CLG & SPRAY 10MOV-39A control switch to OPEN.	CRITICAL STEP
*9.	Throttle RHR TEST & TORUS CLG 10MOV-34A to establish desired flow.	Places RHR TEST & TORUS CLG 10MOV-34A control switch to OPEN. Subsequently places RHR TEST & TORUS CLG 10MOV-34A control switch to OPEN and/or CLOSE as necessary to establish desired flow.	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
10.	WHEN RHR Loop A flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16A.	Observes MIN FLOW VLV 10MOV-16A green light on, red light off.	
11.	IF RHR Loop A condensate transfer keep-full is in service, AND RHR Loop A pressure is LESS THAN condensate transfer pressure, THEN close 10RHR-274 (RHR loop A containment spray keep-full cond xfer connection valve).	Contacts plant operator to determine if RHR Loop A condensate transfer keep-full is in service. EVALUATOR CUE: Report that RHR Loop A condensate transfer keep-full is NOT in service.	
12.	Establish RHRSW flow per OP-13C, if desired.	Selects Posted Attachment 1 or Section D.1 of OP-13C.	
13.	Verify one of the following alarms is clear: <ul style="list-style-type: none"> Annunciator 09-4-3-4 RHRSW A OR B DISCH LINE NOT FULL EPIC-D-134 10LS-105A 	Observes either of the following: <ul style="list-style-type: none"> Annunciator 09-4-3-4 RHRSW A OR B DISCH LINE NOT FULL is clear EPIC-D-134 10LS-105A is clear 	
*14.	Start one of the following RHRSW pumps: <ul style="list-style-type: none"> RHRSW PMP 10P-1A RHRSW PMP 10P-1C 	Rotates RHRSW PMP 10P-1A or 10P-1C control switch to START.	CRITICAL STEP
*15.	Throttle RHRSW DISCH VLV FROM HX A 10MOV-89A to establish 2500 to 4000 gpm.	Rotates RHRSW DISCH VLV FROM HX A 10MOV-89A control switch to OPEN. Subsequently rotates RHRSW DISCH VLV FROM HX A 10MOV-89A control switch to OPEN and/or CLOSE as necessary to establish 2500 to 4000 gpm flow.	CRITICAL STEP
*16.	Start the second RHRSW pump if desired.	Rotates RHRSW PMP 10P-1A or 10P-1C control switch to START. EVALUATOR CUE: If candidate asks if second RHRSW pump start is desired, direct them to maximize torus cooling from this loop of RHR.	CRITICAL STEP
*17.	Throttle RHRSW DISCH VLV FROM HX	Rotates RHRSW DISCH VLV FROM HX	CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
	A 10MOV-89A to establish 2500 to 4000 gpm per RHRSW pump.	A 10MOV-89A control switch to OPEN and/or CLOSE as necessary to establish 2500 to 4000 gpm flow per RHRSW pump .	
*18.	Close HX A BYP VLV 10MOV-66A.	Rotates HX A BYP VLV 10MOV-66A control switch to CLOSE.	CRITICAL STEP
<p><u>EVALUATOR</u>: Terminate the task at this point.</p>			

HANDOUT

- Torus cooling is required due to elevated torus water temperature.
- Drywell pressure is above 2.7 psig.

The CRS directs you to place RHR A in the torus cooling lineup per OP-13B and OP-13C. Maximize torus cooling from this loop of RHR.