INITIATING CUES:

1. Plant is stable at 50% power, all systems in Automatic for this condition.

2. You are to respond to the plant event and perform all of the required procedural immediate actions.

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Perform the Immediate Operator Actions of E-0, Reactor Trip or Safety Injection, with a Failure of Automatic and Manual Reactor Trip

TIME: 15 Minutes DIFFICULTY: 4

TIME CRITICAL: NO ALTERNATE PATH: YES

PARENT TASK: 012 001 04 01 K/A # Gen 2.4.49 IMP 4.0/4.0

PROCEDURE/REFERENCES: E-0 (Rev 38);

STARTING STEP: 1

ENDING STEP: 4

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**	[ ]	**RO/SRO**	[X]	**NPO/RO/SRO** [ ]
METHOD			**SIMULATE**	[ ]	**PERFORM** [X]
LOCATION			**SIMULATOR**	[X]	**IN-PLANT** [ ]
PERFORMANCE:			**PASS**	[ ]	**FAIL** [ ]

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 2, 3, 5 and 7

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to respond to the plant event and perform all of the required procedural immediate actions.

I will describe the general system conditions. Before you start, I will state Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. Plant is stable at 50% power, all systems in Automatic for this condition.

2. You are to respond to the plant event and perform all of the required procedural immediate actions.

TASK STANDARD:

Required immediate operator actions completed

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	INITIATING CUE: **When candidate is ready, instruct Simulator operator to insert the file for failing a Main Feed Regulating FULL OPEN. This should cause a Rx Trip/FWI, but the reactor will not trip for this JPM.** **These steps are designed to be done from memory without the use of references.**		
	START TIME	_____	
1	Recognize the need for a reactor trip and attempts to verify Reactor Trip	IDENTIFIES SG narrow range level GREATER THAN 73% and the Reactor should be tripped and the Reactor is NOT TRIPPED by any: Rod Bottom Lights - NOT LIT Reactor Trip Breakers - CLOSED Rod Position Indicators - NOT AT ZERO Neutron Flux - NOT DECREASING	
*2	Manually Trip reactor	DEPRESSES manual reactor trip pushbutton and observes reactor is NOT SUBCRITICAL	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
*3	De-energize AC 480V busses 2A and 6A for 10 seconds **NOTE:** **This step is only time critical if breakers are not held open long enough to cause the full rod insertion**	PLACES C.S. for breakers 52/2A and 52/6A to TRIP position, WAITS 10 SECONDS **AND** PLACES switches to CLOSE	
4	If generator output breakers are CLOSED, reset Blackout relay **NOTE :** **If the main generator output breakers are OPEN, then steps 5, 6, and 7 will not be performed.**	CHECKS 345 KV Breakers 7and 9 GREEN open light-NOT LIT and RED closed light- LIT	
*5	Reset Blackout relay	DEPRESSES Blackout relay Reset 480V bus pushbutton on SC panel.	
6	Verify Turbine Trip	CHECKS Turbine NOT Tripped-Turbine Stop and Control Valves GREEN lights - NOT LIT and RED lights - LIT	
*7	Manually Trip Turbine	DEPRESSES Turbine Trip PB	
8	Verify Turbine Trip	CHECKS Turbine Stop and Control Valves GREEN light - LIT and RED light - NOT LIT	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
9	Check if SI is actuated	CHECKS: SI Annunciator - NOT LIT **OR** SI System pumps - NOT RUNNING	
10	Check if SI required	CHECKS: PRZR pressure GREATER THAN 1840 psig Steamline ΔP LESS THAN 155 psid NO High Steamflow Containment pressure LESS THAN 2 psig PRZR level GREATER THAN 11%	
11	Transitions to ES-0.1 Rx Trip Response	DETERMINES that SI has not actuated, and is not required, and TRANSITIONS to ES-0.1 Rx Trip Response	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	CUE: **Due to the nature of this JPM (perform all of the required procedural immediate actions) and the initiating CUE, it may be necessary to inform the candidate "This completes the JPM".**		
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

Examinee Signature

All areas of observed weakness discussed

Evaluator Initials

Description of problem area:

Description of reviewed information:

SIMULATOR SET-UP

TSM> dr_snap 200101 ### (096, or 97 etc.)

Power level 50%

Check rod position on Proteus Update Time/Date/Rods function in the MISC function menu. Ensure demand position numbers are correct.

Ensure failures are active:

COMPONENTS:
PPL3 52/RTA Reactor Trip Breaker Option 5
PPL4 52/RTB Reactor Trip Breaker Option 5

OVERRIDES:
NIS2 Power Range #1 Delta Flux Indicator
NIS4 Power Range #2 Delta Flux Indicator
NIS6 Power Range #3 Delta Flux Indicator
NIS8 Power Range #4 Delta Flux Indicator

Input 24 Feed Reg malfunction.
CFW14 Feed Regulating Valves
Option 5 Variable Position
Severity 100
Ramp Time 30 seconds

INITIATING CUES:

1. The Plant is operating at 100% power with all control systems in Automatic for this condition.

2. You are the Reactor Operator At the Controls.

3. You are to respond to Control Room annunciators, using appropriate procedures.

4. Pressurizer Level Channel 2 and Pressurizer Pressure Channel 1 are the Controlling Channels.

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Respond To Control Room Annunciators

TIME: 10 Minutes DIFFICULTY: 3

TIME CRITICAL: NO ALTERNATE PATH: NO

PARENT TASK: 007 005 04 01 K/A # 028 AA1.08 IMP 3.7/3.6

PROCEDURE/REFERENCES: AOI 28.7 (Rev. 7)

STARTING STEP: 1

ENDING STEP: 4.6

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**	[ ]	**RO/SRO**	[X]	**NPO/RO/SRO** [ ]
METHOD			**SIMULATE**	[ ]	**PERFORM** [X]
LOCATION			**SIMULATOR**	[X]	**IN-PLANT** [ ]
PERFORMANCE:			**PASS**	[ ]	**FAIL** [ ]

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 4, 7, 9 and 10

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to respond to Control Room annunciators

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. The Plant is operating at 100% power with all control systems in Automatic for this condition.

2. You are the Reactor Operator At the Controls.

3. You are to respond to Control Room annunciators, using appropriate procedures.

4. Pressurizer Level Channel 2 and Pressurizer Pressure Channel 1 are the Controlling Channels.

TASK STANDARD:

PRZR level channel 460 is defeated from the control circuit, **AND** Hi Level Trip bistable for 460 (White A-12) is placed in the trip position.

