

Facility: Limerick Generating Station

Date of Examination: 04/03/2000

Exam Level: RO

Operating Test No.: \_\_\_\_\_

**B.1 Control Room Systems**

System / JPM Title	Type Code*	Safety Function
a. SCRAM Reset	D, A, L, S	1
b. RCIC Start for Pressure Control	N, A, S	3
c. Place Reactor Feed Pump in Service During Start-up	N, L, S	2
d. Venting Primary Containment from 2" Suppression Pool Vent	M, A, S	5
e. Perform a Remote Manual Start of D12 Diesel Generator	D, S	6
f. Alternate Cooling of RECW Heat Exchanger	D, S	8
g. Manual Depressurization of RHR	N, A, S	4

**B.2 Facility Walk-Through**

a. Bypass Squib Valves for SLC Injection (T-212)	D, R	1
b. Bypass a Control Rod from RMCS	D, R	7
c. Defeat HPCI/RCIC High Temperature Isolations (T-249)	D, R	5

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: Limerick Generating Station

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Exam Level: SRO(I)

Operating Test No.: \_\_\_\_\_

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Exam Level: SRO(U)

Operating Test No.:

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c. Manual Depressurization of RHR	N, A, S	4
d.		
e.		
f.		
g.		

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| TITLE: SCRAM RESET GP-11 (Alternate Path)

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**DIRECTIONS TO EVALUATOR:**

1. Transfer House Loads
2. Place Reactor Mode Switch in "Shutdown"
3. Trip Main Turbine
4. Line up for Startup Level Control
5. Insert malfunction MRP028B

**EVALUATION METHOD :**

**PERFORM**

**EVALUATION LOCATION:**

**SIMULATOR**

**APPROXIMATE COMPLETION TIME:**

15 MINUTES

**IMPORTANCE RATING(S):**

3.8/3.8

A4.14

**SYSTEM NUMBER(S):**

212000

**REFERENCES:**

- | 1. GP-11, Rev. 16, Reactor Protections System - SCRAM RESET

**TASK STANDARD(S):**

Recognize failure to reset scram and initiate a manual reactor scram.

TASK CONDITIONS:

1. A Rapid Plant Shutdown was performed on Unit 1.
2. There are NO indications of fuel damage.

| INITIATING CUES:

You are directed by Shift Supervision to perform a Unit 1 Reactor Protection System - Scram reset.

Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
1. Obtain current revision of GP-11. (CUE: When Candidate demonstrates the ability to obtain current revision of procedure, provide working copy of GP-11)	Current revision of GP-11 obtained.	
2. All half scram <b>AND</b> full scram signals cleared, except scram discharge volume HI Level Trip (C-1 on *07 Reactor)	Verify by observation, no un-bypassed scram signals, other than SDV high level, are indicated on Reactor 107, 108 annunciator panels.	
3. Reactor Mode Switch in "SHUTDOWN" <b>OR</b> "REFUEL"	Reactor Mode Switch in shutdown or refuel.	
4. Power available to RPS Bus A - *AY160 ckt 13 <b>AND</b> RPS Bus B - *BY160 ckt 13 (CUE: If requested, Report "I&C has confirmed that RPS Bus A - 1AY160 ckt 13 <b>AND</b> RPS Bus B - 1BY160 ckt 13 are energized.")	Recognize power is available to RPS by lack of alarms or report	
5. <b>REQUEST</b> Health Physics survey scram discharge volume prior to releasing fluid inventory <b>AND EVALUATE</b> the need for RT-6-047-600-*, FLUSH OF CRD SCRAM DISCHARGE VOLUME. (REF. 4.8) (CUE: Report that HP has surveyed the SDV and there is no need for the RT to be done.)	HP contacted to evaluate need to perform RT-6-047-600-1	
*6. <b>PLACE</b> Scram Discharge Volume High Level Bypass keylock switch on *OC603 to "BYPASS"	SDV High Level Bypass Switch in Bypass position.	
7 <b>VERIFY</b> SCRAM DISC VOLUME HI LEVEL SCRAM BYPASSED alarm on *07 REACTOR (C-2)	Verify by observation that SDV HI LEVEL SCRAM BYPASSED 107 Reactor (C-2) is lit.	
8. <b>ENSURE</b> RPIS INOPERATIVE clear on *08 REACTOR (E-5)	Verify by observation that RPIS INOPERATIVE 108 Reactor (E-5) is not lit.	

STEP	STANDARD	SAT/UNSAT
9. <b>IF</b> RDACS INOPERATIVE alarm lit on *08 REACTOR (E-4), <b>THEN RESET</b> RDACS per S73.0.F	RDACS INOPERATIVE alarm NOT lit on *08 REACTOR (E-4)	
10. <b>IF</b> CRD Full Core Display <b>OR</b> Process Computer indicates <b>not</b> all control rods are fully inserted, <b>THEN PERFORM</b> GP-11 Appendix I using Attachment I	Verifies by observation that All rods full in.	
11. <b>RESET</b> Alternate Rod Insertion at *OC603 as follows:	N/A	N/A
11a. Depress ARI RESET pushbuttons (1A, 1B, 2A, 2B)	ARI Reset pushbuttons 1A, 1B, 2A, 2B depressed	
12. <b>RESET</b> RPS at *OC603 as follows	N/A	N/A
*12a. <b>PLACE</b> Scram Reset switch to "GP 1/4"	RPS Scram reset switch taken to GP 1/4 position	
*12b. <b>PLACE</b> Scram Reset switch to "GP 2/3"	RPS Reset switch taken to GP 2/3 position.	
*13. <b>VERIFY</b> the eight scram group white lights are lit for Scram System A <b>AND</b> Scram System B on *OC603	Recognize 1 light for RPS 'A' and 1 light for RPS 'B' did <b>not</b> light.	
13a. <b>IF NOT</b> on after initial reset, <b>THEN VERIFY</b> proper mode switch position <b>AND</b> repeat step 3.8 one time	Verify Mode switch in "shutdown".	
14. Reset RPS at *OC603 as follows:	N/A	N/A
14a. Place Scram Reset switch to "GP 1/4"	RPS Scram Reset Switch taken to "GP 1/4" position	
14b. Place Scram Reset switch to "GP 2/3"	RPS Scram Reset Switch taken to "GP 2/3" position.	
*15. <b>IF NOT</b> on after second reset attempt, <b>THEN INSERT</b> a full scram signal via manual scram pushbuttons <b>AND PERFORM</b> the following:	Channel CH A1 or CH A2, and CH B1 or CH B2 manual scram collars turned and pushbuttons depressed.	
15a. <b>VERIFY</b> scram discharge volume vent/drain valves close	Vent: Inboard (XV47-1F010), Outboard (XV47-1F180), CLOSED  Drain: Inboard (XV47-1F011), Outboard (XV47-1F181), CLOSED	

STEP	STANDARD	SAT/UNSAT
15b. <b>ENTER T-100 <u>AND</u> EXIT</b> this procedure  (Cue: "You can stop here, you have met the termination criteria for this JPM".)	Supervisor informed to enter T-100	



Comments:

Note: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT/UNSAT

TASK CONDITIONS:

1. A Rapid Plant shutdown was performed on Unit 1 Reactor.
2. There are NO indications of fuel damage.

INITIATING CUES:

You are directed by Shift Supervision to perform a Unit 1 Reactor Protection System - Scram reset.

