

Facility: <u>ANO Unit 1</u> Scenario No.: <u>1</u> Op-Test No.: <u>1</u>			
Examiners: _____ Operators: _____ _____			
Initial Conditions: 100% Power; Equilibrium Xenon, MOC P3D Circ Water Pump idle due to low lake temperature. Idle pump available, if needed. #2 EDG Service Water valve fails to open on manual or autostart. Channels 1 and 2 of ESAS fail to automatically actuate when valid setpoint is reached.			
Turnover: 100% Power; Equilibrium Xenon, MOC P3D Circ Water Pump idle due to low lake temperature. Idle pump available, if needed. AO routinely checking and washing travelling screens due to mild shad run over past 24 hours.			
Event No.	Malf. No.	Event Type*	Event Description
1 T=4	IMF CV059 50 R5:00	C (BOR)	RCS leak into the "B" letdown cooler (Intersystem LOCA)
2 T=15	N/A	N (BOR)	Restore Letdown after High Temperature isolation
3 T=20	ICM CV1235_a 0	C (BOR)	Pressurizer level control valve fails in current position
4 T=25	IMF IA170 2 R0	R (BOR) C (ALL)	Loss of Instrument Air. Power reduction.
5 T=2 min. after pwr reduction started	IMF RX150	I (BOT) R (BOT)	Turbine EHC fails to respond to ICS signal in AUTO mode
6 T=45	IMF RC005 .007 R2:00	M (ALL)	LOCA (ESAS actuates)
7	IMF ES259 IMF ES260	C (BOR)	Channels 1 and 2 of ESAS fail to auto actuate on valid setpoint
8	ICM CV3807_a 0	C (BOT)	#2 EDG Service Water valve fails to open when EDG autostarts

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

Simulator Instructions for Scenario #1				Page 2 of 8
Event No.	Time	Malfunction No. Input Command	Value/Ramp/ Delay	Event Description
7&8	T=0	IMF ES259 IMF ES260 ICM CV3807_a	N/A N/A 0	Channels 1 and 2 of ESAS fail to auto actuate on valid setpoint #2 EDG Service Water valve fails to open when EDG autostarts
1	T=4	IMF CV059	50 R5:00	RCS leak into the "B" letdown cooler (Intersystem LOCA)
2	T=15	N/A	N/A	Restore Letdown after High Temperature isolation
3	T=20	ICM CV1235_a	0	Pressurizer level control valve fails in current position
4	T=25	IMF IA170	2 R0	Loss of Instrument Air. Power reduction.
5	T=2 min. after pwr reduction started	IMF RX150	N/A	Turbine EHC fails to respond to ICS signal in AUTO mode
6	T=45	IMF RC005	.007 R0	LOCA (ESAS actuates)

Op-Test No: <u> 1 </u> Scenario No: <u> 1 </u> Event No: <u> 1 </u>		Page 3 of 8
Event Description: <u>RCS leak into the "B" Letdown cooler (Intersystem LOCA).</u>		
Time	Position	Applicants Actions or Behavior
T=4	CRS	Direct operations per 1203.0121 for Process Monitor Radiation High Alarm. Step 8, page 12 of 54.
	CREW	Determine RCS leakage into nuclear ICW system
	CRS	Direct operations per 1203.039 Excess RCS Leakage
	CREW	Determine leak is into the 'B' cooler and perform step 3.4.7 of 1203.039
CT	CBOR/ CBOT	Isolate the 'B' LD cooler
NOTE:		
When AO is called to verify surge tank level, report that the surge tank has been stabilized after cooler isolation.		
		Refer to EAL classification Alert 2.2 Leakage > normal makeup (See note 1)
		Refer to technical specifications for leakage 3.1.6
	CRS	Direct restoration of L/D if isolated by high temperature (See Next Event)
EVENT TERMINATION CRITERIA		
"B" Letdown Cooler is isolated and RCS leak verified stopped.		

Op-Test No: <u> 1 </u> Scenario No: <u> 1 </u> Event No: <u> 2 </u> Page 4 of 8		
Event Description: <u>Restoration of letdown following isolation due to high temperature.</u>		
Time	Position	Applicants Actions or Behavior
T _≅ 15	CRS	Direct restoration of Letdown per Makeup and Purification System procedure 1104.002, section 15.0.
	CBOR	Close the letdown orifice bypass (CV1223)
	CBOR	Close the inlet to the in-service purification demineralizer (CV1244 or CV1245)
	CREW	Contact the WCO and dispatch him to open the purification demineralizer manual bypass valve (MU-9)
	CBOT	Open CV1221 on C16. (Valve may need to be cycled if it closes on high temperature again, until cooler water passes the TE giving the temperature indication)
	CBOR	Open the inlet to the previously in-service purification demineralizer (CV1244 or CV1245)
	CREW	Dispatch the WCO to close the demineralizer bypass valve, MU-9.
	CBOR	Re-establish desired letdown flow.
EVENT TERMINATION CRITERIA		
Letdown restored to desired flow rate with L/D temperature <130°F.		

Time	Position	Applicants Actions or Behavior
Op-Test No: <u> 1 </u> Scenario No: <u> 1 </u> Event No: <u> 3&4 </u> Page 5 of 8		
Event Description: <u>Loss of instrument air. CV 1235 fails in it's current position.</u>		
T=20	CBOR	Identify that the pressurizer makeup valve, CV1235, will not control the pressurizer level at the desired setpoint.
	CBOR	Take manual control of CV1235 and attempt to open to restore pressurizer level to setpoint.
	CBOR	Identify that CV1235 will not respond to demanded signal.
T=25	CREW	Recognize lowering IA pressure
	CREW	Dispatch operators to locate the leak
<p style="text-align: center;">IA NOTE:</p> Adjust size of the instrument air leak to maintain pressure above 50 psig but below 60 psig to prompt continued power reduction until the leak is located and isolated. Once power reduction has begun, Call as the WCO and report the leak in the Aux. Bldg. Lower north piping area going to CV1235.		
	CRS	Direct operations per 1203.024
	CBOR	Commence power reduction at 60# IA pressure NOTE: The next event will occur as the plant power reduction is performed.
	CRS	Direct isolating the instrument air leak by closing the isolation valve to the leak, IA218
<p style="text-align: center;">IA NOTE:</p> Use CAE file caeialeak , "IA leak at IA218" to simulate the isolation of the leak and the loss of control of the effected components.		
	CRS	Contact Mechanical maintenance for emergency repair of the IA line.
<p style="text-align: center;">NOTE:</p> TIME COMPRESSION: Simulate repair of the IA line to allow for continued recovery.		
	CRS	Direct unisolating the leak when repairs have been completed.
<p style="text-align: center;">IA NOTE:</p> Select the component malfunction button at top of IA screen and delete all malfunctions to simulate opening of IA218.		
	CRS	Direct placing PZR controls in automatic
	CBOR	Return PZR controls to Automatic
EVENT TERMINATION CRITERIA		
Leak repaired and the Pressurizer controls in auto OR LOCA event begins		

Op-Test No: <u> 1 </u> Scenario No: <u> 1 </u> Event No: <u> 4&5 </u>		Page 6 of 8
Event Description: <u>Turbine EHC fails to respond.</u>		
Time	Position	Applicants Actions or Behavior
T=27	CBOT	Recognize failure of turbine to respond during the power reduction.
NOTE		
Turbine may revert to Operator Auto mode before operator takes action.		
	CBOT	Take the turbine to manual or operator auto
	CBOT	Continue power reduction in turbine leading mode
<u>ROLE PLAY</u>		
If asked about PPAS information, report ICS signal to EHC good.		
	CBOR	Stabilize power at new level when IA leak is isolated and pressure begins to recover.
EVENT TERMINATION CRITERIA		
This event will remain for the duration of the scenario.		

Time	Position	Applicants Actions or Behavior
Op-Test No: <u> 1 </u> Scenario No: <u> 1 </u> Event No: <u> 6 , 7,& 8 </u> Page 7 of 8		
Event Description: <u>LOCA in the "A" RCS loop Tcold. ESAS channels 1 and 2 fail to auto actuate. #2 EDG service water valve fails to open when the EDG autostarts.</u>		
T=45	CBOR	Identify pressurizer level and RCS pressure dropping.
	CBOT	Recognize and report RCS leakage into the Reactor Building. Tech Spec. 3.1.6 EAL 2.4, SAE (RCS leakage >HPI capacity)
	CRS	Direct initiation of HPI per RT 2.
NOTE		
The crew may manually initiate ESAS due to the imminent automatic actuation prior to reaching the setpoint and therefore may not identify the failure of channel 1 and 2 to auto actuate.		
	CREW	Recognize the actuation of ESAS on low RCS pressure.
	CBOR	Identify the failure of channels 1 and 2 of ESAS to actuate.
CT	CBOR	Manually initiate channel 1 and 2 from the pushbuttons on C04
	CRS	Transition to ESAS procedure, 1202.010, and direct crew operations
	CBOR	Check for adequate subcooling margin.
	CBOT	Verify proper ESAS actuation per RT 10.
	CBOT	Identify the failure of the service water valve for the #2 EDG to open when the EDG autostarts.
	CBOT	Attempt to open the service water valve for #2 EDG.
	CRS	Direct the stopping of the #2 EDG.
	CBOT	Stop the #2 EDG by placing the #2 EDG control switch in "LOCKOUT" position.
	CBOR	Close the following valves; CV-1008, CV-1009, and CV-1000
Continued		

Op-Test No: <u> 1 </u> Scenario No: <u> 1 </u> Event No: <u> 6, 7, & 8 </u> Page 8 of 8		
Event Description: <u>LOCA in the "A" RCS loop Tcold. ESAS channels 1 and 2 fail to auto actuate. #2 EDG service water valve fails to open when the EDG autostarts.</u>		
Time	Position	Applicants Actions or Behavior
	CRS	Transition to Loss of subcooling margin procedure, 1202.002, and direct crew actions.
	CBOR	Control RCS pressure within limits of Figure 3 of EOP (RT 14)
EVENT and SCENARIO TERMINATION CRITERIA		
All appropriate channels of ESAS actuated and HPI injecting water into RCS and RCS pressure stable. OR As directed by the lead examiner		

Facility: <u>ANO Unit 1</u> Scenario No.: <u>2</u> Op-Test No.: <u>1</u>			
Examiners: _____ Operators: _____ _____			
Initial Conditions: 100% Power; Equilibrium Xenon; MOC RPS fails to actuate on a valid trip setpoint being reached EFW valves to the "A" OTSG fail open and will not close from the control room switches			
Turnover: 100% Power; Equilibrium Xenon; MOC P3D Circ Water Pump is idle due to low lake temperature. Idle pump is available, If needed. AO routinely checking and washing travelling screens due to mild shad run over past 24 hours.			
Event No.	Malf. No.	Event Type*	Event Description
1 T=3	TR582 300 R3:00	I (BOR)	"A" loop selected MFW Temperature instrument fails low slowly
2 T=15	IMF ED453	I (ALL)	SPDS Loss of Power
3 T=20	IOR -DO K05F1 CAE FILE: 4Astrmri	N (BOT)	Travelling Screen Trouble Annunciator "A" Service Water strainer delta P alarm (Shift service water pumps)
4 T=35	CAE FILE: caeH2hi	R (BOR)	Generator H2 temperature Hi alarm. Power reduction to stabilize temperatures.
5 T=55	EG171 200 R0	C (BOT)	Main Turbine trip >43% power
6 T=55	RP246,247 248,249	C (BOR)	RPS failure to trip upon receipt of a valid trip signal.
7 T=57	ED180	M (ALL)	Degraded Power (SU #1 transformer lockout relay trip)
8	ICM CV2627_a 1 ICM CV2645_a 1	C (BOR)	EFW valves to the "A" OTSG fail open resulting in level being raised higher than the EFIC controlled setpoint.

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

Simulator Instructions for Scenario #1				Page 2 of 9
Event No.	Time	Malfunction No. Input Command	Value/Ramp/Delay	Event Description
6 & 8	T=0	RP246,247248,249 ICM CV2627_a ICM CV2645_a	N/A 1 1	RPS failure to trip upon receipt of a valid trip signal EFW valves to the "A" OTSG fail open resulting in level being raised higher than the EFIC controlled setpoint.
1	T=3	TR582	300 R3:00	"A" loop selected MFW Temperature instrument fails low slowly
2	T=15	IMF ED453	N/A	SPDS Loss of Power
3	T=20	IOR -DO K05F1 CAE FILE: 4Astrnrhi	TRUE N/A	Travelling Screen Trouble Annunciator "A" Service Water strainer delta P alarm (Shift service water pumps)
4	T=35	CAE FILE: caeH2hi IOR -AO TR9001I_T	N/A 175 R2:00	Generator H2 temperature Hi alarm. Power reduction to stabilize temperatures. Stator Temperature RTD 10 ramps hi.
5	T=55	EG171	200 R0	Main Turbine trip >43% power
7	T=57	ED180	N/A	Degraded Power (SU #1 transformer lockout relay trip)

Op-Test No: <u> 1 </u> Scenario No: <u> 2 </u> Event No: <u> 1 </u> Page 3 of 9		
Event Description: "A" Main feedwater temperature transmitter fails low		
Time	Position	Applicants Actions or Behavior
T=3	CREW	Report SASS Mismatch alarm, K07B4.
	CRS	Refer to ACA, 1202.012F-B4, Page 20 of 41.
	CBOR	Place BOTH FW loop demands to manual
	CBOR	Place "A" MFW pump H/A station to "HAND"
	CBOR	Stabilize Feedwater flow.
	CBOT	Check redundant instrument is valid on the plant computer (PMS)
	CBOT	Select opposite (good) feedwater temperature instrument for control on C13
	CBOR	Select opposite (good) FW flow instrument on C03
	CBOR	Place ICS in "AUTO"
EVENT TERMINATION CRITERIA		
ICS in auto		

Op-Test No: <u> 1 </u> Scenario No: <u> 2 </u> Event No: <u> 2 </u> Page 4 of 9		
Event Description: <u>SPDS Loss of Power.</u>		
Time	Position	Applicants Actions or Behavior
T=15	CREW	Recognize and report the failure of the SPDS displays in the control room on panels C09 and C19.
	CRS	Contact Unit 2 or Computer Support to attempt to reboot the SPDS computers.
	CRS	Determine that there is a one hour time limit to restore operation of at least one SPDS system OR it will become a reportable item.
EVENT TERMINATION CRITERIA		
This event will exist for the remainder of the scenario.		

Op-Test No: <u> 1 </u>		Scenario No: <u> 2 </u>		Event No: <u> 3 </u>		Page 5 of 9	
Event Description: <u>Circ. Water / Service Water problems at the intake structure result in high service water pump strainer ΔP conditions.</u>							
Time	Position	Applicants Actions or Behavior					
T=20	CREW	Report annunciator for Traveling Screen Trouble, K05F1.					
	CRS	Dispatch the AO to check traveling screens and alarm.					
IA NOTE							
Report as the AO that screens C/D are reading 11" H ₂ O DP and rising due to debris in the intake canal. All other screens are ~3-4" DP. You will be washing screens to try and clear the alarm. (Alarm occurs at 8" H ₂ O.)							
2 minutes later, call as the AO and report that it appears that a hole is in the "D" screen and you believe debris has passed into the circ water bay.							
When asked , report the "A" SW strainer D/P is reading 11 psid .							
	CBOR	Recognize and report Service Water Pump "A" strainer DP HI alarm, K10C3.					
	CRS	Refer to ACA for Strainer DP, 1203.012I, page 23.					
	CRS	Direct shifting running service water pumps.					
	CBOT	Shift suction for the "B" service water bay to the ECP					
IA NOTE:							
IF asked, report the "B" SW Bay level is rising when the sluice gate from the ECP is opened.							
	CBOT	Start "B" service water pump and stop "A" pump.					
IA NOTE:							
With the SPDS system OOS, the crew will have to communicate with the outside operator to obtain information normally received from SPDS.							
SW Pump Disch. Press. \cong 80 PSI							
	CRS	Contact mechanical maintenance for cleaning the strainer					
	CRS	Call System Engineering to assist in operability concerns					
EVENT TERMINATION CRITERIA							
Awaiting the completion of strainer cleaning –OR- next event							

Time	Position	Applicants Actions or Behavior
Op-Test No: : <u>1</u> Scenario No: <u>2</u> Event No: <u>4</u> Page 6 of 9		
Event Description: <u>Generator H2 temperature high alarm. Turbine generator stator temperature anomaly.</u>		
T=35	CBOT	Report K04 B6 in alarm. (Generator H2 TEMP HI)
	CRS	Refer to ACA 1202.012C, page 36 of 77.
	CBOT	Report pt. #7-10 on recorder TR9001 in alarm.
	CRS	Send AO to throttle open on H2 cooler ACW outlets.
	CBOR	Reduce load to bring temperatures down
	CRS	Dispatch the AO to report the readings of the Generator Conditions Monitor and Radio Frequency Monitor.
	CBOT	Check for indications of generator degradation on the plant computer or QS9504 on C11.
	CBOT	Report H2 temperatures decreasing.
	CBOT	Report pt. #13 (max. $\Delta T > 14^{\circ}\text{F}$) on TR9001.
	CRS	Refer to 1203.035 and direct actions. (Generator Winding Trouble)
NOTE:		
When asked as AO to check the Generator Conditions Monitor and the Radio Frequency Monitor, report the conditions monitor at 50% and the radio frequency monitor at 31%.		
	CRS	Call System Engineering for assistance
	CBOT	Monitor generator temperatures
EVENT TERMINATION CRITERIA		
NEXT EVENT		

Op-Test No: <u> 1 </u> Scenario No: <u> 2 </u> Event No: <u> 5&6 </u> Page 7 of 9		
Event Description: <u>Main turbine trip >43% power. RPS fails to trip upon receipt of a valid trip signal.</u>		
Time	Position	Applicants Actions or Behavior
T=55	CREW	Recognize and report the main turbine trip alarm
CT	CBOR	Recognize the reactor has not tripped and power is greater than 43%. Manually trip the reactor.
EVENT TERMINATION CRITERIA		
Reactor Tripped		

Op-Test No: <u> 1 </u> Scenario No: <u> 2 </u> Event No: <u> 7 </u> .		Page 8 of 9
Event Description: <u>Degraded Power due to loss of Startup Transformer #1.</u>		
Time	Position	Applicants Actions or Behavior
T=57	CREW	Recognize loss of SU1 and offsite power
	CRS	Transition to the Degraded Power Emergency Operating Procedure (1202.007). Direct operations per 1202.007. Tech Spec 3.7.1 (pg. 56)
	CBOR CBOT	Verify service water to both EDG's.
	CBOR	Verify EFW actuated and perform RT5
	CBOR	Actuate MSLI for both OTSG's using push-buttons on C09. Verify proper actuation using RT6.
	CBOT	Isolate letdown by closing either CV1221 or Letdown Coolers Outlet valves (CV-1214 & 1216).
	CBOT	Place RCP Seal Bleedoff (Alternate path to Quench Tank) controls in CLOSE (SV-1270, 1271, 1272, and 1273).
	CBOT	Isolate RCP Seal Bleedoff (Normal) by closing either; CV-1274 OR CV-1271, 1272, 1273, and 1274.
EVENT TERMINATION CRITERIA		
This event will remain in progress for the remainder of the scenario		

Op-Test No: <u> 1 </u>		Scenario No: <u> 2 </u>	Event No: <u> 8 </u>	Page 9 of 9
Event Description: EFW valves to the "A" OTSG fail open resulting in level being raised higher than the EFIC controlled setpoint.				
Time	Position	Applicants Actions or Behavior		
	CBOR	Report the EFW valves to the "A" OTSG will not control and will not move in manual.		
	CBOR	Place P7B in service if not already running.		
CT	CBOR	Stop P7A. Monitor EFW to ensure P7B feeding OTSGs as necessary.		
EVENT TERMINATION CRITERIA				
P7A stopped, P7B controlling OTSG level, RCS pressure and temperature stable				
OR				
As directed by the lead examiner.				

Facility: <u>ANO Unit 1</u> Scenario No.: <u>3</u> Op-Test No.: <u>1</u>			
Examiners: _____ Operators: _____ _____			
Initial Conditions: 100% Power; Equilibrium Xenon; MOC P3D idle due to low lake temperature. Idle pump is available, if needed.			
Turnover: 100% Power; Equilibrium Xenon; MOC P3D idle due to low lake temperature. Idle pump is available, if needed. Bulk diesel fuel oil is being unloaded at the fuel vault. #2 EDG is OOS for maintenance of the governor. Day 4 of a 7 day T.C. LCO 3.7.2.C .			
Event No.	Malf. No.	Event Type*	Event Description
1 T=3	N/A	N (CBOT)	Perform surveillance test for #2 EDG for post maintenance testing following governor repair.
2	IOR -DI CS2- DG2_R TRUE	C (CBOT)	#2 EDG governor fails in the "Raise" position causing a loss of control of the EDG. Manually trip the EDG.
3 T=20	TR580 600 R5:00	I (CBOR)	Selected Main Steam Header Pressure instrument fails low
4	IOR -DI ICC0016_A FALSE	C (CBOR)	SG/Rx Master H/A station will cannot be placed in the "Auto" mode when selected
5 T=30	RD303 0 D0 R0	R (CBOR)	Group 7 Rod 6 drops into the core. Manual power reduction must be performed.
6 T=35	RC002 .25 R10:00	M (ALL)	"B" OTSG Tube Rupture
7	RD 293 0 D0 R0	C (CBOR)	Group 7 Rod 3 drops into the core. This is the second dropped rod and requires a manual reactor trip to be performed.
8	IMF CV097	C (CBOT)	ES HPI pump trips requiring HPI to be supplied by the operating Makeup pump.

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

Simulator Instructions for Scenario #1				Page 2 of 8
Event No.	Time	Malfunction No. Input Command	Value/Ramp/Delay	Event Description
1	T=3	N/A	N/A	Perform surveillance test for #2 EDG for post maintenance testing following governor repair.
2	T=When EDG output breaker is closed	IOR -DI CS2-DG2_R	TRUE	#2 EDG governor fails in the "Raise" position causing a loss of control of the EDG. Manually trip the EDG.
3	T=20	TR580	600 R5:00	Selected Main Steam Header Pressure instrument fails low
4	T=When ICS is placed in Manual	IOR -DI ICC0016_A	FALSE	SG/Rx Master H/A station will cannot be placed in the "Auto" mode when selected
5	T=30	RD303	0 R0 D0	Group 7 Rod 6 drops into the core. Manual power reduction must be performed.
6	T=35	RC002	.25 R10:00	"B" OTSG Tube Rupture
7	T=Prior to the crew shifting plant auxiliaries	RD293	0 R0 D0	Group 7 rod 3 drops into the core. Manual reactor trip required.
8	T=Rx trip + 5 min.	IMF CV097	N/A	ES HPI pump trips requiring HPI to be supplied by the operating Makeup pump.

Op-Test No: 1 Scenario No: 3 Event No: 1&2 Page 3 of 8
 Event Description: Perform surveillance test of the #2 EDG following maintenance to the governor.

Time	Position	Applicants Actions or Behavior
T=3	CRS	Directs the performance of the #2 EDG post maintenance surveillance test.
	CBOT	Make plant announcement of the starting of #2 EDG.
	CBOT	Start #2 EDG using the start pushbutton on C10.
	CBOT	Adjust the voltage and frequency within the acceptable operating bands.
	CBOT	Parallel and tie the EDG to the A4 bus.
	CBOT	Raise #2 EDG load to approximately 2750 Kw using the governor.
	CBOT	Identify and report the EDG load continuing to rise when the governor is released.
	CBOT	Trip #2 EDG.
EVENT TERMINATION CRITERIA		
#2 EDG is tripped or Next Event		

Op-Test No: <u> 1 </u> Scenario No: <u> 3 </u> Event No: <u> 3 & 4 </u>		Page 4 of 8
Event Description: <u>Selected Main Steam Header Pressure transmitter fails low.</u>		
Time	Position	Applicants Actions or Behavior
T=20	CBOT	Identify the main turbine reference/setter lowering.
	CBOR	Identify main steam header pressure indication on C03 lowering.
	CBOT	Place the Main Turbine EHC control in "Operator Auto" or "Turbine Manual" mode.
	CBOR	Place the SG/Rx Master station of ICS in "Manual".
	CREW	Validate the failed pressure transmitter with other indications.
	CBOR	Select the opposite Header pressure transmitter for control. Verify the Header Pressure recorder indicating the correct pressure.
IA NOTE:		
If the crew dispatches an operator to the ICS room to bypass the SASS alarm, input the following: MRF RXSASS14 ON		
	CBOT	Place the Turbine control In "Integrated Control".
	CBOR	Attempt to place the ICS in "AUTO".
	CBOR	Identify and report the SG/Rx master failure to go to "AUTO".
EVENT TERMINATION CRITERIA		
Next Event		

Op-Test No: <u> 1 </u> Scenario No: <u> 3 </u> Event No: <u> 5 </u> Page 5 of 8		
Event Description: <u>Group 7 Rod 6 drops due to stator failure. Manual power reduction using the SG/Rx master H/A station.</u>		
Time	Position	Applicants Actions or Behavior
T=30	CREW	Recognize Group 7 rod 6 drops
	CRS	Direct operations per 1203.003
	CBOR	Manually reduce power to <40% (Power reduction must be performed manually due to the failure of the SG/RX Hand/Auto station)
	CBOR	Stabilize plant at ~40%
EVENT TERMINATION CRITERIA		
Plant is stabilized at approximately 38-40%		

Time	Position	Applicants Actions or Behavior
Op-Test No: <u> 1 </u> Scenario No: <u> 3 </u> Event No: <u>6, 7, & 8</u> Page 6 of 8		
Event Description: "B" OTSG tube leak. Second dropped rod. HPI pump trips after HPI is initiated.		
T=35	CBOR/T	Identify and report "B" OTSG N16 TROUBLE annunciator (K07-A6).
	CBOR	Begin leak rate determination. Tech. Spec. 3.1.6.3.b Leakage (pg. 27) EAL 2.1 NUE RCS Leakage > T.S. Limits requiring a plant S/D or C/D
	CRS	Reference Small Generator Tube Leaks Abnormal Operating procedure (1203.023).
ROLE PLAY		
If notified as Chemistry to determine leak rate;		
<ul style="list-style-type: none"> • using condenser off gas wait ~5 minutes (Time Compressed) • using steam generator sample wait ~8 minutes (Time Compressed) then report approximate leak rate displayed on PS1 display. 		
	CRS	Reference Rapid Plant Shutdown Abnormal Operating procedure (1203.045). Direct CBOT/CBOR to commence a plant shutdown at ~5% per minute.
	CBOT	Begin plant shutdown with the SG/Rx master H/A station in "Manual" mode.
	CRS	Direct Auxiliary Operators to implement Control of Secondary Contamination Abnormal Operating procedure (1203.014).
	CBOT	Select ANALYZER position for "B" OTSG N ₁₆ detector.
	CBOR	Place SG EFW Pump Turbine (K3) Steam Supply valve (CV-2617) in MANUAL and close.
	CRS	Notify Health Physics to commence monitoring of secondary system for rising radiation levels.
EVENT TERMINATION CRITERIA		
This malfunction will remain in effect for the remainder of this scenario.		