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	INITIATING CUE: **When candidate is ready, instruct Simulator operator to insert the file for failure of PRZR level channel 460 failing High.** **NOTE:** **Candidate may refer to several ARPs (ie Low Charging Flow, PZR High Level) which should lead to AOI 28.7 Pressurizer Level Channel Fails High. The evaluation is to begin once AOI 28.7 has commenced.**		
	START TIME	_____	
1	Obtain correct procedure	Locates AOI 28.7 Pressurizer Level Channel Fails High	
2	Review Purpose, Symptoms/Indications, Automatic Actions	REVIEWS Purpose, Symptoms/Indications, Automatic Actions, and DETERMINES that the procedure is APPROPRIATE.	
3	Determine if channel 460 is controlling channel	DETERMINES based on initiating cue CHANNEL 460 is CONTROLLING.	
✷4	Turn Off all pressurizer back-up heaters.	PLACES C.S for 21, 22 and 23 BU Group PRZR HTRs - OFF	
5	Place Charging pump speed control to MANUAL	PLACES 22 Charging pump speed control to MANUAL	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
6	Control Pressurizer Level in the normal band. **NOTE: Depending on how quickly the candidate arrives at this procedure step, this may not be necessary.**	Manually ADJUSTS Charging pump speed controller to maintain PRZR level between 40 and 50%.	
	NOTE: It may be necessary to CUE candidate that another Licensed Reactor Operator will remain at the controls during the next step.		
*7	Place pressurizer level defeat switch to Defeat	Locates Foxboro rack B6 and PLACES pressurizer level defeat switch (L460A) to -"DEFEAT 2"	
8	Place Charging pump speed control to Automatic	PLACES Charging pump speed control to AUTOMATIC.	
*9	Return all pressurizer back-up heaters to Automatic or Manual. **NOTE:** **If necessary, role play CRS and Instruct candidate to Return all pressurizer back-up heaters to Automatic**	PLACES C.S for 21, 22 and 23 BU Group PRZR HTRs - AUTO	
	CUE: **It may be necessary to CUE candidate that another Licensed Reactor Operator will remain at the controls during the next step.**		
*10	Place Hi level trip bistable trip switch for the affected channel to TRIP	Locates WHITE rack A-12 and PLACES Hi Level Trip Bistable Trip Switch for 460 to TRIP (UP)	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
11	Ensure Tech Spec requirements in Table 3.5-2 are met.	Refers to Tech Spec Table 3.5-2 and DETERMINES that the other two channels of Pressurizer Level are operable, and power operation may continue.	
	CUE: **Due to the nature of this JPM (respond to Control Room annunciators) and the initiating CUE, it may be necessary to inform the candidate "This completes the JPM".**		
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

_____
Examinee Signature

All areas of observed weakness discussed _____
Evaluator Initials

Description of problem area:

Description of reviewed information:

SIMULATOR SET-UP

TSM> dr_snap 200104 ### (096, or 97 etc.)

Power level 100%

Check rod position on Proteus Update Time/Date/Rods function in the MISC function menu. Ensure demand position numbers are correct.

Iput Pressurizer Level transmitter failure:
RCS6 - PZR Spray & Instrumentation
RCS20 LT-460 PZR LEVEL CH.2
Option 1 Output Failure
Severity 100
Ramp Time 30 seconds

NOTE: JPM #4 to be performed concurrently

INITIATING CUES:

1. The Reactor has tripped from 100% power, a LOCA inside Containment has occurred. E-0, "Reactor Trip or Safety Injection" has been completed to step 16. All automatic actions to this point in E-0, have occurred.

2. The Control Room Supervisor has instructed you to complete step 17, "Check if Main Steamlines should be isolated" and step 18, "Check if Containment Spray should be Actuated" of E-0.

3. Inform the Control Room Supervisor when steps 17 and 18 have been completed

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Manual Actuation of Containment Spray

TIME: 10 Minutes DIFFICULTY: 3

TIME CRITICAL: NO ALTERNATE PATH: YES

PARENT TASK: 0130100501 K/A # WE14 EA1.1 IMP 3.7/3.7

PROCEDURE/REFERENCES: E-0 (Rev 38)

STARTING STEP: 15

ENDING STEP: 16

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**		**RO/SRO**	X	**NPO/RO/SRO**	
METHOD			**SIMULATE**		**PERFORM**	X
LOCATION			**SIMULATOR**	X	**IN-PLANT**	
PERFORMANCE:			**PASS**		**FAIL**	

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 7, 10, and 11

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to complete step 17, "Check if Main Steamlines should be isolated" and step 18, "Check if Containment Spray should be Actuated" of E-0, "Reactor Trip or Safety Injection".

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. The Reactor has tripped from 100% power, a LOCA inside Containment has occurred. E-0, "Reactor Trip or Safety Injection" has been completed to step 16. All automatic actions to this point in E-0, have occurred.

2. The Control Room Supervisor has instructed you to complete step 17, "Check if Main Steamlines should be isolated" and step 18, "Check if Containment Spray should be Actuated" of E-0.

3. Inform the Control Room Supervisor when steps 17 and 18 have been completed

TASK STANDARD:

At least one train of Containment Spray is Actuated

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	START TIME	_____	
1	Obtain correct procedure	E-0 "Reactor Trip or Safety Injection".	
2	Check MSIVs CLOSED	VERIFIES GREEN closed light-LIT for MS-1-21, 22, 23, and 24.	
3	Check if containment pressure has ever been greater than 24 psig. **CUE:** **Since a SNAP IC is being used for this JPM, it may be necessary to provide the candidates with a CUE that Containment pressure was 26 PSIG at one point.**	CHECKS containment pressure transmitters and recorder to DETERMINE that containment pressure is -GREATER THAN 24 PSIG.	
	NOTE: **The next step results in the JPM being faulted, in that CONTAINMENT spray pumps have not automatically started.**		
4	Verify spray pumps running. **NOTE:** **Determines that the spray pumps are not running and should be.**	CHECKS RED breaker closed light - LIT for both spray pumps **RED lights not lit**	
5	Manually initiates Spray	DEPRESSES both CNTMT Spray Phase B isolation P.B.s	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
6	Verify both spray pumps running	CHECKS RED breaker closed light - LIT for both spray pumps **RED lights not lit**	
✷7	Manually start both spray pumps	PLACES C.S. for 21 and 22 CNTMT Spray Pumps -START	
8	Verify both spray pumps running	CHECKS 21 and 22 CNTMT Spray Pumps RED breaker closed lights - LIT **AND** GREEN open lights NOT LIT	
9	Verifies spray pump discharge valves open. **NOTE:** **Determines that the spray pump discharge valves are not open and should be.**	CHECKS MOV-866A, B, C, and D [21 and 22 CNTMT Spray Disch Stop valves] RED open lights - LIT **AND** GREEN closed lights - NOT LIT **GREEN lights remain LIT and RED lights are NOT LIT**	
✷10	Manually Opens 21 spray pump discharge valves MOV-866A, B.	PLACES C. Ss. for MOV-866A, and B [21 CNTMT Spray Disch Stop valves] to OPEN.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
*11	Manually Opens 22 spray pump discharge valves MOV-866C, and D.	PLACES C. Ss. for MOV-866C, and D [22 CNTMT Spray Disch Stop valves] to OPEN.	
12	Verifies spray pump discharge valves open.	CHECKS MOV-866A, B, C, and D [21 and 22 CNTMT Spray Disch Stop valves] RED open lights - LIT **AND** GREEN closed lights - NOT LIT	
13	Verify CIB valves closed.	CHECKS the GREEN closed light-LIT and RED open light-NOT LIT for the following valves: Component cooling to the RCS pumps MOV-769, 797, 789, 786, 784, and FCV-625 [Red plaque] Seal water return containment isolation valve MOV-222 [Red plaque]	
14	Verify IVSW isolation Phase B valves open. **CUE:** **Roleplay the NPO. Inform CCR that ALL valves are OPEN**	COMMUNICATES with NPO requests the following valves be verified OPEN: 7864, 7865, 7866, and 7867	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
15	Verify all RCPs stopped. **NOTE:** **All RCPS were tripped due to loss of subcooling**	CHECKS RCP 21, 22, 23, and 24 RED breaker closed Lights-NOT LIT **AND** GREEN breaker open lights-LIT.	
16	Inform Control Room Supervisor that steps 17 and 18 of E-0 Rx Trip or SI have been completed.	REPORTS to Control Room Supervisor that steps 17 and 18 of E-0 "Reactor Trip or Safety Injection" have been COMPLETED.	
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

Examinee Signature

All areas of observed weakness discussed

Evaluator Initials

Description of problem area:

Description of reviewed information:

SIMULATOR SET-UP
TSM> dr_snap 200103 ### (096, or 97 etc.)