TITLE: RCIC MANUAL QUICK START WITH HV-49-1F022 FAILING CLOSED (ALT. PATH)

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**DIRECTIONS TO EVALUATOR:**

1. Reset the simulator to any IC with Reactor pressure greater than 500 psi.
2. Ensure RCIC is lined-up for automatic operation per S49.1.A
3. Insert Override, HS49-F022 to FAIL AS-IS
4. When RCIC Pump speed is reduced to <2800 RPM, Remove HS49-F022 Override

**EVALUATION METHOD :**

**PERFORM**

**EVALUATION LOCATION:**

**SIMULATOR**

**APPROXIMATE COMPLETION TIME:**

15 MINUTES

**IMPORTANCE RATING:**

3.1/3.1

A2.08

**SYSTEM NUMBER:**

217000

**REFERENCES:**

1. S49.1.D, Rev. 27, RCIC SYSTEM FULL FLOW FUNCTIONAL TEST AND TURBINE OIL PRIMING

**TASK STANDARD(S):**

Unit 1 RCIC in full flow test with FIC-49-1R600 in AUTO, a discharge pressure least 70 psig greater than Reactor pressure, and a pump flow rate of 550 to 650 gpm.

## TASK CONDITIONS:

1. RCIC vacuum pump repairs are complete.
2. ST-6-060-390-1 is currently being performed by the 4<sup>th</sup> RO.
3. S49.9.A, ROUTINE INSPECTION OF RCIC SYSTEM has been performed.
4. Vibration Monitoring System is in service.
5. Steam leak detection is not known to be inoperable.
6. S49.1.A, NORMAL RCIC LINE-UP FOR AUTOMATIC OPERATION is complete.

## INITIATING CUE:

You are directed by Shift Supervision to place Unit 1 RCIC in full flow test by the manual quick start method using FIC-49-1R600 for a 15 minute PMT following vacuum pump repairs.

You are to obtain a discharge pressure at least 70 psig greater than Reactor pressure, and a pump flow rate of 600 gpm with the controller in AUTO.

Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
1. Obtain a Current revision of S49.1.D. (CUE: When trainee demonstrates the ability to obtain a current rev. of the procedure, state "you have the procedure" and give him / her a working copy of the procedure)	Current revision of S49.1.D obtained	
2. Suppression Pool level normal (22' to 24.25')	Verified by observation that Suppression pool level is between 22' and 24.25' on LI-52-140A(B) at panel 10C626 or LR55-115 at panel 10C648.	
3. <b>AND</b> below 95°F.	Verified by observation that TI-41-101(103) indicates <95 degrees F.	
4. RCIC Pump suction is lined up to the CST	Verified by observation that HV-49-1F010 is open.	
5. Steam Leak Detection System available (CUE: If asked, report that Steam Leak Detection is not known to be inop)	Steam Leak Detection System is available as indicated in alarm indications.	
6. Suppression Pool Cooling available.	Verified by observation that Suppression pool cooling is not tagged out.	
7. <b>IF</b> RCIC to be run for a normally scheduled test, <b>THEN</b> RCIC inspection has been performed per S49.9.A, Routine Inspection of RCIC System. (Given in Task Conditions)	N/A	N/A
8. RCIC System available for auto initiation per S49.1.A, Normal RCIC Line-up for Automatic Operation. (Given in Task Conditions)	N/A	N/A
9. <b>IF</b> RCIC is expected to run for more than 1 hour, <b>THEN</b> Suppression Pool oxygen level verified to be less than 3% <b>WHEN</b> Tech Spec 3.6.6.3 applies. (15 minute run given in Task conditions)	N/A	N/A



10. <b>IF</b> performing this procedure to prime the Turbine Oil System, <b>THEN</b> personnel are stationed to monitor oil level <b>AND</b> to add oil as required. (PMT for vacuum pump repairs given in Task conditions)	N/A	N/A
11. <b>IF</b> Vibration Monitoring System is available, <b>THEN VERIFY</b> in service (Given in Task Conditions)	N/A	N/A
12. <b>PERFORM</b> the following: <b>ENSURE</b> HV-55-*F071, "HPCI/RCIC Flush Line to Suppression Pool" (TEST OUTBOARD), closed	HV-55-1F071, "HPCI/RCIC Flush Line to Suppression Pool" (TEST OUTBOARD), is closed	
13. <b>ENSURE</b> HV-55-*F008, "Test Loop Shutoff" (TEST ISOL), closed.	HV-55-1F008, "Test Loop Shutoff" (TEST ISOL) is closed	
14. <b>ENSURE</b> HV-49-*F022, "RCIC Test Loop Isolation" (TEST ISOL), is closed.	HV-49-1F022, "RCIC Test Loop Isolation" (TEST ISOL) is closed.	
*15. <b>OPEN</b> HV-55-*F011, "HPCI/RCIC Test Return to CST" (CONDENSATE RETURN).	HV-55-1F011, "HPCI/RCIC Test Return to CST" (CONDENSATE RETURN) is open.	
*16. <b>START</b> *OP219, "Barometric Condenser Vacuum Pump" (VACUUM PUMP).	1OP219, "Barometric Condenser Vacuum Pump" (VACUUM PUMP) is running	
*17. <b>OPEN</b> HV-50-*F046, "RCIC Lube Oil Cooling Water Supply" (COOLING WATER).	HV-50-1F046, "RCIC Lube Oil Cooling Water Supply" (COOLING WATER) is open	
18. <b>MONITOR</b> Suppression Pool temperature per ST-6-060-390-*, Suppression Pool Temperature Check. (ST is being performed, given in Task conditions)	N/A	N/A
19. <b>IF</b> required to limit Suppression Pool temperature any time during this procedure,	N/A	N/A

20. <b>THEN PLACE</b> Suppression Pool Cooling Mode of RHR System in service per S51.8.A, Suppression Pool Cooling Operation (Startup and Shutdown) and Level Control. (CUE: The RO will place S/P Cooling in service if needed.)	N/A	N/A
21. <b>INFORM</b> HP of changing radiological conditions due to RCIC system start. (CUE: HP acknowledges changing radiological conditions due to RCIC start.)	HP contacted and informed of changing radiological conditions	
22. <b>IF</b> a manual quick start is desired, <b>THEN PERFORM</b> the following:	N/A	N/A
23. <b>VERIFY</b> FIC-49-*R600, "RCIC Pump Discharge Flow Controller" (FL), set to 600 gpm in "AUTO."	FIC-49-1R600, "RCIC Pump Discharge Flow Controller" (FL), set to 600 gpm in "AUTO."	
*23. <b>OPEN</b> HV-50-*F045, "RCIC Steam Supply" (INLET), at *0C648	HV-50-1F045, "RCIC Steam Supply" (INLET), at *0C648 is open	
24. <b>WHEN</b> RCIC turbine speed starts rising as indicated on SI-50-*01-1, "Turbine Speed" (S),	N/A	N/A
*25. <b>THEN THROTTLE</b> HV-49-*F022, "RCIC Full Flow Test" (TEST ISOL), open.	Attempt to open with HS and recognize HV-49-1F022, "RCIC Full Flow Test" (TEST ISOL), did not open.	
26. <b>IF</b> HV-49-*F022, TEST ISOL, will <b>not</b> open,	N/A	N/A
*27. <b>THEN</b> place FIC-49-*R600 in "MANUAL,"	FIC-49-1R600 in "MANUAL,"	
28. <b>PERFORM</b> the following:	N/A	N/A
<b>EVALUATOR NOTE:</b> When RCIC Turbine Speed drops less than 2800 RPM remove Handswitch, HS49-1F022, Override		
*29. <b>LOWER</b> output of FIC-49-*R600 to approximately 2500 rpm.	FIC-49-1R600 output lowered between 2400 rpm and 2600 rpm	
*30. <b>THROTTLE OPEN</b> HV-49-*F022, TEST ISOL.	HV-49-1F022, TEST ISOL not full shut	
*31. Slowly <b>RAISE</b> output of FIC-49-*R600	Output of FIC-49-1R600 increased with OPEN pushbutton	
32. <b>AND MATCH</b> setpoint to actual flow.	Red arrow in Green band, Setpoint equal to actual flow	

