

INITIAL SUBMITTAL OF SCENARIOS

FOR THE DRESDEN INITIAL EXAMINATION THE WEEKS OF FEBRUARY 5 AND 12, 2001

December 18, 2000
 Dresden NRC Operating Test Scenario Changes

ALL SCENARIOS:

1. Deleted turnover item of APRM Channel 3 OOS since validation indicated that having only one APRM channel fail in Scenario D provided for more significant operator action.
2. Deleted turnover item of Control Rod D09 accumulator OOS since validation indicated that starting shift with OOS accumulator (Scenario B) was less realistic than having accumulator become inoperable during scenario.

Scenario No: A	
Previous Event	Instrument air compressor (IAC) 3C trips on overcurrent requiring the manual starting of IAC 2B.
Change/Modification	Replaced with Service Water pump trip since validation indicated that instrument air compressor trip did not provide for significant operator actions.

Scenario No: A	
Previous Event	Main generator voltage regulator trips to manual and generator voltage is adjusted using manual voltage control.
Change/Modification	Exchanged event with Bus 29 trip from scenario B since validation indicated that Bus 29 trip limited operator actions with ATWS.

Scenario No: B	
Previous Event	SBLC Pump 2A trips on overcurrent just after starting
Change/Modification	Added failure of SBLC Pump 2B relief valve since Bus 29 trip was placed in Scenario A.

Scenario No: C	
Previous Event	Reactor Building Exhaust Fan 2A low flow trip.
Change/Modification	Changed exhaust fan to ventilation fan since validation indicated that exhaust fan trip could result in entry into DEOP.

Scenario No: C	
Previous Event	Reactor Building Ventilation Radiation Monitor 2B spurious trip.
Change/Modification	Replaced with Isolation Condenser Inadvertent Initiation since validation indicated that event did not provide for significant operator actions.

Scenario No: C	
Previous Event	FWRV 2B fails open.
Change/ Modification	Modified to be FWLCS setpoint change since validation indicated that FWRV 2B failing open did not require significant operator action.

Scenario No: C	
Previous Event	Core Spray Pump 2A overcurrent trip. Core Spray Pump 2B degraded flow.
Change/ Modification	Exchanged with HPCI start failure event from Scenario D since validation indicated that loss of HPCI fit better with emergency depressurization path of Scenario C.

<u>Facility:</u> Dresden		<u>Scenario No:</u> A		<u>Op-Test No:</u> 1	
<u>Examiners:</u> _____			<u>Operators:</u> _____		
_____			_____		
_____			_____		
<u>Initial Conditions:</u> IC-72; 54% reactor power; Unit 3 is at rated power.					
<u>Turnover:</u> The following equipment is out of service: CRD Pump 2A and RFP 2C					
Event No.	Malfunction Number	Event Type*	Event Description		
1	N/A	N (AUX)	Stator water cooling pumps are swapped by starting 2B and securing 2A.		
2	N/A	R (NSO)	Reactor power is increased from 54% to 64% by withdrawing control rods.		
3	RODF10ST	C (NSO)	A control rod becomes stuck during the power increase and the control rod is moved by increasing drive water pressure.		
4	Q23	C (AUX)	A service water pump trips and the standby pump is started to restore service water system pressure.		
5	K41	C (AUX)	Bus 29 trips due to a fault in the feed to MCC 29-1. The feed to MCCs 29-1 and 29-9 is isolated and Bus 29 is recovered.		
6	RRMASUPF RRMASUPD	I (NSO)	Master recirc flow controller fails and slowly increases both recirculation pump speeds. The excursion is stopped by locking out both recirculation pump scoop tubes.		
7	I22 IP1	M (ALL)	Steam leak in the drywell, upstream of flow restrictors, ramps to major size. Reactor is scrammed due to high drywell pressure.		
8	LPCI28AC	C (NSO)	Drywell spray valve fails to open forcing an emergency depressurization due to high drywell pressure.		

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Dresden

Scenario No: A

Op-Test No: 1

Summary:

- The Stator Water Cooling Pumps are swapped in order to prepare for an inspection of the 2A Pump. The 2B Stator Water Cooling Pump is started and the 2A pump is secured per DOP 7400-02.
- A unit startup is continued per DGP 01-01. Reactor power is increased with control rod withdrawal.
- A control rod fails to move from position 00 during control rod withdrawal. Drive water pressure is increased per DOP 0400-01. The control rod moves after drive water pressure has been raised per the DOP.
- The 2/3 Service Water Pump trips. The immediate operator action of DOA 3900-01 is taken to start the standby Service Water Pump (2A). Proper operation of the 2A Service Water Pump is verified per the DOA.
- A loss of Bus 29 occurs due to a fault in the feed to MCC 29-1. The feed to MCCs 29-1 and 29-9 is isolated and Bus 29 is recovered. With MCCs 29-1/29-9 lost, Tech Spec Actions are required due to the loss of the following:
 - 2B Core Spray injection valves
 - Division I Drywell spray valves
 - SBGT Train A
- The Reactor Recirc Master Flow Controller then slowly fails upscale causing an increase in core flow and reactor power. The Recirc MG Set scoop tubes are locked in accordance with DOA 202-03 and DGA-07 is entered for the unpredicted reactivity addition.
- Drywell pressure begins increasing due to a steam line leak in the drywell forcing the team to scram the reactor and enter DEOPs to control the RPV and primary containment.
- The failure of a drywell spray valve forces an Emergency Depressurization due to high drywell temperature.

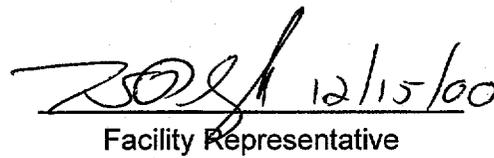
SCENARIO ESG-A

REVISION: 0

DATE: 12/2000

Reviewed and approved by:

 12/15/00
Exam Developer

 12/15/00
Facility Representative

Scenario Summary

Initial Conditions:

Unit 2:

- Reactor is at ~54% power with a unit startup in progress
- 2A CRD pump is out of service.
- 2C RFP is out of service

Unit 3:

- Operating at rated power, on line for 422 days.
- No equipment out of service.

Events:

1. Stator Water Cooling Pump Swap
2. Reactor Power Increase
3. Stuck Control Rod
4. Service Water Pump Trip
5. Loss of Bus 29
6. Master Recirc Flow Controller Fails Upscale
7. Steam Line Leak in Drywell
8. Failure of Drywell Sprays

Sequence

- The Stator Water Cooling Pumps are swapped in order to prepare for an inspection of the 2A Pump. The 2B Stator Water Cooling Pump is started and the 2A pump is secured per DOP 7400-02.
- A unit startup is continued per DGP 01-01. Reactor power is increased with control rod withdrawal.
- A control rod fails to move from position 00 during control rod withdrawal. Drive water pressure is increased per DOP 0400-01. The control rod moves after drive water pressure has been raised per the DOP.
- The 2/3 Service Water Pump trips. The immediate operator action of DOA 3900-01 is taken to start the standby Service Water Pump (2A). Proper operation of the 2A Service Water Pump is verified per the DOA.
- A loss of Bus 29 occurs due to a fault in the feed to MCC 29-1. The feed to MCCs 29-1 and 29-9 is isolated and Bus 29 is recovered. With MCCs 29-1/29-9 lost, Tech Spec Actions are required due to the loss of the following:
 - 2B Core Spray injection Valves
 - Division I Drywell Spray Valves
 - SGBT Train A
- The Reactor Recirc Master Flow Controller then slowly fails upscale causing an increase in core flow and reactor power. The Recirc MG Set scoop tubes are locked in accordance with DOA 202-03 and DGA-07 is entered for the unpredicted reactivity addition.
- Drywell pressure begins increasing due to a steam line leak in the drywell forcing the team to scram the reactor and enter DEOPs to control the RPV and primary containment.
- The failure of a drywell spray valve forces an Emergency Depressurization due to high drywell temperature.

Simulator Setup

1. Complete the Scenario Specific Checklist.
2. Function keys loaded are as follows:

Function Key	Description
TC 02 08:00 S M IP2 10.0 : R M RLR	Sets timer two to modify steam line break leak rate size and remove reduced leak rate.
K N F1 S M K30 RODF10ST : S R LPCI28AC U3PWR237	Fails the auto-transfer of MCCs 28-7/29-7 to Bus 28, sticks Control Rod F10, fails the LPCI 1501-28 valve (Drywell Spray Valve) closed, closes the Unit 3 24/48 VDC supply for the U2/3 Chimney GE rad monitors.
K N F2 R M RODF10ST	Removes the Control Rod F10 stuck malfunction
K N F3 S M Q23 Q31 : RC QP1 9.0 02:00 G	Trips the 2/3 Service Water Pump and degrades the Service Water System slightly to force the start of the 2A Service Water Pump
K N F4 RD QP1 : RC QP1 0.0 00:30 G	Removes the degradation of the Service water System to allow parameters to return to normal
K N F5 S R W14 : TC 01 00:10 G R R W14	Stops the 2/3 DFP and removes the 2/3 DFP STOP signal to allow it to restart as needed.
K N F6 S M K41	Trips Bus 29
K N F7 S R T54 : R R T53	Aligns 125 VDC Charger 2A to the 125 VDC System and removes 125 VDC Charger 2 from service
K N F8 R M K41 : R R T53	Removes the Bus 29 over current and opens the Bus 29 breaker to MCCs 29-1/29-9.
K N F9 S R T23	Acknowledges the 2/3 DG Trouble alarm
K N F10 S R B05	Resets EPA relays to re-energize RPS Bus A
K N F11 S M RRMASUPF RRMASUPD 40.0 : RC RRMASUPD 80.0 05:00 G	Inserts a failure of the Recirc Master controller ramping to 80.0% over 5 minutes.
K N F12 S M RLR I22 : RC IP2 50.0 05:00 G : TG 02	Inserts a steam line break ramping from 0 to 50% in 5 minutes with RLR. Starts a timer to enlarge the break in 8 minutes.
K S F1 S R K89	Recovers MCC 29-3.
K S F2 S R ACR298BF	Recovers MCC 29-8.

Procedures

PROCEDURE	TITLE	REVISION
DGP 01-01	Unit Startup	91
DGA-07	Unpredicted Reactivity Addition	11
DOP 0202-12	Recirculation Pump Motor Generator Set Scoop Tube Operation	15
DOP 0400-01	Reactor Manual Control System Operation	15
DOP 0500-03	Reactor Protection System Power Supply Operation	15
DOP 3900-01	Service Water System Operation	06
DOP 6800-05	Power Restoration to Analog Trip System Feeds	09
DOP 7400-02	Stator Cooling System Pump Changeover	02
DOA 0202-03	Reactor Recirculation System Flow Control Failure	02
DOA 3900-01	Loss of Cooling by Service water	11
DOA 6500-10	4 kV Circuit Breaker Trip	02
DEOP 100	RPV Control	09
DEOP 200-01	Primary Containment Control	09
DEOP 400-02	Emergency Depressurization	03

Critical Tasks

- PC-4.1: With the reactor at power and drywell temperature increasing, MANUALLY SCRAM the reactor before drywell design temperature is exceeded.
- PC-6.1: When suppression chamber/containment pressure cannot be maintained below the Pressure Suppression Pressure (PSP), INITIATE emergency depressurization before drywell/containment design pressure is reached.

SIMULATOR EVENT (0) Shift Turnover

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
Verify the Scenario Specific Checklist for Scenario ESG-A has been completed.	Assign each person a position. Give a Shift Turnover sheet to each examinee.	
	Perform a turnover, reviewing the SHIFT TURNOVER information sheet for this scenario. Ensure the team members understand the plant conditions.	
	Direct the Unit 2 Unit Supervisor to inform the lead evaluator when the team has the shift.	Each examinee walks their respective panels and verifies that the parameters are within acceptable values.
		The Unit 2 Unit Supervisor may also perform an additional team briefing with all members of the team.
		When the team is ready to assume the shift, they report such to the Shift Manager.
		The Unit 2 Unit Supervisor informs the lead evaluator that the team has the shift.
END OF EVENT (0)		

SIMULATOR EVENT (1) Stator Water Cooling Pump Swap

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.	As the Mechanical Maintenance Supervisor, report to the Control Room and request the swap of the Stator Water Cooling Pumps to prepare the 2A Stator Cooling Water Pump for inspection.	SRO directs the performance of DOP 7400-02, Stator Cooling System Pump Changeover
	As the NLO, report the 2B Stator water Cooling Pump is operating normally.	<p>AUX NSO swaps the Stator Water Cooling Pumps per DOP 7400-02:</p> <ul style="list-style-type: none"> - Starts the 2B Stator Water Cooling Pump - Verifies the NORMAL PRESS indicating light illuminates - Directs an NLO to verify proper operation of the 2B Stator Water Cooling Pump - Stops the 2A Stator water Cooling Pump - Directs an NLO to verify the Stator Water Cooling System parameters are maintained
	As the NLO, wait approximately 3 minutes, then report that the Stator Water Cooling System parameters are normal.	
	This event is complete when the 2B Stator Water Cooling Pump is in operation and the 2A Stator Water Cooling Pump has been secured.	
End of event (1)		

SIMULATOR EVENT (2) Reactor Power Increase

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.		Team reviews DGP 01-01, Unit Startup
		SRO directs the continuation of the Unit startup per DGP 01-01
		NSO continues reactor power increase with control rod withdrawal
		Annunciator 902-4 F-17, Reactor Building Equipment Drain Tank Level Hi may alarm. Team verifies: – U2 RBEDT PP 2-2042 starts – DISCH VLV 2-2001-8 OPENS AND RECIRC VLV 2-2001-15 CLOSED.
	This event is complete when a power increase of $\geq 10\%$ has been completed, or at the discretion of the evaluators.	
End of event (2)		