Power level 0%

Ensure failures are active:

SLF:
RCS1A Rupture Loop A Cold Leg

COMPONENTS:

PPL83	AS1 Hi Hi Containment Pressure Train A
PPL84	AS2 Hi Hi Containment Pressure Train A
CNS1	CS1 21 Containment Spray pump
CNS2	CS2 22 Containment Spray pump
CNS1	866A 21 Containment Spray pump discharge

INITIATING CUES:

1. Plant is stable at 100% power.
2. A low-level condition exists in #21 SI Accumulator.
3. The CRS has instructed you to fill the #21 SI Accumulator to 65%, using the 22 SI pump.
4. Support systems are aligned in accordance with their applicable COLs.
5. The Accumulator Topping Pump is "TAGGED OUT" and unavailable for use.
6. The vapor containment is NOT open for personnel access.

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Fill #21 Safety Injection Accumulator

TIME: 15 Minutes DIFFICULTY: 3

TIME CRITICAL: NO ALTERNATE PATH: NO

PARENT TASK: 020 001 02 01 K/A # 006 A1.13 IMP 3.5/3.7

PROCEDURE/REFERENCES: SOP 10.1.1 (Rev 36)

STARTING STEP: 4.1.2.(1)

ENDING STEP: 4.1.2.(11)

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**		**RO/SRO**	X	**NPO/RO/SRO**	
METHOD		**SIMULATE**		**PERFORM**	X
LOCATION		**SIMULATOR**	X	**IN-PLANT**	
PERFORMANCE:		**PASS**		**FAIL**	

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 7, 9, 13, 17, 19, 21, 22, 24, 28, 29, and 31.

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to fill #21 Safety Injection Accumulator to 65%, using the 22 SI pump.

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. Plant is stable at 100% power.
2. A low-level condition exists in #21 SI Accumulator.
3. The CRS has instructed you to fill the #21 SI Accumulator to 65%, using the 22 SI pump.
4. Support systems are aligned in accordance with their applicable COLs.
5. The Accumulator Topping Pump is "TAGGED OUT" and unavailable for use.
6. The vapor containment is NOT open for personnel access.

TASK STANDARD:

#21 Safety Injection Accumulator filled to ~65% [+/- 5%] with the 22 SI Pump secured, and 890A closed.

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	START TIME	_____	
1	Obtain correct procedure	SOP 10.1.1	
2	Reviews Precautions & Limitations and Initial Conditions **CUE:** **If necessary, provide candidate with CUE that all P&L's and initial conditions have been met.**	Reviews P&L's and initial conditions	
3	Verify Accumulators are Not drained and depressurized.	CHECKS 21 Accumulator pressure and level indicators to determine that the accumulator has pressure and level - GREATER THAN ZERO	
4	Verify RCS pressure is greater than 1600 psig and RCS temperature is greater than 350°F	CHECKS RCS pressure indication - GREATER THAN 1600 psig **OR** RCS temperature indictors are GREATER THAN 350°F	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	NOTE: **The following valves are normally positioned to the position requested by the procedure, and Initiating Cue #4 informed the candidate that the COLs were completed.**		
5	Ensure following SI pump alignment valves are OPEN and the Accumulator Drain/Test stops are CLOSED **CUE:** **If necessary Cue candidate that ALL valves in steps 4.1.2.(3) and 4.1.2.(4) are in the required position.**	Determines from initial conditions or Evaluator CUE that SI pump alignment valves are OPEN and the Accumulator Drain/Test stops are CLOSED	
6	Ensure SI pump suction pressure at least 10 psig.	CHECKS SI pump suction pressure meter GREATER THAN 10 psig [PI 947].	
✷7	OPEN 890A Accumulator Fill Stop	PLACES C.S. for 890A [21 Accum Fill Valve] to OPEN	
8	Verify 890A Accumulator Fill Stop OPEN	CHECKS 890A [21 Accum Fill Valve] RED open indicating light -LIT **AND** GREEN closed indicating light -NOT LIT.	
✷9	Start the 22 SI Pump	PLACES C. S. for 22 SI Pump to - START.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
10	Verifies pump Start.	CHECKS 22 SI Pump RED breaker closed indicating light -LIT **AND** GREEN open indicating light -NOT LIT.	
11	Fill Accumulator to obtain level between 55 and 65% (65% per initiating cue.)	CHECKS Accumulator level and pressure indication-RISING	
	NOTE: **The simulator setup should insure that the Accumulator pressure will rise above 675 psig, thus requiring Venting of the Accumulator.**		
12	Checks Accumulator pressure to determine if venting is required.	CHECKS Accumulator pressure meters, GREATER THAN 675 psig. **AND** DETERMINES THAT VENTING WILL BE REQUIRED.	
*13	CLOSE 890A Accumulator Fill Stop	PLACES C.S. for 890A [21 Accum Fill Valve] to CLOSE	
14	Verify 890A Accumulator Fill Stop CLOSED	CHECKS 890A [21 Accum Fill Valve] RED open indicating light - NOT LIT. **AND** GREEN closed indicating light - LIT.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	CUE: **Roleplay the CRS and instruct candidate to reduce Accumulator pressure to 660 psig.**		
15	Monitor the VC atmosphere	CHECKS radiation monitors R41 Particulate/R42 Radiogas-STABLE	
16	Ensure the following valves closed: 891A/B/C/D, HCV-943, PCV-863	CHECKS position indicating lights for 891A/B/C/D, HCV-943, PCV-863 all RED open indicating lights - NOT LIT. **AND** GREEN closed indicating lights - LIT.	
✷17	Open N_2 supply stop	PLACES C. S. for 891A [N_2 supply stop] to -OPEN	
18	Verify N_2 supply stop open	CHECKS 891A [N_2 supply stop] RED open indicating light -LIT **AND** GREEN closed indicating light -NOT LIT.	
✷19	Slowly Open HCV-943 to depressurize Accumulator	Slowly TURNS the Controller for HCV-943 to COUNTER CLOCKWISE raise direction.	
20	Verifies Accumulator pressure slowly dropping to 660 psig	CHECKS Accumulator pressure meters, SLOWLY dropping to 660 psig.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	NOTE: **When Accumulator pressure is between 635 and 660 psig the next step will be performed.**		
✷21	Close HCV-943	Slowly TURNS the Controller for HCV-943 to the CLOCKWISE direction UNTIL FULL LOWERED.	
✷22	Close N_2 supply stop.	PLACES C. S. for 891A [N_2 supply stop] to - CLOSE	
23	Verify N_2 supply stop Closed	CHECKS 891A [N_2 supply stop] RED open indicating light - NOT LIT **AND** GREEN closed indicating light - LIT.	
	NOTE: **RESTART filling the accumulator**		
✷24	OPEN 890A Accumulator Fill Stop	PLACES C.S. for 890A [21 Accum Fill Valve] to OPEN	
25	Verify 890A Accumulator Fill Stop OPEN	CHECKS 890A [21 Accum Fill Valve] RED open indicating light -LIT **AND** GREEN closed indicating light -NOT LIT.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
26	If RWST level decreases to less than 37 feet and RWST level low alarm on panel SBF-1 has not annunciated, then direct I&C to investigate cause.	CHECKS RWST level GREATER THAN 37 feet.	
27	If RCS temperature is greater than 350 °F, maintain RWST level greater than 36 ft. 10 in.	CHECKS RCS temperature greater than 350 °F, and RWST level GREATER THAN 36 ft. 10 in.	
*28	Fill Accumulator to obtain level between 55 and 65% (65% per initiating cue.)	CHECKS Accumulator level and pressure indication-RISING to 65%(+/-5%)	
*29	Stop the 22 SI Pump	PLACES C. S. for 22 SI Pump to - STOP.	
30	Verifies pump Stop.	CHECKS 22 SI Pump RED breaker closed indicating light - NOT LIT **AND** GREEN open indicating light - LIT.	
*31	CLOSE 890A Accumulator Fill Stop	PLACES C.S. for 890A [21 Accum Fill Valve] to CLOSE	
32	Verify 890A Accumulator Fill Stop CLOSED	CHECKS 890A [21 Accum Fill Valve] RED open indicating light - NOT LIT. **AND** GREEN closed indicating light - LIT.	
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

Examinee Signature

All areas of observed weakness discussed

Evaluator Initials

Description of problem area:

Description of reviewed information:

SIMULATOR SET-UP

TSM> dr_snap 200104 ### (096, or 97 etc.)