*33. <b>PLACE</b> FIC-49-*R600 in "AUTO."	FIC-49-1R600 in "AUTO."	
*34. <b>ADJUST</b> HV-49-*F022, "RCIC Full Flow Test" (TEST ISOL), as necessary to maintain pump discharge pressure at least 70 psig over reactor pressure	Pump discharge pressure at least 70 psig over Reactor pressure	
*35. <b>AND</b> pump flow rate of 600 gpm.	Pump flow rate of 550 to 650 gpm	
36. <b>ENSURE</b> the following valves aligned as indicated:	N/A	N/A
37. HV-50-*F004 "RCIC Barometric Condenser Drain to Isolation" (DRAIN OUTBOARD) CLOSED	HV-50-1F004 "RCIC Barometric Condenser Drain to Isolation" DRAIN OUTBOARD is closed	
38. HV-50-*F005 "RCIC Barometric Condenser Drain Isolation"(INBOARD TO RADWASTE) CLOSED	HV-50-1F005 "RCIC Barometric Condenser Drain Isolation" (INBOARD TO RADWASTE) is closed	
39. HV-49-*F026 "RCIC Steam Drain Line Isolation" (OUTBOARD TO COND) CLOSED	HV-49-1F026 "RCIC Steam Drain Line Isolation" (OUTBOARD TO COND) is closed	
40. HV-49-*F025"RCIC Steam Drain Line Isolation Valve to Main Cond" (TRAP INBOARD) CLOSED	HV-49-1F025 "RCIC Steam Drain Line Isolation Valve to Main Cond" (TRAP INBOARD) is closed	
(CUE: You can stop here. You have met the termination criterion for this JPM)	N/A	N/A

Comments:

NOTE: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT / UNSAT

## TASK CONDITIONS:

1. RCIC vacuum pump repairs are complete.
2. ST-6-060-390-1 is currently being performed by the 4<sup>th</sup> RO.
3. S49.9.A, ROUTINE INSPECTION OF RCIC SYSTEM has been performed.
4. Vibration Monitoring System is in service.
5. Steam leak detection is not known to be inoperable.
6. S49.1.A, NORMAL RCIC LINE-UP FOR AUTOMATIC OPERATION is complete.

## INITIATING CUE:

You are directed by Shift Supervision to place Unit 1 RCIC in full flow test by the manual quick start method using FIC-49-1R600 for a 15 minute PMT following vacuum pump repairs.

You are to obtain a discharge pressure at least 70 psig greater than Reactor pressure, and a pump flow rate of 600 gpm with the controller in AUTO.



TITLE: PLACE REACTOR FEED PUMP IN SERVICE DURING START-UP

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**DIRECTIONS TO EVALUATOR:**

1. Initialize Simulator to IC-7
2. Place "1A" RFP in standby per S06.1.A

**EVALUATION METHOD :**

**PERFORM**

**EVALUATION LOCATION:**

**SIMULATOR**

**APPROXIMATE COMPLETION TIME:**

15 MINUTES

**IMPORTANCE RATING:**

3.9/3.7

A4.02

**SYSTEM NUMBER:**

259001

**REFERENCES:**

1. S06.1.C, Rev. 22, Placing a Standby Reactor Feed Pump in Service

**TASK STANDARD(S):**

"1A" RFP in service and RPV Level maintained between +20" and +40"

**TASK CONDITIONS:**

1. Plant Startup is in progress
2. Reactor Power 4%
3. Reactor Pressure 446 psig
4. "1A" RFP is in standby per S06.1.A
5. "1A" RFP has been on the MGU low speed stop for 1 hour

**INITIATING CUES:**

Shift Supervision directs you to place the "1A" RFP in service to support Reactor plant startup.

Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
1. Obtain copy of current revision of S06.1.C  (CUE: When Candidate demonstrates the ability to obtain current revision of procedure provide a working copy of S06.1.C)	S06.1.C current revision obtained.	
2. <b>IF</b> Startup Level Control <b>OR</b> RFP "A" are <b>not</b> available, <b>THEN GO TO</b> Section 4.6.  (CUE: If asked, Startup Level Control and "1A" Reactor feed pump are NOT known to be unavailable.)	N/A	N/A
3. <b>ENSURE</b> RFPT "A" has been warmed up at MGU low speed stop for at least 1 hour following turbine roll.	N/A	N/A
*4. <b>OPEN</b> HV-06-*38A, "RFP 'A' Bypass" (BYPASS), at *0C651	HV-06-138A "RFP 'A' Bypass" (BYPASS), at 10C651 is open	
*5. <b>PLACE</b> LIC-06-*38, "Startup Bypass" (LV), in "AUTO"	LIC-06-138, "Startup Bypass" (LV), in "AUTO"	
6. <b>AND ADJUST</b> to 55% (35 inches).	LIC-06-138, "Startup Bypass" (LV) is set to 55%	
7. Slowly <b>RAISE</b> RFPT speed with MGU until pump discharge pressure is at least 50 psig greater than RPV pressure	Recognize by observation that "1A" RFP discharge pressure is 50 psig greater than RPV pressure	
*8. <b>AND ADJUST</b> RPV Min Flow Valve as required to remain on the safe side of Attachment 1.	RPV Min Flow remains on the safe side of Attachment 1. (Controller Set to 20-60%)	
9. <b>WHEN</b> HV-C-06-*20, "RFP Bypass Control Valve," can <b>not</b> pass enough flow to maintain RPV level,  (CUE: HV-C-06-120 <b>cannot</b> pass enough flow to maintain RPV level)	N/A	N/A

STEP	STANDARD	SAT/UNSAT
*10. <b>THEN PLACE</b> LIC-06-*20, PUMP BYPASS, in "MANUAL"	LIC-06-120, PUMP BYPASS, controller is in "MANUAL"	
*11. <b>AND</b> slowly <b>CLOSE</b> HV-06-*20.	HV-06-120 CLOSED	
12. <b>VERIFY</b> LV-C-06-*38A, "RFP A Discharge Level Bypass Valve," opens to maintain RPV level.  (CUE: You have met the termination criterion, you can stop here.	LV-C-06-138A is OPEN	

Comments:

NOTE: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT / UNSAT

TASK CONDITIONS:

1. Plant Startup is in progress
2. Reactor Power 4%
3. Reactor Pressure 446 psig
4. "1A" RFP is in "standby" per S06.1.A
5. "1A" RFP has been on the MGU low speed stop for 1 hour

INITIATING CUE:

Shift Supervision directs you to place the "1A" RFP in service to support reactor plant startup.



TITLE: VENTING PRIMARY CONTAINMENT USING 2" SUPPRESSION POOL VENT

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

Directions to the Simulator Operator/Evaluator:

1. Insert MAD151,A,100, SRV "K" Downcomer Leaks 100%
2. Insert MRE 303, 100, Reactor Enclosure Air Leak at 100%
3. Perform a GP-4
4. Insert NI's and align Feedwater for Post Scram Level Control
5. Open K SRV to achieve about 60 psig in Drywell.
6. Open S,M,E,H SRV's
7. Isolate HPCI
8. On LOCA, reset instrument busses, shunt trips, and secure LP ECCS
9. Perform Step 4.1.2 of T-200
10. When HV-57-105 is opened, Trigger or insert Annunciators 103 RAD F-1 and F-2, SOUTH STACK HI AND HI HI RAD ALARM

Evaluation Method:

### PERFORM

Evaluation Location:

### SIMULATOR

Approximate Completion Time:

15 Minutes

Importance Rating(s):

System Number(s):

3.1/3.4

AA1.05

295024

References:

1. Unit 1, T-200, Rev.14, Primary Containment Emergency Vent Procedure

Task Standard(s):

Suppression Pool Venting in progress using the 2" vent path.

