FINAL AS-ADMINISTERED SCENARIOS

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

SIMULATOR EVENT (3) Control Rod RPIS Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
ent (2) is complete, at the discretion of the rs. **F2** **AILF5** re for control rod F05.		**NSO** reports annunciator DAN ROD DRIFT, in alarm and refe • Views Full Core Display AN CRD with Rod Drift light illu • Selects Control Rod F 05. • Reports no position indicatio Rod Display for Control Rod
		NSO recognizes loss of control r position indication on Full Core D Four Rod Display, RWM, and/or computer (OD-7).
		SRO references Tech Spec 3.3.I 1, Control Rod Position Indication
		Team may enter DOA 0300-12, Mispositioned Control Rod
		NSO performs immediate action o 0300-06, RPIS Failure: • Stops any power change or cont motion in progress (immediate

SIMULATOR EVENT (3) Control Rod RPIS Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
rected to disarm CRD F05: **F3** **DF05DA** ly disarms CRD F05.	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. When contacted as the QNE, report that you will come to the control room and look at the situation. Approximately 3 minutes after being called to the control room, report as the QNE that the core operating limits are OK.	**NSO** performs subsequent ac 0300-06, RPIS Failure: • Insert control rod F05 one no • Determines no control rod po indication at alternate positio • Drives control rod F05 to fully position. (verification of inser normal insertion time, LPRMs decreasing and Stall flow indi NOTE: Driving control rod F0 inserted should take about 60 • Electrically or hydraulically isc control rod F05 HCU. • Notify a QNE of the action tak obtain further guidance.
		NSO records the failed RPIS ind DOS 0300-06, Control Rod Drive Abnormality Record.
	Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.	**SRO** may contact any or all of th following to inform of situation or assistance: - System Engineer - Shift Operations Superintenden - Operations Manger

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SIMULATOR EVENT (3) Control Rod RPIS Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	Event (3) is complete when: - DOA 0300-06 actions have been taken. - Technical Specifications have been referenced.	
End of event (3)		

SIMULATOR EVENT (4) Reactor Building Ventilation Fan Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEA RESPONSE
vent (3) is complete, at the discretion of uators, F4 or Building Ventilation fan trips on low f the evaluators to assist in this event to u as soon as the Aux NSO attempts a art of the 2C Reactor Building Vent Fan. JX NSO moves 2C RX BLDG VENT ol switch to CLOSE, IMMEDIATELY erride for RX BLD VENT FAN 2C CS ow the fan to start.	When contacted as NLO, wait approximately 4 minutes, then report that the 2C Reactor Building Ventilation fan is running normally. If asked, report that the 2A Reactor Building Ventilation fan, motor, and breaker all appear normal.	**AUX NSO** reports annunciato U2 RX BLDG VENT/EXH FAN alarm and 2A Reactor Building fan tripped. Per DAN 923-5 A • Verifies standby fan auto s (Standby fan fails to auto s • Starts 2C Reactor Building fan by holding control switc for a minimum of 5 seconds • Place 2A Reactor Building V fan in PTL.
	Respond as an NLO. Wait approximately 3 minutes, then report that the 2A Reactor Building Ventilation Fan breaker is tripped with no flags.	Team enters DOA 6700-06, 480V Breaker Trip - Dispatches NLO to investigate
	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 th following to inform of situation or r assistance: - System Engineer - Shift Operations Superintender - 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 TEA RESPONSE
e Event (4) is complete, at the discretion of uators, **F5** **PDFTP 0 ICSPDFTF** Isolation Condenser (IC) initiation o 0 psig.		**AUX NSO** announces numero due to Isolation Condneser ini as: - 902-4 A-15, ISOL CONDR C INITIATION - 902-3 B-4, ISOL CONDR VL NORM - 902-3 C-4, ISOL CONDR TE
		AUX NSO determines that the I is inadvertent by verifying react less than the initiation setpoint.
		SRO directs the AUX NSO to se IC from operation.
		AUX NSO secures the IC from o - Places the 1301-3 valve in PT