Power level 100%

Check rod position on Proteus Update Time/Date/Rods function in the MISC function menu. Ensure demand position numbers are correct.

21 SI Accumulator level reduced to 50% with N_2 gas pressure at ~ 670 psig so that Accumulator pressure exceeds 675 psig during refill activities.

NOTE: JPM #2 to be performed concurrently.

INITIATING CUES:

1. The Reactor is operating at 8% power.

2. Plant Start-up is in progress with the Turbine at 1800 RPM and ready for main generator synchronizing to the grid.

3. The main generator voltage regulator is ready to be placed in service.

4. SOP 26.4, "Turbine Generator Startup, Synchronizing, Voltage Control and Shutdown" has been completed through step 4.6.6.

5. The DO has requested breaker 7 be used for synchronizing to the grid.

6. The Auto- Synchronizing circuitry is INOPERABLE.

7. The Control Room Supervisor has instructed you to place the main generator voltage regulator in service and synchronize the main generator to the grid starting at step 4.6.7 of SOP 26.4, "Turbine Generator Startup, Synchronizing, Voltage Control and Shutdown".

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Synchronize the Main Generator to the Grid

TIME: 25 Minutes DIFFICULTY: 3

TIME CRITICAL: NO ALTERNATE PATH: NO

PARENT TASK: 0450020301 K/A # 062 A4.07 IMP 3.1/3.1

PROCEDURE/REFERENCES: SOP 26.4 (Rev. 37)

STARTING STEP: 4.6.7

ENDING STEP: 4.7.3.(3)

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**	[ ]	**RO/SRO**	[X]	**NPO/RO/SRO** [ ]
METHOD			**SIMULATE**	[ ]	**PERFORM** [X]
LOCATION			**SIMULATOR**	[X]	**IN-PLANT** [ ]
PERFORMANCE:			**PASS**	[ ]	**FAIL** [ ]

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 6, 7, 10, 12, 14, 15, 16, 18, 20 and 23

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to synchronize the main generator to the grid, starting at step 4.6.7 of SOP 26.4, "Turbine Generator Startup, Synchronizing, Voltage Control and Shutdown".

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. The Reactor is operating at 8% power.
2. Plant Start-up is in progress with the Turbine at 1800 RPM and ready for main generator synchronizing to the grid.
3. The main generator voltage regulator is ready to be placed in service.
4. SOP 26.4, "Turbine Generator Startup, Synchronizing, Voltage Control and Shutdown" has been completed through step 4.6.6.
5. The DO has requested breaker 7 be used for synchronizing to the grid.
6. The Auto- Synchronizing circuitry is INOPERABLE.
7. The Control Room Supervisor has instructed you to place the main generator voltage regulator in service and synchronize the main generator to the grid starting at step 4.6.7 of SOP 26.4, "Turbine Generator Startup, Synchronizing, Voltage Control and Shutdown".

TASK STANDARD:

The Main Generator is synchronized to the grid.

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
NOTE: **Refer to attached Figure 2 to assist in proper LED designations.**			
	START TIME	_____	
1	Obtain correct procedure	SOP 26.4, "Turbine Generator Startup, Synchronizing, Voltage Control and Shutdown."	
2	Ensure the generator field is not excited	CHECKS voltage regulator control panel LED #1 -NOT LIT **AND** LED # 2 LIT	
3	Ensure DC and AC volts at minimum.	CHECKS voltage regulator control panel LED #8 -NOT LIT **AND** LED # 17 LIT	
4	Verify all alarms clear on FBF panel.	CHECKS Panel FBF for alarms-NONE LIT	
5	Verify that 345 KV MO Disc Switch F7-9 is closed.	CHECKS 345 KV MO Disc Switch F7-9 RED closed light -LIT, **AND** GREEN open light -NOT LIT	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
*6	Select DC control	PLACES DC regulator DC/AC selector switch-to DC	
*7	Press the field excitation OFF button	PRESSES the field excitation OFF button [Green P.B.]	
8	Press and hold the field excitation ON button	PRESSES AND HOLDS the field excitation ON button **AND** CHECKS LED #2 -NOT LIT **AND** LED # 1 LIT	
9	Release the field excitation ON button	RELEASES the field excitation ON button **AND** CHECKS LED #1 -NOT LIT **AND** LED # 2 LIT	
*10	Press and hold the field excitation ON button AGAIN	PRESSES AND HOLDS the field excitation ON button **AND** CHECKS LED #2 -NOT LIT **AND** LED # 1 LIT	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
11	Observe field amperage building	CHECKS field amperage BUILDING	
✷12	Raise the DC voltage regulator until 22KV voltage is reached.	RAISE/LOWER the ROCKER C.S. for DC regulator UNTIL 22 KV is reached on Generator Voltmeter	
13	Verify the center status light lit	CHECKS the center status light-LIT	
✷14	Null the AC regulator	RAISE/LOWER the ROCKER C.S. for AC regulator UNTIL transfer volts meter indicates ZERO	
✷15	Transfer to the AC regulator	DEPRESSES the AC/DC selector switch to AC **AND** CHECKS LED #3 -LIT	
✷16	Adjust terminal voltage to 22KV	RAISE/LOWER the ROCKER C.S. for AC regulator UNTIL terminal voltage indicates 22KV	
17	Request the DO to indicate which generator breaker (7 or 9) is to be used for Synchronizing.	Based on Initiating Cue #5 candidate ELECTS to use breaker 7	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
*18	Place the Sync Pot Control selector switch to the appropriate position.	PLACES the Sync Pot Control selector switch to the BKR #7 Position.	
19	Ensure the Synchroscope Switch is in the MAN position.	PLACES the Synchroscope Switch to MAN	
*20	Slowly adjust the AC regulator Until 346-358 KV on the high side of the generator main power transformers has been established.	RAISE/LOWER the ROCKER C.S. for AC regulator UNTIL 346-358 KV reached on the main transformer secondary voltmeter.	
21	Check Main Transformer Secondary Voltage 8-20 KV > system voltage. [Procedure Caution]	CHECKS Main Transformer Secondary Voltage meters and system voltage meters and determines that Main Transformer Secondary Voltage is 8-20 KV GREATER THAN system voltage.	
22	Adjust turbine speed Until the Synchroscope is rotating slowly in the FAST direction.	ADJUST the Govenor C.S. Until the Synchroscope is rotating slowly in the FAST direction.	
*23	When the Synchroscope is between 1 minute before 12 and 12 O'clock, close the selected generator breaker.	When the Synchroscope is between 1 minute before 12 and 12 O'clock, PLACES 345 KV Breaker 7 C. S. to the -CLOSE position.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
24	Verify 345 KV Breaker 7 closed.	CHECKS the GREEN open light-NOT LIT **AND** RED closed light- LIT **AND** CHECKS main generator MW output meters to determine that the main generator has ASSUMED LOAD.	
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

Examinee Signature

All areas of observed weakness discussed

Evaluator Initials

Description of problem area:

Description of reviewed information:

SIMULATOR SET-UP

TSM> dr_snap 200105 ### (096, or 97 etc.)

Power level 8%

Check rod position on Proteus Update Time/Date/Rods function in the MISC function menu. Ensure demand position numbers are correct.