Critical Element(s) (Indicated by \* in Performance Checklist)

Performance Check List:

STEP	STANDARD	SAT/UNSAT
*1. Obtain current revision of T-200. (CUE: When Candidate demonstrates the ability to obtain current revision of procedure provide a working copy of T-200)	Current revision of T-200 obtained.	
2. Direct dose assessment personnel to monitor offsite dose.	HP called or SSV directed to request offsite dose assessment.	
3. Place control switches for the following valves to close on 10C601 to enable NSSSS bypass permissive signal (Main Control Room).	N/A	N/A
*3a. SV57-183,191 "1A Contain Atmosphere Sampling System isolation" (ISOL A).	SV57-183,191 switch in close	
*3b. SV57-133 "1A Contain Atmosphere Sampling System Isolation"(ISOL A).	SV57-133 switch in close	
3c. HV57-117 "Equipment Compartment Outboard Isolation Valve" (TO RX ENCL FILTER).	SV57-117 switch in close	
3d. HV57-118 "Suppression Pool Exhaust to Equipment Compartment Outboard Isolation Valve: (TO RX ENCL FILTER).	SV57-118 switch in close	
3e. HV51-1F079A "1A RHR Sample Line Upstream isolation Valve" (SAMPLE INBOARD.	HV51-1F079A switch in close	
3f. HV51-1F079B "1B RHR Sample Line Upstream Isolation Valve" (SAMPLE INBOARD).	HV51-1F079B switch in close	
4. <b>PLACE</b> the following key switches to "bypass" on 10C601 to inhibit NSSSS isolation signal (Main Control Room)	N/A	N/A

STEP	STANDARD	SAT/UNSAT
*4a. HSS57-191A "Containment Isolation Signal Bypass"(A)	HSS57-191A switch in bypass	
*4b. HSS57-191B "Containment Isolation Signal Bypass" (B)	HSS57-191B switch in bypass	
5. Acknowledge annunciators 111 RECIRC Windows F-4 and F-5.	111 Recirc F-4 and F-5 acknowledged	
*6. Open HV57-118 "Suppression Pool Purge to Equipment Compartment Outboard Isolation Valve" (TO RX ENCL FILTER).	HV57-118 is open	
7. Notify HP of changing radiological conditions in the Reactor Enclosure.	HP notified	
<b>EVALUATOR NOTE: Trigger or Insert Annunciators 103 RAD F-1 and F-2, South Stack HI and HI HI RAD Alarm when the next step is performed</b>		
*8. Throttle Open HV57-105 "Suppression Pool Purge to Equipment Compartment Inboard Isolation Valve" (SUPP POOL EXH BYPASS).	HV57-105 is open	
9. <b>IF</b> performing Section 4.2 per T-102/SAMP-2, SP/G-1 leg <b>AND</b> the South Stack Hi Hi rad alarm is reached <b>THEN PERFORM</b> the following:	N/A	N/A
*10. <b>CLOSE</b> HV-57-105, "Suppression Pool Purge to Equipment Compartment Inboard Isolation Valve" (SUPP POOL EXH BYPASS), on 10C601 (Main Control Room).	HV-57-105, "Suppression Pool Purge to Equipment Compartment Inboard Isolation Valve" Closed	
11. <b>CLOSE</b> HV-57-118, "Suppression Pool Purge to Equipment Compartment Outboard Isolation Valve" (TO RX ENCL. FILTER), on 10C601 (Main Control Room).	HV-57-118, "Suppression Pool Purge to Equipment Compartment Outboard Isolation Valve" Closed	
(CUE: You can stop here. You have met the termination criterion for this JPM		

Comments:

Note: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT/UNSAT

**TASK CONDITIONS:**

1. Primary Containment pressure is elevated and rising.
2. Attempts to spray the Drywell have failed.
3. SP/G-1 leg of T-102 has been entered
4. T200, Section 4.1 "Preparation to Vent" has been completed.

**INITIATING CUES:**

Shift Supervision directs you to vent the Suppression Pool using the 2" vent per T-200.



TITLE: PERFORM A REMOTE MANUAL START OF THE D12 DIESEL GENERATOR AND LOAD IT TO 2000 KW

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

DIRECTIONS TO EVALUATOR:

1. Reset Simulator to any stable IC
2. Toggle Remote function RDG315 to SLOW START.
3. You must provide CUES as an EO stationed locally at the diesel, many steps require local operation or verification of automatic function.

EVALUATION METHOD :

**PERFORM**

EVALUATION LOCATION:

**SIMULATOR**

APPROXIMATE COMPLETION TIME:

25 MINUTES

IMPORTANCE RATING(S):

3.7 / 3.7

A4.04

SYSTEM NUMBER(S):

264000

REFERENCES:

1. S92.1.0, Local and Remote Manual Startup of a Diesel Generator, Rev. 22

TASK STANDARD(S):

D12 supplying 2000 KW to the D12 Safeguard Bus

## TASK CONDITIONS:

1. Procedure S92.1.0 is completed up to and including step 4.3.4.
2. All S92.1.0 Prerequisites are satisfied.
3. D12 Safeguard Bus supplied from 201 Safeguard Transformer.
4. An EO is stationed at D12 D/G.
5. Technical Specifications have been referenced due to the DG being INOP during this test.

## INITIATING CUES:

You are directed by Shift Supervision to start and load D12 to 2000 KW from the control room per S92.1.0, the procedure has been performed up to and including step 4.3.4.

Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
1. Obtain current revision of S92.1.0. (CUE: Provide current revision of S92.1.0 to the candidate.)	N/A	N/A
2. Make PA announcement of impending D12 diesel generator start.	Plant announcement made.	
* 3. <b>PLACE</b> selected 101-A(B,C,D)G501/CS MCR, "Diesel Generator Control," to "START."	Switch 101-BG501B/CS MCR red flagged	
4. Verify prelube pump in operation. (CUE: If requested, report prelube pump is running.)	Contact EO to verify prelube pump in operation.	
5. <b>WHEN</b> 3 minutes time delay for prelube pump operation is completed, <b>THEN OBSERVE</b> diesel generator starts.	D12 Diesel running, annunciator illuminated,	
<b>NOTE: WITHIN 20 SECONDS of receipt of the "DG RUNNING" annunciator, report as the EO the CUES from steps 6, 7, and 8 below and that you are SLOWLY RAISING DG Speed.</b>		
6. <b>VERIFY</b> diesel accelerates to between 300 to 400 rpm by observing engine tachometer at engine gauge panel <b>OR</b> local control panel. (CUE: EO reports diesel speed is 370 rpm.)	Contact EO to verify Diesel speed verified between 300 and 400 rpm.	
7. <b>VERIFY</b> lube oil pressure greater than or equal to 12 psi on red pointer at local PI-GA-*01A(B,C,D) (CUE: EO reports lube oil pressure is 18 psig.)	Contact EO to verify Lube oil pressure verified $\geq 12$ psi at PIGA-101B on red pointer.	
8. <b>VERIFY</b> jacket water pressure greater than or equal to 10 psi on red pointer at local PI-GA-*20A(B,C,D). (CUE: EO reports jacket water pressure is 15 psig.)	Contact EO to verify Jacket water pressure verified $\geq 10$ psig at PIGA-120B on red pointer.	

STEP	STANDARD	SAT/UNSAT
9. Gradually <b>RAISE</b> engine speed to 900 rpm within 1 to 2 minutes using speed control knob. (CUE: EO reports that the diesel is now at 900 rpm.)	Diesel speed verified at 900 rpm within 1 to 2 minutes.	
10. <b>PLACE</b> EXCITER SHUTDOWN/ RESET switch to "RESET". (CUE: EO reports the exciter shutdown/reset switch is in RESET.	Direct EO to place EXCITER SHUTDOWN / RESET Switch in RESET.	
11. <b>AFTER</b> 10 seconds, <b>THEN TURN</b> speed control knob fully clockwise to full high speed stop. (CUE: EO reports the knob is fully clockwise.)	Direct EO to place Speed Control knob verified fully clockwise.	
12. <b>VERIFY</b> frequency meter reads from 59 to 61 Hz.	Frequency between 59-61 Hz on Frequency Meter.	
13. <b>IF</b> ESW pump <b>not</b> already running, <b>THEN VERIFY</b> ESW pump starts 50 to 60 seconds after diesel start.	OB ESW pump running.	
14. <b>VERIFY</b> cooling water is available to diesel generator by observing PI-11-*07A(B,C,D), "ESW Supply", indicates higher pressure than PI-11-*08A(B,C,D), "ESW Return". (CUE: EO reports cooling water available.)	Direct EO to verify Cooling water D/P.	
15. <b>IF</b> diesel was started locally, <b>THEN RETURN</b> diesel control to Control Room:  <b>PLACE</b> LOCAL-REMOTE switch to REMOTE.  <b>INFORM</b> Control Room Operator diesel control has been returned to MCR.  <b>PLACE</b> 101-A(B,C,D)G501, "Diesel Generator Control", to START to convert governor to droop mode.	N/A	N/A

STEP	STANDARD	SAT/UNSAT
16. <b>PLACE</b> appropriate 143-A(B)X103, "01 Safeguard Transformer Tap Changer Selector," to "MANUAL." (CUE: The PRO reports - "Handswitch, 143-BX103, "201 Safeguard Transformer Tap Changer Selector is in MANUAL.")	Switch 143-BX103 in MANUAL.	
*17. <b>INSERT</b> synchroscope switch handle into Synchroscope Switch for appropriate Diesel Generator Breaker <b>AND PLACE</b> to "ON".	Switch 125-11607/SS in the "ON" position.	
18. <b>OBSERVE</b> appropriate Synchroscope operates properly: Synchroscope rotating <u><b>WHEN</b></u> synchroscope is at 180°, <u><b>THEN</b></u> both lights are lit <b>AND</b> fully bright <u><b>WHEN</b></u> synchroscope is at 0°, <u><b>THEN</b></u> both lights are not LIT	Synchroscope operation verified.	
19. <b>VERIFY</b> speed controls operate properly as follows: <b>OBSERVE</b> diesel generator frequency as indicated by synchroscope. <b>PLACE</b> 165-A(B,C,D)G501/CS, "Diesel Generator Speed Governor Control," to RAISE" <b>AND</b> to LOWER <b>VERIFY</b> change in synchroscope rotation rate or direction of rotation.	Frequency increased and decreased by observing response to switch 165-BG501/CS.	
20. <b>VERIFY</b> voltage controls operating properly as follows: <b>OBSERVE</b> diesel generator voltage as indicated on Incoming Voltmeter. <b>PLACE</b> 170-A(B,C,D)G502/CS VOLTAGE REGULATOR to "Raise" <b>AND</b> to "LOWER" <b>VERIFY</b> change on Incoming Voltage meter.	Voltage increased and decreased by observing response to switch 170-BG502/CS	

STEP	STANDARD	SAT/UNSAT
*21. <b>ADJUST</b> engine speed using appropriate 165-A(B,C,D)G501/CS, "Diesel Generator Speed Governor Control", until synchroscope is rotating slowly in FAST direction (clockwise).	Synchroscope rotating slowly in FAST direction.	
*22. <b>ADJUST</b> diesel generator voltage using 170-A(B,C,D)G502/CS "Diesel Generator Voltage Regulator" until Synchronizing Incoming Voltmeter is slightly higher than Synchronizing Running Voltmeter.	Incoming Voltage meter reads 0.5 to 5 volts higher than Running Voltage meter.	
*23. <b>WHEN</b> Synchroscope is within 3 degrees before 12 o'clock, <b>THEN CLOSE</b> Diesel Generator Breaker.	D12 output breaker 152-11607/CS red flagged, D12 output breaker 152-11607 shuts and remains closed.	
24. Immediately <b>RAISE</b> load to between 200 to 300 KW by turning 165-A(B,C,D)G501/CS "Diesel Generator Speed Governor Control", to "RAISE."	Load raised to between 200 to 300 kW on W/BG501-2.	
25. Immediately <b>LOAD</b> 100 KVAR by turning 170-A(B,C,D)G502/CS, "Diesel Generator Voltage Regulator" to "RAISE."	KVAR meter (VAR/BG501-2) indicating between 100 and 200 kVARs.	
26. <b>TURN</b> Synchroscope Switch to "OFF".	Synchroscope switch (125-11607/SS) in the OFF position.	
*27. Gradually <b>RAISE</b> diesel generator load at rate of less than or equal to 350 KW/min to desired value.  (CUE: You have met the termination criteria for this JPM. You may stop here.)	AC kilowatt meter (W/BG501-2) indicates 2000 KW (+/- 100 KW) with KVARs less than 1500 KVARs  OR  KVARs no more than 75% of real load	

Comments:

Note: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT/UNSAT

**TASK CONDITIONS:**

1. Procedure S92.1.0 is completed up to and including step 4.3.4.
2. All S92.1.0 Prerequisites are satisfied.
3. D12 Safeguard Bus supplied from 201 Safeguard Transformer.
4. An EO is stationed at D12 D/G.
5. Technical Specifications have been referenced due to the DG being INOP during this test.

**INITIATING CUES:**

You are directed by Shift Supervision to start and load D12 to 2000 KW from the control room per S92.1.0, the procedure has been performed up to and including step 4.3.4.



TITLE: ALTERNATE COOLING OF RECW HEAT EXCHANGERS

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

DIRECTIONS TO EVALUATOR:

1. Reset the Simulator to any power IC.
2. Insert a Loss of Offsite Power (MED261).
3. Stabilize the Plant.
4. Acknowledge and reset annunciators.
5. Ensure all ESW Pumps are running.
6. Ensure I/A available to ESW valves

EVALUATION METHOD :

**PERFORM**

EVALUATION LOCATION:

**SIMULATOR**

APPROXIMATE COMPLETION TIME:

10 MINUTES

IMPORTANCE RATING(S):

3.3/3.4  
4.3/4.2

A1.01  
2.1.20

SYSTEM NUMBER(S):

295018  
Generic

REFERENCES:

- | 1. E10/20 Rev. 28, Loss of Offsite Power

TASK STANDARD(S):

In-Service RECW Heat Exchangers are being cooled by the ESW System.

**TASK CONDITIONS:**

1. A total loss of Offsite power has occurred.
2. E10/E20 Initial Actions 2.1 through 2.12 are complete.
3. Unit 1 and Unit 2 Reactors are scrammed.
4. No evidence of a Seismic event exists.
5. "1A" and "2A" RECW Heat Exchangers are in service.

**INITIATING CUES:**

You are directed by Shift Supervision to establish ESW to the in-service RECW Heat Exchangers for Units 1 and 2 using procedure E10/20.

Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
1. Obtain current revision of E10/20. (CUE: When Trainee demonstrates the ability to obtain current revision of procedure, provide working copy of E10/20.)	Current Revision of E10/20 obtained.	
2. Obtain four GE75 keys.	Four GE75 keys obtained.	
NOTE: Section 2.13 for Unit 2 or 2.15 for Unit 1 may be performed in any order.		
3. <b>CLOSE</b> 10-2004A(B), "A(B) RECW Hx SW Supply," (284-R17-201) to isolate flow to the out of service RECW Heat Exchanger. (CUE: EO reports 10-2004B(A) is closed.)	EO directed to close 10-2004B (2B RECW Hx is O.O.S.)	
Evaluator Note: "IF ESW Loop A(B) HI DIFF FLOW " Annunciator Alarms provide the following cue: (CUE: "The 4 <sup>th</sup> RO will respond to that alarm no action is required on your part.")		
*4. <b>OPEN</b> HV-11-227 "RECW Heat Exchangers U/2 Return to ESW A" (UNIT 2 RET LOOP A).	HV-11-227 open.	
*5. <b>OPEN</b> HV-11-228 "ESW A to U/2 RECW Heat Exchanger" (UNIT 2 SUPPLY), via key lock hand switch.	HV-11-228 open.	
*6. <b>OPEN</b> HV-11-224, "ESW A to U/2 RECW Heat Exchanger" (UNIT 2 SUPPLY), via key lock hand switch.	HV-11-224 open.	
7. <b>CLOSE</b> 10-2407 "SW Supply to RECW HTX Block Valve" (284-R17-201). (CUE: EO reports 10-2407 is closed.)	EO directed to close 10-2407.	
*8. <b>CLOSE</b> HV-10-215 "RECW Heat Exchangers U/2 shutoff". (UNIT 2 RET U/2 SW).	HV-10-215 closed.	
9. <b>CLOSE</b> 10-1004A(B) "A(B) RECW Hx SW Supply" (207-R12-201) to isolate flow to the out of service RECW Heat Exchanger. (CUE: EO reports 10-1004B(A) is closed.)	EO directed to close 10-1004B. (1B RECW Hx is O.O.S.)	