SIMULATOR EVENT (3) Stuck Control Rod

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
The stuck control rod malfunction (S M RODF10ST) was inserted during the simulator setup when K N F1 was pressed.		NSO reports that Control Rod F10 will not withdraw from position 00
		NSO references DOP 0400-01, Reactor Manual Control System Operation
		SRO approves the performance of DOP 0400-01, for control rod "Double Clutching"
		NSO attempts to "Double Clutch" Control Rod F10.
		NSO reports that Control Rod F10 will not move from position 00 with "Double Clutching"
As soon as drive water pressure has been raised to 300 psid, PRESS F2 R M RODF10ST Removes the stuck control malfunction for Control Rod F10		SRO directs the performance of DOP 0400-01, to raise drive water pressure to move Control Rod F-10: - NSO raises drive water pressure to 300 psid - NSO withdraws Control Rod F10 to 04 - NSO lowers drive water pressure to 260 psid (250 – 280 psid)
		SRO directs continuation of startup with rod withdrawal
		NSO continues control rod withdrawal as directed by the SRO

SIMULATOR EVENT (3) Stuck Control Rod

**SIMULATOR OPERATOR
ACTIONS**

**SIMULATOR COMMUNICATOR
ACTIONS**

**EXPECTED TEAM
RESPONSE**

	This event is complete when Control Rod F10 has been withdrawn after increasing control rod drive pressure.	
End of event (3)		

SIMULATOR EVENT (4) Service Water Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When event (3) is complete, at the discretion of the evaluators,</p> <p>PRESS F3</p> <p>S M Q23 Q31 : RC QP1 9.0 02:00 G</p> <p>Trips the 2/3 Service Water Pump and degrades the Service Water System slightly to force the team to start the 2A Service Water Pump</p>		<p>AUX NSO reports annunciator 923-1, Service Water Pump Trip, in alarm and 2/3 Service Water Pump tripped</p>
<p>As soon as the 2A Service Water Pump is started,</p> <p>PRESS F4</p> <p>RD QP1 : RC QP1 0.0 00:30 G</p> <p>Removes the Service Water System degradation to allow parameters to return to normal.</p>		<p>AUX NSO recognizes Service Water pressure dropping and starts the 2A Service Water Pump in accordance with the Immediate Operator Actions of DOA 3900-01, Loss of Cooling by Service Water</p>
	<p>As the NLO, wait approximately 4 minutes, then report the 2A Service Water Pump is operating normally.</p>	<p>AUX NSO references DOA 3900-01:</p> <ul style="list-style-type: none"> - Monitors Service Water System parameters - Dispatches an NLO to verify proper operation of the 2A Service water Pump per DOP 3900-01, Service Water System Operation

SIMULATOR EVENT (4) Service Water Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Team enters DOA 6500-10, 4 kV Circuit Breaker Trip: <ul style="list-style-type: none"> - Places the 2/3 Service Water Pump in PTL on report of overcurrent trip. - Contacts Electrical Maintenance to troubleshoot.
	As an NLO, wait a few minutes, then report that the 2/3 Service Water Pump breaker has an over current flag up	Team may direct an NLO to determine the cause of the 2/3 Service Water Pump trip.
		AUX NSO reports the Unit 2/3 Diesel Fire Pump running
If/when directed to STOP the 2/3 Diesel Fire Pp wait ~ 3 minutes, Then, PRESS F5 S R W14 : TC 01 00:10 G R R W14 Stops 2/3 DFP and removes the 2/3 DFP stop signal to allow it to restart as needed.		AUX NSO directs an NLO to STOP the 2/3 Diesel Fire Pump.
	This event is complete when the 2A Service Water Pump has been started and Service Water pressure has been restored.	
End of event (4)		

SIMULATOR EVENT (5) Loss of Bus 29

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>After the Event (4) is complete, at the discretion of the evaluators,</p> <p>PRESS F6</p> <p>S M K41</p> <p>Trips Bus 29 on overcurrent</p>		<p>AUX NSO reports annunciator 902-8 A-5, 480 V Switch Gear Bkr Trip, in alarm</p>
		<p>AUX NSO reports Bus 29 has been lost</p>
		<p>NSO reports half scram in RPS Channel A</p>
		<p>AUX NSO reports trip of Reactor Water Cleanup System.</p>
		<p>AUX NSO reports Reactor Building Ventilation isolated and SBTG Train B in operation.</p>
	<p>Loads affected include:</p> <ul style="list-style-type: none"> - 120/240 VAC ESS UPS - 2C, 2D, and 2E Drywell coolers - 2B Fuel Pool cooling pump - 2B recirc vent fan - 2B and 2C Reactor Building exhaust fans - 2B Reactor Building vent fan - 2B South Turbine Building vent fan 	<p>AUX NSO reports that indications of lost equipment are consistent with a loss of Bus 29.</p>
	<p>Respond as an NLO. Wait approximately 4 minutes, then report that the MCC 29-1/29-9 breaker is scorched and the breaker appears to still be closed.</p>	<p>AUX NSO dispatches an NLO to investigate the loss of Bus 29</p>
		<p>AUX NSO reports that MCCs 28-7/29-7 have failed to auto transfer to Bus 28</p>

SIMULATOR EVENT (5) Loss of Bus 29

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		SRO directs the recovery of MCCs 28-7/29-7
		AUX NSO re-energizes MCCs 28-7/29-7 from Bus 28 per the appropriate Hard Card: <ul style="list-style-type: none"> - OPENS feed breaker from Bus 29, MCC 29-7/28-7 FEED FROM BUS 29, by placing and holding the control switch in trip. - CLOSES feed breaker from Bus 28, MCC 29-7/28-7 FEED FROM BUS 28. - Releases the control switch, MCC 29-7/28-7 FEED FROM BUS 29.
<p>When directed by the Simulator Communicator, PRESS F7 S R T54 : R R T53</p> <p>Aligns 125 VDC Charger 2A to the 125 VDC System and removes 125 VDC Charger 2 from service</p>	<p>Respond as an NLO. Wait approximately 4 minutes, then report that you are ready to align the 2A Charger to the 125 VDC System. Direct the Simulator Operator to press F7 to align Charger 2A and then inform the team that the 2A Charger has been aligned to the 125 VDC System.</p>	<p>Team recognizes loss of 125 VDC Charger 2 and dispatches an HVO to align the 2A Charger per DOP 6900-02,</p>
<p>When directed by the Simulator Communicator, PRESS F8 R M K41 : R R K88</p> <p>Removes the Bus 29 overcurrent and opens the Bus 29 breaker to MCCs 29-1/29-9</p>	<p>Respond as Electrical Maintenance. Wait approximately 3 minutes (time compress), then direct the Simulator Operator to press F8. After F5 has been pressed contact the team and report that there is a fault on the MCC 29-1 feed from Bus 29. The fault is on the MCC 29-1 side of the breaker. The MCC 29-1/29-9 feed breaker is now open and Bus 29 can be re-energized.</p>	<p>Team requests assistance form the Electrical Maintenance Department</p>
		<p>Team refers to DOP 6800-05, Power Restoration to Analog Trip System Feeds, and determines that no actions are required before Bus 29 restoration</p>

SIMULATOR EVENT (5) Loss of Bus 29

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		<p>AUX NSO re-energizes Bus 29 per DOP 6700-02: Open BUS 29 & 28 TIE ACB Open BUS 28 & 29 TIE ACB Close BUS 24-1 TO TR 29 ACB Resets the Bus 29 UV relay behind the 902-8 Panel by depressing pushbutton 2-7240-12 BUS 29 UV RESET.</p>
<p>If sent to check 2/3 DG Trouble, report back "The Turbo Oil pump is off and is the reason for the trouble alarm."</p> <p>PRESS F9</p> <p>S R T23</p> <p>Acknowledges the 2/3 DG Trouble Alarm</p>		<p>AUX NSO dispatches an NLO to the 2/3 DG Room to acknowledge local alarm</p> <p>Team enters DOA 6600-03, Diesel Generator Keep Warm System Failure.</p> <p>No immediate action. Lubrication must be established within 48 hours.</p>
	<p>US priorities should be as follows:</p> <ul style="list-style-type: none"> • Restore 125VDC Charger 2 • Restore "A" RPS Bus • Return ventilation systems to normal and secure SBGT system 	<p>SRO sets priorities for restoration of 2A RPS Bus, Reactor Building ventilation system, securing SBGT system and recovery of load shed MCCs.</p>

SIMULATOR EVENT (5) Loss of Bus 29

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>Take action to recover the load shed MCCs as directed by the Simulator Communicator,</p> <p>To recover MCC 29-3:</p> <p>PRESS SHIFT F1 (S R K89)</p> <p>To recover MCC 29-8:</p> <p>PRESS SHIFT F2 (S R ACR298BF)</p> <p>No actions are required to recover MCCs 29-5 and 29-6.</p>	<p>Acknowledge the request and coordinate the recovery of the load shed MCCs. Wait approximately 4 minutes between the recovery of each MCC and inform the team before each MCC is recovered.</p> <p>Direct the Simulator Operator to press SHIFT F1 to recover MCC 29-3.</p> <p>Direct the Simulator Operator to press SHIFT F2 to recover MCC 29-8.</p> <p>No actions are required to recover MCCs 29-5 and 29-6. Wait a few minutes and report that those MCCs have been recovered</p>	<p>SRO directs recovery of load shed MCCs 29-3, 29-5, 29-6, and 29-8</p>
<p>When directed by the Simulator Communicator:</p> <p>PRESS F10</p> <p>S R B05</p> <p>Resets the EPAs to recover the 2A RPS Bus</p>	<p>As an NLO, acknowledge the request. Wait approximately 5 minutes, then report that you are ready to re-energize RPS Bus 2A from the 2B MG Set. Then direct the Simulator Operator to Press F10. Report to the Team that RPS Bus 2A from the 2B MG Set</p>	<p>Team directs the HVO to energize RPS Bus 2A from the 2B MG Set in accordance with DOP 500-03, "RPS Power Supply Operations."</p>

SIMULATOR EVENT (5) Loss of Bus 29

**SIMULATOR OPERATOR
ACTIONS**

**SIMULATOR COMMUNICATOR
ACTIONS**

**EXPECTED TEAM
RESPONSE**

		<p>SRO reviews Tech Specs:</p> <ul style="list-style-type: none"> - Tech Spec 3.5.A, Action 1.a (Core Spray 2B inoperable) - Tech Spec 3.4.A, Action 1 (SBLC pump 2B inoperable) - Tech Spec 3.7.P, Action 1 (SBGT Train A inoperable) - Tech Spec 3.2.F, Action 60 (UR 2-640-27 inoperable) - Tech Spec 3.2.I, Action 80.a (Fuel Zone A inoperable) - Tech Spec 3.7.F, Action 2 (AO 2-1601-20B open) - Tech Spec 3.7.L, Action 1 (Div II Drywell Sprays inoperable)
	<p>This event is complete when:</p> <ul style="list-style-type: none"> - Bus 29 has been restored - Tech Specs have been referenced 	
<p>End of Event (5)</p>		

SIMULATOR EVENT (6) Master Recirc Flow Controller Fails Upscale

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
When event (5) is complete, at the discretion of the evaluators, PRESS F11 S M RRMASUPF RRMASUPD 40.0 : RC RRMASUPD 80.0 05:00 G Increases the Master Recirc Flow Controller to 80.0% over 5 minutes		Team recognizes Main Generator and reactor power rising.
		NSO recognizes recirc pump speeds increasing
		NSO locks out the RR MG Set scoop tubes in accordance with the Immediate Operator Actions of DOA 0202-03, Reactor Recirculation System Flow Control Failure
		Team references DOA 0202-03
		Team enters DGA-07, Unpredicted Reactivity Addition
		Aux NSO enters DOP 202-12, Recirculation Pump Motor Generator Set Scoop Tube Operation, to complete MG Set lock-out actions.
	Respond as the QNE.	Team contacts a QNE
	If an IM Technician is requested, respond to the Team's request.	Team may contact IM Department for assistance

SIMULATOR EVENT (6) Master Recirc Flow Controller Fails Upscale

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Team may direct a licensed individual to take manual control of the scoop tube in accordance with DOP 202-12, Recirculation Pump Motor Generator Set Scoop Tube Operation
	Event is complete when: <ul style="list-style-type: none"> • Recirc MG Set scoop tubes have been locked out and • DGA-07 has been entered. <p align="center"><i>OR</i></p> The Team has scrammed the Reactor.	
End of event (6)		

SIMULATOR EVENT (7) Steam Line Leak in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		<p><i>Critical Task PC-4.1</i></p> <p>Performs a reactor scram per DGP 02-03 before reaching 281°F in the drywell:</p> <ul style="list-style-type: none"> - Presses scram push-buttons - Places mode switch in shutdown - Checks rods inserted - Verifies RPV level restoring to +8" to +48" (per DEOP 100) - Checks turbine and generator tripped - Resets Recirculation Pump Scoop Tubes. Trips the affected Recirculation Pumps when they don't run back to minimum. - Checks aux. power transferred - Inserts SRM/IRMs
		<p>Enters DEOP 100, Reactor Control due to low water level:</p> <ul style="list-style-type: none"> - Checks water level instrument accuracy - Verifies automatic actions have occurred - Maintains level +8" to +48" - Maintains pressure < 1060 psig

SIMULATOR EVENT (7) Steam Line Leak in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Enters DEOP 200-1, Primary Containment Control when drywell pressure exceeds +2 psig: - Monitors drywell pressure and initiates torus sprays - Monitors drywell temperature - Monitors torus temperature - Monitors torus level - Monitors drywell and torus hydrogen and oxygen concentrations
		SRO directs AUX NSO to prevent HPCI injection.
		Aux NSO prevents HPCI injection.
End of event (7)		