INITIATING CUES:

1. A reactor trip has occurred.

2. It has been determined that 3 control rods did not insert on the trip.

3. The Control Room Supervisor has directed you to borate the Reactor Coolant System in accordance with AOI-3.4, "Uncontrolled Reactivity Addition".

4. Notify the Control Room Supervisor when boration has commenced.

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Emergency Borate the Reactor Coolant System

TIME: 15 Minutes DIFFICULTY 5

TIME CRITICAL: NO ALTERNATE PATH: YES

PARENT TASK: 0040080401 K/A # 024AK3.02 IMP 4.2/4.4

PROCEDURE/REFERENCES: AOI-3.4 (Rev. 11)

STARTING STEP: 4

ENDING STEP: 5.4.10

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**		**RO/SRO**	X	**NPO/RO/SRO**	
METHOD		**SIMULATE**		**PERFORM**	X
LOCATION		**SIMULATOR**	X	**IN-PLANT**	
PERFORMANCE:		**PASS**		**FAIL**	

EVALUATOR: _____ _____

Signature DATE

CRITICAL STEP(S): 14, 15, and 21

APPROVED FOR EXAMINATION: _____ _____

Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to borate the Reactor Coolant System.

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. A reactor trip has occurred.
2. It has been determined that 3 control rods did not insert on the trip.
3. The Control Room Supervisor has directed you to borate the Reactor Coolant System in accordance with AOI-3.4, "Uncontrolled Reactivity Addition".
4. Notify the Control Room Supervisor when boration has commenced.

TASK STANDARD:

Boration to the Reactor Coolant System has commenced (via MOV-333).

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	START TIME	_____	
1	Obtain procedure.	Candidate locates AOI-3.4.	
2	IF entry to this procedure is from ES-0.1 OR ES-1.1 GO TO step 4.6.	Candidate DETERMINES entry is from ES-0.1 and transitions to step 4.6, Responding To A Failure Of Rods To Fully Insert Or A Loss Of IRPIs On A Trip.	
3	IF IRPIs are de-energized, GO TO step 4.6.3.	Candidate DETERMINES that Individual Rod Position Indications are ENERGIZED by observing Individual Rod Position Indications for the affected rods reading-GREATER THAN ZERO, **AND** Rod bottom lights for all other rods-LIT	
4	INITIATE boration per step 5.2.	Candidate TRANSITIONS to step 5.2, NORMAL BORATION PATH (PREFERRED).	
5	SET Boric Acid Integrator to 600 gallons.	SETS the Boric Acid Counter to 600 GALLONS.	
6	PLACE RCS Makeup Control switch to STOP.	PLACES the RCS Makeup C.S. to-STOP.	
7	PLACE RCS Makeup Mode Selector switch to the BORATE.	PLACES the RCS Makeup Mode Selector switch to-BORATE.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
8	PLACE RCS Makeup Control switch to START.	PLACES the RCS Makeup Control switch to-START.	
9	PLACE FCV-110 Boric Acid Flow Controller in MANUAL AND ADJUST for maximum flow.	PLACES FCV-110 Boric Acid Flow Controller to MANUAL **AND** ROTATES FCV-110 Boric Acid Flow Controller-FULL COUNTER CLOCKWISE.	
10	Verifies Boration flow. **NOTE:** **INDICATED FLOW IS ZERO**	CHECKS Boration Flow indicator [FI 110] - GREATER THAN ZERO Candidate OBSERVES NO FLOW indicated on the boric acid flow indicator [FI 110] **AND** TRANSITIONS to step 5.3, RWST BORATION PATH VIA LCV-112B (ALTERNATE 1).	
	NOTE: **Candidate may return the C.S.s for altered equipment to the "AS FOUND" position prior to performing the next step.**		
11	PLACE LCV-112A, Divert Normal VCT Inlet, to DIVERT.	PLACES C.S. for LCV 112A [VCT Inlet] to-DIVERT.	
12	OPEN LCV-112B, Emergency RWST Makeup Stop.	PLACES C.S. for LCV-112B [RWST Emerg M/U Vlv] to-OPEN.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
13	Verifies valve OPEN **NOTE:** **VALVE DOES NOT OPEN**	CHECKS closed GREEN light- NOT LIT and open RED light - LIT Candidate observes that the position indicating lights for LCV-112B do not change state and TRANSITIONS to step 5.4, MOV-333 BORATION PATH (ALTERNATE 2).	
	NOTE: **Candidate may return the C.S.s for altered equipment to the "AS FOUND" position prior to performing the next step.**		
*14	Open MOV-333, Emergency Boration Stop.	PLACES C.S. for MOV-333 [Emergency Boration Vlv] to OPEN.	
*15	SELECT FAST on 21 Boric Acid Transfer Pump	PLACES the 21 Boric Acid Transfer Pump W-2 switch to-FAST	
16	Start 21 Boric Acid Transfer Pump	PLACES the C.S. for 21 Boric Acid Transfer Pump to-START	
17	VERIFY Pump switches to FAST speed.	CHECKS RED light over SLOW speed is-NOT LIT **AND** CHECKS RED light over FAST speed is-LIT	
18	SELECT FAST on 22 Boric Acid Transfer Pump	PLACES the 22 Boric Acid Transfer Pump W-2 switch to-FAST	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
19	Start 22 Boric Acid Transfer Pump	PLACES the C.S. for 22 Boric Acid Transfer Pump to-START	
20	VERIFY Pump switches to FAST speed.	CHECKS RED light over SLOW speed is-NOT LIT **AND** CHECKS RED light over FAST speed is-LIT	
*21	PLACE operating charging pump(s) control in MAN AND increase to maximum speed.	PLACES 22 charging pump speed controller to MANUAL **AND** ROTATES-FULL CLOCKWISE.	
22	Adjust HCV-142 as necessary to maintain RCP seal injection 6-10 GPM	CHECKS ALL RCP seal injection indicators to determine 6-10 GPM indicated.	
23	Verify flow via Delta-P across Boric Acid Filter. **CUE:** **PI-108 Filter Inlet 80 psig** **PI-109 Filter Outlet 70 psig**	CONTACTS NPO to check for Delta-P across the Boric Acid Filter, by observing: PI-108 Filter Inlet PI-109 Filter Outlet.	
24	Informs Control Room Supervisor that boration is in progress.	Candidate informs Control Room Supervisor that boration is in progress	
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

_____
Examinee Signature

All areas of observed weakness discussed _____
Evaluator Initials

Description of problem area:

Description of reviewed information:

SIMULATOR SET-UP

TSM> dr_snap 200106 ### (096, or 97 etc.)

Power level 0%

Ensure 21 Boric Acid Transfer pump is aligned to the blender.
Make sure the 22 charging pump is the running charging pump.

Ensure failures are active:
CRF1A Stuck Rod 1 F-8
CRF1B Stuck Rod 2 F-14
CRF1C Stuck Rod 3 B-10
CVC28 LCV-112B
CVC1 FCV-110A

Make sure that the setting on HCV-142 keeps RCP seal injection flow 6-10 gpm throughout the JPM

INITIATING CUES:

1. The Reactor has tripped from 100% power. E-0, "Reactor Trip or Safety Injection" has been completed, and a transition to ES-0.1, "Reactor Trip Response" has been made. AFW flow greater than 400 gpm could not be established and a transition to FR-H.1, "Response to Loss of Secondary Heat Sink" is being made.

2. AFW flow is 0 gpm

3. The Control Room Supervisor has instructed you to respond to the Loss of Heat Sink by Implementing FR-H.1, "Response to Loss of Secondary Heat Sink", beginning at step 1.