*10.	<b>OPEN</b> HV-11-127 "RECW Hx U/1 Return to ESW B" (UNIT 1 RET LOOP B).	HV-11-127 open.	
*11.	<b>OPEN</b> HV-11-128 "ESW B to U/1 RECW Hx" (UNIT 1 SUPPLY) via key lock hand switch.	HV-11-128 open.	
*12.	<b>OPEN</b> HV-11-124 "ESW B to U/1 RECW Hx" (UNIT 1 SUPPLY) via key lock hand switch.	HV-11-124 open	
13.	<b>CLOSE</b> 10-1407 "SW Supply to RECW HTX Block valve," (207-R12-201). (CUE: EO reports 10-1407 is closed.)	EO directed to close 10-1407.	
*14.	<b>CLOSE</b> HV-10-115 "RECW Heat Exchangers U/1 Shutoff" (UNIT 1 RET U/1 SW).	HV-10-115 closed.	

Comments:

Note: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT/UNSAT

**TASK CONDITIONS:**

1. A total loss of Offsite power has occurred.
2. E10/20 Initial Actions 2.1 through 2.12 are complete.
3. Unit 1 and Unit 2 Reactors are scrammed.
4. No evidence of a Seismic event exists.
5. "1A" and "2A" RECW Heat Exchangers are in service.

**INITIATING CUES:**

You are directed by Shift Supervision to establish ESW to the in-service RECW Heat Exchangers for Units 1 and 2 using procedure E10/20.

TITLE: MANUAL DEPRESSURIZATION OF RHR (Alternate Path)

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

DIRECTIONS TO EVALUATOR:

1. Reset Simulator to any Power IC
2. Insert Annunciator 113 COOL A F-3, 1A RHR PUMP DISCH HI/LO PRESS
3. After HV-51-1F024A is opened a second time, Trigger or insert Malfunction MRH573A, HV-51-1F024A Fails due to Thermal Overload
4. After HV-51-1F024A has failed to close, Trigger or insert Annunciator 113 COOL A F-5, Division 1 LPCI HIGH POINT VENT and remove Annunciator 113 COOL A F-3, 1A RHR PUMP DISCH HI/LO PRESS

EVALUATION METHOD :

**PERFORM**

EVALUATION LOCATION:

**SIMULATOR**

APPROXIMATE COMPLETION TIME:

15 MINUTES

IMPORTANCE RATING:

3.9/3.7

A4.02

SYSTEM NUMBER:

259001

REFERENCES:

1. S51.4.A, Rev. 6, Manual Depressurization of RHR

TASK STANDARD(S):

"1A" RHR Loop depressurized and draining of RHR to the Suppression Pool terminated by closing HV-51-125A.

## TASK CONDITIONS:

1. Annunciator 113 F-3 "1A RHR PUMP DISCH HI/LO PRESS" has annunciated
2. Unit 1 is at \_\_\_\_\_% power
3. "1A" Loop of RHR is aligned for AUTOMATIC OPERATION ON LPCI MODE per S51.1.A
4. "1A" RHR Loop Pressure on PISH-1N653A indicates 405 psig

## INITIATING CUES:

You are directed by Shift Supervision to depressurize the "1A" Loop of RHR in accordance with the annunciator response card and S.51.4.A

Critical Element(s) indicated by "\*" in Performance Checklist.

## PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
1. Obtain copy of current revision of S51.4.A  (CUE: When Candidate demonstrates the ability to obtain current revision of procedure provide a working copy of S51.4.A)	S51.4.A current revision obtained.	
*2a. For affected RHR Loop, crack OPEN, HV-51-*F024A, "A RHR"	HV-51-1F024A, "1A RHR" HS taken to OPEN	
*2b. pull-to-stop HV-51-*F024A, "A RHR"	HV-51-1F024A, "1A RHR" HS pulled to stop valve movement before full open	
2c. wait 10 seconds	10 seconds pass	
*2d. close HV-51-*F024A, "A RHR"	HV-51-1F024A, "1A RHR" Closed	
3. <b>IF</b> the full flow test valve fails to close for any reason <b>THEN</b> CLOSE HV-51-125A(B) immediately to avoid draining RHR to Suppression Pool	N/A	N/A



STEP	STANDARD	SAT/UNSAT
<p>*4. REPEAT step 4.1 as necessary to depressurize loop to stayfill system pressure.</p> <p>(CUE: If asked, EO reports "PISH-1N653A, "1A RHR" indicates 290 psig and steady")</p>	Determine "1A" Loop pressure is greater than 275 psig	
<p align="center"><b>DRIVER NOTE:</b></p> <p>Upon the 2nd opening of HV-51-1F024A, trigger or insert MALF MRH573A - HV-51-1F024A FAILS DUE TO THERMAL OVERLOAD and Annunciator 113 COOL A, F-5, DIVISION 1 LPCI HIGH POINT VENT</p> <p align="center"><b>EVALUATOR NOTE:</b></p> <p>HV-51-1F024A will fail as-is (open). The candidate must close HV-51-125A to terminate draining the RHR Loop to the Suppression Pool.</p>		
*5a. For affected RHR Loop, crack OPEN, HV-51-*F024A, "A RHR"	HV-51-1F024A, "1A RHR" HS taken to OPEN	
*5b. pull-to-stop HV-51-*F024A, "A RHR"	HV-51-1F024A, "1A RHR" HS pulled to stop valve movement before full open	
5c. wait 10 seconds	10 seconds pass	
*5d. close HV-51-*F024A, "A RHR"	HV-51-1F024A, "1A RHR" HS taken to CLOSED	
(CUE: If asked, EO reports "PISH-1N653A, "1A RHR" indicates 120 psig and steady")	N/A	N/A
6. <b>IF</b> the full flow test valve fails to close for any reason <b>THEN</b>	Recognize that the full flow test valve does not close	
*7. CLOSE HV-51-125A(B) immediately to avoid draining RHR to Suppression Pool	HV-51-125A Closed	
8. ENSURE "RHR Min Flow Valve", HV-51-*F007A(B,C,D), is open.	HV-51-1F007A, "RHR Min Flow Valve" , is open.	
(CUE: You can stop here. You have met the termination criterion for this JPM.		

Comments:

NOTE: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT / UNSAT

TASK CONDITIONS:

1. Annunciator 113 F-3 "1A RHR PUMP DISCH HI/LO PRESS" has annunciated
2. Unit 1 is at \_\_\_\_\_% power
3. "1A" Loop of RHR aligned for AUTOMATIC OPERATION ON LPCI MODE per S51.1.A
4. "1A" RHR Loop Pressure on PISH-1N653A indicates 405 psig

INITIATING CUES:

You are directed by Shift Supervision to depressurize the "1A" Loop of RHR in accordance with the annunciator response card and S.51.4.A

TITLE: BYPASSING SQUIB VALVES FOR SLC INJECTION

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

DIRECTIONS TO EVALUATOR:

NONE

EVALUATION METHOD:

**SIMULATE**

EVALUATION LOCATION:

**PLANT**

APPROXIMATE COMPLETION TIME:

20 MINUTES

IMPORTANCE RATING(S):

3.7/3.9

EA 1.10

SYSTEM NUMBER(S):

295037

REFERENCES:

1. Unit 1, T-212, Rev. 17, Bypassing Squib Valves for SLC Injection
2. Unit 2, T-212, Rev. 13, Bypassing Squib Valves for SLC Injection

TASK STANDARD(S):

Establish a flowpath from the discharge of the SLC pumps to the vessel in accordance with T-212.

TASK CONDITIONS:

1. Unit \_\_\_\_ is in an ATWS.
2. SLC was manually initiated from the control room but the Squib valves failed to fire. All three SLC Injection Pumps are shutdown.

INITIATING CUES:

You are directed by Shift Supervision to perform T-212 on Unit \_\_\_\_ to inject SLC to the vessel.

Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
<p>1. NOTE:</p> <p><u>IF</u> this JPM is the <b>first</b> of multiple T-200 series JPMs being performed by a single candidate <u>THEN</u> step #1 applies.</p> <p><u>OTHERWISE</u> mark step #1 N/A</p> <p><u>AND</u> provide the following to the candidate :</p> <p>a. INITIATING CUE(S)</p> <p>b. CUE: " You are now in possession of the T-212 equipment container. It contains all tools and equipment required by the procedure. You are to simulate their use during performance of the procedure."</p> <p>c. PROCEDURE COPY</p>		
<p>*2. Obtain the following equipment from the Unit * T-200 Hose Storage cabinet (506-R16-283/580-R17-283) (Attachment 1). BL-840 key required:</p> <ul style="list-style-type: none"> <li>- (1) 20 (U1)/ 15 (U2) foot Hydraulic hose with female Parker fittings</li> <li>- (1) LV-*00 Key</li> </ul> <p>(CUE: You have obtained the equipment.)</p>	<p>The following equipment obtained from Unit * T-200 cabinet:</p> <ul style="list-style-type: none"> <li>- (1) 20 (U1)/15 (U2) foot Hydraulic hose with female Parker fittings</li> <li>- (1) LV-*00 Key</li> </ul>	
<p>3. <b>ENSURE</b> the following at *0C603 (Main Control Room)</p>	N/A	N/A
<p>4. 48-*F036, "SLC Manual Injection Maintenance Valve" (INBOARD), open.</p> <p>(CUE: If Unit * RO is contacted, report "48-*F036 indicates open.")</p>	48-*F036 open.	
<p>5. HV-48-*F006A, "SLC Injection" (OUTBOARD A), open.</p> <p>(CUE: If Unit * RO is contacted, report "HV-48-*F006A indicates open.")</p>	HV-48-*F006A open.	

STEP	STANDARD	SAT/UNSAT
<p>6. HV-48-*F006B, "SLC Injection" (OUTBOARD B), open.</p> <p>(CUE: If Unit * RO contacted, report "HV-48-*F006B indicates open.")</p>	HV-48-*F006B open.	
<p>7. 48-*F016, "SBLC Test Return Line Valve" (RECIRC VLV TEST) (500-R16-283/574-R17-283) closed.</p> <p>(CUE: If Unit * RO contacted, report "48-*F016 indicates closed.")</p>	48-*F016 closed.	
8. ENSURE the following at *0C603 (Main Control Room)	N/A	N/A
<p>9. Place the following keylock switches at panel *0C603 (MCR) for SLC Injection Pumps to "STOP"</p> <ul style="list-style-type: none"> <li>. *AP208 "SLC Injection Pump"</li> <li>. *BP208 "SLC Injection Pump"</li> <li>. *CP208 "SLC Injection Pump"</li> </ul>	Keylock switches checked in "STOP"	
10. <b>CONNECT</b> hose between the following:	N/A	N/A
<p>*11. Parker fitting at 48-*001 "SBLC Test Return Line Vent Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Hose fitting is connected)</p>	One end of 20 (U1)/15 (U2) foot hose is connected at 48-*001	
<p>*12. Parker fitting at 48-*015 "SBLC Pps Disch Hdr Test Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Hose fitting is connected)</p>	The free end of the 20 (U1)/ 15 (U2) foot hose is connected at 48-*015	
<p>*13. <b>UNLOCK AND OPEN</b> 48-*F021, "SBLC Test Return Line Vent Vlv" (500-R16-283/574-R17-283).</p> <p>(CUE: Lock is removed, handwheel rotates counter clockwise and then comes to a stop.)</p>	48-*F021 unlocked and open.	

STEP	STANDARD	SAT/UNSAT
<p>*14. <b>OPEN</b> 48-*001, "SBLC Test Return Line Vent Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Valve handwheel rotates counter clockwise and then comes to a stop.)</p>	48-*001 open.	
<p>*15. <b>UNLOCK AND OPEN</b> 48-*014, "SBLC Pps Disch Hdr Test Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Lock is removed, handwheel rotates counter clockwise and then comes to a stop.)</p>	48-*014 unlocked and open.	
<p>*16. <b>OPEN</b> 48-*015, "SBLC Pps Disch Hdr Test Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Valve handwheel rotates counter clockwise and then comes to a stop.)</p>	48-*015 open.	
17. <b>OPEN</b> the following:	N/A	N/A
<p>*18. 48-*F017A, "A SBLC Pp Recirc Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Valve handwheel rotates counter clockwise and then comes to a stop.)</p>	48-*F017A open.	
<p>*19. 48-*F017B, "B SBLC Pp Recirc Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Valve handwheel rotates counter clockwise and then comes to a stop.)</p>	48-*F017B open.	
<p>*20. 48-*F017C, "C SBLC Pp Recirc Vlv" (500-R16-283/574-R17-283)</p> <p>(CUE: Valve handwheel rotates counter clockwise and then comes to a stop.)</p>	48-*F017C open.	

STEP	STANDARD	SAT/UNSAT
<p>*21. <b>START</b> one of the following SLC Injection Pumps, by holding keylock switch at panel *0C603 (Main Control Room) in "RUN" for at least 1 second before releasing:</p> <ul style="list-style-type: none"><li>• *AP208, "SLC Injection Pump"</li><li>• *BP208, "SLC Injection Pump"</li><li>• *CP208, "SLC Injection Pump"</li></ul> <p>(CUE: When the candidate notifies the MCR to start a SLC pump then say: "You can stop here, you have met the termination criteria for this JPM.")</p>	<p>Recognize the need to start a SLC pump and notify control room operators that SLC is aligned per T-212 and that they need to start a SLC pump.</p>	



Comments:

Note: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT/UNSAT

**TASK CONDITIONS:**

1. Unit \_\_\_\_ is in an ATWS.
2. SLC was manually initiated from the control room but the Squib valves failed to fire. All three SLC Injection Pumps are shut down.

**INITIATING CUES:**

You are directed by Shift Supervision to perform T-212 on Unit \_\_\_\_ to inject SLC to the vessel.

TITLE: BYPASSING A CONTROL ROD FROM THE REACTOR MANUAL CONTROL SYSTEM

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

DIRECTIONS TO EVALUATOR:

NONE

EVALUATION METHOD :

**SIMULATE**

EVALUATION LOCATION:

**PLANT**

APPROXIMATE COMPLETION TIME:

15 MINUTES

IMPORTANCE RATING:

SYSTEM NUMBER:

3.2/3.1

A2.04

201002

REFERENCES:

1. S73.0.E, Rev. 10, Bypassing/Unbypassing a Control Rod from RMCS

TASK STANDARD(S):

Control Rod 18-31 bypassed from RMCS, and RDCS is reset

TASK CONDITIONS:

1. Control Rod 18-31 is declared inoperable.
2. RDCS is tripped inop due to the fault on rod 18-31.

INITIATING CUES:

You are directed by Shift Supervision to bypass Control Rod 18-31 from the Unit \_\_\_\_ RMCS, and reset RDCS

Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
1. Obtain copy of current revision of S73.0.E. (CUE: When Candidate demonstrates the ability to obtain current revision of procedure, proved a working copy of S73.0.E)	S73.0.E current revision obtained.	
2. Reactor Manual Control System in operation. (CUE: If asked say: "RMCS is operable.")	Ask the SSV or RO if RMCS is operable.	
3. Permission to bypass rod obtained from Shift Supervision. (CUE: If asked say: "You have permission to bypass control rod 18-31.")	Ask SSV for permission to bypass control rod 18-31.	
4. Refer to Attachment 1 and determine binary coordinated of control rod to be bypassed. (CUE: None)	Determine binary coordinates referring to Attachment 1: X = 00110 Y = 01001	
*5. Placed Bypassed Rod Identity Switches in position corresponding to binary coordinates of the control rod to be bypassed at *0C616. (CUE: Switches X2, X1, Y3 and Y0 are in the up position.)	Switches aligned: X4, down                      Y4, down X3, down                      Y3, up X2, up                          Y2, down X1, up                          Y1, down X0, down                      Y0, up	
*6. Place Bypassed Switch in up position at *0C616. (CUE: Bypassed switch is in the up position.)	Bypassed switch in the up position *0C616.	
7a. IF RDCS is INOPERABLE, as indicted by INOPERABLE LED Lit, on the RDCS STATUS section at *0C616 ... (CUE: The INOP LED is lit.)	Look at the "INOPERATIVE" LED and determined if it is lit and *0C616.	