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SIMULATOR EVENT (5) Inadvertent Isolation Condenser Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEA RESPONSE
	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 After about 2 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. Anytime after the report of damage from the AEER, inform the Aux NSO that the XL3 alarm is reset.	Team receives XL3 alarm an an NLO to the AEER to inves
		Team may enter DGA-07, Unp Reactivity Addition, due to the c condensate water entering the r
		SRO references Tech Specs/DA determines the following apply: • TS 3.5.D, Icolation Condense the IC system within 14 days Mode 3 within the next 12 ho </=150 psig within the followi hours. • DATR 3/4.2.1, SSD affecting Action b: submit a PIF, (2) Act restore the IC within 67 days
		Reportability Manual requirement 1.12, ESF or RPS actuation which a 4 hour ENS call

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SIMULATOR EVENT (5) Inadvertent Isolation Condenser Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEA 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 following to inform of situation c assistance: - System engineer - Bulk Power Operations - Shift Operating Superintender - Operations Manager
	This event is complete when: - 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
ent (5) is complete, at the discretion of ators, e value for FLLMLSP MUST include the oint noted he value of FLLMLSP to 28.0. Alternate int between 28.0 and 32.0 until the team nual control of feedwater level control. e oscillations if necessary (ie. 26.0 to t is NOT to force the team to manually		**NSO** detects drifting of FWLCS
		Team enters DOA 0600-01, Tr Level Control
		SRO sets scram contingency f level (i.e., per Operations Stan manually scram if level drops t increases to >45".
		NSO places FWLC in Manual c DOA 0600-01 and controls RP between +25" and +35"
	Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.	**SRO** may contact any/all of the to inform of situation or reques assistance: • Senior Operating Manager • System Engineer • Shift Operating Superinten • 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 Dryw

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
e during this event, the Operating Team ise the Conservative Decision Making and elect to perform a Manual Scram. team performs the manual scram, page 17 for further action in response m.		
n Override that is open, select 2A RFP N HI SER point and override it ON. nute, then override 2B RFP N HI, wait ~1 minute, then override ER REG STATION VIBRATION HI ON oscillation in the Feed Water system.	When contacted as the NLO, wait ~2 minutes and report that the RFP high vibration alarms cannot be reset. As NLO report that Feed System Piping is vibrating violently in RFP area. As NLO report that Feed System Piping is vibrating violently in FWRV area.	**NSO** refers to DANs 902-6 F-12 and E-12: • Direct NLO to reset the high alarms. • Direct NLO to locally inspect the associated piping for abn pump vibrations, and piping f

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
m has secured the Feed Pumps per 0-01: **7** **S 02 : SM HP 0.0** feedwater system oscillations **.0 : RC HP4 15.0 04:00 G** Feed Line break ramping to 15% in 4		**SRO** enters DOA 3200-01, Fee System High Vibration, due to v alarms on both RFPs. • Manually scram the reactor DGP 02-03, Reactor Scram. - Presses scram push-button - Places mode switch in shut - Checks rods inserted - Verifies RPV level restoring +48" (per DEOP 100) - Checks turbine and generat - Checks recirc pumps run ba - Checks aux. power transferr - Inserts SRM/IRMs • Maintain feedwater flow for 6 seconds OR until reactor wat restored to above +15 inches. • Trip all operating Reactor Fee Pumps, when one of the abov conditions has been met.

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

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		• Monitor reactor water level entry conditions. • Close MO 2-3206A and –32 REG ISOL VLVs. • Monitor reactor water level A pressure. • Monitor systems for indicatic leakage. • Consider evacuation of Reac Turbine Buildings. Make PA announcements as applicabl • May close Group 1 containm isolation valves.
		Enters DEOP 100, Reactor Cont low water level: - Checks water level instrument a - Verifies automatic actions have - Maintains level +8" to +48" - Maintains pressure < 1060 psig
		Enters DEOP 200-1, Primary Cor Control when drywell pressure ex +2 psig: - Monitors drywell pressure and ir torus sprays - Monitors drywell temperature - Monitors torus temperature - Monitors torus level - Monitors drywell and torus hydro oxygen concentrations