4 No other sources of low pressure water are available.

5. Inform the Control Room Supervisor when a Heat Sink has been restored.

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Respond to Loss of Secondary Heat Sink

TIME: 15 Minutes DIFFICULTY: 3

TIME CRITICAL: NO ALTERNATE PATH: YES

PARENT TASK: 300 116 05 01 K/A # E05 EA2.2 IMP 3.7/4.3

PROCEDURE/REFERENCES: FR-H.1 (Rev 36)

STARTING STEP: 1

ENDING STEP: 19

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**		**RO/SRO**	X	**NPO/RO/SRO**	
METHOD		**SIMULATE**		**PERFORM**	X
LOCATION		**SIMULATOR**	X	**IN-PLANT**	
PERFORMANCE:		**PASS**		**FAIL**	

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 2, 3, 8, 11, 12, 15, 16, and 17.

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to respond to a Loss of Secondary Heat Sink

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. The Reactor has tripped from 100% power. E-0, "Reactor Trip or Safety Injection" has been completed, and a transition to ES-0.1, "Reactor Trip Response" has been made. AFW flow greater than 400 gpm could not be established and a transition to FR-H.1, "Response to Loss of Secondary Heat Sink" is being made.
2. AFW flow is 0 gpm
3. The Control Room Supervisor has instructed you to respond to the Loss of Heat Sink by Implementing FR-H.1, "Response to Loss of Secondary Heat Sink", beginning at step 1.
4. No other sources of low pressure water are available.
5. Inform the Control Room Supervisor when a Heat Sink has been restored.

TASK STANDARD:

Heat Sink restored.

NOTE:

(This JPM is designed to restore adequate Heat Sink via bleed and feed with only 1 PORV OPEN and the Rx vessel head vents OPEN).

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	START TIME	_____	
1	Obtain correct procedure	Locates FR-H.1 Response to Loss of Secondary Heat Sink	
*2	Check that secondary Heat Sink is Required.	CHECKS RCS pressure and any SG pressure and DETERMINES that RCS pressure is GREATER THAN SG pressure. **AND** CHECKS RCS temperature GREATER THAN 350 °F	
*3	Check the average of the three lowest wide range SG levels < 45%.	CHECKS all 4 SG wide range levels and DETERMINES that the average of the three lowest is LESS THAN 45%.	
4	Transitions to step 15 of FR-H.1 Response to Loss of Secondary Heat Sink	Based on determination made in previous step, DETERMINES that a TRANSITION to step 15 of FR-H.1 Response to Loss of Secondary Heat Sink is REQUIRED.	
5	Stop all RCPs	PLACES C.S. for RCP 21, 22, 23, and 24 in the STOP position.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
6	Verify pump stopped	CHECKS the GREEN open light-LIT **AND** RED closed light-NOT LIT for RCP 21, 22, 23, and 24 breakers **AND** Motor amps dropping **AND** Loop flows dropping	
7	Verify SI actuated.	Checks SI annunciators NONE LIT.	
*8	Manually actuate SI	DEPRESSES both SI Actuation PBs	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
9	Verify RCS feed path	CHECKS the RED running light LIT for SI pumps 21, 22, and 23 **AND** RED open light LIT for the following valves: 22 SI pump discharge isolation MOV-851A & B; HH Branch Loop Cold Leg 856A,E,C, & D RHR Hx CCW outlet 822A & B RHR Hx motor-operated 746 and 747	
10	Verify power to PRZR PORV block valves AVAILABLE	CHECKS GREEN closed light LIT for PRZR PORV block valves MOV 535 and 536	
*11	Open both PRZR PORV block valves	PLACES C.S. for PRZR PORV block valves MOV 535 and 536 to the OPEN position	
	NOTE: **ONLY ONE PORV will OPEN in the next step, which will require the candidate to implement an alternate path to achieve an adequate bleed path.**		
*12	Open both PRZR PORVs	PLACES C.S for PRZR PORVs 455C and 456 to OPEN	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
13	Verify adequate bleed path **NOTE:** **Order of checking is at candidate discretion.**	CHECKS the RED open light for PRZR PORV block valves MOV 535 and 536-LIT **AND** PRZR PORVs 455C and 456 LIT. **PRZR PORVs 455C RED open light-NOT LIT**	
14	Determines that PRZR PORV 455C did not OPEN	CHECKS GREEN closed light for PRZR PORV 455C is still LIT	
✷15	Restore power to reactor head vent valves **CUE:** **After communicating with NPO, CUE breakers 7MR on MCC 26A and 26B have been closed**	COMMUNICATES with NPO to close the power supply breakers for the reactor head vent valves by closing breakers 7MR on MCC 26A and 26B	
✷16	Open all reactor head vent valves	PLACES C.S. for reactor head vent valves HCV 3100 and 3101 to OPEN	
✷17	Depressurize at least one Intact SG to atmospheric pressure	PLACES Auto/Man station for at least one Intact SG Atmospheric dump to MANUAL and OPEN.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
18	Align any available low pressure water source. **NOTE:** **Based on initiating cue, there are no other sources of low pressure water available.**	DETERMINES that no low pressure water source is available.	
	NOTE: **Candidate may continue on in FR-H.1 Response to Loss of Secondary Heat Sink based on initiating CUE to establish a heat sink.** **IF so, CUE: This JPM is complete.**		
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

_____
Examinee Signature

All areas of observed weakness discussed _____
Evaluator Initials

Description of problem area:

Description of reviewed information:

SIMULATOR SET-UP

TSM> dr_snap 200107 ### (096, or 97 etc.)

Power level 0%

Ensure failures are active:

COMPONENTS:
AFW1 21 Aux Feed pump
AFW2 23 Aux Feed pump
RCS2 PCV-455C PORV

FLEX LEAKS:
AFW1 Node7
CFW1 Node30

INITIATING CUES:

INITIATING CUES:

1. The Plant is at 300 °F, both RHR pumps are operating, and a plant cooldown is in progress.

2. Component Cooling Water has been lost.

3. The Control Room Supervisor has ordered you to establish backup Primary Water cooling to the SI and RHR pumps, with the pumps operating in accordance with SOP-4.1.2,"Component Cooling System Operation"

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Lineup City Water to the SI and RHR Pumps with the Pumps Running

TIME: 30 Minutes DIFFICULTY: 3

TIME CRITICAL: NO ALTERNATE PATH: YES

PARENT TASK: 006 002 04 04 K/A # 005 K1.01 IMP 3.2/3.4

PROCEDURE/REFERENCES: SOP 4.1.2 (Rev 21), Jumper hoses (simulated), Flashlight, Hardhat, Safety Glasses, "Hold Off" key (simulated).

STARTING STEP: 4.7.1

ENDING STEP: 4.7.2(12)

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**	[ ]	**RO/SRO**	[ ]	**NPO/RO/SRO** [X]
METHOD	**SIMULATE**	[X]	**PERFORM**	[ ]	
LOCATION	**SIMULATOR**	[ ]	**IN-PLANT**	[X]	
PERFORMANCE:	**PASS**	[ ]	**FAIL**	[ ]	

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 3, 7, 8, 9, 11, 12, 13, 15, 16, 17, and 18

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to lineup backup cooling - Primary Water to the SIS and RHR pumps.

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. The Plant is at 300 °F, both RHR pumps are operating, and a plant cooldown is in progress.
2. Component Cooling Water has been lost.
3. The Control Room Supervisor has ordered you to establish backup Primary Water cooling to the SI and RHR pumps, with the pumps operating in accordance with SOP-4.1.2,"Component Cooling System Operation"

TASK STANDARD:

City Water backup cooling to the SI and RHR pumps has been established.

NOTE:

The valves in Steps 12, 13, 14, 17 and 18 require a ladder. It is not necessary to actually have the candidate and evaluator climbing up the ladder several times during this JPM. Having the candidate point out the appropriate valves using a flashlight is acceptable.

