SIMULATOR EVALUATION SCENARIO COVER PAGE

PROGRAM TITLE: 1LOT4 NRC Simulator Examination

SUBDIVISION: Simulator

SCENARIO TITLE/NO. Scenario #1

COMPUTER CODE FOR L.P.: N/A

Revision No.	Date
0	6/21/01

Revision No.	Date

INSTRUCTIONAL SETTING: Simulator

APPROXIMATE DURATION: 2 Hours

PREPARED BY: E. Ernfield _____ 6/21/01 _____
Date

REVIEWED BY: _____ _____
Date

APPROVED FOR IMPLEMENTATION: _____ _____
Date

U1-LOT-SIM-NRC EXAM-Drill #1 1LOT4. Initial Conditions REV 0

INITIAL CONDITIONS: IC- 187. Select C.A.E.P. File 1-SCENARIO 1.cae
Reactor power = 27 %, BOL, RCS boron = 1550 ppm, CBD = 145 steps, Equilibrium Xenon.

ADDITIONAL LINEUP CHANGES	STICKERS	VOND MARKINGS
Set CBD step counters at 145 steps Place BOL ΔI curve in RO operator aids 2000 - 4000 MWD/MTU Reactivity Plan Ensure computer trends set up per procedure. Train "A" ESF status panel lit. **Ensure control rods are in MANUAL.**	FW-P-3A YCT W/RED SLASH BKR ACB 1E9 YCT W/RED SLASH ANN A9-7 YCT W/RED SLASH	N/A
EQUIPMENT STATUS	**DATE/TIME OOS**	**TECHNICAL SPECIFICATION(S)**
FW-P-3A **#1 EDG**	1 day ago 6 hrs ago	3.7.1.2 3.8.1.1

SHIFT TURNOVER INFORMATION

1. Plant is at 27% power Equilibrium XE, BOL, 1550 ppm boron. CBD at 145 steps in manual.
2. Plans for the shift are to raise power to 100% IAW 1.52.4.A which is completed up through and including step A.96.
3. FW-P-3A OOS for motor bearing replacement. Pump is expected to be returned to service in approximately 10 – 12 hrs.
4. #1 EDG on clearance for air start motor replacement. It is expected to be returned to service in approximately 8 – 10 hrs.
5. Breaker alignment OST has been completed and will not be required this shift.
6. No other items are scheduled for this shift.
7. Severe thunderstorms are possible in the area during the next several hours.

SCENARIO SUPPORT MATERIAL REQUIRED

1OM-52.4.A, "Raising Power From 5% to Full Load Operation."
Reactivity plan from Reactor Engineering for power increase.

U1DRILL 1 (4) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Initialize IC - 187 and establish initial plant conditions. Select C.A.E.P. File: 1-SCENARIO 1.cae	Reactor at 27 % power, BOL, steady-state conditions. RCS boron 1550 ppm, CBD at 145 steps.		
IC & 1-SCENARIO 1.cae preloads:			
CRF12A &B **INH20, 21 & 35** **BAT LOT_INIT.DAT**	Manual and auto reactor trip failure. AFW pump auto start inhibit. Restore constants to pre-uprate values.		
SIMULATOR TO RUN **C.A.E.P. TO RUN** **ANN ACK** **ANN RST** **HORN ON** **FRZ SIMULATOR**			
Assign shift positions. ANSS _____ RO _____ PO _____	Simulator Frozen until after shift turnover unless it needs to be run momentarily for an alignment change.		

U1DRILL 1 (5) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Conduct a shift turnover with oncoming operators. The main electrical grid has had several losses of major generators. Severe thunderstorms are forecasted.			Oncoming ANSS conducts a formal shift turnover.
When the shift turnover is completed, place the simulator in **RUN** and commence the drill.	Simulator running.		ANSS assumes control and directs operators to increase reactor power to 100% IAW 1OM-52.4.A, Step A.97.
EVENT #1	Turbine load and reactor power increasing at 10%/hr.		Crew reviews/agrees with reactivity plan. ANSS approves for use. Crew begins power increase.
EVENT #2 PT-RC-444 FAILS HIGH **IMF PRS08D (0 0) 2500**	PT-RC-444 fails high. A4-10 High Press Dev alarm. PZR heaters turn off. Spray valves open. A4-5 PCV-RC-455C opens. A4-11 RCS pressure decreases rapidly. A4-12 RCS Low Press Dev alarm.		RO notes alarm, informs ANSS that PT-RC-444 failed high.
			RO takes manual control of master pressure controller, ensures, spray valves close, heaters energized, PORV closed, and informs ANSS.
	RCS pressure recovering.		Crew refers to ARP A4-11, and Instrument Failure Procedure 1.6.4.IF, Attachment 2.
	Shut Down Panel indications SAT, 3 PORVs are operable.		ANSS refers to Tech Specs 3.4.11, 3.3.3.5 and 3.3.3.8, and 3.2.5.

U1DRILL 1 (6) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
To reset acoustic mon. annun. (A4-6)			ANSS directs I&C to investigate and repair.
IRF PRS009 (0 0) 1 **DRF PRS009**			
EVENT #3			
"A" SG Pressure Transmitter PT-MS-475 fails low.			
IMF MSS16B (0 0) 0	"A" SG channel 3 steam pressure transmitter PT-MS-475 fails low. "A" SG channel 3 steam flow drops (density compensation input).		
Note: Level deviation dependent on time of establishing normal MFRV control to restore "A" SG level.	"A" SG feed flow, NR level drop. FCV-FW-478 modulates closed in automatic.		
	Loop 1 steamline pressure, feed flow > steam flow alarms.		
	"A" SG deviation alarm.		PO notes problem with "A" SG level control, takes manual control of FCV-FW-478, informs ANSS.
	A7-41		
	A7-42		Crew refers to ARPs and OM 1.24.4.IF, Attachment 4.
	A7-45		
			Crew determines that steam pressure channel PT-MS-475 failed low.

U1DRILL 1 (7) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	NR level = 44%.		ANSS directs PO to restore "A" SG level to program value. ANSS refers to T.S. 3.3.1.1, 3.3.2.1, identifies 6 hour requirement to place channel in the tripped condition. ANSS directs crew to trip associated bistables per OM 1.24.4.IF, Attachment 4 Table 1.
When directed to trip bistables per 1MSP-21.20-1, use the following: **IOR XS03C23 ON** **IMF BST-RCS089 (0 0) 0** **IMF BST-RCS099 (0 0) 0** **DOR XS03C23**	Protection rack #35 door open. BS475A low pressure SI/SLI. BS475B high pressure rate. Protection rack #35 door closed.		Crew directs plant operator to trip bistables. ANSS directs PO to select Channel 4 input for "A" SG steam flow signal, returns FCV-FW-478 to automatic control.
IOR XS03C23 ON **IMF BST-RCS054 (0 0) 0** **IMF BST-RCS155 (0 0) 0** **DOR XS03C23**	Protection rack #17 door open. BS478B Stm Flow/Feed Flow mismatch BS478C Feed Flow > Steam Flow Protection rack #17 door closed.		ANSS notifies I&C of steam pressure transmitter problem.

U1DRILL 1 (8) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
EVENT #4			
CH-P-1A trips.			
IMF SIS05A (0 0) 1	CH-P-1A trips, Annunciators A3-49, 50, 58 and 78 actuate.		RO notes alarms, informs crew of loss of CH-P-1A.
IMF RCS05A (0 0) 3 2100 This will cause a very slow rise in seal leakoff flow from RCP 1A in support of the next event.	Charging flow = 0 Seal injection flow = 0		ANSS refers to AOP.
	Turbine on HOLD.		ANSS directs load change stopped if in progress.
	CCR support conditions for RCP operation not affected, RCP temperatures W/I limits.		Crew verifies CCR status to RCPs and pump temperatures.
	Seal injection flow 0, CCR flow SAT.		RO verifies RCP seal status, reports seal flow lost to RCPs, CCR flow to RCPs SAT.
	No charging pumps in operation.		RO reports ALL charging pumps stopped.
	CH-P-1A did not trip due to cavitation.		Crew determines that pump loss is not due to cavitation.

U1DRILL 1 (9) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			ANSS directs RO to perform the following in order to restore charging/seal injection flow: • Close FCV-CH-122. • Close HCV-CH-186. • Start stby charging pmp. • Place CH-P-1A in PTL. • Adjust HCV-CH-186 to obtain proper seal injection flow to RCPs. • Throttle FCV-CH-122 to restore PZR level to program and place in AUTO. • IF L/D isolated, crew will restore letdown IAW procedures.
	Charging/seal injection restored. L/D restored as applicable.		
			ANSS dispatch operator to investigate cause for loss of CH-P1A.
	3.1.2.4 – 2 charging pumps operable required MODES 1 thru 4. 3.5.2 – 2 separate/independent ECCS subsystems required MODES 1 thru 3.		ANSS refers to TS 3.1.2.4, 3.5.2.
After appropriate delay, report back as maintenance that CH-P-1A has seized and tripped on over current, will not be available in near future.	CH-P-1A physical damage.		ANSS determines need for 2 HHSI pumps operable, directs personnel to place CH-P-1C in stby status on AE bus.

U1DRILL 1 (10) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			Crew determines requirement to perform OST 1.6.4 for seal injection flow, assigns available personnel to perform, resumes normal plant operation.
DELAY placing CH-P-1C in STBY status until after crew begins S/D due to RCP vibration.			ANSS informs station management of CH-P-1A problems.
When requested, perform the following to place CH-P-1C in stby status on the AE bus.			
IRF EPS049 (0 0) 0 **IRF EPS051 (0 0) 1** **IRF AUX068 (0 0) 0** **IRF AUX 070 (0 0) 1**	CH-P-1A racked off AE bus. CH-P-1C racked on AE bus. CH-P-1A AUX LO pmp off. CH-P-1C AUX LO pmp on.		Crew places CH-P-1C in standby.
Report actions to control room.			
Continue with next event at Examiners discretion.			
EVENT #5			
"A" RCP Hi vibration.			
IMF RCS10A (0 0) 15	RCP "A" Shaft Vibration reading 15 mils Annunciator A3-126 RCP Vibration High alarms		RO acknowledges alarm, informs ANSS refers to ARP.

U1DRILL 1 (11) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	RCP "A" 15 mils (steady) on shaft.		PO checks RCP Vibration Monitor behind vertical board and reports RCP "A" shaft vibration at 15 mils - steady.
NOTE: Seal leakoff for RCP 1A slowly rising in support of high vibration. This action was initiated earlier.	VB-A Status of RCP "A" shows slowly increasing seal leakoff flow.		RO monitors RCP "A" parameters on VB-A and reports increasing seal leakoff status to ANSS.
			ANSS determines that RCP does not need to be tripped immediately; however, emergency shutdown to remove the pump from service is conservative decision and should be performed..
	Plant Emergency shutdown at rate determined by crew commenced.		ANSS directs commencement of emergency S/D IAW AOP 1.51.1 in preparation for RCP 1A removal from service.
When crew starts Emergency S/D:			PO rechecks vibration monitor and reports status to crew.
IMF RCS10A (0 0) 23	ANN A3- 127 "RCP Vibration High High" alarms. RCP vibration increases rapidly above required trip limit.		
			Crew determines need to trip 1A RCP per limits set in ARP.

U1DRILL 1 (12) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			ANSS orders manual reactor trip, completion of IMA and trip of RCP 1A.
EVENT #6			
Reactor trip failure in auto and manual - ATWS.			RO notes a reactor trip has not occurred and informs ANSS of ATWS condition.
ANSS transitions to FR-S.1.			Operators commence immediate actions of E-0 and FR-S.1, ANSS refers to FR-S.1.
ANSS must implement FR-S.1 at Step 1 of E-0 and restore the core to a subcritical state.			STA monitors status trees for information only in FR-S.1.
Crew performs immediate operator actions of FR-S.1.	Reactor trip breakers shut. Neutron flux steady. Rod bottom lights not lit. Rod position indications not zero.		RO verifies reactor trip, attempts to trip reactor on BB-A if not attempted in E-0.
	Turbine trips.		PO trips turbine, using both trip PBs.
	Tref drops to 547°.		PO verifies Tref dropping.
CT #1 FR-S.1.C - Crew inserts negative reactivity into the core by inserting RCCAs before completing the immediate actions steps of FR-S.1.	Rods inserting.		RO uses auto or manual rod control to insert rods.

U1DRILL 1 (13) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Two minutes after the request to open the reactor trip breakers & trip rod drive MG sets:			Crew dispatches an operator to open the reactor trip breakers.
IMF CRF14A **IMF CRF1BB** **IMF CRF01A (0 0) 1** **IMF CRF01B (0 0) 1**	Reactor trip breakers open. Rod drive MG sets secured.		
then report reactor trip breakers open.			
			Crew sounds standby alarm and announces Unit 1 reactor trip without scram.
NOTE: ANSS will make EPP declarations at end of scenario.	S.A.E. due to ATWS.		EPP evaluated at end of scenario.
	TVs, GVs, SVs, IVs shut.		PO verifies turbine trip.
	Steam dump control interlock selector switch in off.		PO isolates condenser steam dump.
Immediate operator actions complete.	MOV-1MS-100A and B shut. Reheat controller reset pushbutton depressed.		PO ensures reheat steam isolation.
EVENT #7			
MDAFWPs and TDAFWP fail to Auto Start.			

U1DRILL 1 (14) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
CT #2 FR-S.1.B - Crew starts AFW pumps before WR SG Level is less than 10%.	FW-P-3A OOS, Start 3B or FW-P-2 AFW pump running. MOV-FW-151A-F full open.		PO verifies AFW - starts "FW-P-3B" pump or - starts TDAFW pump. - verifies MOV-FW-151A-F full open.
	HHSI pump running. SI has not actuated. SI not required. MOV-1CH-350 open. Boric acid transfer pump CH-P-2A in fast speed. Emergency boration flow indicated > 30 gpm. FCV-CH-122 open > 75 gpm.		Crew checks SI actuation status. RO initiates emergency boration via MOV-CH-350.
	PZR pressure less than 2335 psig.		RO checks PZR pressure < 2335 psig.
	SI has not actuated. SI not required.		Crew checks SI actuation status.
When requested to align WR H_2 analyzers insert: **IMF XN02097 (0 0) 1** **IMF XN02105 (0 0) 1** and report actions to the control room.	Annun A2-97 energizes. Annun A2-105 energizes. H_2 analyzers in service.		ANSS directs an extra operator to start the H_2 analyzers.
	Total feed flow > 630 gpm.		PO checks total feed flow to intact SGs > 630 gpm & controls feed flow to maintain NR level between 13% - 50%.

U1DRILL 1 (15) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	Station Air press > 100 psig.		PO checks station air system status.
	Reactor trip breakers opened. All control rods fully inserted.		RO informs ANSS that the reactor tripped.
	SR & IR NI selected on NR 45 recorder.		RO aligns neutron flux monitoring for shutdown.
	FCV-CH-113B closed. FCV-CH-114A closed. FCV-CH-114B closed.		RO verifies dilution paths isolated.
	Uncontrolled cooldown not in progress.		RO checks for reactivity insertion from RCS uncontrolled cooldown.
	No SG pressure dropping in an uncontrolled manner or completely depressurized.		PO checks pressure in all SGs to identify a faulted SG.
	Core exit TCs < 1200 F.		RO checks 5 hottest core exit TCs < 1200 F.
	PR NIs less than 5%. IR NIs neg. SUR.		RO verifies reactor subcritical.
ANSS transitions to E-0 upon completing FR-S.1 and ensures operators verify reactor trip			ANSS transitions from FR-S.1 to E-0 and informs crew to commence E-0 immediate actions.

U1DRILL 1 (16) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
EVENT #8			
When crew transitions to E-0:			
IMF MSS01B (0 0) 6E5	"B" S/G faulted inside containment, CNMT pressure and temperature increase,		RO and PO commence immediate actions of E-0, ANSS references E-0 to verify immediate actions.
Crew performs immediate operator actions of E-0.			Crew performs IMAs of E-0.
	Reactor trip and bypass breakers open, neutron flux decreasing. Rod bottom lights lit. Rod position indication at 0.		RO verifies reactor tripped.
			RO sounds standby alarm.
	Throttle and governor valves closed, reheat stops and interceptors closed.		PO verifies turbine tripped.
	Depress reheat controller, reset pushbutton. Reheat flow control and block valves closed.		PO ensures reheat steam isolated.
	Main generator output breakers open. Exciter circuit breaker open. Main Gen volts 0.		PO verifies generator trip.
	1AE / 1DF buses energize.		PO verifies power to AE/DF buses.

U1DRILL 1 (17) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
NOTE: If crew does not manually actuate SI at this time, SI will be required due to degrading overall status due to steam break in CNMT. Crew will be required to return to E-0 at that time.	RCS pressure reducing. CNMT pressure/temp. increasing. "B" S/G pressure reducing more than A&C S/Gs.		Crew checks for SI, assesses plant status and manually actuates SI if not already actuated, continues with E-0.
	Only exceptions to Attachment 1-K are: FW-P-3A OOS at turnover. #1 EDG OOS at turnover. All other checks/conditions SAT for current plant conditions.		ANSS directs operator to perform Attachment 1-K, Verification of Automatic Actions, as time/manpower permit, continues with E-0.
NOTE: Plant/containment conditions will degrade due to steam break. **NOTE: At some point, CIB/CNMT Spray will actuate due to CNMT pressure. Scenario assumes this has happened from this point on.**	Automatic actions eventually occur: SI, CIA, FWI, MSLI, CIB		
E-0 continued.	**H2 Analyzers PREVIOUSLY PERFORMED.** Annun A2-97 energizes. Annun A2-105 energizes. H_2 analyzers in service.		Crew directs operator to place wide range H_2 analyzers in service.
	VS-F-4A running.		PO verifies at least one leak collection exhaust fan running.

U1DRILL 1 (18) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	Tavg < 547°F and dropping rapidly. SLI previously actuated. RCPs secured due to CIB.		RO/PO check RCS Tavg stable at or trending to 547°F, report Cold Leg temperatures dropping.
	PORVs, safeties and spray valves indicate closed. PRT parameters as expected for current plant conditions. PORV lineup SAT.		RO checks PRZR PORV's, safeties, spray valve closed. RO checks PRT conditions. RO checks PORV lineup.
	RCPs NOT running due to CIB.		RO reports RCPs stopped.
	B SG pressure dropping.		PO checks if any SGs are faulted.
Crew transitions to E-2.			ANSS makes transition to E-2, and informs crew. ANSS directs STA to monitor status trees.
As U-2 operator, when requested, report proper CREBAPS actuation.	Bottle discharge lights lit. Intake and exhaust dampers closed.		PO verifies CREBAPS actuated, requests Unit 2 CREBAPS verification.
CT #3 - E-2.A crew isolates faulted S/G and directs operator to close isolation valve(s) operated from outside of the control room before transition out of E-2.	All yellow SLI marks lit.		Crew verifies steam line isolation.

U1DRILL 1 (19) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Note: "A" and "C" SG pressures may be dropping due to effects of "B" SG fault, but should not be diagnosed as faulted.	"A" and "C" SG pressure stable.		PO checks for any non-faulted SG.
	"B" SG pressure dropping uncontrollably.		PO identifies "B" SG as faulted.
	FCV-FW-488 closed.		PO verifies "B" MFRV closed.
	FCV-FW-489 closed.		PO verifies "B" BPFRV closed.
	MOV-FW-151C, D closed.		PO closes MOV-FW-151C, D.
IRF FWM35 (0 0) 0 **IRF FWM36 (0 0) 1**	MS-16 CLOSED MS-17 OPENED.		Crew addresses the fact that TDAFW supply valve MS-16 is NSA open, it must be closed and MS-17 must be opened.
	PCV-MS-101B closed. HCV-MS-104 closed.		RO/PO verify "B" S/G atmospheric dump valve and RHR valve closed.
	No SG level rising in an uncontrolled manner.		Crew checks if SG tubes are intact.
NOTE: If B SG has completely blown down by this time, conditions to terminate SI will be met and crew will transition to ES-1.1. If so, skip to page 21 for drill termination. If SI termination criteria not met, crew transitions to E-1.	Subcooling > 43 [58]°. Secondary heat sink sufficient. RCS pressure stable or rising. PRZR level > 18 [37]%.		RO/PO check if SI can be terminated and if so, transition to ES-1.1.

U1DRILL 1 (20) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Crew transitions to E-1.			ANSS makes transition to E-1, informs crew.
	CREBAPS actuated per E-2.		PO re-checks control room habitability.
	RCPs NOT running.		RO checks if RCPs should be stopped.
	"B" SG previously diagnosed as faulted and isolated (pending reports of local operator actions).		PO checks if any SG is faulted.
			PO maintains intact SG levels 13% [30%] to 50%.
	NR level 13% to [30%] 50% or total feed flow > 355 gpm & 100 gpm to each intact SG		Crew checks intact SG level.
	Instrument air pressure >100 psig.		PO verifies PI-1IA-106 > 100 psig.
	PORV shut in auto and block valve energized.		RO verifies PORVs and block valves.
	No SG levels rising in an uncontrolled manner, no secondary rad monitor alarms.		PO checks for ruptured SG.

U1DRILL 1 (21) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	Subcooling > 43 [58]°. Secondary heat sink sufficient. RCS pressure stable or rising. PRZR level > 18 [37]%.		RO/PO check if SI can be terminated.
Crew transitions to ES-1.1.			ANSS makes transition to ES-1.1, informs crew.
Terminate drill after crew determines SI termination criteria are met and transition to ES-1.1.			
Collect and review logs after allowing crew time to complete them.			
EPP DECLARATION			ANSS declares S.A.E. TAB 2.3, Failure of Reactor Protection.

SIMULATOR EVALUATION SCENARIO COVER PAGE

PROGRAM TITLE: 1LOT4 NRC Simulator Examination

SUBDIVISION: Simulator

SCENARIO TITLE/NO. Scenario #2

COMPUTER CODE FOR L.P.: N/A

Revision No.	Date
0	6/21/01

Revision No.	Date

INSTRUCTIONAL SETTING: Simulator

APPROXIMATE DURATION: 2 Hours

PREPARED BY: E. Ernfield _____ 6/21/01 _____
Date

REVIEWED BY: _____ _____
Date

APPROVED FOR IMPLEMENTATION: _____ _____
Date

U1-LOT-SIM-NRC EXAM-Drill #2 1LOT4. Initial Conditions REV. 0

INITIAL CONDITIONS: IC- 171. Select C.A.E.P. File 1-SCENARIO 2.cae
Reactor power = 75 %, BOL, RCS boron = 1346 ppm, CBD = 181 steps, Equilibrium Xenon.

ADDITIONAL LINEUP CHANGES	STICKERS	VOND MARKINGS
Set CBD step counters at 181 steps. Place BOL ΔI curve in RO operator aids. 2000 - 4000 MWD/MTU Reactivity Plan. Ensure computer trends set up per procedure. Train "A" ESF status panel lit. **Ensure control rods are in MANUAL.**	FW-P-3A YCT W/RED SLASH BKR ACB 1E9 YCT W/RED SLASH ANN A9-7 YCT W/RED SLASH	N/A
EQUIPMENT STATUS	**DATE/TIME OOS**	**TECHNICAL SPECIFICATION(S)**
FW-P-3A **#1 EDG**	1 day ago 6 hrs. ago	3.7.1.2 3.8.1.1

SHIFT TURNOVER INFORMATION

1. Plant is at 75%, BOL, Equilibrium Xe, 1346 PPM boron, 181 steps CBD in manual.
2. Plans are to return the Unit to full power IAW 1OM-52.4.B "Load Follow".
3. FW-P-3A is OOS for motor bearing replacement. Pump is expected to be returned to service in approximately 10 – 12 hrs.
4. #1 EDG is OOS for air start motor replacement. It is expected to be returned to service in approximately 8 – 10 hrs.
5. Breaker alignment OST has been completed and will not be required this shift.
6. No other items scheduled for this shift.
7. Severe thunderstorms are possible in the area during the next several hours.

SCENARIO SUPPORT MATERIAL REQUIRED

1OM-52.4.B, "Load Following."
Reactivity plan from Reactor Engineering for power increase.

U1DRILL 2 (4) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Initialize IC - 171 and establish initial plant conditions. Select C.A.E.P. File: 1-SCENARIO 2.cae	Reactor at 75 % power, BOL, steady-state conditions. RCS boron 1346 ppm, CBD at 181 steps.		
IC & 1-SCENARIO 2.cae preloads:			
FWM11B **CRF12A** **FWM01A & 1B** **SIS10A & B** **FWM11C** **IOR X10I023O** **BAT LOT_INIT.DAT**	AUX FEED PUMP 3B TRIP. AUTO REACTOR TRIP FAILURE. FWP 1A & 1B TRIP. AUTO SI FAILURE TRAIN A & B. TRIP FW-P-2 ON STARTUP. FAIL MOV-FW-151B OPEN. Restore constants to pre-uprate values.		
SIMULATOR TO RUN **C.A.E.P. TO RUN** **ANN ACK** **ANN RST** **HORN ON** **FRZ SIMULATOR**			

U1DRILL 2 (5) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Assign shift positions. ANSS _____ RO _____ PO _____	Simulator Frozen until after shift turnover unless it needs to be run momentarily for an alignment change.		
Conduct a shift turnover with oncoming operators. The main electrical grid has had several losses of major generators. Severe thunderstorms are forecasted.			Oncoming ANSS conducts a formal shift turnover.
When the shift turnover is completed, place the simulator in **RUN** and commence the drill.	Simulator running.		ANSS assumes control and directs operators to increase reactor power to 100% IAW 1OM-52.4.B, Load Following.
EVENT #1	Turbine load and reactor power increasing at 12%/hr.		Crew reviews/agrees with reactivity plan, ANSS approves for use. Crew begins power increase to 100%.
EVENT #2			
"A" SG Tube Leak **IMF RCS03A (0 0) 0.03**	.03 GPM (43 gpd) tube leak "A" SG. Air ejector rad mon RM-SV-100 alarms. RMS high and high-high alarms A4-71, 72. SG N-16 alarm A4-88.		RO notes alarms, informs ANSS, crew refers to ARPs for RMS. Crew monitors RMS racks, responds to air ejector, N-16 alarms.

U1DRILL 2 (6) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Five minutes after being directed to report status of N-16 monitor, report "A" S/G indicates leak magnitude of 43 gpd, step change (equivalent to .03 gpm).			ANSS directs Radcon and Chemistry to investigate possible tube leak.
			ANSS references AOP-1.6.4, Steam Generator Tube Leakage.
			Crew performs actions of Attachment 1, $\geq$ 30 gpd < 75 gpd (attached).
			ANSS directs Auxiliary Operator to locally report status of Main Steam Line N-16 rad monitor every 15 minutes for first hour.
			Crew continues to monitor SG tube leak rate IAW AOP 1.6.4.
TS 3.4.6.2 "Operational Leakage" applicable for SG tube leakage if > 150 GPD.			ANSS review TS 3.4.6.2, informs crew of SGTL limits.
	Power increasing.		Crew continues power escalation to 100%.
EVENT #3			
VCT level transmitter LT-CH-115 fails high.			

U1DRILL 2 (7) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
IMF CHS20B (0 0) 100	ANN A3-53 "VOLUME CONTROL TANK LEVEL HIGH-LOW". LI-CH-115, VB"A" indicates pegged high. ALL letdown flow is diverted to the Boron Recovery Degasifiers & Coolant Recovery Tanks.		RO notes alarm, informs ANSS, observes/reports status of letdown system.
			ANSS refers to ARP A3-53, directs crew actions.
	LT-CH-112 indicates normal. VCT pressure indicates normal.		Crew compares redundant indications on computers, determines instrument failure as cause of alarm, refers to "Probable Cause NO. 2".
After appropriate delay, report actual VCT level to control room.	Local indication of LI-CH-112 indicates normal level.		Crew may dispatches operator to report local indication of LI-CH-112.
	L/D returned to VCT.		RO places VCT level control selector switch to VCT position.
			RO verifies letdown flow returned to VCT, controls VCT level manually by computer indication of LI-CH-112.
	Ability to automatically transfer suction of the charging pumps to the RWST on low-low level in the VCT is no longer functional.		ANSS briefs crew on effects of failure of LT-CH-115.

U1DRILL 2 (8) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			ANSS contacts I&C to investigate problem with LT-CH-115. ANSS informs management of LT-CH-115 failure.
	Power increasing.		Crew continues power escalation to 100%.
EVENT #4 PT-MS-446 (selected) fails low.			
IMF TUR18A (0 0) 0	PT-MS-446 failed low. Tavg Deviation from Tref alarm.(A4-46). AMSAC trouble alarm.(A3-20). S/G Level deviation (3) alarms due to program level shift to 33%.(A7-45,53,61). Main Feed Reg Valves throttle closed to reduce SG level to 33%. Steam dumps have large demand signal (TI-RC-408 on BB "B") but are not armed (remain closed). C-20 AMSAC bypassed status light energizes after 3 minutes.		Crew notes alarms and informs ANSS that PT-MS-446 failed low. PO informs crew that PT-446 is the current controlling channel.
	SG levels reducing to 33%. Deviation alarms may have cleared.		ANSS enters 1OM-24.4.IF, Attachment 5. ANSS directs PO to take manual control of MFRVs and adjust as necessary to stabilize SG levels.

U1DRILL 2 (9) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	PT-MS-447 selected. Tavg Deviation From Tref alarm clear. 3 SG Level Deviation alarms may actuate again depending on actual SG level when program setpoint shifts back to 44%		When SG levels under control and MFRVs in manual, PO selects PT-MS-447.
	MFRVs returned to auto.		PO returns SG levels to 44% and then places the MFRVs back in auto.
	Steam dumps in steam pressure mode.		ANSS directs placing the steam dump system in the steam pressure mode. Crew references 1OM-45.B.4.AAE to address the C-20 status light "AMSAC Bypassed" on BB-C. PO directs Turbine Plant Operator to re-arm AMSAC per Procedure 1.45.B.4AAE and 1.45.B.4.AAC.
	P-13 permissive status should reflect plant conditions; bistable does not need to be tripped per Tech specs, but attachment 5, table 1 says to trip bistable BS-446A-1.		ANSS references Tech. Spec. 3.3.1.1 for P-13 input from PT-446 and Attachment 5, Table 1 from OM 24.4.IF.

U1DRILL 2 (10) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
When proper bistables and AMSAC actions are identified, continue to the next event. Do not wait to trip bistables or take action at the AMSAC cabinet.			ANSS directs I&C to investigate problem with PT-MS-446. ANSS informs management of problem with PT-MS-446.
EVENT #5 "A" MFRV erratic response to auto control. **IMF FWM09A (0 0) 15** **IRF MAL05 (0 0) 60**	"A" MFRV control becomes erratic in automatic, controls properly in manual. Annunciator A7-45 possible.		PO notes erratic response of "A" MFRV in auto, informs ANSS, takes manual control of "A" MFRV and restores level. Subsequent level adjustments are made during plant operations to maintain proper S/G level. Crew dispatch operator to MFRV for visual inspection of possible problems. ANSS contacts I&C to investigate problem.
After appropriate delay, report that the "A" MFRV has no outward signs of physical degradation.			

U1DRILL 2 (11) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			ANSS informs management of problem with "A" MFRV.
EVENT #6			
Valve position limiter failure causing load rejection.			
IMF TUR15 (0 0) 45	Load rejection to 45% limiter position. VPL light lit. RCS temperature increases. SG level deviation alarms possible.		Crew recognizes load rejection. ANSS direct operators to stabilize the plant and refers to AOP-1.35.2.
	Rods inserting in auto, Tavg dropping.		RO places rods to auto, verifies proper operation. RO or PO sounds standby alarm and announces Unit 1 load rejection. No EPP EAL declaration required.
	Valve position limit light lit.		PO check proper operation of EHC system, informs ANSS that VPL is not consistent with pre-event.

U1DRILL 2 (12) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			ANSS acknowledge PO report, directs PO to refer to procedure OM 1.26.4.AK to recover the GVs from the limiter and continues with this procedure.
	LO-M-9A operating, 9B in STBY.		RO/PO verify proper operation of EHC pumps.
	Governor valves in Full Arc and operating correctly.		RO/PO verifies proper operation of GVs.
			ANSS informs crew if second unexplained load rejection occurs, place reactor in Hot Standby.
	Load > 270 MWe. Condenser backpressure < 5.5 IN HG absolute.		RO/PO verify no need to trip reactor or turbine.
	Volts, Amps & Power factor normal for current load.		RO/PO verify proper operation of Main Generator.
	Rod insertion and/or boration continues until Tavg-Tref < 2°F.		RO checks Tavg-Tref within 2°F.
	Condenser Steam Dumps not armed.		RO/PO verify proper operation of Cond. Stm. Dumps.
			Crew notifies System Operator of load loss.

U1DRILL 2 (13) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	Load rejection < 15%.		Crew determines chemistry samples not required.
	Power > 25%.		Crew evaluates plant status, continues efforts to restore governor valves, contacts I&C to investigate problem with VPL. ANSS informs management of load rejection & plant status.
Continue with scenario at examiners discretion or when Tavg/Tref matched W/I ± 2F.			
EVENT #7 Main Transformer failure causes immediate Main Generator & Turbine trip with failure of automatic reactor trip			
IMF EPS18 (0 0) TRUE	Main transformer failure, MUG/Turbine trip, Reactor auto trip failure, numerous alarms actuate. FIRST OUT – A5-39 REACTOR TRIP DUE TO TURBINE TRIP AND P9. BOTH Main Feed Pumps trip due to electrical fault.		Crew notes 1st out annunciator, verifies actual plant conditions, recognize auto reactor trip failure.

U1DRILL 2 (14) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			RO informs ANSS of failure of auto reactor trip.
CT #1 - Crew manually trips the reactor from the Control room before performing the mitigation strategy of FR-S.1.			ANSS acknowledges reports from RO, directs RO to manually trip the reactor, acknowledge report of successful trip. **CT #1**
	Reactor tripped.		RO manually trips reactor and reports results to ANSS.
Crew transitions to E-0 step 1.	When AFW pumps required: FW-P-2 trips during S/U, steam not available alarm A7-7. FW-P-3B fails to start and cannot be started manually. FW-P-3A OOS at turnover. Both Main Feed pumps tripped. No Main/AFW flow will require transition to FR-H.1.		ANSS transitions to E-0 step 1 and informs operators to commence immediate manual actions of E-0.
Steps 1 - 7 are immediate manual actions.			RO/PO commence IMAs of E-0, ANSS references E-0 to verify immediate actions.
	Reactor trip and bypass breakers open, neutron flux dropping, rod bottom lights lit, all rod position indication at 0.		RO verifies reactor trip.

U1DRILL 2 (15) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			Crew sounds standby alarm and announces UNIT 1 Reactor Trip.
			NSS requested to evaluate EPP.
	Throttle, governor, reheat stops and intercept valves all closed.		PO verifies turbine trip.
	Reheat flow control valves and MOVs closed.		PO ensures reheat steam isolation by depressing reheat controller reset push-button and checks MOVs MS - 100A&B shut.
	Main generator output breakers open. Exciter circuit breaker open.		PO verifies generator trip.
	AE and DF busses energized.		PO verifies AE and DF busses energized.
Immediate operator actions completed.	SI not required.		RO checks SI has not actuated.
			Crew verifies SI not required.
May have been reported earlier			PO reports AFW status, Crew recognize need to transition to FR-H.1.
			ANSS directs STA to monitor Status Trees and confirm FR-H.1 required.

U1DRILL 2 (16) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
May have been dispatched earlier.			Crew dispatch operator/additional personnel to restore AFW flow.
	F-0.3 STATTUS TREE INDICATES: NR levels in 3 SGs < 13%. Total AFW flow < 355 gpm. Flow < 100 gpm to each SG.		PO verifies total AFW flow less than 355 gpm, < 100 gpm to each SG, SG levels < 13% NR, informs ANSS.
Crew transitions to FR-H.1.			ANSS makes transition to FR-H.1 and informs crew. ANSS directs STA to continue monitoring status trees.
	RCS pressure > any non-faulted SG pressure. RCS hot leg temp > 320°F.		RO/PO check if heat sink is required.
CT #2 - Crew restores AFW flow to > 330 gpm during FR-H.1, prior to manually tripping RCPs.	3 SG WR levels > 13 [29]%. PZR pressure less than 2325 psig.		RO/PO check if RCS bleed and feed is required, determines bleed and feed not required. **CT #2**
	PDWST [1WT-TK-10] > 27.5 ft.		Crew checks PDWST greater than 27.5 ft.
	SG BD CNMT isolation valves closed. SG BD sample outside CNMT valves closed.		Crew verifies SG BD system isolated.

U1DRILL 2 (17) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
After entry into FR-H.1 Step 4, and when requested to reset FW-P-2 then insert: **DMF FWM11C** **IRF FWM61 (0 0) 1** **IRF FWM62 (0 0) 100** to restore AFW flow by resetting and opening the terry turbine trip throttle valve.	FW-P-3A OOS at turnover. FW-P-3B cannot be started. FW-P-2 tripped on startup. MOV-FW-151A-F full open. FW-P-2 operating. AFW flow > 355 gpm. AFW flow adjusted to >100 gpm to each SG.		Crew attempts to establish AFW flow by requesting PAB Operator to relatch and open FW-P-2 trip throttle valve. Crew verifies > 355 gpm AFW flow after FW-P-2 is started, adjusts flow to >100 gpm to each SG.
Crew transitions to ES-0.1 step 1.			ANSS returns to procedure and step in effect and informs crew. ANSS transitions to ES-0.1 based on operator reports, informs the crew. ANSS directs STA to begin monitoring CSF Status Trees.
	SI not actuated, not required.		RO checks if SI is actuated, informs ANSS.
	Tavg responding as expected for current plant conditions.		RO/PO verify Tavg responding as expected, report same to ANSS.
	Maintain RCS Temperature		PO verifies MSIVs open and condenser available.

U1DRILL 2 (18) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Steam dumps previously placed in Steam Pressure due to PT-MS-446 failure.	Place Steam Dump into the STM PRESS mode of control in Auto.		PO verifies Steam Dumps are set properly for post trip operation.
EVENT #8			
Main Steam Line break outside CNMT, upstream of MSIVs. After PO verifies proper operation of the steam dumps:			
IMF MSS18C (0 0) 1E6	"C" SG faulted outside CNMT, steam flow indicated on "C" SG, its pressure dropping faster than "A"&"C" SGs. RCS temperature dropping. Steam Dumps modulate closed. ANNs A7-43, A7-57 & A11-26actuate.		Crew notes degrading plant conditions, informs ANSS.
Auto SI failure will not be realized by crew if ANSS orders manual SI prior to exceeding auto setpoint. Scenario is written to reflect SI actuation at this point.			ANSS/Crew may manually actuate SI at this time and return to E-0. If not, conditions will continue to degrade to a point that will require SI.
Crew returns to E-0 step 1.			ANSS transitions back to E-0, Step 1 and informs the crew.

U1DRILL 2 (19) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
E-0 steps 1 through 7 are immediate manual actions.			RO and PO commence immediate actions of E-0, re-verify high level actions of steps 1 through 7, ANSS references E-0 to verify immediate actions.
	Rx. trip and bypass breakers open, neutron flux decreasing. Rod bottom lights lit.		RO reverifies reactor trip.
			PO/RO re-sounds standby alarm, announces Unit 1 reactor trip and safety injection.
	Throttle and governor valves closed, reheat stop and intercept valves closed.		PO reverifies turbine trip.
	Reheat MOVs closed.		PO reverifies reheat steam isolation.
	Main generator output breakers open. Exciter circuit breaker open.		PO reverifies generator trip.
	AE and DF busses energized.		PO reverifies Power to AC Emergency busses.
	A5-13 SI annunciator lit. SI actuation status lights. SI manually actuated.		RO checks if SI is actuated, informs ANSS.

U1DRILL 2 (20) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	Only exceptions to ATT 1-K are: FW-P-3A OOS at turnover. #1 EDG OOS at turnover. FW-P-3B tripped and cannot be started. All other conditions SAT for ATT 1-K.		ANSS directs operator to perform Attachment 1-K, Verification of Automatic Actions, as time/manpower permit, continues with E-0.
NOTE: Plant conditions will continue to degrade, CNMT is unaffected since stm brk is outside CNMT.	Auto actions that have/will occur are CIA, FWI, MSLI. CIB/CNMT Spray not required.		
E-0 continued.	H2 analyzers placed into service. Annun A2-97 energizes. Annun A2-105 energizes.		ANSS directs personnel to place H_2 analyzers in service.
	VS-F-4A running.		PO verifies at least one leak collection & exhaust fan running.
	Tavg < 547°F and dropping rapidly. SLI previously actuated.		RO/PO check RCS Tavg stable at or trending to 547°F, report Tavg dropping.
	PORVs, safeties and spray valves indicate closed. PRT parameters as expected for current plant conditions. PORV lineup SAT.		RO checks PRZR PORV's, safeties, spray valve closed. RO checks PRT conditions. RO checks PORV lineup.
	RCPs running.		RO/PO check RCP trip criteria, report RCPs DO NOT need to be tripped.

U1DRILL 2 (21) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	"C" SG pressure dropping.		PO checks if any SGs are faulted, reports status of "C" to ANSS. ANSS acknowledge report of "C" SG, transitions to E-2.
As U-2 operator, when requested, report proper operation of CREBAPS at U2.	Bottle discharge lights lit. Intake and exhaust dampers closed.		PO verifies CREBAPS actuated, requests Unit 2 CREBAPS verification.
CT #3 - E-2.A crew isolates faulted S/G and directs operator to close isolation valve(s) operated from outside of the control room before transition out of E-2.	All yellow SLI marks lit.		Crew verifies steam line isolation.
Note: "A" and "B" SG pressures may be dropping due to effects of "C" SG fault, but should not be diagnosed as faulted.	"A" and "B" SG pressure stable.		PO checks for any non-faulted SG.
	"C" SG pressure dropping uncontrollably.		PO identifies "C" SG as faulted.
	FCV-FW-498 closed.		PO verifies "C" MFRV closed. **CT #3**
	FCV-FW-499 closed.		PO verifies "C" BPFRV closed. **CT #3**
MOV-FW-151B fails to close.	MOV-FW-151A closed. MOV-FW-151B remains open.		PO closes MOV-FW-151A, reports MOV-FW-151B will not close. **CT #3**

U1DRILL 2 (22) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
			ANSS directs auxiliary operator to locally close MOV-FW-151B. **CT #3**
After appropriate delay:			
DOR X10I023O **IOR X10I023O (0 0) 1**	MOV-FW-151B closed.		PO verifies AFW flow to "C" S/G secured when MOV-FW-151B reported closed. **CT #3**
To close MOV-FW-151B			
Then report actions to control room.			
	MS-17 NSA closed.		Crew addresses the fact that TDAFW supply valve MS-17 is NSA closed. **CT #3**
	PCV-MS-101C closed. HCV-MS-104 closed.		RO/PO verify "C" S/G atmospheric dump valve and RHR valve closed. **CT #3**
	No SG level rising in an uncontrolled manner.		Crew checks if SG tubes are intact.
NOTE: If C SG has completely blown down by this time, conditions to terminate SI will be met and crew will transition to ES-1.1. If so, skip to page 24 for drill termination. If SI termination criteria not met, crew transitions to E-1.	Subcooling > 43 [58]°. Secondary heat sink sufficient. RCS pressure stable or rising. PRZR level > 18 [37]%.		RO/PO check if SI can be terminated and if so, transitions to ES-1.1.

U1DRILL 2 (23) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
Crew transitions to E-1.			ANSS makes transition to E-1, informs crew.
	CREBAPS actuated per E-2.		PO re-checks control room habitability.
	RCPs running. DO NOT meet termination criteria.		RO checks if RCPs should be stopped.
	"C" SG previously diagnosed as faulted and isolated (pending reports of local operator actions).		PO checks if any SG is faulted.
			PO maintains intact SG levels 13% [30%] to 50%.
	NR level 13% to [30%] 50% or total feed flow > 355 gpm & 100 gpm to each intact SG		Crew checks intact SG level.
	Instrument air pressure >100 psig.		PO verifies PI-1IA-106 > 100 psig.
	PORV shut in auto and block valve energized.		RO verifies PORVs and block valves.
	No SG levels rising in an uncontrolled manner, no secondary rad monitor alarms.		PO checks for ruptured SG.

U1DRILL 2 (24) REV0

INSTRUCTIONAL GUIDELINES	PLANT STATUS OR RESPONSE	OBJECTIVE	EXPECTED STUDENT RESPONSE
	Subcooling > 43 [58]°. Secondary heat sink sufficient. RCS pressure stable or rising. PRZR level > 18 [37]%.		RO/PO check if SI can be terminated.
Crew transitions to ES-1.1.			ANSS makes transition to ES-1.1, informs crew.
Terminate drill after crew determines SI termination criteria are met and transition to ES-1.1.			
Collect and review logs after allowing crew time to complete them.			
EPP DECLARATION			ANSS declares S.A.E. TABS 1.1.1 & 1.2.1 Red Path on Heat Sink.