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

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	Event (7) is complete when: - 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
tor Operator actions are required for		**AUX NSO** recognizes HPCI aut failure.
		SRO directs Aux NSO to attemp initiation of HPCI.
		AUX NSO attempts manual initi HPCI and reports HPCI failed to
	Respond as an NLO, wait ~3 minutes, then report that there is nothing abnormal in the HPCI Room.	Team may dispatch an NLO to i HPCI.
		SRO directs ADS placed in INHI level cannot be maintained >-59
		AUX NSO places ADS in INHIBI
		Critical Task PC-5.1 When drywell pressure reaches + OR before drywell temperature re 281°F: • **SRO** verifies drywell temperat within the drywell spray initiati • **SRO** verifies recirculation pum tripped. • **SRO** verifies drywell coolers a tripped. • **SRO** directs drywell sprays init • **AUX NSO** initiates Drywell Spr

SIMULATOR EVENT (8) HPCI Start Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		SRO enters DEOP 400-2, Em RPV Depressurization, if RPV to < -143". **AUX NSO** opens all 5 ADS val verifies all five have opened.
		SRO directs RPV level recover +48".
		NSO & AUX NSO coordinate a restore RPV level to +8" to +48
		Reportability Requirements to ir not limited to: - SAF 1.1, Declaration of an E Class - SAF 1.12, ESF or RPS Actu
		GSEP classification: EAL FS1 due to >+2 psig in Dryv RPV level <-164".

SIMULATOR EVENT (8) HPCI Start Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	Event (8) and the scenario are complete when: - 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		

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SCENARIO ESG-D

REVISION: 1

DATE: 01/30/01

Reviewed and approved by:

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Exam Developer

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Facility Representative

- 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 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.

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	Causes a HPCI auto initiation.
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 – 60.0 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 IP1 10.0	Adjusts the break size.
K S F3 = R M NVM106AF	Restores Fuel Zone A indication to normal
K S F4 = R M NVM100AF	Restores Medium Range A indication to normal

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
[illegible]	Classification of GSEP Conditions	05

	Dresden Technical Specifications	

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
e Scenario Specific Checklist for Scenario as 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 re panels and verifies that the pa are within acceptable values.
		The Unit 2 Unit Supervisor m perform an additional team b members of the team.
		When the team is ready to a shift, they report such to the Manager.
		The Unit 2 Unit Supervisor i lead evaluator that the team
	END OF EVENT (0)	

SIMULATOR EVENT (1) Unisolating a Main Steam Line

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
e no Simulator Operator Actions for this		
		SRO directs **AUX NSO** to perfo 0250-02, Isolating and Unisolati Main Steam Line
		AUX NSO performs DOP 250- and Unisolating One Main Stea
	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 01, 02 and 03 and waits 5 mir
	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 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 203-2B and waits 5 minutes
		Aux NSO opens Inboard M 1B.
		Aux NSO closes MO 2-22
		AUX NSO closes MSL Dra 01, 02 and 03
	End of event (1)	

SIMULATOR EVENT (2) Reactor Power Increase

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEA RESPONSE
ulator Operator actions are required for ent.	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, R Changes. - Determines ramp rate of ~781 Mwe and 5 Mwe/h - Requests QNE assistanc rod withdrawal for load
		SRO directs the increase o per DGP 03-01
		NSO begins reactor power control rod withdrawal
	This event is complete when a power increase of >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
ent (2) is complete, at the discretion of the rs. **F2** **A1POT 125.0 NIA1FLG** PRM Channel 1 upscale to 125%.		**NSO** reports half scram in RP
		NSO reports annunciators, in C-12 CHANNEL 1-3 APRM H alarm.
		NSO reports APRM Channel full scale.
		NSO refers to DAN 902-5 C-1 • Compares APRM readings APRMs to confirm APRM C failed.
		SRO determines that requirer Tech Spec Tables 3.1.A-1 an satisfied and directs bypassin Channel 1 and reset of half-s
		NSO bypasses APRM Chann
		NSO resets RPS Channel A h • Turn the SCRAM RESET s EACH direction AND verify SCRAM SOLENOID GROU lit.

SIMULATOR EVENT (3) APRM Channel Fails Upscale

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Team contacts Shift Manager.
	Respond as IMD that you are sending a technician to the control room to investigate.	Team contacts IMD for assistan
	Event (3) is complete when APRM Channel 1 has been bypassed and the half-scram has been reset.	
End of event (3)		

SIMULATOR EVENT (4) RBCCW Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
vent (3) is complete, at the discretion of uators, **F3** **1** e 2A RBCCW Pump.		**AUX NSO** reports annunciato U2 or U3 RBCCW Pump Trip and 2A RBCCW Pump trippe
		AUX NSO reports annunciato U2 or U3 RBCCW Pressure L
		NSO reports annunciators 90 7, 2A & 2B Recirc Pp Seal Co Flow Lo
		AUX NSO Unit 2 RBCCW pre dropping and starts the 2B RI in accordance with one of the • DAN 923-1 C-1 • DAN 923-1 D-1 • Immediate Operator Actio 3700-01, Loss of Cooling Building Closed Cooling W (RBCCW) System.

SIMULATOR EVENT (4) RBCCW Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	As the NLO, wait approximately 4 minutes, then report the 2B RBCCW Pump is operating normally If requested, inform the team that the 2A RBCCW Pump tripped overcurrent.	Team may reference DOA 3700 - Monitors RBCCW System p - Dispatches an NLO to verify operation of the 2B RBCCW DOP 3700-02, RBCCW Sys Operation
	Respond as Electrical Maintenance that troubleshooting will be initiated as soon as possible.	Team enters DOA 6500-10, 4 k Breaker Trip: - Places the 2A RBCCW Pur switch in PTL on report of c trip. - Contacts Electrical Mainter troubleshoot.
	This event is complete when the 2B RBCCW Pump has been started and RBCCW pressure has been retored.	
End of event (4)		

SIMULATOR EVENT (5) HPCI Inadvertent Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEA RESPONSE
e Event (4) is complete, at the discretion of uators, **ESG-D Sim Override File, override the ontrol Power Failure SER point ON.** **n as the HPCI Control Power Failure iator alarms:** **F4** **NIT** rride file causes the HPCI Control Failure ator to alarm. The function key causes an ent initiation of HPCI.	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.	**AUX NSO** reports annunciato HPCI CONT PWR FAILURE, **AUX NSO** recognizes initiatio - Determines that initiation i - Stops HPCI from injecting the following: - Isolates the HPCI syst placing the 4 and 14 v OR - Reduces the HPCI Flo to minimum. NOTE: Remote turbine trip wi secure HPCI unless trip buttor
	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.	**AUX NSO** references DAN 902 - May dispatch an NLO to ch VDC feeds to HPCI Logiic a and 2B-1
		Team enters DGA-07, Unpredi Reactivity Addition, if HPCI inje RPV, causing reactor power to
		Team may reference DOP 230 System Shutdown, for further a secure HPCI.

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 t investigate the problem.
	If contacted as IMD, inform the team that you will send someone to the AEER ASAP.	Team may contact IMD personr determine the extent of the dam 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 operato HPCI Room to investigate the 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. 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.	**SRO** declares HPCI inoperable determines that HPCI must be operable status within 14 days 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.	May contact any or all of the fo inform of situation or request a - System Engineer - Shift Operating Superinten - Operations Manager

FINAL AS-ADMINISTERED SCENARIOS

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

SCENARIO ESG-B

REVISION: 1

DATE: 02/01/01

Reviewed and approved by:

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Exam Developer

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Facility Representative

Scenario Summary

Initial Conditions:

Unit 2:

- Reactor is at ~67 % power with a power reduction for a mid-cycle surveillance 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 while reducing generator voltage. The voltage reduction is continued in the manual mode.
- 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	Cross-ties Unit 2 and Unit 3 CRD systems.

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 (3) Control Rod RPIS Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
After Event (2) is complete, at the discretion of the evaluators. **PRESS F2** **S M RDFAILF5** RPIS failure for control rod F05.		**NSO** reports annunciator DAN 902-5 A-3, ROD DRIFT, in alarm and refers to DAN: • 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.
		NSO recognizes loss of control rod F05 position indication on Full Core Display, Four Rod Display, RWM, and/or process computer (OD-7).
		SRO references Tech Spec 3.3.I., Action 1, Control Rod Position Indication System
		Team may enter DOA 0300-12, Mispositioned Control Rod
		NSO performs immediate action of DOA 0300-06, RPIS Failure: • 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
When directed to disarm CRD F05: **PRESS F3** **S R RODF05DA** Electrically disarms CRD F05.	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. When contacted as the QNE, report that you will come to the control room and look at the situation. Approximately 3 minutes after being called to the control room, report as the QNE that the core operating limits are OK.	**NSO** performs subsequent actions of DOA 0300-06, RPIS Failure: • 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.) NOTE: Driving control rod F05 to fully inserted should take about 60 seconds. • Electrically or hydraulically isolate the control rod F05 HCU. • Notify a QNE of the action taken and to obtain further guidance.
		NSO records the failed RPIS indication per DOS 0300-06, Control Rod Drive Abnormality Record.
	Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.	**SRO** may contact any or all of the following to inform of situation or request assistance: - System Engineer - Shift Operations Superintendent - Operations Manger

SIMULATOR EVENT (3) Control Rod RPIS Failure

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	Event (3) is complete when: - DOA 0300-06 actions have been taken. - Technical Specifications have been referenced.	
End of event (3)		

SIMULATOR EVENT (4) Reactor Building Ventilation Fan Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
When event (3) is complete, at the discretion of the evaluators, **PRESS F4** **S M X04** 2A Reactor Building Ventilation fan trips on low flow. 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. WHEN AUX NSO moves 2C RX BLDG VENT FAN control switch to CLOSE, IMMEDIATELY remove override for RX BLD VENT FAN 2C CS TRIP to allow the fan to start.	When contacted as NLO, wait approximately 4 minutes, then report that the 2C Reactor Building Ventilation fan is running normally. If asked, report that the 2A Reactor Building Ventilation fan, motor, and breaker all appear normal.	**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: • 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.
	Respond as an NLO. Wait approximately 3 minutes, then report that the 2A Reactor Building Ventilation Fan breaker is tripped with no flags.	Team enters DOA 6700-06, 480V Circuit Breaker Trip - Dispatches NLO to investigate
	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: - 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
After the Event (4) is complete, at the discretion of the evaluators, **PRESS F5** **S M ICSPDFTP 0 ICSPDFTF** Sets the Isolation Condenser (IC) initiation setpoint to 0 psig.		**AUX NSO** announces numerous alarms due to Isolation Condneser initiation such as: - 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
		AUX NSO determines that the IC initiation is inadvertent by verifying reactor pressure less than the initiation setpoint.
		SRO directs the AUX NSO to secure the IC from operation.
		AUX NSO secures the IC from operation. - Places the 1301-3 valve in PTL.

SIMULATOR EVENT (5) Inadvertent Isolation Condenser Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	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 After about 2 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. Anytime after the report of damage from the AEER, inform the Aux NSO that the XL3 alarm is reset.	Team receives XL3 alarm and dispatches an NLO to the AEER to investigate.
		Team may enter DGA-07, Unpredicted Reactivity Addition, due to the cold IC condensate water entering the reactor.
		SRO references Tech Specs/DATRs and determines the following apply: • TS 3.5.D, Icolation 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
		Reportability Manual requirement of SAF 1.12, ESF or RPS actuation which requires a 4 hour ENS call

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: - System engineer - Bulk Power Operations - Shift Operating Superintendent - Operations Manager
	This event is complete when: - 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
When event (5) is complete, at the discretion of the evaluators, NOTE-The value for FLLMLSP MUST include the decimal point noted 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). The intent is NOT to force the team to manually scram.		**NSO** detects drifting of FWLCS setpoint
		Team enters DOA 0600-01, Transient Level Control
		SRO sets scram contingency for RPV level (i.e., per Operations Standard manually scram if level drops to <20" or increases to >45".
		NSO places FWLC in Manual control per DOA 0600-01 and controls RPV level between +25" and +35"
	Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.	**SRO** may contact any/all of the following to inform of situation or request assistance: • 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
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.		
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 ~1 minute, then override FEEDWATER REG STATION VIBRATION HI ON and **PRESS F6** **TG 01** Simulates oscillation in the Feed Water system.	When contacted as the NLO, wait ~2 minutes and report that the RFP high vibration alarms cannot be reset. As NLO report that Feed System Piping is vibrating violently in RFP area. As NLO report that Feed System Piping is vibrating violently in FWRV area.	**NSO** refers to DANs 902-6 F-12, G-12, and E-12: • 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
After Team has secured the Feed Pumps per DOA 3200-01: **PRESS F7** **TS 01 : TS 02 : SM HP 0.0** Stops the feedwater system oscillations **PRESS 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.		**SRO** enters DOA 3200-01, Feedwater System High Vibration, due to vibration alarms on both RFPs. • Manually scram the reactor per DGP 02-03, Reactor Scram. - 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 OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		• 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.
		Enters DEOP 100, Reactor Control due to low water level: - Checks water level instrument accuracy - Verifies automatic actions have occurred - Maintains level +8" to +48" - Maintains pressure < 1060 psig
		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

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: - 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
		Critical Task PC-5.1 When drywell pressure reaches +9 psig OR before drywell temperature reaches 281°F: • **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, if 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: - 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
	Event (8) and the scenario are complete when: - 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		

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SCENARIO ESG-D

REVISION: 1

DATE: 01/30/01

Reviewed and approved by:

_____

Exam Developer

_____

Facility Representative

Scenario Summary

Initial Conditions:

Unit 2:

- Reactor is at ~49% power with Main Steam Line B 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 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.

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	Causes a HPCI auto initiation.
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 – 60.0 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 IP1 10.0	Adjusts the break size.
K S F3 = R M NVM106AF	Restores Fuel Zone A indication to normal
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
EPIP 200-01	Classification of GSEP Conditions	05

PROCEDURE	TITLE	REVISION
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. - 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 >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
After Event (2) is complete, at the discretion of the evaluators. **PRESS F2** **S M NIA1POT 125.0 NIA1FLG** Fails APRM Channel 1 upscale to 125%.		**NSO** reports half scram in RPS Channel A
		NSO reports annunciators, including 902-5 C-12 CHANNEL 1-3 APRM HI-HI/INOP, in alarm.
		NSO reports APRM Channel 1 indicating full scale.
		NSO refers to DAN 902-5 C-12: • Compares APRM readings with other APRMs to confirm APRM Channel 1 has failed.
		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.
		NSO bypasses APRM Channel 1.
		NSO resets RPS Channel A half-scram: • 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 Shift Manager. Team contacts IMD for assistance.
	Event (3) is complete when APRM Channel 1 has been bypassed and the half-scram has been reset.	
End of event (3)		

SIMULATOR EVENT (4) RBCCW Pump Trip

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
When event (3) is complete, at the discretion of the evaluators, **PRESS F3** **S M Q01** Trips the 2A RBCCW Pump.		**AUX NSO** reports annunciator 923-1 C-1, U2 or U3 RBCCW Pump Trip, in alarm and 2A RBCCW Pump tripped
		AUX NSO reports annunciator 923-1 D-1, U2 or U3 RBCCW Pressure LO, in alarm
		NSO reports annunciators 902-4 G-3 & G-7, 2A & 2B Recirc Pp Seal Cooling Water Flow Lo
		AUX NSO Unit 2 RBCCW pressure dropping and starts the 2B RBCCW Pump in accordance with one of the following": • 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
	As the NLO, wait approximately 4 minutes, then report the 2B RBCCW Pump is operating normally If requested, inform the team that the 2A RBCCW Pump tripped overcurrent.	Team may reference DOA 3700-01: - Monitors RBCCW System parameters - Dispatches an NLO to verify proper operation of the 2B RBCCW Pump per DOP 3700-02, RBCCW System Operation
	Respond as Electrical Maintenance that troubleshooting will be initiated as soon as possible.	Team enters DOA 6500-10, 4 kV Circuit Breaker Trip: - Places the 2A RBCCW Pump control switch in PTL on report of overcurrent trip. - Contacts Electrical Maintenance to troubleshoot.
	This event is complete when the 2B RBCCW Pump has been started and RBCCW pressure has been retored.	
End of event (4)		