<p>*7b. <u>THEN</u> depress "RESET" pushbutton located in RDCS STATUS section of analyzer card for several seconds at *0C616 <u>AND</u> RELEASE.</p> <p>(CUE: The "RESET" pushbutton depressed <u>AND</u> released.)</p>	<p>Depress the "RESET" pushbutton located in RDCS STATUS section of analyzer card for several seconds at *0C616 <u>AND</u> release.</p>	
<p>8a. VERIFY ROD BYPASS light lit on RDCS STATUS section of the ROD SELECT MODULE at *0C603, "Reactor Control Console"</p> <p>(CUE: The RO reports, "The ROD BYPASS light is lit on the *0C603 "Reactor Control Console.")</p>	<p>Ask the RO is the ROD BYPASS light is lit on the RDCS STATUS section of the ROD SELECT MODULE at *0C603, or verify in the MCR.</p>	
<p>8b. AND verify RDCS INOPERATIVE annunciator clear on the *08 REACTOR (E-4)</p> <p>(CUE: The RO reports, "The RDCS INOPERATIVE annunciator is clear on *08 REACTOR (E-4)".</p>	<p>Ask the RO if the RDCS INOP annunciator is clear on *08 REACTOR, window E-4, or verify in the MCR.</p>	
<p>9. Document bypassed rod in Unified Narrative Log.</p> <p>(CUE: If asked say: "I understand you want me to note, control rod 18-31 bypassed.")</p>	<p>Notify CRS to make log entry saying control rod 18-31 is bypassed.</p>	

Comments:

NOTE: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT / UNSAT

TASK CONDITIONS:

1. Control Rod 18-31 is declared inoperable.
2. RDCS is tripped inop due to the fault on rod 18-31.

INITIATING CUES:

You are directed by Shift Supervision to bypass Control Rod 18-31 from the Unit \_\_\_\_ RMCS, and reset RDCS

TITLE:            HPCI/RCIC HIGH AREA TEMPERATURE ISOLATION BYPASS (T-249)

TASK PERFORMED BY: \_\_\_\_\_ EVALUATOR: \_\_\_\_\_

EVALUATOR SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

DIRECTIONS TO EVALUATOR:

- 1. NONE

EVALUATION METHOD :

**SIMULATE**

EVALUATION LOCATION:

**PLANT**

APPROXIMATE COMPLETION TIME:

10 MINUTES

IMPORTANCE RATING(S):

SYSTEM NUMBER(S):

3.8/3.6	2.4.34	Generic
3.3/3.7	K.408	223002

REFERENCES:

- |    |  |
|----|--|
| 1. | Unit 1 T-249, Rev. 0, HPCI/RCIC HIGH AREA TEMPERATURE ISOLATION BYPASS |
| 2. | Unit 2 T-249, Rev. 1, HPCI/RCIC HIGH AREA TEMPERATURE ISOLATION BYPASS |

TASK STANDARD(S):

HPCI/RCIC High area temperature isolations bypassed.

## TASK CONDITIONS:

1. A LOCA has occurred on Unit \_\_\_\_.
2. RPV level is -180 inches.
3. T-111 has been entered.
4. A steam line break is not known to exist in HPCI/RCIC rooms.

## INITIATING CUES:

You are directed by shift supervision to Bypass the HPCI and RCIC area high temperature isolations per T-249.



Critical Element(s) indicated by "\*" in Performance Checklist.

PERFORMANCE CHECKLIST:

STEP	STANDARD	SAT/UNSAT
<p>NOTE:</p> <p><b>IF</b> this JPM is the <b>first</b> of multiple T-200 series JPMs being performed by a single candidate <b>THEN</b> step #1 applies.</p> <p><b>OTHERWISE</b> mark step #1 N/A</p> <p><b>AND</b> provide the following to the candidate :</p> <ol style="list-style-type: none"> <li>INITIATING CUE(S)</li> <li>CUE: " You are now in possession of the T-249 equipment container. It contains all tools and equipment required by the procedure. You are to simulate their use during performance of the procedure."</li> <li>PROCEDURE COPY</li> </ol>		
<p>*1. The following is <b>OBTAINED</b> from Unit ___ T-200 locker.</p> <ul style="list-style-type: none"> <li>copy of T-249</li> <li>(4) PA2235 keys</li> </ul> <p>(CUE: After the operator tells you what equipment he/she will take, inform them: "You have that equipment and procedure" and provide copy of T-249.)</p>	A copy of T-249 and four (4) PA2235 keys OBTAINED.	
2. <b>HPCI high area temperature isolation bypass.</b>	N/A	N/A
3. <b>PLACE</b> the following keylock switches in "BYPASS":	N/A	N/A
<p>*3a. B21B-S6B "HPCI Steam Line OBV Steam Leak" at *0C620 (Aux Equip Room)</p> <p>(CUE: Switch is in bypass)</p>	B21B-S6B "HPCI Steam Line OBV Steam Leak" at *0C620 keylock switch in "BYPASS":	
<p>*3b. B21B-S6D "HPCI Steam Line IBV Steam Leak" at *0C641 (Aux Equip Room)</p> <p>(CUE: Switch is in bypass)</p>	B21B-S6D "HPCI Steam Line IBV Steam Leak" at *0C641 keylock switch in "BYPASS":	
4. <b>RCIC HIGH AREA TEMPERATURE ISOLATION BYPASS</b>	N/A	N/A

STEP	STANDARD	SAT/UNSAT
5. <b>PLACE</b> the following keylock switches in "BYPASS"	N/A	N/A
*5a. B21B-S5A "RCIC Steam Line OBV Steam Leak" at *0C621 (Aux Equip Room) (CUE: Switch is in bypass)	B21B-S5A "RCIC Steam Line OBV Steam Leak" at *0C621 keylock switch in "BYPASS":	
*5b. B21B-S5C "RCIC Steam Line IBV Steam Leak" at *0C640 (Aux Equip Room) (CUE: Switch is in bypass)	B21B-S5C "RCIC Steam Line IBV Steam Leak" at *0C640 keylock switch in "BYPASS":	

**TASK CONDITIONS:**

1. A LOCA has occurred on Unit \_\_\_\_.
2. RPV level is -180 inches.
3. T-111 has been entered.
4. A steam line break is not known to exist in HPCI/RCIC rooms.

**INITIATING CUES:**

You are directed by shift supervision to Bypass the HPCI and RCIC area high temperature isolations per T-249.

Comments:

Note: Any grade of UNSAT requires a comment.

JPM Overall Rating: \_\_\_\_\_  
SAT/UNSAT

## TASK CONDITIONS:

1. Primary Containment pressure is elevated and rising.
2. Attempts to spray the Drywell have failed
3. SP/G-1 leg of T-102 has been entered
4. T200, Section 4.1 "Preparation to Vent" has been completed.

## INITIATING CUES:

Shift Supervision directs you to vent the Suppression Pool using the 2" vent per T-200.