SIMULATOR EVENT (8) Failure of Drywell Sprays

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>No simulator Operator actions are required for this event. The required remote function to fail the drywell spray valve, (S R LPCI21AC), was entered during the simulator setup when K N F1 was pressed.</p>		<p>When drywell pressure exceeds 9 psig or if drywell temperature is approaching or reaches 281°F:</p> <ul style="list-style-type: none"> - Verifies drywell coolers secured - Verifies recirc pumps secured - Verifies drywell temp. within the drywell spray initiation limit - Attempts to initiate drywell sprays
		<p>Aux NSO reports the drywell spray valve 1501-28A has failed to open</p>
		<p>Critical Task PC-6.1</p> <p>SRO enters DEOP 400-2, Emergency Depressurization, due to drywell temperature exceeding 281°F or the Pressure Suppression Pressure Curve being exceeded:</p> <ul style="list-style-type: none"> - Initiates IC at maximum flow - Verifies torus level above 6 ft. - Opens all ADSV's
		<p>Reportability (at minimum): SAF 1.1, Emergency Declaration</p> <p>GSEP: EAL FA1 due to Drywell pressure greater than 2.0 psig.</p>
	<p>This event is complete when LPCI and Core Spray injection are being controlled after RPV pressure drops to less than 350 psig.</p>	
End of event (8)		
END OF SCENARIO		

<u>Facility:</u> Dresden		<u>Scenario No:</u> B		<u>Op-Test No:</u> 1	
<u>Examiners:</u> _____		<u>Operators:</u> _____			
_____		_____			
_____		_____			
<u>Initial Conditions:</u> IC-75; 64% reactor power; Unit 3 is at rated power.					
<u>Turnover:</u> The following equipment is out of service: CRD Pump 2A and RFP 2C					
Event No.	Malfunction Number	Event Type*	Event Description		
1	N/A	R (NSO)	Reactor power is reduced from 64% to 54% by inserting control rods.		
2	N/A	N (AUX)	A condensate/condensate booster pump is secured for the power reduction.		
3	U3PWR237	C (AUX)	The SPING fails due to a malfunction of the 24/48 vdc power supply. Power supply is manually shifted to Unit 2.		
4	MGMATMF	I (AUX)	The main generator voltage regulator trips to manual and generator voltage is adjusted using manual voltage control.		
5	RODH07AT RODF05AT	C (NSO)	Accumulator trouble alarm due to low pressure on control rod H07. Another accumulator trouble alarm is received for control rod F05. Verify CRD pump flow by inserting control rod.		
6	RDPPBTRP	C (NSO)	CRD Pump 2B trips on overcurrent. Reactor must be manually scrammed.		
7	RDHLDEGA RDHLDEGB RDHLVFPA RDHLVFPB	M (ALL)	Reactor scram fails due to water in scram discharge volume.		
8	SCPMPOCA SCRLFVBD	C (NSO)	SBLC Pump 2A trips on overcurrent just after starting and the discharge relief valve fails open on the SBLC Pump 2B.		

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Dresden

Scenario No: B

Op-Test No: 1

Summary:

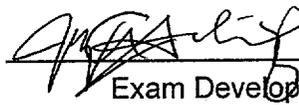
- A unit shutdown is continued per DGP 02-01. Reactor power is decreased with Control Rod insertion.
- Per DGP 02-01, the team takes action to secure a Condensate/Condensate Booster when power reaches 450 MWe.
- The 24/48 VDC supply breaker to the 2/3 Chimney GE Radiation Monitors trips.
- The main generator voltage regulator trips to manual after a change in MVAR loading is requested. Main generator voltage is adjusted using manual control.
- The HCU Accumulator Trouble annunciator alarms for Control Rod H-07. Upon investigation it is determined to be due to low nitrogen pressure. An NLO takes action to restore nitrogen pressure for Control Rod H-07. While the recharging is in progress another accumulator alarm occurs on Control Rod F-05. Local investigation determines that a nitrogen fitting has failed on the HCU. Action is taken in accordance with Tech Specs.
- The 2B CRD pump trips requiring a reactor scram.
- When a manual scram is attempted an ATWS condition occurs.
- When the team attempts to inject standby liquid the 2A SBLC Pump trips on overcurrent and the discharge relief valve fails open on the 2B SBLC pump.

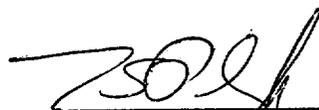
SCENARIO ESG-B

REVISION: 0

DATE: 12/2000

Reviewed and approved by:

 12/15/00
Exam Developer

 12/15/00
Facility Representative

Scenario Summary

Initial Conditions:

Unit 2:

- Reactor is at ~60 % power with a power reduction for a short maintenance outage in progress
- 2A CRD pump is out of service.
- 2C RFP is out of service.

Unit 3:

- Operating at rated power, on line for 422 days.
- No equipment out of service.

Events:

1. Reactor Power Decrease
2. Condensate/Condensate Booster Pump Shutdown
3. Loss of 2/3 Chimney Radiation Monitors
4. Main Generator Voltage Regulator Trip
5. Accumulator Trouble
6. CRD Pump Trip
7. ATWS
8. Standby Liquid Control fails to inject

Sequence

- A unit shutdown is continued per DGP 02-01. Reactor power is decreased with Control Rod insertion.
- Per DGP 02-01, the team takes action to secure a Condensate/Condensate Booster when power reaches 450 MWe.
- The 24/48 VDC supply breaker to the 2/3 Chimney GE Radiation Monitors trips.
- The main generator voltage regulator trips to manual after a change in MVAR loading is requested. Main generator voltage is adjusted using manual control.
- The HCU Accumulator Trouble annunciator alarms for Control Rod H-07. Upon investigation it is determined to be due to low nitrogen pressure. An NLO takes action to restore nitrogen pressure for Control Rod H-07. While the recharging is in progress another accumulator alarm occurs on Control Rod F-05. Local investigation determines that a nitrogen fitting has failed on the HCU. Action is taken in accordance with Tech Specs.
- The 2B CRD pump trips requiring a reactor scram.
- When a manual scram is attempted an ATWS condition occurs.
- When the team attempts to inject standby liquid the 2A SBLC Pump trips on overcurrent and the discharge relief valve fails open on the 2B SBLC pump.

Simulator Setup

1. Complete the Scenario Specific Checklist.
2. Function keys loaded in the Scenario Specific Checklist are as follows:

Function Key	Description
K N F1 S M RDHLVFPA 94.0 RDHLVFPB 94.0 RDHLDEGA 94.0 RDHLDEGB 94.0 : S R U3PWR237	Inserts a CRD hydraulic lock, aligns the U2/3 Chimney GE rad monitors to the Unit 3 24/48 VDC supply
K N F2 R R U3PWR237	Trips open the Unit 3 24/48 VDC supply to the U2/3 Chimney GE Rad Monitors
K N F3 S M MGMATMF	Trips the Main Generator Voltage Regulator from Automatic to Manual
K N F4 S M RODH07AT	Control Rod H07 Accumulator trouble
K N F5 S M RODF05AT	Control Rod F05 Accumulator trouble
K N F6 S M RDPPBTRP	Trips the 2B CRD pump
K N F7 S M SCPMPOCA SCRLFVBD 500.0	Trips the 2A SBLC pump and fails the relief valve for the B SBLC to open at 500 psig discharge pressure
K N F8 S R CI59JP OGOGJP	Installs Group 1 Isolation jumpers (Lo-Lo RPV Level @ -59") and the Off-Gas Hi Rad jumpers
K N F9 S R RD25POS 0.0	Closes the CRD 0301-25 valve.
K N F10 S R RPJUMPAS	Installs RPS jumpers
K N F11 S R AW4	Removes ATWS fuses
K N F12 S M RDHLVFPA 0.00 RDHLVFPB 0.00 RDHLDEGA 0.00 RDHLDEGB 0.00	Removes CRD hydraulic lock
K S F1 S R RDXTIEU3	Removes the Control Rod H07 Accumulator trouble

Procedures

PROCEDURE	TITLE	REVISION
DGP 02-01	Unit Shutdown	62
DGP 02-03	Reactor Scram	51
DOS 0300-06	Control Rod Drive Abnormality Record	13
DOP 0300-06	Control Rod Drive System Accumulator Charging	17
DOP 3300-03	Condensate system Shutdown	18
DOP 6400-08	345KV Voltage Control	11
DOA 0300-01	Control Rod Drive System Failure	17
DOA 6900-01	Failure of Unit 2(3) 24/48 VDC Power Supply	12
DEOP 100	RPV Control	09
DEOP 400-05	Failure to Scram	11
DEOP 500-01	Alternate Standby Liquid Control Injection	07
DEOP 500-05	Alternate Insertion of Control Rods	09

Critical Tasks

- RPV-6.1: With a reactor scram required and the reactor not shutdown, TAKE ACTION TO REDUCE POWER, by injecting boron and/or inserting control rods, to prevent exceeding the primary containment design limits.
- RPV-6.2: With a reactor scram required, reactor not shutdown, and conditions for ADS blowdown are met, INHIBIT ADS to prevent an uncontrolled RPV depressurization, to prevent causing a significant power excursion.

SIMULATOR EVENT (0) Shift Turnover

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
Verify the Scenario Specific Checklist for Scenario ESG-B has been completed.	Assign each person a position. Give a Shift Turnover sheet to each examinee.	
	Perform a turnover, reviewing the SHIFT TURNOVER information sheet for this scenario. Ensure the team members understand the plant conditions.	
	Direct the Unit 2 Unit Supervisor to inform the lead evaluator when the team has the shift.	Each examinee walks their respective panels and verifies that the parameters are within acceptable values.
		The Unit 2 Unit Supervisor may also perform an additional team briefing with all members of the team.
		When the team is ready to assume the shift, they report such to the Shift Manager.
		The Unit 2 Unit Supervisor informs the lead evaluator that the team has the shift.
END OF EVENT (0)		

SIMULATOR EVENT (1) Reactor Power Decrease

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.		Team reviews DGP 02-01 Unit Shutdown.
		SRO directs continuation of Unit Shutdown per DGP 02-01.
	<p align="center">NOTE:</p> <p>A Condensate/Condensate Booster pump will be secured (Event (2)) prior to a 10% power decrease being completed.</p>	NSO begins Control Rod insertion for power decrease per DGP 02-01.
	This event is complete when a power decrease of $\geq 10\%$ has been completed, or at the discretion of the evaluators.	
End of event (1)		

SIMULATOR EVENT (2) Condensate/Condensate Booster Pump Shutdown

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.		NSO inserts Control Rods until ~450 Mwe is reached.
		SRO directs the 2D Condensate/Condensate Booster pump shut down per DOP 3300-03, condensate System Shutdown.
	Acknowledge the direction as an NLO. Wait ~4 minutes, then report the 2-3393-17D & 20D valves have been closed.	AUX NSO shuts down 2D Condensate/Condensate Booster pump per DOP 3300-03. <ul style="list-style-type: none"> • Verifies RFP suction pressure >250 psig • Places Cond/Cond Booster pp Standby Select Switch to OFF • Dispatches an NLO to verify hydrogen isolation valves for 2D C/CB pump are closed • Stops the 2D Cond/Cond Booster pp • Places the STBY pp Select Switch in the Pump 2A or Pump 2D position
		SRO directs NSO to continue the unit shutdown
		NSO continues power decrease with Control Rod insertion
	This event is complete when the 2D Condensate/Condensate Booster Pump has been secured.	
End of event (2)		

SIMULATOR EVENT (3) Loss of 2/3 Chimney Radiation Monitors

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>After event (3) is complete, at the discretion of the evaluators</p> <p>PRESS F2</p> <p>R R U3PWR237</p> <p>Removes the Unit 3 24/48 VDC supply from the U2/3 Chimney GE Rad Monitors</p>	<p>Respond as an NLO, wait ~4 minutes, then report that at Unit 3 48/24 VDC Dist Panel 3A, Circuit Breaker #3 is tripped</p>	<p>AUX NSO reports annunciator 932-7, U2/3 Chimney Gas Monitor Trouble, in alarm.</p> <ul style="list-style-type: none"> • AUX NSO reports the U2/3 Chimney Rad Monitors both downscale with no indicating lights on. • AUX NSO dispatches an NLO to the power supply at 24/48 VDC Dist. Pnl 3A • Team May enter DOA 6900-01, Failure of U2(3) 24/48 VDC Power Supply • AUX NSO selects Unit 2 power supply to U2/3 Chimney Rad Monitors with 923-7 panel select switch • AUX NSO reports power restored to U2/3 Chimney Rad Monitors • Team addresses generating CR for the circuit breaker trip
	<p>This event is complete after the team has restored power to the U2/3 Chimney GE Rad Monitors.</p>	
<p>End of event (3)</p>		

SIMULATOR EVENT (4) Main Generator Voltage Regulator Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	After event (4) is complete, at the discretion of the evaluators call the team as the BPO and request MVARs adjusted to 150.	Team acknowledges the request from the BPO.
		SRO directs the AUX NSO to adjust Main Generator VARs per DOP 6400-08, 345 KV Voltage Control
As soon as Main Generator VAR adjustment is started, PRESS F3 S M MGMTMF Trips the main Generator Voltage Regulator from Automatic to Manual		AUX NSO begins adjusting Main Generator VARs per DOP 6400-08: <ul style="list-style-type: none"> • References Figure 2, Dresden Units 2 or 3 Generator Capability Curves and Under Excitation Limiter Settings, Regulator: In Service. • Uses AUTO VOLTAGE ADJUST control switch to control system voltage as directed by LD
		AUX NSO Reports annunciator 902-8 B-12 GENERATOR VOLTAGE REGULATOR TRIPPED.
		AUX NSO places the Voltage Regulator Mode Control Switch to MANUAL
	Respond as an NLO. Wait a few minutes, then report that you see nothing abnormal locally.	Team dispatches an NLO to investigate Voltage Regulator Trip
	Respond as individual contacted.	Team contacts Maintenance and/or Work Week Manager for Voltage Regulator investigation.