SIMULATOR EVENT (5) HPCI Inadvertent Initiation

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE

After the Event (4) is complete, at the discretion of the evaluators,
 	
On the ESG-D Sim Override File, override the HPCI Control Power Failure SER point ON.
 	
As soon as the HPCI Control Power Failure annunciator alarms:
 	
PRESS F4
 	
S M HPINIT
 	
The override file causes the HPCI Control Failure annunciator to alarm. The function key causes an inadvertent initiation of HPCI.
	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.	**AUX NSO** reports annunciator 902-3 G-12, HPCI CONT PWR FAILURE, in alarm:
		
		AUX NSO recognizes initiation of HPCI:
		
		- Determines that initiation is spurious.
		
		- Stops HPCI from injecting by either of the following:
		
		  - Isolates the HPCI system by placing the 4 and 14 valves in PTL
		
		  OR
		
		  - Reduces the HPCI Flow Controller to minimum.
		
		NOTE: Remote turbine trip will NOT secure HPCI unless trip button is held in.

	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.	**AUX NSO** references DAN 902-3 G-12: - May dispatch an NLO to check the 125 VDC feeds to HPCI Logiic at Bus 2A-1 and 2B-1
		Team enters DGA-07, Unpredicted Reactivity Addition, if HPCI injects into the RPV, causing reactor power to increase
		Team may reference DOP 2300-04, HPCI System Shutdown, for further actions to secure HPCI.

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.
	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. 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.	**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.	May contact any or all of the following to inform of situation or request assistance: - 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
When event (5) is complete, at the discretion of the evaluators, **PRESS F5** **S M RRMGGAHI** Starts raising temperatures in 2A recirculation MG set generator.	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.	**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: - 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.
	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)	**SRO** directs the NSO to shutdown the 2A Recirc MG Set in accordance with DOP 0202-04, Unit 2(3) Recirculation System Shutdown
		NSO immediately secures the 2A recirculation pump per DOP 0202-04, Unit 2(3) Recirculation System Shutdown: - 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
		Team enters DOA 0202-01, Recirculation Pump trip – one or both pumps: • 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
When directed by the Simulator Communicator **PRESS SHIFT F1** **R R S44** Removes the 2D Service Unit from operation	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.	Team may direct an NLO to cut out a Demin Service Unit.
		Team enters DOA 0500-01, Inadvertent entry into the Unstable Power/Flow Region • Monitor for reactor core instabilities while exiting the unstable region.
		Team enters DGP 03-03, Single Recirculation Loop Operation.

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.	**SRO** may contact any/all of the following to inform of situation or request assistance: • QNE • Bulk Power Operations • Senior Operating Management • System Engineering • NRC Resident
		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.
	Event (6) is complete when: • 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

SIMULATOR EVENT (7) Instrument Line Break in Drywell

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
When event (6) is complete, at the discretion of the evaluators, **PRESS F6** **S M RLR I21 IP1 4 NVMNRBLF : RC NVMNRBLP 40 15:00 G** Sets a 4% leak in the main steam line 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.	If Unit 3 drywell pressure status is requested, report that Unit 3 drywell pressure is unchanged and steady at ~1.14 psig. if the Team requests Crib House inlet temperature from the local recorder, wait ~4 minutes, then report inlet temperature is ~70°F.	Team detects rising drywell pressure and refers to DOA 0040-01, Slow Leak (actions taken as time permits): - Notifies Rad Protection - Verifies reactor level normal - Attempts to locate and isolate leak - Shuts down H_2 addition - Makes PA announcements - Establishes contingency for reactor scram - Monitors torus temperature - Verifies Crib House inlet temp. <95°F - Initiates torus cooling
		NSO Reports rising RPV level indication on Narrow Range B instrument.
	If Team checks OIS screen to determine cause of alarm, provide attachment for OIS alarm screen.	**NSO** reports annunciator 902-6 H-3 FW Control System Panel Trouble in alarm
When drywell pressure reaches 1.25 psig: **PRESS SHIFT F2** **S M IP1 10.0**		**SRO** directs preparatory scram actions due to rising Drywell pressure: - **AUX NSO** Starts turbine lube oil pumps - **AUX NSO** trips H_2 addition (if not done already)

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
		Critical Task PC-4.1 Team performs a reactor scram per DGP 02-03, Reactor Scram, before reaching 281°F in the Drywell: • 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
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 **PRESS F7** **S M NVM100AF NVM100AP –120.0 NVML29AF : RC NVML29AP –60.0 05:00 G** **Wait ~2 seconds after pressing F8 and then,** **PRESS F8** **S M IP1 0.8 NVML112F : RC NVML112P 400.0 00:15 G : R M RLR** **PRESS F9** **S M NVM106AF NVM106AP –280** These keys cause deviations of RPV level indications and adjust the size of the leak in the drywell.	If directed to report local reactor water levels at the Reactor Building instrument racks, report the following: Fuel Zones (2202-7, -8 racks, respectively on 1st floor of RB) • FZ A: Report as shown on the SimVue screen • FZ B: Report as shown on the SimVue screen Medium Ranges on (2202-5, -6 racks, respectively on 2nd floor of RB) • MR A: Report as shown on the SimVue screen • MR B: Report as shown on the SimVue screen	**SRO** enters DEOP 100, Reactor Control due to low water level: • 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: - 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: - 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
	As NLO report from plant that the 2B Core Spray pump motor is sparking and smoking but there is NO FIRE. Continue reports with increasing severity until team secures 2B Core Spray pump.	**SRO** directs AUX NSO to secure 2B Core Spray pump. **AUX NSO** secures 2B Core Spray pump. **SRO** directs injection flow to be adjusted to maintain RPV pressure at least 54 psig above drywell pressure. **AUX NSO** adjusts injection flow.
		SRO 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
When informed of opening the RPV high level trip cutout knife switches: **PRESS F10** **S R FWKNIFE** Opens the RFP high RPV level trip switches	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.	Team may refer to DEOP 0500-02, Bypassing Interlocks and Isolations to start reactor feed pumps: - 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
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). **K N F11 R M NVML112F (Wide Range)** **K N F12 R M NVML29AF (Narrow Range A)** **K S F3 R M NVM106AF (Fuel Zone A)** **K S F4 R M NVM100AF (Medium Range A)**	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).	Team requests IMD to restore RPV level instruments.
If IMD is requested to determine the availability of any of the following: • Narrow Range B • Medium Range A • Fuel Zone B Report that these instruments are not responding as expected and should not be considered available.		Team continues RPV flooding until: - RPV level can be determined OR - RPV level instruments are available and, - Drywell temp. points 9 & 10 are less than 212°F and, - RPV pressure has remained ≥ 54 psig above drywell pressure for 100 min.

SIMULATOR OPERATOR ACTIONS	SIMULATOR COMMUNICATOR ACTIONS	EXPECTED TEAM RESPONSE
	After team has established RPV flooding conditions (RPV pressure >54 psig above drywell pressure) and has control of RPV pressue 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.	If wide range RPV level indication is full scale (+330"): - **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.
	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.	If wide range RPV level indicaton is on scale (<+330"), DEOP 400-1 can be exited: - **SRO** enters DEOP 100 for RPV level control. - **SRO** enters DEOP 400-2 for RPV pressure control.
		When drywell pressure reaches +9 psig OR if drywell temperature approaches 281°F: - Verifies drywell temperature is within the drywell spray initiation limit - Verifies recirculation pumps are tripped - Verifies drywell coolers are tripped - Initiates drywell sprays

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