Time	Position	Applicants Actions or Behavior
Op-Test No: <u>1</u> Scenario No: <u>3</u> Event No: <u>6, 7, & 8</u> Page 7 of 8		
Event Description: <u>"B" OTSG tube leak. Second dropped rod. HPI pump trips after HPI is initiated.</u>		
	CBOR	Determine and report OTSG tube leak rate has increased. EAL 2.2 ALERT RCS Leakage > Normal Makeup Capacity
	CRS	Transition to OTSG Tube Rupture Emergency Operating procedure (1202.006).
	CBOT	Open BWST Outlet to OP HPI pump (CV-1407 or CV1408).
	CBOR CBOT	Reduce or isolate letdown flow NOTE Letdown is isolated at this point by closing Letdown Coolers Outlet valve (CV-1221).
CT	CBOT	Initiate HPI per RT2 as required.
	CBOT	When unit is $\leq 55\%$ stop Heater Drain Pumps (P8A, B). (This step may have been performed earlier while reducing power for the dropped control rod)
IA NOTE:		
Prior to the crew manually transferring auxiliaries to Startup #1 Transformer, insert the second dropped rod to initiate requirement to trip the reactor.		
	CBOR	Recognize and report a second dropped control rod
	CRS	Direct the CBOR to manually trip the reactor.
CT	CBOR	Trip the reactor
	CRS	Transition to step 25 of 1202.006, Tube Rupture Procedure.
	CBOR	Verify all rods inserted and reactor power dropping.
	CBOR	Adjust header pressure setpoint to 45.
	CBOR	Check Turbine Bypass valves controlling OTSG pressure 950-990psig.
CONTINUED		

Op-Test No: 1 Scenario No: 3 Event No: 6, 7, & 8 Page 8 of 8
 Event Description: "B" OTSG tube leak. Second dropped rod. HPI pump trips after HPI is initiated.

Time	Position	Applicants Actions or Behavior
	CBOR	Operate PZR heater and spray in hand as required to maintain RCS pressure low within the limits of figure 3.
	CBOR	Verify "B" OTSG to indicate on header pressure recorder.
	CBOT	Select "B" OTSG N ₁₆ to GROSS position.
CT	CBOR	Place Turbine Bypass valves for the "A" OTSG in hand and adjust to initiate and maintain a cooldown rate of $\leq 100^{\circ}\text{F}$ per hour.
	CRS	Respond to annunciator K10E7, HPI pump Motor Winding Temperature Hi.
	CBOR/T	Identify the HPI pump trips.
CT	CBOT	Shift HPI to the normal operating MU/HPI pump by opening the necessary HPI valves associated with the operating pump.

EVENT AND SCENARIO TERMINATION CRITERIA

RCS Cooldown in progress and controlled at $\leq 100^{\circ}\text{F}$ per hour using the "A" OTSG

OR

As directed by the lead examiner

DATE (ON-COMING) 2/13/01 SHIFT (ON-COMING) Days CREW (ON-COMING) RO/SRO

- ◆ On-coming crew review the following items during shift turnover.
If CRS Admin watchstation is not manned, N/A.

	S/S	SE	CRS	CRS Admin	CBOT	CBOR
Control Room Annunciators (All Alarms)						
Protective Tagging Log						
Caution Tag Log						
Temporary Alteration Log						
Plant Status Board						
Safety System Status Board						
Category "E" Valve Log						
Inoperable Equip/Tech Spec LCO Log						
Component Out of Position Log						
Operator Logs (for respective position)						
Keys						
Station Log						
Key Log and Key Cabinet Key						
Weekly Surveillance Schedule						
Past Due Surveillance Basket						
Daily Surveillance Checklist						

- ◆ Off-going shift fill out the following items. Additional pages may be attached.
If no items exist for a section, enter "None".

EVOLUTIONS IN PROGRESS

- 100% MOL; Equilibrium Xenon
- P3D Circ Water Pump idle due to low lake temperature. Idle pump available, if needed.
- Bulk diesel fuel oil is being unloaded at the fuel vault.
- #2 EDG is OOS due to maintenance to the governor. Day 4 of a 7 day T.C. (T.S. 3.7.2.C). Surveillance testing of the #2 EDG is in progress. All outside steps have been completed and the test is ready to be performed in the control room.

EVOLUTIONS SCHEDULED

- Power Ops.
- Complete the operability surveillance test of #2 EDG.

FORM TITLE: SHIFT RELIEF SHEET - 200°F AND ABOVE (UNIT 1)	FORM NO. 1015.015A	REV. 026-02-0
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