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	NOTE: **If the candidate wishes to consult prints for this JPM, they are readily accessible in the Field Support Office. Allow candidate to walk to this area for the print reference.**		
	START TIME	_____	
1	Obtain correct procedure	Locates SOP 4.1.2 "Component Cooling System Operation"	
2	CLOSE PW-73 PW to demineralizer supply header telltale drain stop. **CUE:** **Full Clockwise**	VERIFIES PW-73 closed by checking full CLOCKWISE DIRECTION.	
	NOTE: **The next step will FAULT this JPM and make it Alternate Path. When candidate attempts to OPEN PW-72, Provide the CUE that the valve will not move.**		
*3	OPEN PW-72 and PW-6 PW to demineralizer supply isolation stops. **CUE:** **PW-72 will not move.**	TURNS PW-72 and PW-6 Filter/Demin PW Supply Header Stop COUNTER-CLOCKWISE DIRECTION.	
4	Candidate determines that Primary Water backup cooling to RHR pumps cannot be established and informs the CRS. **CUE:** **Roleplay CRS Attempt to have candidate suggest that City Water can be used to supply cooling, and then direct :** **Establish Alternate Backup Cooling using City water, as directed in SOP 4.1.2 "Component Cooling System Operation"**	NOTIFIES Control Room Supervisor that Primary Water backup cooling to RHR pumps cannot be established.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
6	Candidate locates new procedure section SOP 4.1.2 "Component Cooling System Operation" step 4.7.2.	Candidate locates new procedure section SOP 4.1.2 "Component Cooling System Operation" step 4.7.2.	
	NOTE: **Hoses are located in Safe Shutdown Cabinet located in the area.**		
*7	Connect hose at PW-115, PW to CCW Supply Telltale Drain Stop **CUE:** **Hose connected**	LOCATES HOSE and CONNECTS to PW-115 Telltale Drain Conn Stop.	
*8	Connect other end of hose to MW-746, City Water Header Outlet Stop **CUE:** **Hose connected**	LOCATES OTHER END OF HOSE and CONNECTS to MW-746 City Water Header Outlet Stop	
*9	Connect another hose at 734F SI and RHR Pumps Emergency Cooling Outlet Stop, and route to drainage **CUE:** **Hose connected**	LOCATES ANOTHER HOSE and CONNECTS to 734F SI Pumps Return HDR Emergency Outlet Stop.	
10	Route the other end of the hose at 734F SI and RHR Pumps Emergency Cooling Outlet Stop to Drainage. **NOTE: Drain located below FIC 634** **CUE:** **Hose routed to drain.**	LOCATES THE OTHER END OF THE HOSE at 734F SI Pumps Return HDR Emergency Outlet Stop and ROUTES to local drain.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
*11	Open 734F SI and RHR Pumps Emergency Cooling Outlet Stop **CUE:** **Valve Fully Counter-clockwise**	TURNS 734F (SI HDR Pumps Emergency Outlet Stop) in the COUNTER-CLOCKWISE DIRECTION	
	NOTE: **The valves needed in Steps 12, 13, 14, 17 and 18 are up the ladder. It is not necessary to actually have the candidate and evaluator climbing up the ladder several times during this JPM. Having the candidate point out the appropriate valves using a flashlight is acceptable. (Simulate Use of "Hold Off" key).**		
*12	Open 734E SI and RHR Pumps Emergency Cooling Outlet Stop **CUE:** **Valve Fully Counter-clockwise**	TURNS 734E SI Pump Return HDR Emerg Outlet Stop in the COUNTER-CLOCKWISE DIRECTION	
*13	Close 734B Hi-Head Safety Injection and RHR Pumps Normal Outlet Stop **CUE:** **Valve Fully Clockwise.**	TURNS 734B SI/RHR Pump Return HDR Stop in the CLOCKWISE DIRECTION.	
14	Check closed PW-114 PW to CCW Supply Telltale Drain Stop **CUE:** **Valve stem full down .**	CHECKS PW-114 Supply Stop valve stem FULL DOWN.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
*15	Open PW-115, PW to CCW Supply Telltale Drain Stop **CUE:** **Valve Fully Counter-clockwise**	TURNS PW-115 (Telltale Drain Stop) in the COUNTER-CLOCKWISE DIRECTION.	
*16	Open MW-746 City Water Header Outlet Stop **CUE:** **Valve Fully Counter-clockwise**	TURNS MW-746 City Water Header Outlet Stop in the COUNTER-CLOCKWISE DIRECTION	
*17	Open 733C Hi-Head SI and RHR Pumps Primary Water Emergency Supply Stop **CUE:** **Valve Fully Counter-clockwise**	TURNS 733C Primary Water Emergency Supply Stop in the COUNTER-CLOCKWISE DIRECTION	
*18	Close 734A SI and RHR Pumps Normal Supply Stop **CUE:** **Valve Fully Counter-clockwise**	TURNS 734A SI/RHR Pump Sup HDR Stop in the COUNTER-CLOCKWISE DIRECTION	
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

_____
Examinee Signature

All areas of observed weakness discussed _____
Evaluator Initials

Description of problem area:

Description of reviewed information:

INITIATING CUES:

1. A fire has caused the Central Control Room to be evacuated.

2. As the First RO you have unsuccessfully attempted to start the 21 Auxiliary Boiler Feedwater Pump.

3. You have been directed to start the 22 Auxiliary Boiler Feedwater Pump per AOI 27.1.9, "Control Room Inaccessibility Safe Shutdown Control" step 9.2.

4. Inform Control Room Supervisor when 22 Auxiliary Boiler Feedwater Pump is ready to feed the steam generators.

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Local Manual Start of 22 Auxiliary Boiler Feedwater Pump

TIME: 20 Minutes DIFFICULTY: 5

TIME CRITICAL: NO ALTERNATE PATH: NO

PARENT TASK: 0840040401 K/A # 061A2.04 IMP 3.4/3.8

PROCEDURE/REFERENCES: AOI-27.1.9 (Rev. 30), Flashlight, Hardhat, Safety Glasses, Crescent wrench,

STARTING STEP: 9.2

ENDING STEP: 9.2.7

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**		**RO/SRO**	X	**NPO/RO/SRO**
METHOD	**SIMULATE**	X	**PERFORM**		
LOCATION	**SIMULATOR**		**IN-PLANT**	X	
PERFORMANCE:	**PASS**		**FAIL**		

EVALUATOR: _____ _____

Signature DATE

CRITICAL STEP(S): 3, 4, 6, 9, 11 and 13

APPROVED FOR EXAMINATION: _____ _____

Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to locally start the 22 Auxiliary Boiler Feedwater Pump.

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. A fire has caused the Central Control Room to be evacuated.

2. As the First RO you have unsuccessfully attempted to start the 21 Auxiliary Boiler Feedwater Pump.

3. You have been directed to start the 22 Auxiliary Boiler Feedwater Pump per AOI 27.1.9, "Control Room Inaccessibility Safe Shutdown Control" step 9.2.

4. Inform Control Room Supervisor when 22 Auxiliary Boiler Feedwater Pump is ready to feed the steam generators.

TASK STANDARD:

The 22 Auxiliary Boiler Feedwater Pump is running and ready to feed the steam generators.

