

Fricac GJBMITTAL

INITIAL LICENSE EXAM

2007

SCENARIO THREE

Brunswick Steam Electric Plant, Unit No. 2

BRUNSWICK JULY-AUG EXAM - 325, 324/2007-301 FINAL SIMULATOR SCENARIO (3 OF 4)

FINAL SCENARIO 3 OF 4



Brunswick 2007 NRC Scenario 3 Page 1 of 3

Facility:	BRUNS	NICK	Scenario No.:	3	Op Test No.:	2007 NRC
Examiner	-s:		Opera	tors:		(SRO)
				-		(RO)
				-		(BOP)
					~	
Initial Cor		e plant is o	perating at 94% power,	End O	f Cycle.	
			np 2D is under clearanc service for two days.	e for m	otor replaceme	nt and will
			p 2B is under clearance p 2C has been placed ii			ibration.
	No	other equi	pment is out of service.			
Turnover:		ap Service V se power to	Vater Pumps for maintena 100%	ance wo	rk on the operatir	ng pump.
Critical Ta		Scenario S				
Event No.	Malf. No.	Event Type*		Event D	escription	
1	N/A	N-SRO	Swap NSW pumps			
		N-BOP				
2	N/A	R-SRO R-RO	Power increase to 100% for	or roa pa	ittern adjustment	
3	MRC021F	C-SRO	Recirc Pump "A" scoop tul	ne locku	n	
ž		C-RO			~	
4	ZUA2162 ON	TS-SRO	EDG low starting air press	ure (TS)		
5	CW019F (A)	C-SRO	NSW pump trip(AOP) and	standby	pump fails to auto	start
	K4821A-Auto Off	C-BOP				
6	ES27F	C-SRO	RCIC Mechanical Overspe	ed Trip		
		C-RO				
7	K4403A Open 30 sec	C-ALL	Partial Loss of FW heating	, Power	reduction required	(AOPs)
8	NB005F RP005F	M-ALL	Fuel Failure, Hi MSL Rads (EOP)(AOP) Initiates ARI		closed, Manual & A	Auto Scram Fail,
	K2503A-AS IS					
. 9	ES004F	C-SRO	SRV F sticks open			
	1	C-BOP				





NOTES:

1) S = Satisfactory; U - Unsatisfactory; N/O = Not Observed All Unsatisfactory ratings require comments; a comment sheet is attached.

Brunswick 2007 NRC Scenario 3 Page 2 of 3



10	K1230A-AS IS RSIARHBYPB- Bypass	C-SRO	RHR Loop A SW HX outlet valve fails, F068B valve (RHR HX Service Water Outlet) will fails to auto close.
		C-BOP	
11	CW071F (B)	C-SRO	RHR SW 2B pump trip, RHR leak into service water. (CT)
	CW013F	C-BOP	
12	CA020F	M-ALL	SRV F tailpipe break, ED required (CT)
1) *	N)ormal, (R)ea	activity, (I)n	strument, (C)omponent, (M)ajor





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2) * = Critical Task/Step



SCENARIO DESCRIPTION

BRUNSWICK 2007 NRC Scenario #3

The plant is operating at 87% power, End Of Cycle with RHR SW Pump 2D and TBCCW Pump 2B under clearance. A swap of NSW pumps is required for upcoming maintenance on the operating pump. After swapping NSW pumps, reactor power will be raised to 100%.

While power is being raised a scoop tube lockup will occur on the "A" Recirc MG Set. I&C will report a circuit breaker caused the problem and the operator can reset the scoop tube. Once the scoop tube has been reset and recirc flows are matched, the #3 EDG will have a low starting air pressure requiring a technical specification determination (TS). (The EDG #3 must be declared inoperable).

Following the TS determination for the EDG (3.8.1.D), the NSW pump previously started will trip, requiring a restart of the NSW pump originally removed from service (TS 3.7.2.B). Once the NSW pump is restarted, a RCIC overspeed trip will occur due to a field operator accidentally unlatching the mechanism (T.S. 3.5.3.A). The RO will respond and re-latch the trip mechanism.

Feedwater valve FW-V120 will partially open resulting in a loss of feedwater heating and rising reactor power. The crew will respond per AOP-03.0 and reduce reactor power. The FW-V120 valve can be manually closed by the operators.

Fuel failure will occur that causes SJAE readings to rise and MSL Rad Hi to alarm. The crew will respond by entering AOP-05.0 and 0EOP-04-RRCP. Power will be reduced to clear the MSL Rad Hi alarm. The fuel failure will get worse resulting in MSL Hi-Hi alarm along with rising Main Stack readings and alarms. Per the guidance of 0EOP-04-RRCP, the crew will insert a manual reactor scram and close the Group 1 Isolation Valves *****(Critical task to Close the MSIVs and Drains)**. The manual scram switch for channel B will fail. The reactor can be scrammed by Mode switch or ARI initiation **(Critical Task)**.

When the MSIVs are closed SRVs will be required for pressure control. When SRV F is opened, it will stick open. Suppression pool temperature will rise requiring initiation of suppression pool cooling per 0EOP-02-PCCP. If RHR Loop "A" is started for suppression pool cooling, the E11-F068A valve (RHR HX Service Water Outlet) will fail to open and RHR Loop "A" will be unavailable for suppression pool cooling.

When RHR Loop B is started for suppression pool cooling, the RHR Heat Exchanger will develop a tube leak. The tube leak will initially result in leakage of service water into the RHR system and RHR high conductivity alarm. RHR SW Booster Pump 2B will then trip (RHR SW 2D is under clearance) and E11-F068B will fail to auto close. Without an RHR Service Water pump in operation, RHR system water will now leak into service water.

Service Water high radiation will alarm. The crew will respond to the service water release per EOP-04-RRCP by closing E11-F068B, shutting down RHR Loop B and isolating the heat exchanger (Critical Task).

The F SRV tailpipe will fail and Emergency Depressurization will be required per 0EOP-02 PCCP when the safe region of Pressure Suppression Pressure (PSP) can not be maintained (Critical Task).

When the reactor is depressurized by the Emergency Depressurization, the scenario may be terminated.



NOTES:

1)

- S = Satisfactory; U Unsatisfactory; N/O = Not Observed All Unsatisfactory ratings require comments; a comment sheet is attached.
- 2) * = Critical Task/Step



PROGRESS ENERGY CAROLINAS BRUNSWICK TRAINING SECTION

2007 NRC EXAM SCENARIO # 3





SCENARIO DESCRIPTION

BRUNSWICK 2007 NRC Scenario #3

The plant is operating at 87% power, End Of Cycle with RHR SW Pump 2D and TBCCW Pump 2B under clearance. A swap of NSW pumps is required for upcoming maintenance on the operating pump. After swapping NSW pumps, reactor power will be raised to 100%.

While power is being raised a scoop tube lockup will occur on the "A" Recirc MG Set. I&C will report a circuit breaker caused the problem and the operator can reset the scoop tube. Once the scoop tube has been reset and recirc flows are matched, the #3 EDG will have a low starting air pressure requiring a technical specification determination (TS). (The EDG #3 must be declared inoperable).

Following the TS determination for the EDG (3.8.1.D), the NSW pump previously started will trip, requiring a restart of the NSW pump originally removed from service (TS 3.7.2.B). Once the NSW pump is restarted, a RCIC overspeed trip will occur due to a field operator accidently unlatching the mechanism (T.S. 3.5.3.A). The RO will respond and re-latch the trip mechanism.

Feedwater valve FW-V120 will partially open resulting in a loss of feedwater heating and rising reactor power. The crew will respond per AOP-03.0 and reduce reactor power. The FW-V120 valve can be manually closed by the operators.

Fuel failure will occur that causes SJAE readings to rise and MSL Rad Hi to alarm. The crew will respond by entering AOP-05.0 and 0EOP-04-RRCP. Power will be reduced to clear the MSL Rad Hi alarm. The fuel failure will get worse resulting in MSL Hi-Hi alarm along with rising Main Stack readings and alarms. Per the guidance of 0EOP-04-RRCP, the crew will insert a manual reactor scram and close the MSIVs (Critical Task to close MSIVs and Drains) and recirc sample valves. The manual scram switch for channel B will fail. The reactor can be scrammed by Mode switch or ARI initiation (Critical Task).

When the MSIVs are closed SRVs will be required for pressure control. When SRV F is opened, it will stick open. Suppression pool temperature will rise requiring initiation of suppression pool cooling per 0EOP-02-PCCP. If RHR Loop A is started for suppression pool cooling, the E11-F068A valve (RHR HX Service Water Outlet) will fail to open and RHR Loop A will be unavailable for suppression pool cooling.

When RHR Loop B is started for suppression pool cooling, the RHR Heat Exchanger will develop a tube leak. The tube leak will initially result in leakage of service water into the RHR system and RHR high conductivity alarm. RHR SW Pump 2B will then trip (RHR SW 2D is under clearance) and E11-F068B will fail to auto close. Without an RHR Service Water pump in operation, RHR system water will now leak into service water.



Service Water high radiation will alarm. The crew will respond to the service water release per EOP-04-RRCP by closing E11-F068B, shutting down RHR Loop B and isolating the heat exchanger (**Critical Task**).

The F SRV tailpipe will fail and Emergency Depressurization will be required per 0EOP-02 PCCP when the safe region of PSP can not be maintained (Critical Task).

When the reactor is depressurized by the ED, the scenario may be terminated.





SIMULATOR SETUP

Initial Conditions

IC 183 ENP 24 for IC 14 Rx Pwr 87% Core Age EOC

EVENTS

Event Number	Trigger	Trigger D	gger Description			
1	NA	NA	Swap Nuclear Service Water Pumps (final alignment = 2A NSW Pump running, 2B NSW Pump in auto)			
2	NA	NA	Raise reactor power to ~100% using Control Rods and Recirc Flow			
3	1	Manual	2A Recirc Pump Scoop Tube Lock			
4	2	Manual	DG #3 Low Starting Air Header Pressure			
5	3	Manual	2A Nuclear Service Water Pump Trip			
6	12	Manual	RCIC Overspeed Trip			
7	4	Manual	Loss of Feedwater Heating (2-FW-V120 partially opening)			
8	5	Manual	Fuel Failure			
9	NA	NA	ATWS			
10	6	Auto	SRV Fails open			
11	7	Auto	RHR Heat Exchanger Tube Leak			
12	8	Auto	RHR SW Pump Trip/E11-F068B failure to close			
13	9	Manual	SRV Tailpipe failure – Pressure Suppression Pressure challenge			

SIMULATOR SETUP

Interventions Summary (Shaded entries = Active)

Malfunctions Summary

Malf ID	Mult ID	Description	Current Value	Target Value	Rmptime	Actime	Dactime	Trig
RC021F		RECIRC PUMP MG SET A SCOOP TUBE FAILURE	FALSE	TRUE			00:00:30	1
CW019F	A	NUC SERVICE WATER PUMP MOTOR WINDING FAULT	FALSE	TRUE				3
ES027F	-	RCIC OVERSPEED TRIP	FALSE	TRUE			00:00:05	12
NB005F		FUEL FAILURE	0.00	100.0000	00:05:00			5
ES004F		ADS VALVE F FAILS OPEN	FALSE	TRUE				6
CW013F		RHR B HX TUBE LEAK	0.00	100.0000	00:05:00			7
CW071F	В	RHR SW BOOSTER PUMP MOTRO WINDING FAULT	FALSE	TRUE				8
CA020F		SRV F TAIL PIPE RUPTURE	FALSE	TRUE				9
RP005F		AUTO SCRAM DEFEAT	TRUE	TRUE				



Remotes Summary

Remf ID	Mult ID	Description	Current Value	Target Value	Rmptime	Actime	Trig
ED_IABKCF16		BKR CTL DC FUSES RHRSW PUMP 2D	OUT	OUT			
RS_IARHBYPB		E11-F068B AUTO-CLOSURE BYPASS SWITCH	NORMAL	BYPASS			8
CF_ZVCF120T		BYP 4 & 5 HTR VLV FW-V120	ON	OFF			10
RI_IARJTURB		RCIC TURB OVERSPEED TRIP RESET	NORMAL	RESET			13



Override Summary

Tag ID	Description	Position/ Target	Actual Value	Override Value	Rmptime	Actime	Dactime	Trig
K4517A	TBCCW PMP B ON	OFF	ON	ON				
K4517A	TBCCW PUMP B ON	ON	OFF	OFF				
Q4517LG4	TBCCW PUMP B OFF G	ON/OFF	ON	OFF				
Q4517RR4	TBCCW PUMP B ON R	ON/OFF	OFF	OFF				
K4403A	FW HEATER 4-5 BYPASS VLV CLOSE	NEUT	ON	OFF			00:00:30	4
K2503A	RX SCRAM B	SCRAM B	OFF	OFF				
K1230A	RHR SW FCV 2E11-F068A	NOR	ON	ON				
K1230A	RHR SW FCV 2E11-F068A	CLOSE	OFF	OFF				
K1230A	RHR SW FCV 2E11-F068A	OPEN	OFF	OFF				
K4B21A	NUC HDR SW PMP B DISCH VLV	AUTO	ON	OFF				
K4403A	FW HEATER 4 & 5 BYPASS VLV CLOSE	CLOSE	OFF	OFF			00:00:30	4
K4403A	FW HEATER 4 & 5 BYPASS VALVE CLOSE	OPEN	OFF	ON			00:00:30	4
Q1508LGL	SRV VLV B21-F013F GREEN	ON/OFF	ON	OFF				11
Q1508RRJ	SRV VLV B21-F013F RED	ON/OFF	OFF	OFF	1			11

Annunciator Summary

Window	Description	Tagname	Override Type	OVal	AVal	Actime	Dactime	Trig
6-2	DG-3 LO START AIR PRESS	ZUA2162	ON	ON	OFF			2

Batch Files

File	Trigger	Description
		NONE

Special Instructions

Load scenario file 2007 NRC Scenario 3.scn

Place red cap on 2D RHR SW Booster Pump Control Switch.

Place red cap on 2B TBCCW Pump Control Switch

Ensure ENP-24 and GP-12 for pulling rods for IC14 @ P603.

Null DVM

SHIFT BRIEFING

Plant Status

The plant is operating at 87% power, End of Cycle.

Control rods 10-43, 42-43, 42-11, and 10-11 have been inserted from position 48 to position 16 for a downpower.

Equipment Out of Service

2D RHR SW Booster Pump is out of service for lube oil change and is expected to be returned to service by the end of shift.

2B TBCCW Pump is out of service and under clearance for motor replacement and is anticipated to be returned to service in 48 hours.

No other equipment is out of service

Plan of the Day

Following shift turnover, place 2A Nuclear Service Water Pump in service with 2B Nuclear Service Water Pump in standby, in support of nuclear header flow measurement activities.

Raise reactor power by withdrawing control rods 10-43, 42-43, 42-11, and 10-11 utilizing the provided GP-12 pull sheet. Once the rods have been fully withdrawn, the NE has given approval to use Reactor Recirculation flow to raise reactor power to maximum rated.

0PT-14.1 is current for all control rods





SCENARIO INFORMATION

Examiner Notes

Procedures Used in Scenarios:

EVENT 1

• 20P-43

EVENT 2

- 0GP-12
- 20P-02.0

EVENT 3

- Annunciator procedure
- 20P-02

EVENT 4

- Annunciator Procedure
- Technical Specifications

EVENT 5

• 0AOP-18

EVENT 6

- RCIC OP-16, section 8.3, and 5.1
- APP A-3 5-3 RCIC TURB TRIP
- Technical Specifications

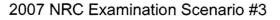
EVENT 7

- 0AOP-03.0
- ENP-24 (Immediate Power Reduction Guidance)
- 0GP-12

EVENT 8

- Annunciator procedures (UA-23: 2-6; UA-03: multiple)
- 0EOP-04-RRCP (Radioactive Release Control Procedure)
- 2EOP-01-RSP (Reactor Scram Procedure)
- 2EOP-01-RVCP (Reactor Vessel Control Procedure)
- 0EOP-02-PCCP (Primary Containment Control Procedure)







SCENARIO INFORMATION

EVENT 9

• 2EOP-01-LPC (Level Power Control)

EVENT 10

• 0AOP-30

EVENT 11/12

• 0EOP-04-RRCP

EVENT 13

• 0EOP-02-PCCP (Primary Containment Control Procedure)

Critical Tasks

When the Main Steam Line Rad High-High is reached (annunciator 2-UA-23 3-6), the MSIVs and MSIV drain valves are manually closed.

When a manual scram signal fails to complete a reactor scram due to a failure on the "B" RPS side, successfully complete control rod insertion by placing the Reactor Mode Switch to Shutdown (scram signal) or by manually initiating ARI.

When indications are observed of a radioactive leak from the "B" RHR Heat Exchanger to the environment via the Service Water system, successfully isolate the Service Water effluent from the RHR Service Water.

When containment parameters cannot be maintained within the safe region of the Pressure Suppression Pressure graph, Emergency Depressurize the reactor.





EVENT 1 SHIFT TURNOVER, SWAPPING NUCLEAR SERVICE WATER PUMPS

The crew will swap operating Nuclear Service Water Pumps in support of scheduled NSW flow measurement activities.

Malfunction required:

• None

Objectives:

- SCO Directs BOP to start 2A Nuclear Service Water Pump and place 2B Nuclear Service Water Pump in standby per 2OP-43, section 8.22.
- BOP Place 2A Nuclear Service Water Pump in service and secure 2B Nuclear Service Water Pump and place it in standby per 2OP-43, section 8.22.

Success Path:

Nuclear Service Water Pump 2A will be started and Nuclear Service Water Pump 2B will be secured and placed in Standby per 2OP-43.



Simulator Operator Activities:

- WHEN asked, report that pre-start checks on 2A Nuclear Service Water Pump have been completed and all parameters/conditions are normal.
- WHEN asked, report that 2A Nuclear Service Water Pump is running normally.



EVENT 1 SHIFTING NUCLEAR SERVICE WATER PUMPS

Required Operator Actions

Normal Plant Operation – Shifting of Nuclear Service Water Pumps

SRO

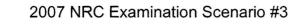
• Direct BOP to shift Nuclear Service Water Pumps per 2OP-43, section 8.22

BOP

• Shift Nuclear Service Water Pumps per 2OP-43, section 8.22.

APPLICANT'S ACTIONS OR BEHAVIOR:







The crew will raise reactor power using Reactor Recirculation flow and control rods per GP-12.

Malfunction required:

• None

Objectives:

- SCO Directs RO to raise power to 100% per GP-12, using Reactor Recirculation flow and control rods.
- BOP Raises reactor power per GP-12, using Reactor Recirculation flow and control rods.

Success Path:

Reactor Power is raised using Reactor Recirculation flow and control rods.

Simulator Operator Activities:

• IF contacted as NE, state that continuous withdrawal of control rods is allowed.



EVENT 2 RAISE REACTOR POWER TO ~100%

Required Operator Actions

Normal Operation – Raise Reactor Power to 100%

****<u>EVALUATOR NOTE</u>: Alternate Power Verification is required at 10% power increments during power ascension and takes approximately 10 minutes to complete. If a change to the Gain Adjustment Factor (GAF) is required following Alternate Power Verification, an additional 15 minutes should be allowed.

At the evaluator's discretion, prompt may be given stating that Alternate Power Verifications are to be completed by other members of the operating crew and are satisfactory.

SRO

 Direct RO to raise reactor power to 100% per 0GP-12 using Recirc Flow and control rods

RO

• Raise Reactor Power to 100% per 0GP-12 using Recirc Flow and control rods

APPLICANT'S ACTIONS OR BEHAVIOR:





EVENT 3 2A Reactor Recirc Pump Scoop Tube Lock (Spurious)

The crew responds to a spurious lock of the 2A Reactor Recirc Pump Scoop Tube

Malfunctions required:

• Circuit 2 on Panel 2A-TB for the 2A Reactor Recirc MG set will trip resulting in a locking of its scoop tube, preventing any controlled changing of speed of the affected machine

Objectives:

SCO Directs actions to stop power changes and evaluates plant conditions to verify the initiating cause.

Contacts I&C to request support in issue resolution.

RO Refers to annunciator procedure and identifies/reports indications of scoop tube status and related plant conditions. 2-A-6 2-4, Fluid Drive A Scoop Tube Lock



Success Path:

Scoop Tube lock is successfully identified, diagnosed, and recovered from, with the final condition being that the scoop tube is restored to an unlocked condition and reactor power is approximately 100%.

Simulator Operator Activities:

- WHEN directed by lead examiner, activate TRIGGER 1 (2A Recirc Pump Scoop Tube Lock).
- WHEN asked, as TBAO, report that 2A-TB circuit 2 is tripped
- WHEN asked, as I&C, to assist in the investigation of the failure, acknowledge the request and, after 3 minutes, inform the SCO that the faulty breaker has been repaired.
- WHEN directed, as TBAO, to reclose the breaker, then acknowledge the request and report the breaker has been reclosed.
- WHEN asked, as I&C, provide assistance in matching speed demand versus actual in support of unlocking the scoop tube using the Instructor Aid for Recirc MG Set Bailey Position error.



EVENT 3 2A Reactor Recirc Pump Scoop Tube Lock

Required Operator Actions

SRO

- Directs actions to stop power changes and evaluates plant conditions to verify the initiating cause.
- Contacts I&C to request support in issue resolution.
- Approves resetting the circuit breaker after repairs have been made.
- Following correction of problem, directs RO to unlock the scoop tube per 2OP-02, Section 8.4.

RO

- Refers to annunciator procedure 2-A-6 2-4, Fluid Drive A Scoop Tube Lock and identifies/reports indications of scoop tube status and related plant conditions.
- Directs AO to investigate potential scoop tube lock causes.
- When directed, unlocks the scoop tube per 2OP-02, Section 8.4





EVENT 3 2A Reactor Recirc Pump Scoop Tube Lock

APPLICANT'S ACTIONS OR BEHAVIOR:





_ ____

EVENT 4 DG #3 Low Starting Air Header Pressure

The crew responds to and diagnoses the Low Starting Air Header Pressure alarm on #3 Emergency Diesel Generator.

Malfunction required:

 Emergency Diesel Generator #3 starting air header will lower to the low pressure threshold, causing annunciator 2-UA-21 6-2, DG3 Lo Starting Air Pressure (235 psig)

Objectives:

SCO Correctly evaluates the condition of the Diesel Generator Low Starting Air Header

Success Path:

SCO obtains information from the Diesel Generator and determines the affected Diesel Generator is inoperable (Technical Specifications).



Simulator Operator Activities:

- WHEN directed by Lead Examiner, activate TRIGGER 2 (# 3 Diesel Generator Starting Air Low Pressure)
- WHEN asked, report that the #3 Emergency Diesel Generator starting air header pressure and air receiver pressure is 220 psig and the air compressors breakers are closed, but the compressors are not running.
- WHEN contacted as Maintenance requesting help to adjust the pressure, acknowledge the request.



EVENT 4 DG #3 Low Starting Air Header Pressure

Required Operator Actions

Normal Plant Operation – Assessing Technical Specifications due to a parameter outside of established bands (DG #3 Starting Air Header Pressure)

SRO

• Successfully evaluates that the lower starting air header pressure results in an inoperability of the #3 Emergency Diesel Generator.

NOTE: Per OP-39 "DG Operating Procedure" Precaution/Limitation step 3.17.3, the DG is inoperable when air receiver pressure is below 230 psig.

***EVALUATOR NOTE: As necessary, prompt SRO that the opposite unit will perform required surveillances.

Refers to Tech Specs:

Tech Spec 3.8.1.D: One diesel generator inoperable for reasons other than planned maintenance

D.1 Perform surveillance 3.8.1.1 within 2 hours and once per 12 hours thereafter

AND

D.2 Declare required features supported by inoperable DG inoperable when redundant required features are inoperable

AND

D.3.1 Determine Operable DGs are not inoperable due to common cause failure (24 hours)

Or

D.3.2 Perform SR 3.8.1.2 for Operable DGs (24 hours)

AND

D.4 Restore DG to Operable status (7 days)

Tech Spec 3.7.1.C.1 Both RHRSW subsystems inoperable (8 hours)





BOP

• Responds to annunciator 2-UA-21 6-2, DG3 Lo Starting Air Pressure

RO/BOP

• Notifies AO to investigate problem at #3 EDG





EVENT 4 DG #3 Low Starting Air Header Pressure

APPLICANT'S ACTIONS OR BEHAVIOR:





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EVENT 5 2A NUCLEAR SERVICE WATER PUMP TRIP

The crew will respond to the failure of an operating Nuclear Service Water Pump per 0AOP-18.0 and take action to restore Nuclear Service Water to within normal operating limits.

Malfunctions required:

2A Nuclear Service Water Pump will trip on electrical fault, and the 2B Nuclear Service Water Pump will fail to start on a low pressure demand signal.

Objectives:

SCO Reference/Enter 0AOP-18.0 and directs the actions of the BOP to facilitate restoration of the Nuclear Service Water System to within normal limits

Evaluates Technical Specifications for the inoperability of the 2A Nuclear Service Water Pump. TS 3.7.2. Ultimate Heat Sink - Tracking LCO- LCO conditions are still met

BOP Reference/Enter 0AOP-18 and manually starts the 2B Nuclear Service Water Pump to restore Nuclear Service Water parameters within normal limits.

Success Path:

Nuclear Service Water header is restored to operating within normal ranges with the 2B Nuclear Service Water Pump operating.

Simulator Operator Activities:

- WHEN directed by the lead examiner, activate TRIGGER 3 (2A Nuclear Service Water Pump trip with failure of 2B Nuclear Service Water Pump to auto start)
- **IF** asked to investigate in the Service Water Building, wait 3 minutes and then report an acrid smell in the vicinity of the 2A Nuclear Service Water Pump motor, but that there are no signs of smoke and/or fire
- **IF** asked to investigate in the Diesel Generator Building, wait 3 minutes and report that there are overcurrent trips on all three phases of the 2A Nuclear Service Water Pump 4KV Breaker.
- IF contacted as I&C and requested to help with the investigation of the failure of the 2A Nuclear Service Water Pump, acknowledge the request.



EVENT 5 2A NUCLEAR SERVICE WATER PUMP TRIP

Required Operator Actions

Abnormal Operating Procedures – Nuclear Service Water Failure

SCO

- Reference/Enter 0AOP-18.0 and directs the actions of the BOP to facilitate restoration of the Nuclear Service Water System to within normal limits
- Evaluates Technical Specifications:

Tech Spec 3.7.2.B (Tracking – required number of nuclear service water pumps remain Operable)

- BOP
- Manually starts the 2B Nuclear Service Water Pump
- Verifies Nuclear Service Water parameters return to normal limits



- References/Enters 0AOP-18
- Responds to annunciators:
 2-UA-17 6-1, Bus E3-4KV MTR OVLD
 2-UA-1 1-10, NUCLEAR SERV WTR HDR PR LO
 2-UA-1 2-10, NUCLEAR SERV WTR PMP A TRIP

RO/BOP

• Dispatches an AO to the Service Water building and Diesel Generator building to investigate cause of 2A NSW Pump trip.





EVENT 5 2A NUCLEAR SERVICE WATER PUMP TRIP

APPLICANT'S ACTIONS OR BEHAVIOR:







EVENT 6 – RCIC MECHANICAL OVERSPEED TRIP

The crew will observe and respond to a mechanical overspeed trip of the RCIC turbine.

Malfunctions required:

None

Objectives:

SCO

Directs response to Annunciator A-3 5-3, RCIC TURB TRIP

Directs contacting auxiliary operator to investigate

Evaluates Tech Specs for RCIC Inoperability

Directs re-latch of trip device

RO

Reviews APP A-3 5-3, RCIC TURB TRIP

Re-latches RCIC mechanical overspeed per OP-16, sections 8.3. & 5.1

RO/BOP

Dispatches AO to investigate the cause of the RCIC trip

Success Path:

RCIC mechanical overspeed re-latched with RCIC in a standby alignment.

Simulator Operator:

- At examiners discretion activate **TRIGGER 12** (RCIC Mechanical Overspeed Trip).
- WHEN called to investigate, report back in 3 minutes that the problem occurred because an auxiliary operator accidentally bumped the overspeed latch. Report that at all personnel are clear and the device can be re-latched.

WHEN contacted to relatch RCIC overspeed trip, activate **TRIGGER 13**. then report that the overspeed latch mechanism has been reset.





EVENT 6 – RCIC MECHANICAL OVERSPEED TRIP

Required Operator Actions:

SRO

- Directs response to Annunciator A-3 5-3, RCIC TURB TRIP
- Directs contacting field operator to investigate
- Evaluates Technical Specifications:

Tech Spec 3.5.3.A RCIC Inoperable

A.1 Verify by administrative means HPCI Operability

AND

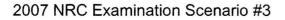
- A.2 Restore RCIC to Operable status (14 days)
- Directs re-latch of trip device
- Directs re-opening of the RCIC TRIP THROTTLE VALVE to restore RCIC operability.

RO

- Reviews APP A-3 5-3, RCIC TURB TRIP
- Re-latches RCIC mechanical overspeed per OP-16, sections 8.3. & 5.1
- Notes that APP states to refer to OP-16 to reset the mechanical overspeed
- Per OP-16 step 8.3.2. CLOSES (takes handswitch to close) TURBINE TRIP & THROTTLE VALVE E51-V8
- Directs the AO to perform the steps of OP-16 Step 8.3.1. to locally reset RCIC mechanical overspeed device.
- When informed by the AO that the device is re-latched, re-opens TURBINE TRIP & THROTTLE VALVE E51-V8 per SCO direction.

***EVALUATOR NOTE: IF requested by RO, state that another operator will perform necessary independent verification steps.







RO/BOP

• Dispatches AO to investigate cause of trip



The crew will observe and respond to a spurious opening of the 2-FW-V120 (loss of feedwater heating) and resultant fuel failure due to the cold water injection overpower.

Malfunctions required:

• 2-FW-V120 (High Pressure Feedwater Heater String) will receive a spurious "Open" signal for 30 seconds, resulting in a loss of feedwater heating and companion power increase.

Objectives:

SCO

Directs the actions of the crew per 2AOP-03.0, Positive Reactivity Addition, in response to the opening of the 2-FW-V120 to limit the power excursion resulting from the cold water addition.

Directs the actions of the crew per 0AOP-05.0, Abnormal Rad Conditions, in response to the indications of fuel failure resulting from the overpower event caused by the loss of feedwater heating.

Enters EOP-04-RRCP, Rad Release Control Procedure and 2EOP-01-RSP, Reactor Scram Procedure.

RO

Lowers reactor power, when directed, to mitigate the overpower resulting from the loss of feedwater heating.

Continues lowering power, as directed, in response to increases in radiological conditions in the plant resulting from fuel failure.

Inserts a manual scram, when directed.



BOP

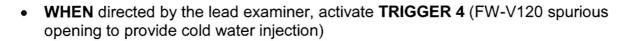
Recognizes and reports the abnormal position of the 2-FW-V120 and takes action to close the valve

Observes and reports annunciators relating to fuel failure, specifically as relating to changing radiological conditions

Success Path:

The crew will correctly diagnose the spurious opening of the 2-FW-V120 and take actions to close the valve and manage power level to limit the overpower condition and subsequent fuel failure.

Simulator Operator Activities:



NOTE: Fuel failure will ramp to 100% severity over 5 minutes. **IF** a scram is inserted prior to fuel failure reaching 100%, **THEN TRIGGER** 14 will automatically actuate to ramp fuel failure to 100% when control rods begin to insert.

- **IF** asked as an auxiliary operator, standby and open the breaker for the 2-FW-V120 when it is moved to a "Closed" position by activating **TRIGGER 10**.
- WHEN directed by the lead examiner, activate TRIGGER 5 (Fuel Failure).
- WHEN asked as E&RC, acknowledge the request to perform area radiological surveys.



Required Operator Actions:

SCO

- Direct actions to close the 2-FW-V120 and entry into 0AOP-03.0: Positive Reactivity Addition
- Enter and direct actions of 0"AOP-05.0 Abnormal Rad Conditions, based on the fuel failure.
- Enter and direct actions of 0EOP-04-RRCP (Radiological Release Control Procedure)
 - When UA-23, 2-6 (MSL Rad Hi) is in alarm, Enters EOP-04-RRCP (Rad Release Control Procedure)
 - Request Unit 1 or Ops Center to Perform PEP 3.4.7 (site boundary dose)
 - o Ensure/direct BOP to place CREV in service
 - o Determine if annunciator UA-3, 5-4 (Stack Rad Hi Hi) is in alarm
 - If yes, ensure/direct BOP to verify SBGTs in service, RB ventilation isolated
 - o Ensures AOG is in service
 - o Directs RO to reduce power to clear UA-23, 2-6 (MSL Rad Hi)
 - o Notify E&RC to obtain off-gas and coolant samples
 - o Assess if annunciator UA-3, 4-2 (SJAE Rad Hi Hi) has been in alarm
 - o Assess if Main Stack Rad is rising
 - o Ensures AOG bypass (AOG-HCV-102) is closed
 - o Directs reactor shutdown per GP-05
 - o Determine if UA-23, 3-6 (MSL Rad Hi Hi) is in alarm

When Yes

- Direct RO to scram the reactor
- Directs BOP to close Group 1 isolation valves
 - (B21-F022A-D, B21-F028A-D, B21-F016/F019, B32-F019/F020)



Required Operator Actions:

SRO (cont.)

CRITICAL TASK(MSIVs and Drains are Critical) When Main Steam Line Rad High High has been exceeded, Directs actions to manually scram and close Group 1 isolation valves.

- Determines Reactor Power is >2% (ATWS) goes to Level-Power Control
- Directs BOP to control reactor pressure 800 psig to 1000 psig using SRVs
- Directs reactor water level control using HPCI/RCIC

RO

- Recognizes and reports Main Steam Line Rad Hi (UA-23, 2-6)
- When directed lowers reactor power to keep main steam line high rad alarm clear IAW ENP-24
 - o Lowers Recirc Flow to 47 Mlbm/hour
 - Inserts Control Rods IAW ENP-24 established emergency power reduction
- When directed, insert a manual scram based on radiological conditions.
- Recognizes and reports failure of controls to insert (ATWS)
- Places ARI to Trip IAW the Scram Hard Card

BOP

- Identify and report the position of the 2–FW-V120 and take action to close the valve.
 - Recognizes and reports Radiological Conditions from annunciators and rad monitors
- When directed closes Group 1 isolation valves (B21-F022A-D, B21-F028A-D, B21-F016/F019, B32-F019/F020)
 - - ***CRITICAL TASK***(MSIVs and Drains are Critical) Following scram closes Group 1 isolation valves.
 - Following scram, maintains reactor water level 170" to 200" using HPCI and/or RCIC.
 - Following scram, maintains reactor pressure 800 psig to 1000 psig with HPCI and/or SRVs.







APPLICANT'S ACTIONS OR BEHAVIOR:





EVENT 9 ATWS

The crew will observe and respond to an ATWS when a reactor scram is attempted.

Malfunctions required:

• The manual scram pushbutton will be overridden to prevent a scram from being successful via depressing of the manual scram pushbuttons.

Objectives:

SCO

Directs actions of the crew in response to the failure of the reactor to scram.

Enters 2EOP-01-RSP, Reactor Scram Procedure and 2EOP-01-LPC, Level Power Control.

RO

Inserts a manual scram, when directed, and takes the appropriate actions in response to the failure of the RPS system to complete a scram.

BOP

Maintains vessel level 170" to 200: using HPCI and RCIC.

Maintains vessel pressure 800 psig to 1000 psig using SRVs and/or HPCI in pressure control mode.



EVENT 9 ATWS

Success Path:

The crew will correctly diagnose the ATWS condition and effect control rod insertion by placing the mode switch in Shutdown or by ARI initiation.

Simulator Operator Activities:

• NONE

Required Operator Actions:

SCO

- Enters and directs actions of 0EOP-01-RSP (Reactor Scram Procedure)
- Enters and directs actions of 0EOP-01-LPC (Level-Power Control)
 - *****CRITICAL TASK*****Directs mode switch placed to Shutdown and ARI initiation.
- When all control rods are inserted, go to Reactor Vessel Control Procedure (EOP-01-RVCP)
 - Direct RO/BOP to use SRVs to maintain reactor pressure 800 psig to 1000 psig
 - Direct RO/BOP to control Reactor Water Level 170" to 200" using HPCI/RCIC
- When Suppression Pool Temperature reaches 95°F enters EOP-02-PCCP, Primary Containment Control Procedure.
 - Direct RO/BOP to maximize Suppression Pool Cooling when Suppression Pool temperature is > 95°F.

RO

- Identifies and responds to the reactor failure to scram and takes appropriate action per 2EOP-01-LPC.
 - o Initiates ARI (per scram hard card or as directed by SRO).
 - Places Recirc Contr. to 10% (per scram hard card or as directed by SRO)



EVENT 9 ATWS

Required Operator Actions (cont.):

RO (cont.)

 Places Reactor Mode Switch to shutdown (immediate operator action or as directed by SRO)

CRITICAL TASK* Initiates ARI and places mode switch to shutdown.

When directed, perform LEP-02, Alternate Control Rod Insertion

RO/BOP

- When directed, establishes and controls reactor pressure in a band 800 psig to 1000 psig using SRVs
- When directed, maintain reactor water level 170" to 200" using HPCI/RCIC RCIC
 - Open E51-F046
 - Start Barometric Vacuum Pump
 - Open E51-F045
 - Open E51-F013
 - Adjust RCIC flow controller to establish desired flowrate (pre-set value is 500 gpm)

HPCI

- Open E41-F059
- Start Vacuum Pump
- Open E41-F001
- Start Aux Oil Pump
- Open E41-F006 (auto open on valve is failed, but valve will open when control switch is operated.
- Adjust Flow Controller to desired injection rate.



EVENT 9 ATWS

Required Operator Actions (cont.):

RO/BOP (cont.)

- When directed places "A" and "B" loops of RHR in Suppression Pool Cooling per the Hard Card.
 - Service Water
 - Opens SW-V105 ("B" Loop) and SW-V101 ("A" Loop)
 - Starts RHRSW Booster Pump (places control switch to Start
 - Throttles Open E11-F068A/B
 - Recognizes and Reports Failure of E11-F068A to Open.
 - RHR
 - If E11-F015A(B) is Open, closes E11-F017A(B)
 - Starts Loop A(B) RHR Pump using control switch
 - Opens E11-F028A(B)
 - Throttles Open E11-F024A(B)
 - Throttles closed E11-F048A(B)







EVENT 9 ATWS

APPLICANT'S ACTIONS OR BEHAVIOR:







EVENT 10 SRV F STUCK OPEN

The crew will respond to a failure of SRV F to close following the placing of its control switch to the "AUTO" position following its manual actuation in support of reactor pressure control.

Malfunctions required:

 SRV "F" will fail in the OPEN position following its use to maintain reactor pressure.

Objectives:

SCO

Enter and direct actions associated with 2EOP-02-PCCP (Primary Containment Control Procedure) due to heating of the Suppression Pool.

Directs actions for 0AOP-30.0 (SRV Failure)

Directs RO/BOP to place all available loops of RHR in Suppression Pool Cooling

RO

Recognizes and communicates failure of SRV "F" to close when it's switch is taken to the AUTO position.

Takes actions as directed by the 0AOP-30, to attempt to close the SRV

When directed, places RHR in Suppression Pool Cooling to mitigate the heat addition due to the failed open SRV

BOP

When directed, supports placing RHR in Suppression Pool Cooling to mitigate the heat addition due to the failed open SRV

Success Path:

Crew recognizes the failed open SRV and takes the actions as directed by the AOP and EOP relating to the failure.





EVENT 10 SRV F STUCK OPEN

Simulator Operator Activities

NOTE: When SRV F is opened (Red Lamp ON) **TRIGGER 6** will automatically initiate activating SRV F Fails Open Malfunction.

WHEN requested pull SRV fuses by initiating TRIGGER 11 (SRV will remain open)

Required Operator Actions

SCO

- Directs entry into 0AOP-30.0 (stuck open relief valve).
 - Directs 0AOP-30.0 actions to attempt to achieve reclosure of SRV F by cycling control switch and leaving in the Auto/Closed position.
 - o Directs 0AOP-30.0 actions to have fuses removed IAW AOP guidance.
- Contacts Maintenance personnel for assistance in the stuck open SRV
- When Suppression Pool Temperature reaches 95°F enters 0EOP-02-PCCP (Primary Containment Control Procedure) and directs actions associated with the heating of the suppression pool resulting from the stuck open SRV.
 - Direct RO/BOP to maximize Suppression Pool Cooling when Suppression Pool temperature is > 95°F.

RO/BOP

- Recognizes and Reports failure of SRV F to close.
 - o Enters and executes 0AOP-30.0 as directed to attempt to re-close SRV F.
 - Cycles SRV several times, leaves switch in Auto/Close position (immediate operator actions of AOP)
 - o Contacts I&C for assistance in removal of fuses IAW AOP-30.0.
 - After fuses are removed, determines and notifies SRO that the relief valve is still open.



EVENT 10 SRV F STUCK OPEN



Required Operator Actions (cont.):

RO/BOP (cont.)

- When directed places "A" and "B" loops of RHR in Suppression Pool Cooling per the Hard Card.
 - Service Water
 - Opens SW-V105 ("B" Loop) and SW-V101 ("A" Loop)
 - Starts RHRSW Booster Pump (places control switch to Start
 - Throttles Open E11-F068A/B
 - Recognizes and Reports Failure of E11-F068A to Open.
 - RHR
 - If E11-F015A(B) is Open, closes E11-F017A(B)
 - Starts Loop A(B) RHR Pump using control switch
 - Opens E11-F028A(B)
 - Throttles Open E11-F024A(B)
 - Throttles closed E11-F048A(B)



EVENT 10 SRV F STUCK OPEN

APPLICANT'S ACTIONS OR BEHAVIOR:





EVENT 11/12 RHR HEAT EXCHANGER TUBE LEAK/SERVICE WATER FAILURE TO ISOLATE/ RHR SW BOOSTER PUMP TRIP

The crew will respond to an RHR Heat Exchanger tube leak accompanied by an RHR Service Water Booster Pump trip and subsequent failure of the outflow isolation valve to automatically close (Radioactive Release).

Malfunctions required:

An RHR Heat Exchanger tube failure will occur (indicated by a rising conductivity of the RHR system). The supporting RHR Service Water Booster Pump will, subsequently, trip accompanied by the Service Water Loop effluent valve (2-E11-F068B) failure to automatically close.

Objectives:

SCO

Will direct the actions of 0EOP-04-RRCP (Radioactive Release Control Procedure) associated with the Service Water Leg of the procedure

*** **CRITICAL TASK***** Will recognize the failure of the 2-E11-F068B to close and provide direction/ oversight to ensure the valve is closed by operator action.

BOP

Will recognize and report the failure of the RHR Service Water Booster Pump and the accompanying failure of the 2-E11-F068B (RHR Service Water Loop Effluent) to automatically close.

*** **CRITICAL TASK***** Will take action to manually manipulate the 2-E11-F068B to close the valve and stop the radiological effluent path from the heat exchanger via the Service Water effluent.

Examiner Note: Closure of the E11-F003 and E11-F047 would also isolate the source of the leak.

Success Path:

The crew will recognize the indications of the RHR Heat Exchanger tube leak. Following the tripping of the RHR Service Water Booster Pump and the failure of the 2-E11-F068B to close, the crew will take action to achieve isolation of the radioactive effluent via the Service Water system by closing the 2-E11-F068B.





Simulator Operator Activities:

NOTE: WHEN E11-F024B is opened (Red Lamp ON) by the operator, **TRIGGER 7** will automatically initiate activating RHR B HX tube leak malfunction.

NOTE: WHEN E11 F024B is opened (Red Lamp ON) **AND** RHR SW B flow is greater than 1000 gpm, **TRIGGER 8** will automatically initiate activating RHR SW Booster Pump B motor winding fault malfunction, tripping the 2B RHR SW pump.

 IF requested as the building auxiliary operator to check the 2-E11-F068B or manually close the 2-E11-F068B, acknowledge the request.

Required Operator Actions:

SRO

- When notified of RHR HX outlet conductivity Hi (A-3, 2-10) directs RO/BOP to take actions IAW APP.
- When notified of Service Water Effluent Rad High (UA-3, 5-5)
 - Directs actions associated with the Service Water leg of 0EOP-04-RRCP, Radioactive Release Control Procedure.
 - Contacts E&RC to sample SW outlet per 0EOP-04-RRCP to determine source of radioactivity.
 - Directs RO/BOP to isolate RHR Heat Exchanger IAW APP or EOP-04-RRCP
- *** **CRITICAL TASK***** Provides oversight and direction, as applicable, to the BOP to take individual action to attempt to close the 2-E11-F068B.

BOP

- Recognizes and communicates the indications of the RHR Heat Exchanger tube leak to the crew.
 - Recognizes and reports RHR HX Outlet Conductivity Hi (A-3 2-10, RHR Ht Exh B Outlet Cond. High).





EVENT 11/12 RHR HEAT EXCHANGER TUBE LEAK/SERVICE WATER FAILURE TO ISOLATE/ RHR SW BOOSTER PUMP TRIP

Required Operator Actions (cont.):

BOP (cont.)

- Recognizes and reports the tripping of the RHR Service Water Booster Pump and accompanying failure of the 2-E11-F068B to automatically close.
 - o Closes E11-F068B and reports to the SRO.
 - If directed, closes E11-F003B and E11-F047B to isolate the RHR Heat Exchanger.
 - Refers to annunciator procedure UA-3 5-5, Service Water Effluent Rad High.
- *** CRITICAL TASK*** Takes action, as directed, to isolate the source of the radioactive release by either closing the E11-F068B or by isolating the heat exchanger by closing the E11-F003 (HX Outlet isolation) and E11-F047 (HX Inlet isolation).



EVENT 11/12 RHR HEAT EXCHANGER TUBE LEAK/SERVICE WATER FAILURE TO ISOLATE/ RHR SW BOOSTER PUMP TRIP

APPLICANT'S ACTIONS OR BEHAVIOR:





EVENT 13 SRV F TAILPIPE BREAK/EMERGENCY DEPRESSURIZATION REQUIRED

The crew will respond to indications of a failure of the SRV "F" tailpipe in the air space of the suppression chamber, resulting in entry of the Unsafe region of the Pressure Suppression Pressure graph, requiring an Emergency Depressurization of the reactor.

Malfunctions Required:

The SRV "F" tailpipe will experience a failure in the air space of the Suppression Chamber, resulting in a loss of the pressure suppression function of the suppression pool.

Objectives:

SCO Diagnose the SRV tailpipe failure based on the rapid increase in containment pressure and the accompanying loss of differential pressure between the Drywell and Suppression Chamber air space.

Assess the changing conditions in the containment, specifically the approach to and entry into the Unsafe region of the Pressure Suppression Pressure curve, requiring Emergency Depressurization of the reactor.

*** **CRITICAL TASK***** Successfully direct the actions prescribed in 0EOP-02-PCCP (Primary Containment Control Procedure) to Emergency Depressurize the reactor.

RO/BOP Identify and report the changes in containment pressure.

Observe and report the lowering differential pressure between the air spaces and participate in the diagnosis of the loss of pressure suppression function.

*** **CRITICAL TASK***** When directed, take the actions necessary to Emergency Depressurize the reactor and control injection sources to prevent overfilling of the reactor pressure vessel.

Success Path:

The crew will correctly diagnose the loss of pressure suppression function of the containment and complete an Emergency Depressurization of the reactor.







EVENT 13 SRV F TAILPIPE BREAK/EMERGENCY DEPRESSURIZATION REQUIRED

Simulator Operator Activities:

• WHEN directed by the lead examiner, after the F068B valve closes, initiate TRIGGER 9 (SRV Tailpipe Failure).

Required Operator Actions:

sco

- Correctly diagnoses the SRV tailpipe failure and subsequent entry into the Unsafe region of the Pressure Suppression Pressure graph.
 - o Recognizes changes in primary containment pressure
 - o Prior to Suppression Chamber Pressure Exceeding 11.5 psig
 - Directs RO/BOP to perform Suppression Pool Spray per SEP-03
 - o When Suppression Chamber exceeds 11.5 psig,
 - Directs RO/BOP to perform Drywell Sprays per SEP-02
 - Determines Anticipation of Emergency Depressurization is not permitted because of the failed fuel (EOP-01-RVCP guidance)
 - Determines Pressure Suppression Pressure cannot be maintained in the safe region of the graph and directs Emergency Depressurization of the reactor

*****CRITICAL TASK***** Direct the actions prescribed in 0EOP-02-PCCP to Emergency Depressurize the reactor when Pressure Suppression Pressure cannot be maintained in the SAFE region.

RO/BOP

- Observe and report the changes in containment parameters associated with the SRV tailpipe failure
 - Support the diagnosis of the loss of pressure suppression function of the containment.
- When directed, Sprays the Suppression Chamber per SEP-03
 - o Places 2/3 Core Height Override Position to ON





- o Place Containment Spray Valve Control Switch to Manual
- If E11-F015A(B) is open and RHR injection is not necessary, close E11-F017A(B)
- o Start/Ensure a loop RHR Pump is running
- Open E11-F028A(B)
- o Open E11-F027A(B)
- Ensure Loop is aligned to one of the following: LPCI, Suppression Pool Cooling, or drywell spray.
- When directed to spray the drywell per SEP-02
 - o Ensure Recirc Pumps are tripped
 - o Ensure Drywell Coolers not running
 - Close E11-F024A(B)
 - o Verify in Safe region of Drywell Spray Initiation Graph
 - o Ensure "B" Loop RHR Pump running
 - o Open E11-F021A(B)
 - o Open E11-F016A(B)
- When directed, open 7 ADS valves by taking control switches to Open

CRITICAL TASK When directed, Emergency Depressurize by opening 7 ADS valves.

NOTE: During Emergency Depressurization, coolant swell will cause Reactor Water Level to be out-of-band high

Control Injection to establish post depressurization water level 170" to 200"





EVENT 13 SRV F TAILPIPE BREAK/EMERGENCY DEPRESSURIZATION REQUIRED

APPLICANT'S ACTIONS OR BEHAVIOR:







Simulator Operator Activities:

WHEN directed by the lead examiner, place the simulator in FREEZE.

CAUTION

DO NOT RESET THE SIMULATOR PRIOR TO RECEIPT OF CONCURRENCE TO DO SO FROM THE LEAD EXAMINER







Title - 2007 NRC Scenario 3

Path - E:\NRC Simulator Dynamic Masters\NRC Scenario SCN files\2007 NRC Scenario 3.scn

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