SIMULATOR EVENT (4) Main Generator Voltage Regulator Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	If the Team discontinues the VAR adjustment with out contacting the BPO, wait approximately 5 minutes after the voltage regulator trip and call the Team back as the BPO and ask for the VAR adjustment again.	AUX NSO continues voltage adjustment per DOP 6400-08 <ul style="list-style-type: none"> • Ensure loading is within Figure 3, Dresden Units 2 or 3 Generator Capability Curves and Under Excitation Limiter Settings, Regulator: Out-of-Service.
	This event is complete when the Team has transferred the Main Generator Voltage Regulator to manual.	
End of event (4)		

SIMULATOR EVENT (5) Accumulator Trouble

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When event (2) is complete, at the discretion of the evaluators</p> <p>PRESS F4</p> <p>S M RODH07AT</p> <p>Accumulator Trouble for Control Rod H07.</p>		<p>NSO reports annunciator 902-5 G-2, ACCUMULATOR WTR HI/PRESS LO, in alarm for control for H07</p>
	<p>Acknowledge the request as an NLO. Wait ~ 3 minutes, then report the accumulator has low nitrogen pressure and is indicating ~ 980 psig.</p>	<p>Team dispatches an NLO to investigate accumulator trouble for Control Rod H07</p>
		<p>NSO records alarm per DOS 0300-06, Control Rod Drive Abnormality Record</p>
<p>As soon as the report from the NLO regarding the nitrogen bottle is complete,</p> <p>PRESS F5</p> <p>S M ROD05AT</p> <p>Accumulator Trouble for Control Rod F05.</p>	<p>Respond as the NLO. Wait a few minutes, then report that you started recharging the accumulator but you are having a problem with the nitrogen bottle pressure regulator and you can't get accumulator pressure above 900 psig.</p>	<p>Team directs the NLO to recharge the accumulator per DOP 0300-06, Control Rod Drive System Accumulator Charging</p>
		<p>SRO declares the scram accumulator inoperable while nitrogen charging is being performed.</p>
		<p>SRO verifies Tech Spec section 3.3.G is met. (8 hours to restore operability)</p>
		<p>NSO reports 902-5 G-2 in alarm for Control Rod F05.</p>

SIMULATOR EVENT (5) Accumulator Trouble

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		NSO reports 902-5 C-3, Rod Out Block, in alarm.
	Respond as an NLO. Wait ~3 minutes, then report that there is a leak on a nitrogen fitting on the Control Rod F05 HCU. Report nitrogen pressure for the F05 HCU is 930 psig.	NSO dispatches an NLO to investigate accumulator trouble for Control Rod F05.
		SRO declares control rod scram accumulator F-05 inoperable to low nitrogen pressure.
	Acknowledge the request as the personnel contacted.	Team contacts Mechanical Maintenance and/or Work Week Manager, and reports Nitrogen leak on the Control Rod F05 HCU.

SIMULATOR EVENT (5) Accumulator Trouble

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		<p>SRO refers to Tech Specs and directs actions:</p> <ul style="list-style-type: none"> • SRO declares control rods H07 and F05 per TS 3.3.G, Action 1.c. • SRO verifies (within one hour) per TS 3.3.C., Action 2.a.1), that control rods H07 and F05 are separated from each other by at least two control cells in all directions, and • SRO directs (within one hour) per TS 3.3.C., Action 2.a.2), the NSO to insert control rods H07 and F05 at least one notch. NOTE: This action also meets the requirement of TS 3.3.G., Action 1.c.1) to insert at least one Control Rod at least one notch to verify a CRD pump is operating • NSO inserts control rods H07 and F05 at least one notch <p>NOTE: TS 3.3.C., Action 2.a.2), note (b) allows control rods H07 and F05 to then be withdrawn to Position 48.</p>
	<p>This event is complete after the team has inserted control rods H07 and F05 at least one notch.</p>	
<p>End of event (5)</p>		

SIMULATOR EVENT (6) CRD Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
After event (5) is complete, at the discretion of the evaluators, PRESS F6 S M RDPPBTRP Trips the 2B CRD Pump		NSO reports annunciator 902-5 B-2, ROD DRIVE PP TRIP, in alarm and 2B CRD Pump tripped.
		Team enters DOA 0300-01
		SRO directs the NSO to manually scram enter DGP 02-03, Reactor Scram.
		NSO performs a reactor scram per DGP 02-03: - Presses scram push-buttons - Places mode switch in shutdown - Reports that control rods have not fully inserted - Initiates ARI
		SRO enters DEOP 100, RPV Control.
End of event (6)		

SIMULATOR EVENT (7) ATWS

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>As soon as the Team enters DEOP 400-5</p> <p>PRESS F7</p> <p>S M SCPMPOCA SCRLFVBD 500.0</p> <p>Trips the 2A SBLC Pp on overcurrent and fails the 2B SBLC Pp relief valve to open at 500 psig.</p>		<p>SRO Exits DEOP 100 and enters DEOP 400-5, Failure to Scram</p> <ul style="list-style-type: none"> - Inhibits ADS - Prevents Core Spray injection
		<p>SRO directs initial actions of DEOP 400-5</p> <p>Aux NSO:</p> <ul style="list-style-type: none"> - Inhibits ADS, <i>Critical Task RPV-6.2</i> - Prevents Core Spray Injection
		<p>SRO directs actions of DEOP 400-5</p> <p>NSO</p> <ul style="list-style-type: none"> - Runs back both Recirc Pps to minimum - Trips both Recirc Pps - Enters DEOP 0500-05, Alternate Insertion of Control Rods. - Initiates SBLC

SIMULATOR EVENT (7) ATWS

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When/if the team directs the bypass of the MSIV Low RPV Level and Off-gas high rad isolation isolations, wait ~4 minutes, then</p> <p>PRESS F8</p> <p>S R CI59JP OGOGJP</p> <p>Bypasses the isolations noted above.</p>	<p>When directed to bypass the MSIV Low RPV Level and Off-gas high radiation isolations, wait ~4 minutes, direct Simulator Operator to press F8, then report that the MSIV Low RPV Level and Off-gas high radiation isolations have been bypassed.</p>	<p>SRO directs actions to control reactor LEVEL:</p> <ul style="list-style-type: none"> - Directs bypass of the MSIV Low RPV Level and Off-gas high rad isolations per DEOP 500-02 - NSO lowers level to at least -35 inches by terminating and presenting injection (except boron and CRD) - Aux NSO prevents HPCI from injecting
		<p>SRO directs actions to control reactor PRESSURE:</p> <ul style="list-style-type: none"> - Verifies turbine is on line, EHC operating normally
<p>When directed to cross connect CRD with Unit 3</p> <p>PRESS SHIFT F1</p> <p>S R RDXTIEU3</p> <p>Cross connects CRD with Unit 3.</p> <p>When directed to close the CRD 0301-25 valve</p> <p>PRESS F9</p> <p>S R RD25POS 0.0</p> <p>Closes the CRD 0301-25 valve.</p>	<p>If requested to cross connect CRD with Unit 3, verify with the Lead Evaluator that you are approved to take these actions. If approved by the Lead Evaluator wait ~10 minutes and direct the Simulator Operator to press SHIFT F3. Report Unit 2 and Unit 3 CRD systems are cross tied.</p> <p>If requested to close CRD 0301-25 valve, wait ~2 minutes and direct the Simulator Operator to press F9. Report the CRD 0301-25 valve is closed.</p>	<p>Critical Task RPV-6.1</p> <p>If rods are manually inserted per DEOP 500-5:</p> <ul style="list-style-type: none"> - Bypasses the RWM - Requests CRD cross tied with Unit 3 - Maximizes drive water pressure by closing the CRD 0301-25 valve OR by opening the CRD flow control valve (while monitoring pump amps and suction pressure while adjusting the CRD drive PCV) - Inserts rods using RONOR in Emerg In or the normal rod movement control switch, prioritizing selected rods

SIMULATOR EVENT (7) ATWS

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When directed to install scram jumpers,</p> <p>PRESS F10</p> <p>S R RPJUMPAS</p> <p>Installs RPS scram jumpers.</p> <p>When directed to pull ARI fuses,</p> <p>PRESS F11</p> <p>S R AW4</p> <p>Pulls ARI fuses.</p>	<p>When/if requested to perform the actions for repeated scrams/resets, verify with the Lead Evaluator that you are approved to take these actions. If approved by the Lead Evaluator perform the actions of DEOP 500-5, Section G.3 up to and including the opening of the scram discharge vents and drains. Verify that the Simulator Operator presses F10 to place the scram jumpers at the appropriate step of the procedure. Inform the team of your actions when they are complete.</p> <p>When/if requested to pull ARI fuses, wait approximately 3 minutes, verify F11 has been pressed, then call the team on the telephone from the AEER and inform them that ARI fuses have been removed.</p>	<p>Critical Task RPV-6.1</p> <p>If repeated scram/resets are performed per DEOP 500-5, the following actions are taken:</p> <ul style="list-style-type: none"> - Depresses close pushbuttons for scram discharge vent/drain valves - Attempts to reset scram - Installs scram jumpers on 902-15(17) - Resets the scram - Verifies all scram valves closed - Opens all scram discharge vent/drain valves - When 902-5 C-1, Scram Inst Vol Hi Lvl Rod Block clears, manually scrams - Repeats the above actions as necessary - May pull ARI fuses when level is < -59"
<p>When RPS is reset and at the discretion of the evaluators,</p> <p>PRESS F12</p> <p>S M RDHLVFP A 0.0 RDHLVFP B 0.0 RDHLDEGA 0.0 RDHLDEGB 0.0</p> <p>Sets the CRD hydraulic lock to 0% to allow the next manual scram to insert all rods to 00.</p>		<p>Team determines all rods are inserted after insertion of manual scram per DEOP 500-05:</p> <ul style="list-style-type: none"> - Enters DEOP 100 and restores reactor level to +8" to +48"
<p>End of event (7)</p>		

SIMULATOR EVENT (8) Standby Liquid Control Failure to Inject

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.		NSO reports SBLC is NOT injecting
	Respond as an NLO. Wait 4 minutes then report the 2A SBLC pump motor is damaged and has scorch marks on it. The 2B SBLC pump is operating but the discharge relief valve appears to be open.	Team dispatches NLO to investigate SBLC system
		SRO directs Team to perform DEOP 500-01, Alternate Standby Liquid Control Injection
	Respond as an NLO. (No actions are required)	Team directs an NLO to perform DEOP 500-01, Alternate Standby Liquid Control Injection
		Reportability Requirements include but are not limited to: - SAF 1.1, Declaration of an Emerg. Class - SAF 1.12, ESF or RPS Actuation
		GSEP classification: - Site Emergency (MS3) due to Auto and Manual scram not successful
	This event is complete when after the Team has requested DEOP 500-01, Alternate Standby Liquid Control Injection to be performed.	
End of event (8)		
END OF SCENARIO		

SIMULATOR EVENT (8) Standby Liquid Control Failure to Inject

Intentionally Blank

<u>Facility:</u> Dresden		<u>Scenario No:</u> C		<u>Op-Test No:</u> 1	
Examiners: _____			Operators: _____		
_____			_____		
_____			_____		
<u>Initial Conditions:</u> IC-17; 90% reactor power; Unit 3 is at rated power.					
<u>Turnover:</u> The following equipment is out of service: CRD Pump 2A and RFP 2C. Surveillance is in progress for SBTG; fan 2/3A is running and ready to be shutdown. The load dispatcher has requested return to rated power.					
Event No.	Malfunction Number	Event Type*	Event Description		
1	N/A	N (AUX)	Shutdown SBTG Fan 2/3A and secure system from surveillance.		
2	N/A	R (NSO)	Increase reactor power to rated by increasing recirculation flow.		
3	RDFAILF5	I (NSO)	Failure of RPIS inputs from control rod F05.		
4	X04	C (AUX)	Reactor Building Ventilation Fan 2A low flow trip.		
5	ICSPDFTP ICSPDFTF	I (AUX)	Isolation condenser inadvertent initiation.		
6	TG02	C (NSO)	FWLCS setpoint drifts and control is transferred to manual.		
7	HP4	M (ALL)	Seismic event occurs followed by FWRV station high vibration. Manual scram of reactor. Unisolable feed line break in drywell following reactor scram.		
8	HPAOPOC	C (NSO)	HPCI start failure.		

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Dresden

Scenario No: C

Op-Test No: 1

Summary:

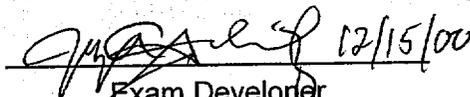
- The 2/3A SBTG fan is shutdown and the train is restored to a standby lineup per DOS 7500-02.
- Reactor power is increased to rated by increasing recirculation flow per DGP 03-01. Power had been reduced to ~90% for turbine control valve testing.
- Following the power increase, a total RPIS failure occurs for control rod F05 and the control rod is fully inserted per DOA 0300-06.
- The 2A Reactor Building Ventilation fan trips and the standby fan (2C) fails to start automatically. The standby fan is then started manually per DAN 923-5 A-1.
- The isolation condenser inadvertently initiates due to a faulty relay in the AEER.
- The FWLCS setpoint begins to drift above and below the normal setpoint. The FWLCS is transferred to manual control per DOA 0600-01.
- The RFP and FWRV station high vibration alarms are received due to a seismic event. The reactor is manually scrammed per DOA 3200-01 and the RFPs are shutdown. An unisolable feed line break in the drywell occurs.
- HPCI fails to start after an auto initiation signal is received. Emergency depressurization is required due to inability to maintain reactor water level.

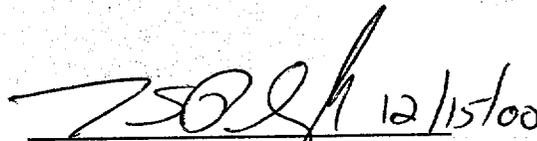
SCENARIO ESG-C

REVISION: 0

DATE: 12/2000

Reviewed and approved by:


Exam Developer


Facility Representative

Scenario Summary

Initial Conditions:

Unit 2:

- Reactor is at ~90% power.
- 2A CRD pump is out of service.
- 2C RFP is out of service.
- 2/3A SBGT train is running for post-maintenance testing per DOS 7500-02..

Unit 3:

- Operating at rated power, on line for 422 days.
- No equipment out of service.

Events:

1. Shutdown SBGT Train and Return to Standby Lineup
2. Increase Reactor Power to Rated by Increasing Recirculation Flow
3. Control Rod RPIS Failure
4. Reactor Building Ventilation Fan Trip
5. Inadvertent Isolation Condenser Initiation
6. FWLCS Setpoint Drift
7. Feedwater System Vibration, Manual Reactor Scram, and Unisolable Feed Line Break in Drywell
8. HPCI Start Failure

Sequence

- The 2/3A SBGT fan is shutdown and the train is restored to a standby lineup per DOS 7500-02.
- Reactor power is increased to rated by increasing recirculation flow per DGP 03-01. Power had been reduced to ~90% for turbine control valve testing.
- Following the power increase, a total RPIS failure occurs for control rod F05 and the control rod is fully inserted per DOA 0300-06.
- The 2A Reactor Building Ventilation fan trips and the standby fan (2C) fails to start automatically. The standby fan is then started manually per DAN 923-5 A-1.
- The isolation condenser inadvertently initiates due to a faulty relay in the AEER.
- The FWLCS setpoint begins to drift above and below the normal setpoint. The FWLCS is transferred to manual control per DOA 0600-01.
- The RFP and FWRV station high vibration alarms are received due to a seismic event. The reactor is manually scrammed per DOA 3200-01 and the RFPs are shutdown. An unisolable feed line break in the drywell occurs.
- HPCI fails to start after an auto initiation signal is received. Emergency depressurization is required due to inability to maintain reactor water level.

Simulator Setup

1. Complete the Scenario Specific Checklist.
2. Function keys loaded are as follows:

Function Key	Description
K N F1 = S M HPAOPOC : S R U3PWR237	HPCI auxiliary oil pump overcurrent trip, aligns the U2/3 Chimney GE rad monitors to the Unit 3 24/48 VDC supply
K N F2 = S M RDFAILF05	RPIS failure for control rod F05
K N F3 = S R RODF05DA	Electrically disarms control rod F05
K N F4 = S M X04	Trips the 2A Reactor Building Ventilation fan
K N F5 = S M ICSPDFTP 0 ICSPDFTF	Sets the isolation condenser (IC) initiation setpoint to 0 psig
K N F6 TG02	Simulates Feedwater system oscillation.
K N F7 TS 01 : TS 02 : SM HP2	Stops the feed water oscillation.
K N F8 = S M HP4 1.0 : RC HP4 15.0 04:00 G	Starts a B feed line break ramping to 15% in 4 minutes

Critical Tasks

- PC-5.1: When drywell pressure exceeds 9 psig, INITIATE drywell sprays, while in the safe region of the drywell spray initiation limit.
- RPV-1.1 With reactor pressure greater than the shutoff head of the low pressure systems and when RPV water level reaches the TAF, INITIATE emergency depressurization before level reaches -164 inches.

Procedures

PROCEDURE	TITLE	REVISION
DGP 03-01	Routine Power Changes	36
DAN 902(3)-5 A-3	ROD DRIFT	09
DAN 902(3)-5 B-3	ROD WORTH MIN BLOCK	05
DOA 0300-06	RPIS Failure	13
DOA 0300-12	Mispositioned Control Rod	08
DOP 7500-01	Standby Gas Treatment System Operation	15
DAN 923-5 A-1	U2 RX BLDG VENT/EXH FAN TRIP	03
DAN 902(3)-4 A-15	ISOL CONDR CH A/B INITIATION	12
DGA-07	Unpredicted Reactivity Addition	11
DOA 0600-01	Transient Level Control	28
DOA 6700-06	480V Circuit Breaker Trip	05
DAN 902(3)-6 F-12	2A RFP VIBRATION HI	04
DAN 902(3)-6 G-12	2B RFP VIBRATION HI	03
DAN 902(3)-6 E-12	FEEDWATER REG STATION VIBRATION HI	03
DOA 3200-01	Feedwater System High Vibration	05
DGA 02-03	Reactor Scram	51
DEOP 100	RPV Control	09
DEOP 200-01	Primary Containment Control	09
DEOP 400-02	Emergency Depressurization	03
EPIP 200-01	Classification of GSEP Conditions	05
EPIP 200-T1	GSEP Emergency Action Levels	13
	ComEd Reportability Manual	N/A
	Dresden Technical Specifications	N/A

SIMULATOR EVENT (0) Shift Turnover

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
Verify the Scenario Specific Checklist for Scenario ESG-C has been completed.	Assign each person a position. Give a Shift Turnover sheet to each examinee.	
	Perform a turnover, reviewing the SHIFT TURNOVER information sheet for this scenario. Ensure the team members understand the plant conditions.	
	Direct the Unit 2 Unit Supervisor to inform the lead evaluator when the team has the shift.	Each examinee walks their respective panels and verifies that the parameters are within acceptable values.
		The Unit 2 Unit Supervisor may also perform an additional team briefing with all members of the team.
		When the team is ready to assume the shift, they report such to the Shift Manager.
		The Unit 2 Unit Supervisor informs the lead evaluator that the team has the shift.
END OF EVENT (0)		

SIMULATOR EVENT (1) Shutdown SBT Train and Return to Standby Lineup

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.		SRO directs the shutdown and return to standby lineup of the 2/3A SBT train per DOS 7500-02.
		<p>AUX NSO performs DOS 7500-02, SBT System Surveillance and IST Test, starting at step 1.3.g.</p> <ul style="list-style-type: none"> • Verifies system flow rate is between 3900 to 4700 cfm and records value in Checklist A. • Records "N/A" for step 3.1.h. since quarterly stroke timing is not required. • Places the 2/3A SBT SELECT switch to the A OFF position. • Ensures Final Run Time data in Checklist A is completed. • Records "As-Left" position of Train A valves in Checklist B. • Ensures the following: <ul style="list-style-type: none"> - 2/3A AIR HEATER is OFF - 2/3A FAN is OFF - FI 7540-13, SBT DISCH FLOW, reduces to zero.

SIMULATOR EVENT (1) Shutdown SBT Train and Return to Standby Lineup

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	When contacted as NLO, acknowledge the direction to fill SBT Train A Demister Loop Seal. Then (Time Compression) inform the team that step I.3.m has been completed.	<ul style="list-style-type: none"> • Contacts NLO to fill SBT System Train A Demister Loop Seal per step I.3.m. • Places 2/3A SBT SELECT switch to A STBY.
		AUX NSO places the 2/3 A SBT SELECT switch to A PRI
		AUX NSO verifies the 2/3 B SBT SELECT switch is in B STBY
		NSO independently verifies SBT in proper alignment.
	Event (1) is complete when DOS 7500-02 is complete..	
End of event (1)		

SIMULATOR EVENT (2) Reactor Power Increase

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.	- Call as BPO and request return to rated power.	Team reviews DGP 03-01, Routine Power Changes. - Determines ramp rate of 100 Mwe/hr to max load.
		Team notifies the load dispatcher of the power increase
		SRO directs the increase of reactor power per DGP 03-01
		NSO raises power by adjusting the Flow Controller Potentiometer on the Master Controller. <ul style="list-style-type: none"> • Communicate the reactivity change to the Unit supervisor. • Make announcement of power change.
		NSO monitors the following during the power change: <ul style="list-style-type: none"> • Steam Flow and Feed Flow • MWTh and MWE • APRM Response • Rx Pressure • Core Flow, Recirc Flow and Core dP • LPRM Response
	This event is complete when a power increase of $\geq 10\%$ has been completed, or at the discretion of the evaluators.	
End of event (2)		

SIMULATOR EVENT (3) Control Rod RPIS Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>After Event (2) is complete, at the discretion of the evaluators.</p> <p>PRESS F2</p> <p>S M RDFAILF05</p> <p>RPIS failure for control rod F05.</p>		<p>NSO reports annunciator DAN 902-5 A-3, ROD DRIFT, in alarm and refers to DAN:</p> <ul style="list-style-type: none"> • Views Full Core Display AND identifies CRD with Rod Drift light illuminated. • Selects Control Rod F 05. • Reports no position indication on Four Rod Display for Control Rod F 05.
		<p>NSO recognizes loss of control rod F05 position indication on Full Core Display, Four Rod Display, RWM, and/or process computer (OD-7).</p>
		<p>SRO references Tech Spec 3.3.1., Action 1, Control Rod Position Indication System</p>
		<p>Team may enter DOA 0300-12, Mispositioned Control Rod</p>
		<p>NSO performs immediate action of DOA 0300-06, RPIS Failure:</p> <ul style="list-style-type: none"> • Stops any power change or control rod motion in progress (immediate action).

SIMULATOR EVENT (3) Control Rod RPIS Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When directed to disarm CRD F05:</p> <p>PRESS F3</p> <p>S R RODF05DA</p> <p>Electrically disarms CRD F05.</p>	<p>When directed to disarm CRD F05, wait approximately 4 minutes, verify F3 is pressed, and report that CRD F05 is hydraulically isolated and electrically disarmed.</p> <p>When contacted as the QNE, report that you will come to the control room and look at the situation.</p> <p>Approximately 3 minutes after being called to the control room, report as the QNE that the core operating limits are OK.</p>	<p>NSO performs subsequent actions of DOA 0300-06, RPIS Failure:</p> <ul style="list-style-type: none"> • Insert control rod F05 one notch. • Determines no control rod position indication at alternate position. • Drives control rod F05 to fully inserted position. (verification of insertion by normal insertion time, LPRMs decreasing and Stall flow indication. • Electrically or hydraulically isolate the control rod F05 HCU. • Notify a QNE of the action taken and to obtain further guidance.
		<p>NSO records the failed RPIS indication per DOS 0300-06, Control Rod Drive Abnormality Record.</p>
	<p>Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.</p>	<p>SRO may contact any or all of the following to inform of situation or request assistance:</p> <ul style="list-style-type: none"> - System Engineer - Shift Operations Superintendent - Operations Manger
	<p>Event (3) is complete when:</p> <ul style="list-style-type: none"> - DOA 0300-06 actions have been taken. - Technical Specifications have been referenced. 	
<p>End of event (3)</p>		

SIMULATOR EVENT (4) Reactor Building Ventilation Fan Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When event (3) is complete, at the discretion of the evaluators,</p> <p>PRESS F4</p> <p>S M X04</p> <p>2A Reactor Building Ventilation fan trips on low flow.</p> <p>Ask one of the evaluators to assist in this event to inform you as soon as the Aux NSO attempts a manual start of the 2C Reactor Building Vent Fan.</p> <p><u>WHEN</u> AUX NSO moves 2C RX BLDG VENT FAN control switch to CLOSE, <u>IMMEDIATELY</u> remove override for RX BLD VENT FAN 2C CS TRIP to allow the fan to start.</p>	<p>When contacted as NLO, wait approximately 4 minutes, then report that the 2C Reactor Building Ventilation fan is running normally and the 2A Reactor Building Ventilation fan, motor, and breaker all appear normal.</p>	<p>AUX NSO reports annunciator 923-5 A-1, U2 RX BLDG VENT/EXH FAN TRIP in alarm and 2A Reactor Building Ventilation fan tripped. Per DAN 923-5 A-1:</p> <ul style="list-style-type: none"> • Verifies standby fan auto started. (Standby fan fails to auto start). • Starts 2C Reactor Building Ventilation fan by holding control switch in CLOSE for a minimum of 5 seconds. • Place 2A Reactor Building Ventilation fan in PTL.
	<p>Respond as an NLO. Wait approximately 3 minutes, then report that the 2A Reactor Building Ventilation Fan breaker is tripped with no flags.</p>	<p>Team enters DOA 6700-06, 480V Circuit Breaker Trip</p> <ul style="list-style-type: none"> - Dispatches NLO to investigate
	<p>Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.</p>	<p>Team may contact any or all of the following to inform of situation or request assistance:</p> <ul style="list-style-type: none"> - System Engineer - Shift Operations Superintendent - Operations Manager

SIMULATOR EVENT (4) Reactor Building Ventilation Fan Trip

**SIMULATOR OPERATOR
ACTIONS**

**SIMULATOR COMMUNICATOR
ACTIONS**

**EXPECTED TEAM
RESPONSE**

	This event is complete the 2C Reactor Building Ventilation fan has been started and the 2A Reactor Building Vent Fan has been placed in PTL.	
End of event (4)		

SIMULATOR EVENT (5) Inadvertent Isolation Condenser Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>After the Event (4) is complete, at the discretion of the evaluators,</p> <p>PRESS F5</p> <p>S M ICSPDFTP 0 ICSPDFTF</p> <p>Sets the Isolation Condenser (IC) initiation setpoint to 0 psig.</p>		<p>AUX NSO announces numerous alarms due to Isolation Condenser initiation such as:</p> <ul style="list-style-type: none"> - 902-4 A-15, ISOL CONDR CH A/B INITIATION - 902-3 B-4, ISOL CONDR VLVS OFF NORM - 902-3 C-4, ISOL CONDR TEMP HI
		<p>AUX NSO determines that the IC initiation is inadvertent by verifying reactor pressure less than the initiation setpoint.</p>
		<p>SRO directs the AUX NSO to secure the IC from operation.</p>
		<p>AUX NSO secures the IC from operation.</p> <ul style="list-style-type: none"> - Places the 1301-3 valve in PTL.

SIMULATOR EVENT (5) Inadvertent Isolation Condenser Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	<p>After the Isolation Condenser is secured, inform the Aux NSO that the XL3 is alarming with the following alarm: 81-07 IN ALM/TROUBLE, SMOKE DET. 2-4135-507, AEER ABOVE 902-40 SMOKE EPIP</p> <p>After about 3 minutes, call on the phone as the NLO sent to the AEER. Report that there is a small amount of smoke coming from the 902-41 panel, not the 902-40 panel. You have carefully opened the cabinet, and you can see some damaged components. THERE IS NO FIRE.</p> <p>Anytime after the report of damage from the AEER, inform the Aux NSO that the XL3 alarm is reset.</p>	<p>Team receives XL3 alarm and dispatches an NLO to the AEER to investigate.</p>
		<p>Team may enter DGA-07, Unpredicted Reactivity Addition, due to the cold IC condensate water entering the reactor.</p>
		<p>SRO references Tech Specs/DATRs and determines the following apply:</p> <ul style="list-style-type: none"> • TS 3.5.D, Isolation Condenser; Restore the IC system within 14 days or be in Mode 3 within the next 12 hours and ≤ 150 psig within the following 24 hours. • DATR 3/4.2.1, SSD affecting Unit 2; (1) Action b: submit a PIF, (2) Action e: restore the IC within 67 days
		<p>Reportability Manual requirement of SAF 1.12, ESF or RPS actuation which requires a 4 hour ENS call</p>

SIMULATOR EVENT (5) Inadvertent Isolation Condenser Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.	Team may contact any or all of the following to inform of situation or request assistance: <ul style="list-style-type: none"> - System engineer - Bulk Power Operations - Shift Operating Superintendent - Operations Manager
	This event is complete when: <ul style="list-style-type: none"> - The Isolation Condenser has been secured - Tech Specs/DATR requirements have been referenced 	
End of Event (5)		

SIMULATOR EVENT (6) FWLCS Setpoint Drift

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When event (5) is complete, at the discretion of the evaluators,</p> <p>NOTE-The value for FLLMLSP <u>MUST</u> include the decimal point noted</p> <p>Change the value of FLLMLSP to 28.0. Alternate the setpoint between 28.0 and 32.0 until the team takes manual control of feedwater level control. Widen the oscillations if necessary (ie. 26.0 to 34.0).</p> <p>The intent is NOT to force the team to manually scram.</p>		<p>NSO detects drifting of FWLCS setpoint</p>
		<p>Team enters DOA 0600-01, Transient Level Control</p>
		<p>SRO sets scram contingency for RPV level (i.e., per Operations Standard manually scram if level drops to <20" or increases to >45".</p>
		<p>NSO places FWLC in Manual control per DOA 0600-01 and controls RPV level between +25" and +35"</p>
	<p>Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.</p>	<p>SRO may contact any/all of the following to inform of situation or request assistance:</p> <ul style="list-style-type: none"> • Senior Operating Management • System Engineer • Shift Operating Superintendent • Operations Manager

SIMULATOR EVENT (6) FWLCS Setpoint Drift

**SIMULATOR OPERATOR
ACTIONS**

**SIMULATOR COMMUNICATOR
ACTIONS**

**EXPECTED TEAM
RESPONSE**

	Event (6) is complete when FWLC has been placed in Manual and level has stabilized.	
End of event (6)		

SIMULATOR EVENT (7) Feedwater System Vibration, Manual Reactor Scram, and Unisolable Feed Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>At any time during this event, the Operating Team may exercise the Conservative Decision Making philosophy and elect to perform a Manual Scram. When the team performs the manual scram, proceed to page 17 for further action in response to the scram.</p>		
	<p>Inform the team that they have just felt a strong seismic event occur which lasted about 10 seconds. Call the team on the radio as the Unit 2 NLO and report that you just felt an earthquake. Also call the Control Room as the Security Supervisor and report the same information.</p> <p>Also call the team as the following individuals regarding the event:</p> <ul style="list-style-type: none"> - SOS - Operations Manager <p>Respond to the direction as NLO(s) to inspect areas.</p> <p>Respond as an NLO. Wait approximately 2 minutes, then report that the Unit 3 Reactor Building Material Interlock Door is closed.</p> <p>Respond as an NLO. Wait approximately 2 minutes, then report that the Event Occurrence indicator is ejected.</p>	<p>SRO enter DOA 010-03, Earthquakes, and may consider an assembly.</p> <p>Acknowledges report from the NLO and calls from other personnel.</p> <ul style="list-style-type: none"> • SRO reviews EPIP 0200-1, Classification of GSEP Conditions. • Dispatches an NLO to verify that the Unit 3 Reactor Building Material Interlock Door is closed. • Dispatches an NLO to check the Event Occurrence Indicator. • NSOs perform instrument checks. • Directs NLOs to inspect all accessible areas.
	<p>Respond as an Instrument Maintenance Technician. Wait ~4 minutes (inform the team that this report is time compressed) and report that the seismic event was 2.6g's.</p>	<p>Team contacts IMD to access seismic data and report it to the Unit Supervisor.</p>

SIMULATOR EVENT (7) Feedwater System Vibration, Manual Reactor Scram, and Unisolable Feed Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	<p>In the following response DO NOT report the magnitude of the earthquake. Only confirm that there has been an earthquake.</p> <p>Respond as the NEC and report that there has been an earthquake centered in Newark, IL.</p>	<p>Team contacts the National Earthquake Center (NEC) to verify the earthquake.</p>
		<p>SRO determines GSEP classification: EAL HA4 based on the 2.6 g reading and confirmation by the NEC.</p>
<p>On the Sim Override that is open, select 2A RFP VIBRATION HI SER point and override it ON. Wait ~1 minute, then override 2B RFP VIBRATION HI, wait ~2 minutes, then override FEEDWATER REG STATION VIBRATION HI ON and</p> <p>PRESS F6</p> <p>TG 01</p> <p>Simulates oscillation in the Feed Water system.</p>	<p>When contacted as the NLO, wait ~2 minutes and report that the RFP high vibration alarms cannot be reset.</p> <p>As NLO report that Feed System Piping is vibrating violently in RFP area.</p> <p>As NLO report that Feed System Piping is vibrating violently in FWRV area.</p>	<p>NSO refers to DANs 902-6 F-12, G-12, and E-12:</p> <ul style="list-style-type: none"> • Direct NLO to reset the high vibration alarms. • Direct NLO to locally inspect RFPs and the associated piping for abnormal pump vibrations, and piping failure.

SIMULATOR EVENT (7) Feedwater System Vibration, Manual Reactor Scram, and Unisolable Feed Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>As soon as the reactor is scrammed</p> <p>PRESS F7</p> <p>TS 01 : TS 02 : SM HP 0.0</p> <p>Stops the feedwater system oscillations</p> <p>After Team has secured the Feed Pumps per DOA 3200-01:</p> <p>PRESS F8</p> <p>S M HP4 1.0 : RC HP4 15.0 04:00 G</p> <p>Starts a B Feed Line break ramping to 15% in 4 minutes.</p>		<p>SRO enters DOA 3200-01, Feedwater System High Vibration, due to vibration alarms on both RFPs.</p> <ul style="list-style-type: none"> • Manually scram the reactor per DGP 02-03, Reactor Scram. <ul style="list-style-type: none"> - Presses scram push-buttons - Places mode switch in shutdown - Checks rods inserted - Verifies RPV level restoring to +8" to +48" (per DEOP 100) - Checks turbine and generator tripped - Checks recirc pumps run back - Checks aux. power transferred - Inserts SRM/IRMs • Maintain feedwater flow for 60 seconds OR until reactor water level is restored to above +15 inches. • Trip all operating Reactor Feed Pumps, when one of the above conditions has been met.

SIMULATOR EVENT (7) Feedwater System Vibration, Manual Reactor Scram, and Unisolable Feed Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		<ul style="list-style-type: none"> • Monitor reactor water level for DEOP entry conditions. • Close MO 2-3206A and -3206B, FW REG ISOL VLVs. • Monitor reactor water level AND pressure. • Monitor systems for indication of leakage. • Consider evacuation of Reactor and Turbine Buildings. Make PA announcements as applicable. • May close Group 1 containment isolation valves.
		<p>Enters DEOP 100, Reactor Control due to low water level:</p> <ul style="list-style-type: none"> - Checks water level instrument accuracy - Verifies automatic actions have occurred - Maintains level +8" to +48" - Maintains pressure < 1060 psig
		<p>Enters DEOP 200-1, Primary Containment Control when drywell pressure exceeds +2 psig:</p> <ul style="list-style-type: none"> - Monitors drywell pressure and initiates torus sprays - Monitors drywell temperature - Monitors torus temperature - Monitors torus level - Monitors drywell and torus hydrogen and oxygen concentrations

SIMULATOR EVENT (7) Feedwater System Vibration, Manual Reactor Scram, and Unisolable Feed Line Break in Drywell

**SIMULATOR OPERATOR
ACTIONS**

**SIMULATOR COMMUNICATOR
ACTIONS**

**EXPECTED TEAM
RESPONSE**

	Event (7) is complete when: <ul style="list-style-type: none"> - The RFPs have been secured per DOA 3200-01. - DEOPs 100 and 200-1 have been entered. 	
End of event (7)		

SIMULATOR EVENT (8) HPCI Start Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.		AUX NSO recognizes HPCI auto start failure.
		SRO directs Aux NSO to attempt a manual initiation of HPCI.
		AUX NSO attempts manual initiation of HPCI and reports HPCI failed to start.
	Respond as an NLO, wait ~3 minutes, then report that there is nothing abnormal in the HPCI Room.	Team may dispatch an NLO to investigate HPCI.
		SRO directs ADS placed in INHIBIT when level cannot be maintained >-59 inches
		AUX NSO places ADS in INHIBIT
		<p><i>Critical Task PC-5.1</i></p> <p>When drywell pressure reaches +9 psig OR before drywell temperature reaches 281°F:</p> <ul style="list-style-type: none"> • SRO verifies drywell temperature is within the drywell spray initiation limit. • SRO verifies recirculation pumps are tripped. • SRO verifies drywell coolers are tripped. • SRO directs drywell sprays initiated. • AUX NSO initiates Drywell Sprays

SIMULATOR EVENT (8) HPCI Start Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		SRO enters DEOP 400-2, Emergency RPV Depressurization, when RPV level drops to < -143".
		AUX NSO opens all 5 ADS valves and verifies all five have opened.
		SRO directs RPV level recovered to +8" to +48".
		NSO & AUX NSO coordinate actions to restore RPV level to +8" to +48".
		Reportability Requirements to include but not limited to: <ul style="list-style-type: none"> - SAF 1.1, Declaration of an Emergency Class - SAF 1.12, ESF or RPS Actuation
		GSEP classification: EAL FS1 due to >+2 psig in Drywell and RPV level <-164".

SIMULATOR EVENT (8) HPCI Start Failure

**SIMULATOR OPERATOR
ACTIONS**

**SIMULATOR COMMUNICATOR
ACTIONS**

**EXPECTED TEAM
RESPONSE**

	<p>Event (8) and the scenario are complete when:</p> <ul style="list-style-type: none">- An Emergency Depressurization has been performed.- Level is being maintained or restored to +8 to +48 inches.- Drywell sprays have been initiated.	
End of event (8)		
END OF SCENARIO		

<u>Facility:</u> Dresden	<u>Scenario No:</u> D	<u>Op-Test No:</u> 1
<u>Examiners:</u> _____	<u>Operators:</u> _____	
_____	_____	
_____	_____	
<u>Initial Conditions:</u> IC-72; 49% reactor power; Unit 3 is in Mode 5.		
<u>Turnover:</u> The following equipment is out of service: CRD Pump 2A and RFP 2C. MSL B was isolated due to stroke adjustment for MSIV 2B and is ready to be unisolated. Two reactor feed pumps and three condensate/condensate booster pumps remain running. Running two RBCCW pumps due to high service water temperatures.		

Event No.	Malfunction Number	Event Type*	Event Description
1	N/A	N (AUX)	Unisolate MSL B.
2	N/A	R (NSO)	Increase reactor power to 59% by withdrawing control rods.
3	NIA1FLG NIA1POT	I (NSO)	APRM Channel 1 fails to 125%.
4	Q01	C (NSO)	RBCCW Pump 2A trip.
5	HPINIT	I (AUX)	Spurious HPCI initiation.
6	RRMGGAH1	C (NSO)	Recirc MG Set 2A high temperature requiring manual shutdown of Recirculation Pump 2A.
7	RLR I21 IP1	M (ALL)	Narrow range level sensing line break in drywell.
8	N/A	C (AUX)	Core Spray Pump 2A failure.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: Dresden

Scenario No: D

Op-Test No: 1

Summary:

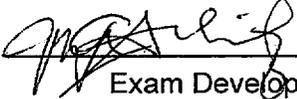
- Main Steam Line B is unisolated per DOP 0250-02.
- Reactor power is increased with control rod withdrawal in accordance with DGP 03-01.
- APRM channel 1 fails upscale during control rod withdrawal. After Tech Specs are referenced the failed APRM is bypassed and the half scram is reset.
- The 2A RBCCW Pump trips. The immediate operator action of DOA 3700-01 is taken to start the standby RBCCW Pump (2B). Proper operation of the 2B RBCCW Pump is verified per the DOA.
- HPCI inadvertently initiates due to a relay failure in the AEER.
- The 2A Reactor Recirc M-G Set Generator temperature then slowly rises. The crew enters DOA 0202-01 after the pump is tripped.
- Drywell pressure begins increasing due to an instrument line leak in the drywell. Narrow range level instruments begin diverging. The reactor is scrammed and additional level instruments begin diverging.
- RPV flooding is entered to control RPV pressure for adequate core cooling.
- During RPV flooding a report is received that 2A Core Spray pump is noisy and smoking. The pump is secured and injection flow of the other systems is adjusted to compensate.

SCENARIO ESG-D

REVISION: 0

DATE: 12/2000

Reviewed and approved by:

 12/15/00
Exam Developer

 12/15/00
Facility Representative

Scenario Summary

Initial Conditions:

Unit 2:

- Reactor is at ~49% power with Main Steam Line A isolated.
- 2A CRD pump is out of service.
- 2C RFP is out of service

Unit 3:

- Operating at rated power, on line for 422 days.
- No equipment out of service.

Events:

1. Unisolate a Main Steam Line
2. Reactor Power Increase
3. APRM Channel Fails Upscale
4. RBCCW Pump Trip
5. HPCI Inadvertent Initiation
6. Recirculation M-G Set High Temperature
7. Instrument Line Break in Drywell
8. Core Spray Pump Failures

Sequence

- Main Steam Line A is unisolated per DOP 0250-02.
- Reactor power is increased with control rod withdrawal in accordance with DGP 03-01.
- APRM channel 1 fails upscale during control rod withdrawal. After Tech Specs are referenced the failed APRM is bypassed and the half scram is reset.
- The 2A RBCCW Pump trips. The immediate operator action of DOA 3700-01 is taken to start the standby RBCCW Pump (2B). Proper operation of the 2B RBCCW Pump is verified per the DOA.
- HPCI inadvertently initiates due to a relay failure in the AEER.
- The 2A Reactor Recirc M-G Set Generator temperature then slowly rises. The crew enters DOA 0202-01 after the pump is tripped.
- Drywell pressure begins increasing due to an instrument line leak in the drywell. Narrow range level instruments begin diverging. The reactor is scrammed and additional level instruments begin diverging.
- RPV flooding is entered to control RPV pressure for adequate core cooling.
- During RPV flooding a report is received that 2A Core Spray pump is noisy and smoking. The pump is secured and injection flow of the other systems is adjusted to compensate.

Simulator Setup

1. Complete the Scenario Specific Checklist.
2. Function keys loaded are as follows:

Function Key	Description
K N F1 = S R U3PWR237	Aligns the U2/3 Chimney GE rad monitors to the Unit 3 24/48 VDC supply
K N F2 = S M NIA1POT 125.0 NIA1FLG	Fails APRM Channel 1 upscale to 125%
K N F3 = S M Q01	Trips the 2A RBCCW Pump
K N F4 = S M HPINIT : TC 01 0016 G R M HPINIT : S M HPTBTRIP	Causes a HPCI auto initiation, removes the initiation after a time delay and then inserts a HPCI turbine trip
K N F5 = S M RRMGGAHI	Starts raising temperatures in 2A Recirculation MG Set Generator
K N F6 = S M RLR I21 IP1 4 NVMNRBLF : RC NVMNRBLP 40 15:00 G	Sets a 4% leak in the MSL upstream of the restrictors at a reduced leak rate (to begin simulating an instrument line break) and inserts malfunctions to simulate a reference leg leak affecting the NR B and Fuel Zone B RPV level instruments
K N F7 = S M NVM100AF NVM100AP -120.0 NVML29AF : RC NVML29AP -30.0 05:00 G	Inserts a failure of MR A RPV level indication downscale; also ramps a negative deviation of Narrow Range A
K N F8 = S M IP1 0.8 NVML112F : RC NVML112P 400.0 00:15 G : R M RLR	Adjusts the size of the leak, ramps the Wide Range RPV level indications upscale, removes the reduced leak rate
K N F9 = S M NVM106AF NVM106AP - 280.0	Inserts a failure for the Fuel Zone A indicator.
K N F10 = S R FWKNIFE	Opens the RPV high level trip cutout knife switches
K N F11 = R M NVML112F	Returns Wide Range level indication to service
K N F12 = R M NVML29AF	Returns Narrow Range A level indication to service
K S F1 = RR S44	Removes the 2D Cond Demin bed from service
K S F2 = S M IP2 10.0	Adjusts the break size.
K S F3 = R M NVM106AF	Restores Fuel Zone A indication to normal

Function Key	Description
K S F4 = R M NVM100AF	Restores Medium Range A indication to normal

Procedures

PROCEDURE	TITLE	REVISION
DOP 0250-02	Isolating and Unisolating One Main Steam Line	08
DGP 03-01	Routine Power Changes	36
DGP 03-04	Control Rod Movements	36
DOP 0400-01	Reactor Manual Control System Operation	15
DAN 902(3)-5 A-6	APRM HI	11
DAN 902(3)-5 B-11	CHANNEL A/B NEUTRON MONITOR	03
DAN 902(3)-5 D-10	CHANNEL A RX SCRAM	08
DOA 0500-01	INADVERTENT ENTRY INTO THE UNSTABLE POWER/FLOW REGION	04
DOA 0700-03	Rod Out Blocks	06
DOA 6500-10	4 KV Circuit Breaker Trip	02
DAN 923-1 C-1	U2 OR U3 RBCCW PUMP TRIP	03
DAN 902(3)-3 G-12	HPCI CONT PWR FAILURE	09
DOP 2300-04	HPCI System Shutdown	09
DAN 902(3)-4 B-9	2A/B RECIRC M-G MTR/GEN TEMP HI	09
DAN 902(3)-4 E-4	2A RECIRC M-G TEMP HI	10
DOP 0202-04	UNIT 2 (3) REACTOR RECIRCULATION SYSTEM SHUTDOWN	12
DOA 0202-01	RECIRCULATION (RECIRC) PUMP TRIP – ONE OR BOTH PUMPS	17
DGA 02-03	Reactor Scram	51
DOA 0040-01	Slow Leak	18
DEOP 100	RPV Control	09
DEOP 200-01	Primary Containment Control	09
DEOP 400-01	RPV Flooding	06
DEOP 0500-02	Bypassing Interlocks and Isolations	10

PROCEDURE	TITLE	REVISION
EPIP 200-01	Classification of GSEP Conditions	05
EPIP 200-T1	GSEP Emergency Action Levels	13
	ComEd Reportability Manual	N/A
	Dresden Technical Specifications	N/A

Critical Tasks

PC-4.1: With the reactor at power and drywell temperature increasing, MANUALLY SCRAM the reactor before drywell design temperature is reached.

RPV-2.1: When RPV water level cannot be determined, INITIATE emergency depressurization.

RPV-2.2: When reactor water level cannot be determined, INJECT into the RPV to maintain RPV pressure 54 psig above drywell pressure.

SIMULATOR EVENT (0) Shift Turnover

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
Verify the Scenario Specific Checklist for Scenario ESG-D has been completed.	Assign each person a position. Give a Shift Turnover sheet to each examinee.	
	Perform a turnover, reviewing the SHIFT TURNOVER information sheet for this scenario. Ensure the team members understand the plant conditions.	
	Direct the Unit 2 Unit Supervisor to inform the lead evaluator when the team has the shift.	Each examinee walks their respective panels and verifies that the parameters are within acceptable values.
		The Unit 2 Unit Supervisor may also perform an additional team briefing with all members of the team.
		When the team is ready to assume the shift, they report such to the Shift Manager.
		The Unit 2 Unit Supervisor informs the lead evaluator that the team has the shift.
END OF EVENT (0)		

SIMULATOR EVENT (1) Unisolating a Main Steam Line

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
There are no Simulator Operator Actions for this event.		
		SRO directs AUX NSO to perform DOP 0250-02, Isolating and Unisolating One Main Steam Line
		AUX NSO performs DOP 250-02, Isolating and Unisolating One Main Steam Line.
	When the team has addressed the 5 minute wait time after opening the MSL Drain Valves, one of the evaluators will inform the team that the 5 minutes has elapsed.	AUX NSO opens MSL Drains MO 2-220-01, 02 and 03 and waits 5 minutes.
	When the team has addressed the 5 minute wait time after opening MO2-220-90B one of the evaluators will inform the team that the 5 minutes has elapsed.	AUX NSO opens MO 2 -220-90B and waits 5 minutes.
	When the team has addressed the 5 minute wait time after opening the Outboard MSIV one of the evaluators will inform the team that the 5 minutes has elapsed.	AUX NSO opens Outboard MSIV AO 2-203-2B and waits 5 minutes.
		Aux NSO opens Inboard MSIV AO 2-203-1B.
		Aux NSO closes MO 2-220-90B
		AUX NSO closes MSL Drains MO 2-220-01, 02 and 03
End of event (1)		

SIMULATOR EVENT (2) Reactor Power Increase

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
No Simulator Operator actions are required for this event.	If the team requests QNE assistance, inform them that you will report to the Control Room. When you report to the team, inform them that control rods will be withdrawn to approximately step 104, then recirc flow will be used for power ascension.	Team reviews DGP 03-01, Routine Power Changes. <ul style="list-style-type: none"> - Determines ramp rate of 100 Mwe/hr to ~781 Mwe and 5 Mwe/hr to Max load - Requests QNE assistance with control rod withdrawal for load recovery.
		SRO directs the increase of reactor power per DGP 03-01
		NSO begins reactor power increase with control rod withdrawal
	This event is complete when a power increase of $\geq 10\%$ has been completed, or at the discretion of the evaluators.	
End of event (2)		

SIMULATOR EVENT (3) APRM Channel Fails Upscale

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>After Event (2) is complete, at the discretion of the evaluators.</p> <p>PRESS F2</p> <p>S M NIA1POT 125.0 NIA1FLG</p> <p>Fails APRM Channel 1 upscale to 125%.</p>		<p>NSO reports half scram in RPS Channel A</p>
		<p>NSO reports annunciators, including 902-5 C-12 CHANNEL 1-3 APRM HI-HI/INOP, in alarm.</p>
		<p>NSO reports APRM Channel 1 indicating full scale.</p>
		<p>NSO refers to DAN 902-5 C-12:</p> <ul style="list-style-type: none"> • Compares APRM readings with other APRMs to confirm APRM Channel 1 has failed.
		<p>SRO determines that requirements of Tech Spec Tables 3.1.A-1 and 3.2.E-1 are satisfied and directs bypassing of APRM Channel 1 and reset of half-scram.</p>
		<p>NSO bypasses APRM Channel 1.</p>
		<p>NSO resets RPS Channel A half-scram:</p> <ul style="list-style-type: none"> • Turn the SCRAM RESET switch in EACH direction AND verify ALL (eight) SCRAM SOLENOID GROUP lights are lit.

SIMULATOR EVENT (3) APRM Channel Fails Upscale

**SIMULATOR OPERATOR
ACTIONS**

**SIMULATOR COMMUNICATOR
ACTIONS**

**EXPECTED TEAM
RESPONSE**

	Respond as IMD that you are sending a technician to the control room to investigate.	Team contacts IMD for assistance.
	Event (3) is complete when APRM Channel 1 has been bypassed and the half-scam has been reset.	
End of event (3)		

SIMULATOR EVENT (4) RBCCW Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When event (3) is complete, at the discretion of the evaluators,</p> <p>PRESS F3</p> <p>S M Q01</p> <p>Trips the 2A RBCCW Pump.</p>		<p>AUX NSO reports annunciator 923-1 C-1, U2 or U3 RBCCW Pump Trip, in alarm and 2A RBCCW Pump tripped</p>
		<p>AUX NSO reports annunciator 923-1 D-1, U2 or U3 RBCCW Pressure LO, in alarm</p>
		<p>NSO reports annunciators 902-4 G-3 & G-7, 2A & 2B Recirc Pp Seal Cooling Water Flow Lo</p>
		<p>AUX NSO Unit 2 RBCCW pressure dropping and starts the 2B RBCCW Pump in accordance with one of the following”:</p> <ul style="list-style-type: none"> • DAN 923-1 C-1 • DAN 923-1 D-1 • Immediate Operator Action of DOA 3700-01, Loss of Cooling by Reactor Building Closed Cooling Water (RBCCW) System.

SIMULATOR EVENT (4) RBCCW Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	<p>As the NLO, wait approximately 4 minutes, then report the 2B RBCCW Pump is operating normally</p> <p>If requested, inform the team that the 2A RBCCW Pump tripped overcurrent.</p>	<p>Team may reference DOA 3700-01:</p> <ul style="list-style-type: none"> - Monitors RBCCW System parameters - Dispatches an NLO to verify proper operation of the 2B RBCCW Pump per DOP 3700-02, RBCCW System Operation
	<p>Respond as Electrical Maintenance that troubleshooting will be initiated as soon as possible.</p>	<p>Team enters DOA 6500-10, 4 kV Circuit Breaker Trip:</p> <ul style="list-style-type: none"> - Places the 2A RBCCW Pump control switch in PTL on report of overcurrent trip. - Contacts Electrical Maintenance to troubleshoot.
	<p>This event is complete when the 2B RBCCW Pump has been started and RBCCW pressure has been retored.</p>	
<p>End of event (4)</p>		

SIMULATOR EVENT (5) HPCI Inadvertent Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>After the Event (4) is complete, at the discretion of the evaluators,</p> <p>On the ESG-D Sim Override File, override the HPCI Control Power Failure SER point ON.</p> <p>As soon as the HPCI Control Power Failure annunciator alarms:</p> <p>PRESS F4</p> <p>S M HPINIT : TC 1 0016 G R M HPINIT : S M HPTBTRIP</p> <p>The override file causes the HPCI Control Failure annunciator to alarm. The function key causes an inadvertent initiation of HPCI, removes the initiation signal after a time delay, and then inserts a HPCI turbine trip.</p>	<p>Approximately 30 seconds after the HPCI initiation inform the team that the XL-3 is alarming and hand a team member the XL-3 alarm sheet provided with this scenario.</p>	<p>AUX NSO reports annunciator 902-3 G-12, HPCI CONT PWR FAILURE, in alarm:</p> <p>AUX NSO recognizes initiation of HPCI:</p> <ul style="list-style-type: none"> - Determines that initiation is spurious. - Stops HPCI from injecting by either of the following: <ul style="list-style-type: none"> - Isolates the HPCI system by placing the 4 and 14 valves in PTL <p align="center">OR</p> <ul style="list-style-type: none"> - Reduces the HPCI Flow Controller to minimum
	<p>If dispatched to check the 125 VDC feeds to the HPCI Logic at the 125 VDC Distribution Panels, wait a few minutes, then report that both of the 125 VDC supply breakers are closed.</p>	<p>AUX NSO references DAN 902-3 G-12:</p> <ul style="list-style-type: none"> - May dispatch an NLO to check the 125 VDC feeds to HPCI Logic at Bus 2A-1 and 2B-1
		<p>Team enters DGA-07, Unpredicted Reactivity Addition, if HPCI injects into the RPV, causing reactor power to increase</p>
		<p>Team may reference DOP 2300-04, HPCI System Shutdown, for further actions to secure HPCI.</p>

SIMULATOR EVENT (5) HPCI Inadvertent Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	After about 3 minutes, call on the phone as the NLO sent to the AEER. Report that there is a small amount of smoke coming from the 902-39 cabinet. You have carefully opened the cabinet, and you can see some damaged components. THERE IS NO FIRE.	Team may dispatch an NLO to the AEER to investigate the problem.
	If contacted as IMD, inform the team that you will send someone to the AEER ASAP.	Team may contact IMD personnel to determine the extent of the damage to the 902-39 cabinet.
	If dispatched to the HPCI Room, wait approximately 3 minutes, then report that there appears to be nothing wrong in the HPCI room.	Team may dispatch an operator to the HPCI Room to investigate the problem.
	<p>After 5 minutes, as the IM Foreman, inform the team that initial investigation of the problem has revealed extensive damage to many of the HPCI initiation logic relays. You cannot tell him at time which ones are damaged. You estimate at least 2 days to repair the damage.</p> <p>If asked for input regarding HPCI availability, inform the team that you are not sure if HPCI can be manually initiated, but that it definitely will not initiate automatically.</p>	SRO declares HPCI inoperable and determines that HPCI must be restored to operable status within 14 days per Tech Spec 3.5.A, Action 3.
	Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.	<p>May contact any or all of the following to inform of situation or request assistance:</p> <ul style="list-style-type: none"> - System Engineer - Shift Operating Superintendent - Operations Manager

SIMULATOR EVENT (5) HPCI Inadvertent Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Reportability requirements: SAF 1.4, ESF or RPS Actuation due to the initiation of HPCI. May also be SAF 1.17 for HPCI unavailability.
	This event is complete when: - Action has been taken in response to the HPCI inadvertent initiation. - Tech Specs have been referenced.	
End of Event (5)		

SIMULATOR EVENT (6) Recirculation M-G Set High Temperature

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>When event (5) is complete, at the discretion of the evaluators,</p> <p>PRESS F5</p> <p>S M RRMGGAHI</p> <p>Starts raising temperatures in 2A recirculation MG set generator.</p>	<p>If dispatched as an in-plant operator (or if an operator is not dispatched, call the Team as the NLO performing rounds) to the "A" M-G Set, wait approximately 2 minutes and report a strong acrid odor and a small amount of smoke from the "A" recirculation M-G set generator. THERE IS NO FIRE. All other conditions are normal.</p>	<p>NSO reports annunciators 902-4 B-9, 2A/B RECIRC M-G MTR/GEN TEMP HI, and 902-4 E-4, 2A RECIRC M-G TEMP HI:</p> <ul style="list-style-type: none"> - Verifies alarm by checking "A" M-G temps on recorder TR 2-262-19A. - Verifies a recirculation MG set vent fan is running. - Checks "A" M-G set current. - Verifies Service Water System operating. - May dispatch an operator to the "A" M-G set.
	<p>If the team does not begin actions to secure the 2A MG Set within 2 minutes if the local report, call and report that the local conditions are worsening. (i.e., more smoke, smell, grinding sounds from the generator)</p>	<p>SRO directs the NSO to shutdown the 2A Recirc MG Set in accordance with DOP 0202-04, Unit 2(3) Recirculation System Shutdown</p>
		<p>NSO immediately secures the 2A recirculation pump per DOP 0202-04, Unit 2(3) Recirculation System Shutdown:</p> <ul style="list-style-type: none"> - Takes 2A MG Set Drive Motor to STOP

SIMULATOR EVENT (6) Recirculation M-G Set High Temperature

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		<p>Team enters DOA 0202-01, Recirculation Pump trip – one or both pumps:</p> <ul style="list-style-type: none"> • Determines FCL <100% and >65% • Determines speed of 2B Recirc Pp (~40%) • Inserts CRAM Arrays to reduce Reactor power to 35 – 39% • Closes the 2-202-5A Valve • Opens the 2-202-5A Valve after 5 minutes • Monitors MSL & Offgas Rad monitors for increased activity. • Notifies a QNE to monitor core parameters. • Notify Chemistry to take samples per Tech Specs & ODCM
<p>When directed by the Simulator Communicator PRESS SHIFT F1 R R S44 Removes the 2D Service Unit from operation</p>	<p>Respond as an NLO. wait ~4 minutes, direct the Simulator Operator to press SHIFT F1. Report that you have removed the 2D Service Unit from operation.</p>	<p>Team may direct an NLO to cut out a Demin Service Unit.</p>
		<p>Team enters DOA 0500-01, Inadvertent entry into the Unstable Power/Flow Region</p> <ul style="list-style-type: none"> • Monitor for reactor core instabilities while exiting the unstable region.
		<p>Team enters DGP 03-03, Single Recirculation Loop Operation.</p>

SIMULATOR EVENT (6) Recirculation M-G Set High Temperature

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.	<p>SRO may contact any/all of the following to inform of situation or request assistance:</p> <ul style="list-style-type: none"> • QNE • Bulk Power Operations • Senior Operating Management • System Engineering • NRC Resident
		<p>SRO determines Tech Spec requirements for single loop operations: 3.6.A, Recirculation Loops, Action 1: within 24 hrs either restore both loops to operation or take actions specified in 1.a thru 1.e.</p>
	<p>Event (6) is complete when:</p> <ul style="list-style-type: none"> • The 2A Recirc Pp has been stopped • CRAM arrays have been inserted to reduce Reactor power • Tech Specs have been referenced 	
End of event (6)		

SIMULATOR EVENT (7) Instrument Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		<p><i>Critical Task PC-4.1</i></p> <p>Team performs a reactor scram per DGP 02-03, Reactor Scram, before reaching 281°F in the Drywell:</p> <ul style="list-style-type: none"> • Presses scram push-buttons • Places Mode Switch in SHUTDOWN • Checks Control Rods inserted • Verifies RPV level restoring to +8" to +48" (per DEOP 100, RPV Control). • Checks Turbine and Generator tripped • Checks Recirc Pumps run back • Checks aux. power transferred • Inserts SRMs/IRMs

SIMULATOR EVENT (7) Instrument Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>After the team scrams the reactor, wait until the Wide Range RPV level indicator reaches its lowest level (~-49") and then begins to rise, then</p> <p>PRESS F7</p> <p>S M NVM100AF NVM100AP -120.0 NVML29AF : RC NVML29AP -60.0 05:00 G</p> <p>Wait ~2 seconds after pressing F8 and then,</p> <p>PRESS F8</p> <p>S M IP1 0.8 NVML112F : RC NVML112P 400.0 00:15 G : R M RLR</p> <p>PRESS F9</p> <p>S M NVM106AF NVM106AP -280</p> <p>These keys cause deviations of RPV level indications and adjust the size of the leak in the drywell.</p>	<p>If directed to report local reactor water levels at the Reactor Building instrument racks, report the following:</p> <hr/> <p>Fuel Zones (2202-7, -8 racks, respectively on 1st floor of RB)</p> <ul style="list-style-type: none"> • FZ A: Report as shown on the SimVue screen • FZ B: Report as shown on the SimVue screen <hr/> <p>Medium Ranges on (2202-5, -6 racks, respectively on 2nd floor of RB)</p> <ul style="list-style-type: none"> • MR A: Report as shown on the SimVue screen • MR B: Report as shown on the SimVue screen 	<p>SRO enters DEOP 100, Reactor Control due to low water level:</p> <ul style="list-style-type: none"> • Checks water level instrument accuracy and reports further divergence of RPV level indicators (Wide Range indication full scale and Medium Range A downscale) • Verifies automatic actions have occurred • Attempts to maintain level +8" to +48" • Attempts to maintain pressure < 1060 psig

SIMULATOR EVENT (7) Instrument Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Team recognizes RPV level cannot be determined and enters DEOP 400-1, RPV Flooding: <ul style="list-style-type: none"> - Opens all ADS valves - Closes MSIV's, Main Steam Line Drains, and IC Steam Isolation Valves - Injects with Cond/Feed, LPCI, Core Spray, HPCI and/or CRD until RPV pressure is at least 54 psig above drywell pressure and is steady or increasing.
	Event (7) is complete when: <ul style="list-style-type: none"> - DEOP 400-1, RPV Flooding, has been entered. 	
End of event (7)		

SIMULATOR EVENT (8) Core Spray Pump Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	<p>As NLO report from plant that the 2B Core Spray pump motor is sparking and smoking but there is NO FIRE.</p> <p>Continue reports with increasing severity until team secures 2B Core Spray pump.</p>	<p>SRO directs AUX NSO to secure 2B Core Spray pump.</p> <p>AUX NSO secures 2B Core Spray pump.</p> <p>SRO directs injection flow to be adjusted to maintain RPV pressure at least 54 psig above drywell pressure.</p> <p>AUX NSO adjusts injection flow.</p>
		<p>SRO enters DEOP 200-1, Primary Containment Control when drywell pressure exceeds +2 psig:</p> <ul style="list-style-type: none"> - Monitors drywell pressure and initiates torus sprays - Monitors drywell temperature - Monitors torus temperature - Monitors torus level - Monitors drywell and torus hydrogen and oxygen concentrations
<p>When informed of opening the RPV high level trip cutout knife switches:</p> <p>PRESS F10</p> <p>S R FWKNIFE</p> <p>Opens the RFP high RPV level trip switches</p>	<p>If the operator informs you that they are opening the RPV high level trip cutout knife switches, verify F10 is depressed and inform the operator that the RPV high level trip cutout knife switches are open.</p>	<p>Team may refer to DEOP 0500-02, Bypassing Interlocks and Isolations to start reactor feed pumps:</p> <ul style="list-style-type: none"> - Opens the RPV high level trip cutout knife switches behind panel 902-6 - Starts RFPs as necessary

SIMULATOR EVENT (8) Core Spray Pump Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
<p>Coordinate the actions to restore the level instruments with the Simulator Communicator. Use the following function keys to restore instruments to service (time compression is allowed).</p> <p>K N F11 R M NVML112F (Wide Range)</p> <p>K N F12 R M NVML29AF (Narrow Range A)</p> <p>K S F3 R M NVM106AF (Fuel Zone A)</p> <p>K S F4 R M NVM100AF (Medium Range A)</p>	<p>When requested by the Instrument Dept. to determine what RPV level instruments are available or to restore them, coordinate with the Simulator Operator to restore level instruments (time compression is allowed), then contact the team to report the availability of the requested instrument(s).</p>	<p>Team requests IMD to restore RPV level instruments.</p>
<p>If IMD is requested to determine the availability of any of the following:</p> <ul style="list-style-type: none"> • Narrow Range B • Medium Range A • Fuel Zone B <p>Report that these instruments are not responding as expected and should not be considered available.</p>		<p>Team continues RPV flooding until:</p> <ul style="list-style-type: none"> - RPV level can be determined <p align="center">OR</p> <ul style="list-style-type: none"> - RPV level instruments are available and, - Drywell temp. points 9 & 10 are less than 212°F and, - RPV pressure has remained \geq 54 psig above drywell pressure for 100 min.

SIMULATOR EVENT (8) Core Spray Pump Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	<p>After team has established RPV flooding conditions (RPV pressure >54 psig above drywell pressure) and has control of RPV pressure AND Wide Range level indication (at a minimum) has been determined to be available, the Lead Examiner can inform the team to assume that 100 minutes have elapsed since reactor pressure has been turned and exceeded 54 psig.</p>	<p>If wide range RPV level indication is full scale (+330"):</p> <ul style="list-style-type: none"> - SRO determines if temperatures near instrument runs are below 212°F. - SRO determines Core Uncovery Time Limit of ~4.5 minutes. - Team stops injection and lowers RPV water level.
	<p>After the time compression has been communicated to the team, if they question the time since shutdown, the Lead Evaluator will inform the team that the reactor has been shutdown for 120 minutes.</p>	<p>If wide range RPV level indication is on scale (<+330"), DEOP 400-1 can be exited:</p> <ul style="list-style-type: none"> - SRO enters DEOP 100 for RPV level control. - SRO enters DEOP 400-2 for RPV pressure control.
		<p>When drywell pressure reaches +9 psig OR if drywell temperature approaches 281°F:</p> <ul style="list-style-type: none"> - Verifies drywell temperature is within the drywell spray initiation limit - Verifies recirculation pumps are tripped - Verifies drywell coolers are tripped - Initiates drywell sprays

SIMULATOR EVENT (8) Core Spray Pump Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Stops drywell spray before drywell pressure drops to 0 psig (if drywell sprays are initiated) and stops torus spray before torus pressure drops to 0 psig.
	Respond as the appropriate person.	May contact any or all of the following to inform of situation or request assistance: <ul style="list-style-type: none"> - System Engineer - Shift Operating Superintendent - Operations Manager
		Reportability Requirements to include but not limited to: <ul style="list-style-type: none"> - SAF 1.1, Declaration of an Emergency Class - SAF 1.12, ESF or RPS Actuation - SAF 1.17, Prevented Safety Function (due to level instruments being INOP)
		GSEP classification of ALERT (FA1, due to drywell pressure >2 psig due to reactor coolant system leakage) and PAR of None (9A)
	Event (8) and scenario are complete when: Injection has been terminated and RPV level indication has been restored on the Wide Range RPV level indicators.	
End of event (8)		
END OF SCENARIO		