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	START TIME	_____	
1	Obtain procedure.	Candidate locates AOI-27.1.9.	
2	CHECK CLOSED the Flow Control Valves (FCV-405s) for the ABFP that is being started: **CUE:** **Valve Stems for Flow Control Valves FCV-405A, B, C and D are DOWN.**	CHECKS CLOSED the Flow Control Valves by VERIFYING the valve stem position DOWN for the following valves: FCV-405A, B, C, and D	
*3	PLACE the hand control jack for HCV-1118 speed control air controller for 22 ABFP COMPLETELY DOWN/IN. **CUE:** **HCV-1118A is completely DOWN / IN**	ROTATES the hand control jack for HCV-1118 ABFP 22 Turbine Speed Governor speed control air controller for 22 ABFP CLOCKWISE until COMPLETELY DOWN/IN.	
	NOTE: **The candidate will need a crescent wrench to complete the next step. The wrench is pre-staged for use on a nearby lanyard.**		
*4	DISCONNECT the instrument air supply line to HCV-1118. **CUE:** **The HCV-1118 instrument air line is disconnected.**	Using the pre-staged wrench DISCONNECT the instrument air supply line to HCV-1118 by inserting wrench onto nut and TURNING COUNTER-CLOCKWISE	
5	VERIFY that the trip flapper valve is LATCHED. **CUE:** **The trip flapper valve is ENGAGED**	VERIFY trip lever ENGAGED in groove.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
*6	PLACE the Stm Stop Valve Aux. FW Pmp 22 (PCV-1139) control switch on the ABFP Local Control Panel to TRIP. **CUE:** **The Stm Stop Valve Aux. FW Pmp 22 control switch is in TRIP.**	PLACES (PCV-1139) control switch on the ABFP Local Control Panel to TRIP [located inside Stm Stop Valve Aux. FW Pmp 22 box].	
7	PLACE PCV-1139 to AUTO for 5-10 seconds to ensure that that PIC-1139 REMOTE SETPOINT feature RESETS to zero.	PLACES PCV-1139 to AUTO **AND** SIMULATES holding for 5-10 seconds.	
8	Verify PIC-1139 REMOTE SETPOINT feature RESETS to zero. **CUE:** **PIC-1139 remote setpoint is zero.**	CHECKS PIC-1139 remote setpoint AT ZERO	
*9	PLACE PCV-1139 control switch to ON. **CUE:** **PCV-1139 is in ON.**	PLACES PCV-1139 control switch to ON.	
10	VERIFY that PI-6331 22 ABFP Steam Inlet Pressure on the gauge board indicates 525-575 psig. **CUE:** **Pressure indicated on PI-6331 is 550 psig.**	CHECKS PI-6331 to verify 22 ABFP Steam Chest Inlet Pressure on the gauge board indicates 525-575 psig.	
*11	TURN the hand control jack on HCV-1118 COUNTER-CLOCKWISE to increase the turbine speed.	TURNS the hand control jack on HCV-1118 - HCV-1118 ABFP 22 Turbine Speed Governor COUNTER-CLOCKWISE	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
12	Verify turbine speed is increasing. **CUE:** **Turbine speed is increasing.**	CHECKS turbine speed indicator for increasing speed	
✱13	INCREASE the turbine speed UNTIL 22 ABFP discharge pressure on the gauge board is 200 – 250 psig above the SG pressure at the ABFP Local Control Panel. **CUE:** **All SG pressures 1000 psig** **AND** **22 ABFP discharge pressure indicates 1220 psig**	CHECKS SG pressure indicators PI-1353, 1354, 1355, and 1356 **AND** PI-6336 TURNS the hand control jack on HCV-1118 - HCV-1118 ABFP 22 Turbine Speed Governor COUNTER-CLOCKWISE until 22 ABFP discharge pressure indicates between 1200 – 1250 psig	
14	Candidate informs Control Room Supervisor that 22 Auxiliary Boiler Feedwater Pump is ready to feed the steam generators.	Candidate INFORMS Control Room Supervisor that 22 Auxiliary Boiler Feedwater Pump is READY TO FEED THE STEAM GENERATORS.	
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

_____
Examinee Signature

All areas of observed weakness discussed _____
Evaluator Initials

Description of problem area:

Description of reviewed information:

INITIATING CUES:

1. The Plant was operating at 100% Steady State power, when a small break LOCA occurred.

2. The CCR crew has progressed through E-0, "Reactor Trip Or Safety Injection" to Step 15, "Check If Main Steamlines Should Be Isolated". Containment pressure is 27 psig.

3. The CCR crew attempted to close the MSIVs, they will not close from the CCR.

4. The Control Room Supervisor has instructed you to CLOSE all MSIVs using procedure AOI 27.1.9, "Control Room Inaccessibility Safe Shutdown Control" Step 9.4.

RETURN THIS TO THE EVALUATOR WHEN YOU HAVE COMPLETED THE TASK

TASK BEING PERFORMED: Locally Close All MSIVs

TIME: 15 Minutes DIFFICULTY: 3

TIME CRITICAL: NO ALTERNATE PATH: NO

PARENT TASK: 039 001 04 02 K/A # 039 A2.01 IMP 3.1/3.2

PROCEDURE/REFERENCES: AOI 27.1.9 (Rev 30); Flashlight, Hardhat, Safety Glasses,

STARTING STEP: 9.4.1

ENDING STEP: 9.4.4

OPERATOR PERFORMING JPM _____

APPLICABLE TO:	**SRO**	[ ]	**RO/SRO**	[ ]	**NPO/RO/SRO** [X]
METHOD	**SIMULATE**	[X]	**PERFORM**	[ ]	
LOCATION	**SIMULATOR**	[ ]	**IN-PLANT**	[X]	
PERFORMANCE:	**PASS**	[ ]	**FAIL**	[ ]	

EVALUATOR: _____ _____
Signature DATE

CRITICAL STEP(S): 1, 2, and 4

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this JPM.)

APPROVED FOR EXAMINATION: _____ _____
Operations Training Manager DATE

DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to locally CLOSE all MSIVs.

I will describe the general system conditions. Before you start, I will state the Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

INITIATING CUES:

1. The Plant was operating at 100% Steady State power, when a small break LOCA occurred.

2. The CCR crew has progressed through E-0, "Reactor Trip Or Safety Injection" to Step 15, "Check If Main Steamlines Should Be Isolated". Containment pressure is 27 psig.

3. The CCR crew attempted to close the MSIVs, they will not close from the CCR.

4. The Control Room Supervisor has instructed you to CLOSE all MSIVs using procedure AOI 27.1.9, "Control Room Inaccessibility Safe Shutdown Control" Step 9.4.

TASK STANDARD:

All MSIVs are CLOSED.

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	START TIME	_____	
	Obtains correct Procedure	N/A	
✱1	Close the instrument air stops to the MSIVs. **CUE:** **All valve stems full-down.**	TURNS the following valves in CLOCKWISE direction until valve stem is FULL DOWN: IA-792, 796, 800, and 804.	
✱2	Close the accumulator outlet stops. **CUE:** **All valve stems full-down, valve handle 90°.**	TURNS valve handle to 90° from flowpath for the following valves: IA-793, 797, and 805. **AND** TURNS the following valve in CLOCKWISE direction until valve stem is FULL DOWN: IA-800	
3	Check Open the gauge stops. **CUE:** **All valve handles parallel.**	VERIFIES the following valves Open, by checking valve handles PARALLEL: IA-960, 961, 962, and 963.	

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	NOTE: **The following step should cause the MSIVs to close by venting off the air.**		
✱4	Open the air supply header vent on the header side of the accumulator outlet. **CUE:** **All valve handles parallel.**	TURNS the following valve handles PARALLEL to the flow: IA-791, 795, 799, and 802.	
5	Verify MSIVs CLOSED **CUE:** **All valve stems indicate CLOSED.**	CHECKS MSIVs valve stem position in the CLOSED position.	
6	Informs Control Room Supervisor that MSIVs are CLOSED.	COMMUNICATES to Control Room Supervisor that MSIVs are CLOSED.	
	STOP TIME	_____	

Any area of weakness observed? YES ☐ NO ☐

Examinee Signature

All areas of observed weakness discussed

Evaluator Initials

Description of problem area:

Description of reviewed information: