Dresden Generating Station

SIMULATOR EXERCISE GUIDE

ILT 01-1 NRC RE-EXAM

SCENARIO

ILT-R-2

Rev. 01

11/02

DEVELOPED BY: Mark Otten (Original on file) 12/6/02
Exam Author Date

APPROVED BY: Rich Gadbois (Original on file) 12/6/02
Facility Representative Date

Facility: Dresden Scenario No: ILT-R-2 Op-Test No: ILT 01-1 Retest

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Approximately 9.0 Mlbm/hr feedwater flow, IRM channel 15 OOS, Unit 3 is in Mode 1

Turnover: A downpower is in progress to remove the 2C RFP from service for maintenance.

Event No.	Malfunction Number	Event Type*		Event Description
1	NA	N	ANSO SRO	Secure the 2C RFP
2	NA	R	NSO SRO	Lower reactor power by reducing recirc flow
3	RRMBUNST	I	NSO SRO	2B Recirc pump speed signal failure
4	MRGCRDE	I	ANSO SRO	Fails the east CRD area arm downscale
5	RDFCFHI	I	NSO SRO	Failure of the CRD flow control controller
6	K70	C	NSO SRO	Trip of the feed breaker to Bus 29
7	I21	M	ALL	Steam leak in the drywell
8	K23 B12		ANSO SRO	Loss of Bus 23-1 / RPS failure to scram

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

Dresden Generating Station

NRC ILT EXAM

Scenario ILT-R-2

Scenario Objective

Evaluate the operators in using the Emergency Depressurization DEOP contingency procedure.

Scenario Summary

Initial Conditions:

- 65% power, down power in progress
- IRM 15 OOS
- 2B EHC Pump OOS
- Unit 3 is in Mode 1

Events:

- Secure the 2C Reactor Feed Pump
- Lower reactor power by reducing recirc flow
- 2B Recirc pump speed signal failure
- East CRD area radiation monitor fails downscale
- CRD Flow Controller fails high
- Trip of the feed breaker to Bus 29
- Steam leak in the drywell
- Loss of Bus 23-1 and RPS failure to scram

Scenario Sequence

- The Team assumes the shift with reactor power at about 70% and a power reduction in progress to remove a RFP from service for maintenance.
- The ANSO, as directed by the SRO, secures the 2C RFP.
- The NSO lowers reactor power by reducing recirculation flow following direction by the SRO.
- Then the speed control signal fails for recirculation pump 2B and the pump flow oscillations are stopped when the NSO locks out the scoop tube.
- Then the ARM for the east CRD area fails downscale. The ANSO bypasses the failed instrument and resets the alarm.
- After the alarm is reset the CRD Flow Controller fails high. The NSO takes manual control of the valve.
- This is followed by a trip of Bus 29. The ANSO then crossties Bus 28 and 29.
- A small steam leak then develops in the drywell.
- When the team scrams the reactor the RPS scram fails and the reactor is scrammed using the ARI pushbuttons.
- The steam leak then gets larger and Bus 23-1 trips on overcurrent.
- The team is unable to spray the drywell and must emergency depressurize the reactor.
- The scenario terminates after the emergency depressurization takes place.

Event One – Shutdown 2C Reactor FeedPump

The Team shutdown of 2C Reactor Feed Pump per normal procedures.

Malfunctions required: 0

Success Path:

- Shutdown 2C Reactor Feed Pump IAW procedures.

Event Two – Power Reduction With Recirculation Flow

The Team reduces power with recirculation flow per procedures.

Malfunctions required: 0

Success Path:

- Reduces power with recirculation flow per procedures

Event Three – Recirculation Pump Controller Speed Signal Failure

The Team recognizes and responds to a recirculation pump speed control signal failing low for Recirculation Pump 2B.

Malfunctions required: 1 (MG set 2B controller signal unstable)

Success Path:

- Locks out the scoop tube

Event Four – Failure of the East CRD area radiation monitor downscale

The team should recognize and respond to failure of the East CRD area radiation monitor downscale.

Malfunctions required: 1 (Fails the East CRD area radiation monitor downscale)

Success Path:

- Bypasses the alarm and resets the annunciator.

Event Five – CRD Flow Controller Failure

The Team recognizes and responds to a failure of the CRD Flow Controller.

Malfunctions required: 1 (CRD flow control output fails high)

Success Path:

- Take manual control of the CRD Flow Controller

Event Six – Trip of the feed breaker to Bus 29

The team should recognize and respond to a trip of the feed breaker to Bus 29

Malfunctions required: 1 (Trip of the feed breaker to Bus 29)

Success Path:

- Re-energize Bus 29 from Bus 28

Event Seven – Steam Leak in the drywell

The team should recognize and respond to a steam leak in the drywell.

Malfunctions required: 1 (Steam leak in the drywell)

Success Path:

- Enter DOA 40-1, Slow Leak

Event Eight – Loss of Bus 23-1 / RPS failure to scram.

The team should recognize and respond to the loss of Bus 23-1 and the RPS failure to scram.

Malfunctions required: 2 (Bus 23-1 over current)
(RPS failure to scram)

Success Path:

- All rods inserted using ARI
- Emergency depressurization.

Scenario Recapitulation

Total Malfunctions:	7	
Abnormal Events:	4	
Major Transients:	1	(Steam Leak)
EOPs Entered:	2	
EOP Contingencies:	1	(Emergency Depressurization)

Op-Test No: ILT 01-1 Scenario No.: ILT-R-2 Event No.: 1 Page 1 of 1

Event Description: The Team shutdown of 2C Reactor Feed Pump per normal procedures.

Time	Position	Applicant's Actions or Behavior
	SRO	Directs ANSO to secure 2C RFP per DOP 3200-05 Reactor Feed Pump Shutdown.
	ANSO	Performs the following actions to secure 2C RFP per DOP 3200-05 Reactor Feed Pump Shutdown. ❑ Verifies zinc injection is properly aligned to the RFP that will remain operating (2A). ❑ Place RFPs standby selector switch, STBY PP SELECT , in OFF. ❑ Place the associated Aux Oil Pump in AUTO. ❑ Open 2C RFP Recirc Valve. ❑ Verify Reactor water level is stable. ❑ When 2C RFP Disch Valve is fully closed, then STOP 2C RFP. ❑ As RFP slows down, verify the associated Aux Oil Pump automatically starts. ❑ Verify running RFP current is below 1115 amps. ❑ Close the 2C RFP recirc valve. ❑ Direct NLO to verify 2C RFP has come to rest. ❑ When 2C RFP has come to rest, reopen 2C RFP Disch Valve. ❑ Direct an NLO to ensure 2C RFP is not rotating in reverse direction. ❑ Direct NLO to verify 2-5772-48C Turbine Building Supply Damper is closed. ❑ Place non-operating RFP in stby mode. ❑ Notify Operations Shift Supervisor the 2C RFP shutdown procedure has been completed.
	NSO	Monitors panels and assists as directed.
		ROLE PLAY - An NLO is in the field and briefed on the securing on RFP. - NLO may be asked to verify Zinc injection lineup. - Report "Zinc injection is lined up to 2A RFP". - NLO to verify 2C RFP has stopped rotating. - Report "2C RFP has come to rest". - NLO to verify 2C RFP is not rotating in the reverse direction. - Report "2C RFP is not rotating in the reverse direction". - NLO may be asked to verify Aux Oil Pump is operating normally. - Report "Aux Oil Pump is running normally and bearing oil flow looks normal in sight glasses". - NLO to verify 2-5772-48C supply damper is CLOSED. - Wait 2 minutes and report "2-5772-48C damper has been verified CLOSED".
		Event 2 Completion Criteria: – 2C RFP has been secured. – AND, at the direction of the NRC Chief Examiner.

Op-Test No: ILT 01-1 Scenario No.: ILT-R-2 Event No.: 2 Page 1 of 2

Event Description: The Team reduces power using Recirculation flow.

Time	Position	Applicant's Actions or Behavior
		SIMULATOR OPERATOR / ROLE PLAY: Call as BPO and request load drop to 650 Mwe.
	NSO	Performs the following actions per DGP 03-01, Routine Power Changes, and DOP 0202-03, Reactor Recirculation Flow Control System Operation, and DGP 03-01 Routine Power Changes: ❑ Lowers recirculation pump speed using the master controller potentiometer. ❑ Verifies expected power reduction.
	SRO	Directs reducing reactor power per DGP 03-01, Routine Power Changes, and DOP 0202-03, Reactor Recirculation Flow Control System Operation, and DGP 03-01 Routine Power Changes by lowering recirculation pump speed.
	ANSO	Monitors panels and assists as directed.
		Event 1 Completion Criteria: – Significant power reduction – AND, at the direction of the NRC Chief Examiner.

Op-Test No: ILT 01-1 Scenario No.: ILT-R-2 Event No.: 3 Page 1 of 2

Event Description: The speed control signal fails low for Recirculation Pump 2B and the pump flow increase is stopped when the NSO locks out the scoop tube.

Time	Position	Applicant's Actions or Behavior
		SIMULATOR OPERATOR: At the discretion of the NRC Chief Examiner, activate **trigger 1**, which fails the 2B Recirculation Pump speed signal.
	NSO	Performs the following actions per DAN 902-4 C-5, 2A/B Recirc PPs Speed Mismatch, and DOA 0202-03, Reactor Recirculation System Flow Control Failure: ❑ Places the 2B M-G Set Scoop Tube Power Lockout Reset Switch in the Lockout position. ❑ Verifies Core thermal power <2957 MWth. ❑ Completes actions of 2B Recirc M-G Lockout in DOP 0202-12, Recirculation Pump Motor Generator Set Scoop Tube Operation. • Places both recirc pump speed control transfer stations to manual. • Runs 2B Recirc M-G Set speed demand to minimum. • May places equipment status card on its Lockout Reset switch. ❑ Directs NLO to check 2B MG Set locally.
		ROLE PLAY: - NLO at Recirc MG set to inspect for problems. - Report "Everything looks normal at 2B Recirc MG Set".
	SRO	Enters and directs performance of DOA 0202-03, Reactor Recirculation System Flow Control Failure. ❑ Enters and directs performance of DGA 7, Unpredicted Reactivity Addition. ❑ Contacts QNE. ❑ May request NLO to take local speed readings ❑ Notifies Shift Manager and IMD of controller problem. ❑ May contact BPO to report load drop on hold.
	ANSO	❑ Begins working through the steps of DGA 7, Unpredicted Reactivity Addition, but will not have time to complete the required actions.

Op-Test No: ILT 01-1 Scenario No.: ILT-R-2 Event No.: 3 Page 2 of 2

Event Description: The speed control signal fails low for Recirculation Pump 2B and the pump flow increase is stopped when the NSO locks out the scoop tube.

Time	Position	Applicant's Actions or Behavior
		Event 6 Completion Criteria: – Card hung on Recirc Speed Controller explaining reason for lockout and efforts in progress to fix the controller. – OR, at the direction of the NRC Chief Examiner.

Op-Test No: ILT 01-1 Scenario No.: ILT-R-2 Event No.: 4 Page 1 of 2

Event Description: The team should recognize and respond to failure of the East CRD area radiation monitor downscale.

Time	Position	Applicant's Actions or Behavior
		SIMULATOR OPERATOR At the Discretion of the NRC Chief Examiner, activate **trigger 2,** which fails the East CRD Area Radiation Monitor downscale.
	NSO	Performs the following actions per DAN 902-3 F-1 AREA RAD MON DOWNSCALE. ❑ Determines which instrument is downscale on 902-11 Panel. ❑ Attempts to reset the downscale alarm by depressing the RESET pushbutton. ❑ Notifies the Operations Shift Supervisor and obtains permission to bypass the instrument. ❑ Bypasses downscale instrument on Panel 902-2. ❑ Resets the annunciator on 902-3 Panel. ❑ Notes condition in Appendix A, Unit Operator's Daily Surveillance Log. ❑ Notifies Rad Protection. ❑ Initiates a Work Request to have the rad monitor repaired.
	SRO	❑ Directs NSO to bypass and reset alarm.
		SIMULATOR OPERATOR Verify **trigger 8** activates when the examinee bypasses the correct ARM. **ROLE PLAY** - Respond as the appropriate person. If asked for assistance, respond that you will come to the control room shortly.
		Event 3 Completion Criteria: - The steps in DAN 902-3 F-1 have been carried out. - AND, at the direction of the NRC Chief Examiner.

Op-Test No: ILT 01-1 Scenario No.: ILT-R-2 Event No.: 5 Page 1 of 1

Event Description: The CRD Flow Controller output fails high and system flow is returned to normal when the NSO takes manual control of the Flow Controller.

Time	Position	Applicant's Actions or Behavior
		SIMULATOR OPERATOR: At the discretion of the NRC Chief Examiner, Activate **trigger 3**, which causes the CRD Flow Controller output to fail high.
	NSO	Notices and announces no drive water pressure. Performs DOA 0300-01, Control Rod Drive System Failure actions as directed: ❑ Diagnoses failure of the CRD Flow Controller and takes manual control of it. ❑ Restores CRD system flows and pressures to normal.
	SRO	Enters and directs performance of DOA 0300-01, Control Rod Drive System Failure. Notifies Shift Manager and IMD of CRD Flow Controller failure.
		ROLE PLAY; - NLO to check CRD FCV operation: (wait 2 min) - Report " the CRD FCV appears to be operating normally". - NLO to check CRD system flow locally; (wait 1 min) - Report "CRD system flow indicates 100 gpm (pegged high)". - NLO to check cooling water flow locally: (wait 1 min) - Report "CRD cooling water flow indicates (same as control room meter)". - Respond as groups notified.
	ANSO	Monitors panels and assists as directed.
		Event 5 Completion Criteria: - Team has taken manual control of the CRD Flow Controller. - OR, at the discretion of the NRC Chief Examiner.

Op-Test No: ILT 01-1 Scenario No.: ILT-R-2 Event No.: 6 Page 1 of 1

Event Description: The Feed Breaker from Bus 24-1 to Bus 29 at Bus 24-1 trips.

Time	Position	Applicant's Actions or Behavior
		SIMULATOR OPERATOR: At the discretion of the NRC Chief Examiner, activate **trigger 5**, which trips the feed breaker from Bus 24-1 to Bus 29 at Bus 24-1.
	ANSO	Diagnoses that Bus 29 has lost power. Will perform the following actions of DGA 12, Partial or Complete Loss of AC Power, and DOP 6700-02, Transferring 480 Volt Busses, Attachment A: ❑ Open BUS 24-1 to TR 29 ACB. ❑ Close BUS 28 and BUS 29 TIE ACB ❑ Close BUS 29 and BUS 28 TIE ACB
	NSO	❑ Monitors panels and assists as directed.
	SRO	❑ Directs entry into DGA 12. ❑ Directs re-energizing Bus 29 from Bus 28.
		ROLE PLAY: - NLO to check Bus 29 feed breaker at Bus 24-1(wait 3 min): - Report "The Bus 29 feed breaker at Bus 24-1 looks charred and an acrid odor in the area." - NLO to check Bus 29 feed breaker at Bus 29 (wait 3 min): - Report "The Bus 29 feed breaker at Bus 29 is open and there are no targets up at the breaker". - (Time compress) EMD reports Bus 29 available to crosstie to Bus 28.
		Event 6 Completion Criteria: - Bus 28 and 29 are crosstied. - Team is planning how to restart loads. - OR, at the direction of the NRC Chief Examiner.

Op-Test No: ILT 01-1 Scenario No.: ILT-N-1 Event No.: 7& 8 Page 1 of 2

A small Main Steam line leak develops in the Drywell. When the team scrams the reactor. The RPS scram fails and the reactor is scrammed using the ARI pushbuttons. The steam leak then gets larger and Bus 23-1 trips on overcurrent. The team is unable to spray the drywell and must emergency depressurize the reactor.

Time	Position	Applicant's Actions or Behavior
		SIMULATOR OPERATOR: At the discretion of the NRC Chief Examiner, activate **trigger 6**, which causes a small Main Steam line leak to develop in the Drywell.
	NSO / ANSO	Recognizes and announces that Drywell pressure is slowly rising. Performs the following actions per DOA 0040-01 Slow Leak, as directed: ❑ Maintain Level with FWLCS (immediate action). ❑ Notifies Shift Supervisor and Rad Protection. ❑ Monitors for GSEP conditions. ❑ Directs search for leak. ❑ Shutdown H_2 Addition. ❑ Makes PA announcement. ❑ Monitors leakage rate, reactor water level, and Drywell pressure. ❑ Verify Crib House inlet temperature is <95^{o}F. ❑ Initiates Torus cooling per DOP 1500-02.
		Role Play: NLO to search for leak Report "I am on my way out to check for leaks". NLO to check Cribhouse inlet temperature: (wait 5 mins) Report " Cribhouse inlet temp is 75^{o}F".
	SRO	❑ Enters and directs performance of DOA 0040-01, Slow Leak. ❑ May enter DGP 02-03, Reactor Scram, and direct taking scram preparatory actions. ❑ Prior to reaching the Drywell Pressure scram setpoint, directs a manual reactor scram per DGP 02-03, Reactor Scram.
	NSO / ANSO	Performs scram preparatory actions per DGP 02-03, Reactor Scram, as directed. ❑ Reduces power with Recirc flow to 51 Mlbm/hr. ❑ Starts MSP and TGOP. ❑ Trips H_2 addition.

Op-Test No: ILT 01-1 Scenario No.: ILT-N-1 Event No.: 7 & 8 Page 1 of 3

Event Description: A small Main Steam line leak develops in the Drywell. When the team scrams the reactor. The RPS scram fails and the reactor is scrammed using the ARI pushbuttons. The steam leak then gets larger and Bus 23-1 trips on overcurrent. The team is unable to spray the drywell and must emergency depressurize the reactor.

Time	Position	Applicant's Actions or Behavior
	NSO	Performs the following actions per DGP 02-03, Reactor Scram, as directed: ❑ Presses scram pushbuttons ❑ Places mode switch in shutdown ❑ Check rods inserted; discovers rods not inserted. ❑ **√ Initiates ARI, checks rods, announces all rods inserted.** ❑ Maintains RPV/L between +25 and +35 inches or as directed by DEOPs. ❑ Verifies Turbine and Generator tripped. ❑ Verifies Recirc Pumps run back. ❑ Check auxiliary power transferred to RAT. ❑ Inserts SRM/IRMs. Verifies the following as time allows: ❑ Group Isolations ❑ Automatic start of ECCS systems ❑ Automatic start of DGs.
	NSO / ANSO	❑ Notices and reports the loss of ECCS equipment powered from bus 23-1. ❑ Reports the loss of Bus 23-1.
	ANSO	❑ Refers to DAN 902(3)-8 F-5, 4KV Bus 23-1 Overcurrent annunciator. As directed, Performs DGA-12, Partial or Complete Loss of AC power: ❑ May dispatch an operator to check TR22 . ❑ Verifies EDG 2 and/or 2/3 auto-started. ❑ Dispatches an operator to verify the applicable EDG (s) is/are operating normally. ❑ Takes EDG 2 to OFF (DOA Actions) ❑ Takes actions per DGA 12 for any faulted buses. ❑ Recognizes the loss of both Bus 28 and 29. ❑ Dispatches NLO to Bus 23-1 to investigate the loss of 23-1. ❑ May enter DGA-13, Loss of 125 VDC.
		Role Play: - NLO to bus 23-1 (wait 2 mins) - Report "The feed breaker to Bus 23-1 from Bus 23 has an overcurrent flag up on it and will not reset.
	ANSO	Performs DEOP 200-1, Primary Containment Control, actions as directed: ❑ Monitors Drywell temperature and pressure and attempts to initiate torus sprays and drywell sprays pre Hard Card LPCI/CCSW OPERATION, as directed. ❑ Announces all Drywell and Torus Sprays and Torus Cooling have lost power.

Op-Test No: ILT 01-1 Scenario No.: ILT-N-1 Event No.: 7 & 8 Page 2 of 3

Event Description: A small Main Steam line leak develops in the Drywell. When the team scrams the reactor. The RPS scram fails and the reactor is scrammed using the ARI pushbuttons. The steam leak then gets larger and Bus 23-1 trips on overcurrent. The team is unable to spray the drywell and must emergency depressurize the reactor.

Time	Position	Applicant's Actions or Behavior
	NSO / ANSO	Dispatches an Operator to manually open any or all of the following valves: ❑ Drywell Sprays ❑ Torus Sprays ❑ Torus Cooling
	NSO	Performs DEOP 400-04, Emergency Depressurization, as directed. ❑ If Drywell pressure is greater than +2 psig, prevents injection from LPCI/CS pumps not needed for Core cooling per Hard Card, LPCI INJ/CC CONTROL/SHUTDOWN. ❑ Initiates Iso Condenser to maximum flow per Hard Card, ISOLATION CONDENSER. ❑ Verifies Torus level >6 feet. ❑ **√ Open all ADS valves** ❑ Verifies all relief valves open.
		ROLE PLAY: - EMD Foreman - Report that you will report to Bus 23 **Note**: EMD personnel will not report back.
	SRO	Enters DEOP 100, RPV Control, due to high Drywell Pressure and/or low Reactor water level and performs, directs: ❑ Entering DGP 2-3. ❑ Verification of all isolations, ECCS and EDGs start. ❑ Holding Reactor water level +8" to +48". Enters DEOP 200-1, Primary Containment Control, when Drywell pressure reaches 2 psig and performs/directs: ❑ Determines if Drywell pressure can be held <2.0 psig with SBGT or Drywell purge. ❑ Verifying of Torus water level <27.5 ft. ❑ Directs initiation of Torus spray. ❑ Verifies Recirc Pumps and Drywell Coolers tripped. ❑ Directs initiation of Drywell sprays. ❑ Continuing efforts to reduce drywell pressure below 9 psig. ❑ Monitoring of Drywell temperature(Drywell sprays may be initiated for temperature control) ❑ Monitoring Torus Temperature and initiation of Torus cooling. ❑ Monitors Torus level.

Op-Test No: ILT 01-1 Scenario No.: ILT-N-1 Event No.: 7 & 8 Page 3 of 3

Event Description: A small Main Steam line leak develops in the Drywell. When the team scrams the reactor. The RPS scram fails and the reactor is scrammed using the ARI pushbuttons. The steam leak then gets larger and Bus 23-1 trips on overcurrent. The team is unable to spray the drywell and must emergency depressurize the reactor.

Time	Position	Applicant's Actions or Behavior
	SRO	Directs Operators to investigate the loss of Bus 23-1. Directs entry into DGA-12 for Partial Loss of AC Power. Recognizes that with both loops of Drywell sprays failed, Emergency Depressurization per DEOP 0400-02 is necessary due to one of the below: ❑ Drywell temperature cannot be maintained below 281°F. ❑ Exceeding the PSP. **√ Enters DEOP 400-02, Emergency Depressurization, and directs**: ❑ If Drywell pressure >2 psig, prevention of injection from LPCI/CS pumps not needed for core cooling. ❑ Initiation of Iso Condenser to maximum flow. ❑ Verification of Torus level > 6ft. ❑ Opening all ADS valves. ❑ Verifying all relief valves open. Verifies the Drywell spray initiation curve prior to the operator manuallly opening any of the Drywell spray valves. Then directs the Operator to open the 2-1501-27B (2-1501-27A, 2-1501-28A) valve(s).
		Scenario Completion Criteria: - All Rods in. - Emergency depressurization in progress. - AND, at the direction of the NRC Chief Examiner.

Critical Tasks (IDENTIFIED BY √ IN GUIDE)

❑ With a reactor scram required and the reactor not shutdown, ***TAKE ACTION TO REDUCE POWER*** by injecting boron and/or inserting control rods, to prevent exceeding the primary containment design limits.

AND

❑ When the Drywell temperature cannot be maintained below 281°F, ***INITIATE EMERGENCY DEPRESSURIZATION.***

OR

❑ When Torus bottom pressure cannot be maintained below the pressure suppression pressure, ***INITIATE EMERGENCY DEPRESSURIZATION.***

REFERENCES

PROCEDURE	TITLE	REVISION
DAN 902-4 E-6	2 A/B Recirc PP Speed Mismatch	14
DOP 0202-03	Reactor Recirculation Flow Control System Operation	21
DOP 0202-12	Recirculation Pump Motor Generator Set Scoop tube Operation	21
DOP 3200-05	Reactor Feed Pump Shutdown	21
DOA 0202-03	Reactor Recirculation System Flow Control Failure	5
DOA 0300-01	Control Rod Drive System Failure	18
DGA 7	Unpredicted Reactivity Addition	14
DGA 12	Partial or Complete Loss of AC Power	47
DGP 03-01	Routine Power Changes	70
DGP 02-03	Reactor Scram	60
DGP 03-04	Control Rod Movements	43
DEOP 0100-00	RPV Control	10
DEOP 0200-01	Primary Containment Control	10
DEOP 0400-02	Emergency Depressurization	04
DEOP 0400-05	Failure to Scram	12
DEOP 0500-02	Bypassing Interlocks and Isolations	12
DEOP 0500-05	Alternate Insertion of Control Rods	13

PRE-SCENARIO ACTIVITIES

1. If applicable, conduct pre-scenario activities in accordance with TQ-AA-106-0107, SIMULATOR EXAMINATION BRIEFING.
   a. Provide the team with a copy of Control Room work request list.
   b. Provide the team with a copy of DGP 03-01, Routine Power Changes, which is marked up to the point of securing third Reactor Feed Pump.
   c. Provide the team with a copy of DOP 3200-05 Reactor Feed Pump Shutdown.
   d. Provide the team with a copy of Appendix A, Unit Operator's Daily Surveillance Log.
   e. Direct the team to perform their briefs prior to entering the simulator.
2. Simulator Setup (the following steps can be done in any logical order)
   a. Initialize simulator in IC 12 and perform the following prior to proceeding below:
      1) Start the 2A Instrument Air Compressor as follows:
         a) Open the "RNI Display" to the "HOME" page.
         b) Open the Instrument Air screen
         c) Double click on the 2A Instrument Air Compressor
         d) Double click on "IADCL2A"
         e) Select "RUN"
         f) Click on "INSERT"
         g) Verify 2A Instrument Air compressor starts.
         h) On the 923-1 panel verify the 2A Instrument Air compressor has a "red" target.
      2) Reduce recirculation pump speed to just below the exclusion range. (<65% recirc speed)
      3) Set Stator Cooling Water PCV to 28.0
      4) Verify 2A Stator cooling and 2A EHC pumps on.
   b. Run the initial setup caep file: **ilt-r-2.cae**
   c. Verify the following simulator conditions:
      1) Master Recirc Flow controller at <65% (recirc speed should be <65% so continuous monitoring locally for the exclusion zone is not required)
      2) MWe at ~700
      3) Condensate Demin dP between 20 and 45 psid [EPU]
      4) Condensate pump amps between 160 and 255 amps [EPU]
   d. Secure the following equipment and tag out of service:
      1) Place IRM 15 902-5 panel joystick in bypass and place an Equipment Status Tag on it.
      2) Place 2B EHC Pump control switch in PTL and hang an OOS card on it
   e. Advance the chart recorders.
   f. Mark up rod sequence as completed through step 130.
   g. Complete the Simulator Setup Checklist.

ILT 01-1 NRC EXAM SCENARIO ILT-R-2 Initial Setup CAEP:

```
# ilt-r-2.cae
# Setup for ilt-r-2
#Written by MO
#Rev 00
#Date 10/02

# INITIAL CONDITIONS

# Prevents an RPS scram
imf b12


#SETUP EVENT TRIGGERS

# Event Trigger 1 inserts a failure of the 2B recirc pump speed signal
trgset 1 "0"
imf rrmbunst (1)


# Event Trigger 2 fails the east CRD area ARM downscale
trgset 2 "0"|2
ior mrgcrde (2) 0|2
imf ser0097 (2) on|2
ior mrlcrdel (2) on|2

# Event Trigger 3 inserts a failure of the CRD flow controller
trgset 3 "0"|3
imf rdfcfhi (3)|3


# Event trigger 4 removes the failure of the CRD flow controller
trgset 4 "0"|4
trg 4 "dmf rdfcfhi"|4

# Event Trigger 5 inserts a trip of the feedbreaker to Bus 29
trgset 5 "0"|5
irf k70 (5) open|5


# Event Trigger 6 Inserts a steam leak in the drywell that starts at 0.001% and ramps to 0.01%.
trgset 6 "0"|6
imf i21 (6) 0.01 10:00 0.001|6


# Event Trigger 7 Increases the steam leak from 0.01% to 10% over 5 minutes and trip Bus 23-1 on over
current
trgset 7 "ppg228 < 60"|7
imf k23 (7)|7
trg 7 "imf i21 10 5:00"|7

# Event trigger 8 removes the alarm for the east CRD area rad monitor
trgset 8 "mrdinstb .ne. 0"|8
trg 8 "dmf ser0097"|

# END
```

Date: TODAY

Unit 2 Turnover

ECCS Status: **All**

Online Information

700 MWe

Online Risk: Green CDF: 1.00

Risk Equipment:

MODE 1

Shutdown Information

Time to Boil: N/A

Shutdown Risk: N/A

Protected Path: N/A

Unit 2 Priorities

Remove 2C RFP from service.

Station Priorities

LCORAs

LCORA # Title	Start Clock Ends

Shift 1 Activities (X = Completed)	Shift 2 Activities	Shift 3 Activities
☐	☐	☐
☐	☐	☐

Common Unit Activities

Shift 1 Activities (X = Completed)	Shift 2 Activities	Shift 3 Activities
☐	☐	☐
☐	☐	☐

Common Unit Procedures / Surveillances in Progress

Unit 2 Conditions, Status, Abnormalities

2 hr ago	0500	IRM 15 OOS due to power supply failure. IMD waiting for replacement power supply to arrive from Quad Cities Station. Placed in DEL for tracking.
6 hr ago	5650	2B EHC pump OOS due to a problem with its pressure compensator. Expected BIS next shift.

Compensatory Actions, Extra Checks

Equipment OOS

2 hr ago	990045654	IRM 15
6 hr ago	990045652	2B EHC pump

Service Unit Status

9 days ago	2A Cond Demin	Cut In
7 days ago	2B Cond Demin	Cut In
16 days ago	2C Cond Demin	Cut In
2 days ago	2D Cond Demin	Cut In
11 days ago	2E Cond Demin	Cut In
6 days ago	2F Cond Demin	Cut Out
2 days ago	2G Cond Demin	Cut In
376 days ago	2A RWCU	Cut In
240 days ago	2B RWCU	Cut Out
20 days ago	2C RWCU	Cut Out
76 days ago	U2 FPC Demin	Cut In

Unit 2 Abnormal Component Position

U2 Open Operability Determinations with Compensatory Actions

Events and Misc. Information

Remove 2C RFP from service for Maintenance.
Recirc MG Sets at 700 RPM. NLO at MG sets with stroboscope monitoring RPM.

Date: TODAY

Unit 3 Turnover

ECCS Status: **All available**

Online Information

910 MWe

Online Risk: Green

Risk Equipment: None

MODE 1

Shutdown Information

Time to Boil: N/A

Shutdown Risk: N/A

Protected Path: N/A

Unit 3 Priorities

Continue safe full power operations.

Station Priorities

LCORAs

LCORA # None
Title

Start
Clock Ends

Shift 1 Activities (X = Completed)	**Shift 2 Activities**	**Shift 3 Activities**
☐	☐	☐
☐	☐	☐

Common Unit Activities

Shift 1 Activities (X = Completed)	**Shift 2 Activities**	**Shift 3 Activities**
☐	☐	☐
☐	☐	☐

Common Unit Procedures / Surveillances in Progress

None

Unit 3 Conditions, Status, Abnormalities

IMD taking voltage readings in the EHC Control Panel 903-31.

Compensatory Actions, Extra Checks

None

Equipment OOS

None

Service Unit Status

5 days ago	3A Cond Demin	Cut In
8 days ago	3B Cond Demin	Cut In
10 days ago	3C Cond Demin	Cut In
5 days ago	3D Cond Demin	Cut In
3 days ago	3E Cond Demin	Cut In
15 days ago	3F Cond Demin	Cut In
3 days ago	3G Cond Demin	Cut In
750 days ago	3A RWCU	Cut In
390 days ago	3B RWCU	Cut Out
60 days ago	3C RWCU	Cut Out
444 days ago	U3 FPC Demin	Cut In

Unit 3 Abnormal Component Position

None

U3 Open Operability Determinations with Compensatory Actions

None

Events and Misc. Information

None