

Facility: LaSalle Station Scenario No.: ESG 1.1 Op Test No.: 1

Examiners: _____ Operators: _____

Initial Conditions:

- Unit 1 is operating at 85% reactor power with flow control line at 105%.
- TLO Temperature controller in manual.
- 1C RHR Pump is OOS for breaker repair.
- 1B IN Compressor is OOS for lube oil change.
- Online Safety level is green.
- Unit 2 is operating at 100% power.

Turnover:

- Unit 1 is in a Division 2 work week.
- LOS-VG-M1 is scheduled to be performed this shift.
- A flow control line adjustment is also scheduled for this shift.
- Reactor Power has been reduced to 85% to allow for rod moves.
- The Control Rod Maneuver Request has been approved.

Event No.	Malf. No.	Event Type*		Event Description
1	N/A	R	RO SRO	Withdraw control rods to 110% flow control line.
2	N/A	N	BOP SRO	Perform VG monthly surveillance IAW LOS-VG-M1.
3	CAEP	C	RO SRO	Stuck control rod (excess friction).
4	MRD131	I	RO SRO	Loss of rod position indication at specific notch position.
5	CAEP	I	BOP SRO	RCIC drain pot alarm w/failure of 1E51-F054 to open automatically (can be open manually).
6	MCA004	C	BOP SRO	VG supply fan trips on overload.
7	MES019	M	ALL	RCIC steam supply line breaks with a failure of isolation valves to close.
8	CAEP		BOP SRO	Failure of RCIC steam supply valve 1E51-F063.
9	CAEP		BOP SRO	Failure of RCIC steam supply valve 1E51-F008.

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

NARRATIVE SUMMARY

Event(s)	Description
1.1.1	Once the turnover is completed, The SRO should direct the RO to withdraw control rods to the 110% flow control line. The RO will withdraw control rods in accordance with LGP 3-1, LOP-RM-01, and the rod sequence package.
1.1.2	The SRO should also direct the BOP operator to perform the VG monthly surveillance in accordance with LOS-VG-M1.
1.1.3	While pulling control rods for flow control line adjustment, a control rod will be stuck. The RO will need to refer to the abnormal operating procedures (LOA-RD-101). The rod can be moved by increasing drive pressure.
1.1.4	Also while moving control rods, the RO will find that rod position indication has failed (single notch position) for one of the rods to be moved. The crew will have to refer to the abnormal operating procedures and tech specs for required action.
1.1.5	After FCL rod moves are complete, drain trap failure will cause the hi level alarm on the RCIC steam line drain pot to come in. A failure of a hi level instrument switch will disable automatic opening of the 1E51-F054, requiring the BOP operator to take action to operate the valve manually and lower drain pot level. The Crew will determine appropriate tech spec and administrative actions for the valve failure.
1.1.6	Once the crew has carried out actions for the RCIC drain pot alarm, the VG supply fan trips on overload. The BOP should acknowledge/announce the alarms and refer to the applicable alarm procedures. The BOP should realign the VG train for shutdown and dispatch an operator locally to investigate the cause of the trip. The SRO should refer to tech specs for required action.
1.1.7, 8, 9	Once actions have been completed for the VG supply fan trip, the steam supply line breaks for the reactor core isolation cooling system (RCIC) with a failure of the isolation valves to close. This BOP should recognize the situation and attempt to manually isolate RCIC. The SRO should enter LGA-02 on high secondary containment temperature and LGA-01 for reactor pressure and level control. Due to the RCIC area temperature exceeding maximum safe values, the crew should scram. As area temperatures rise in the secondary containment, the crew will be required to emergency depressurize per the emergency operating procedures.

Critical Steps

1. Crew recognizes primary release in secondary containment and manually scrams prior to area temperatures reaching the "Max Safe" levels.
2. Crew recognizes failure of RCIC steam line isolation valves to close on valid isolation conditions, and take actions to attempt to isolate the line.
3. Crew performs an emergency depressurization (ADS) when area temperatures exceed Max Safe levels in more than one area.

Facility: LaSalle Station Scenario No.: ESG 1.2 Op Test No.: 1

Examiners: _____ Operators: _____

Initial Conditions:

- Unit 1 startup is in progress IAW LGP-1-1, step E.11, Heatup/Pressurization.
- TLO Temperature controller in manual.
- 1C RHR Pump is OOS for breaker repair.
- 1B IN Compressor is OOS for lube oil change.
- Online Safety level is green.
- Unit 2 is operating at 100% power.

Turnover:

- Control rods are being withdrawn to maintain heatup rate for pressurization.
- 1B RHR system was running for lowering SP level, and is ready to be secured.
- Expect to have 1C RHR operable before mode change.
- Turbine steam chest warming is in progress.

Event No.	Malf. No.	Event Type*		Event Description
1	N/A	R	RO SRO	Pull rods to maintain Rx heatup. LGP-1-1 in progress.
2	N/A	N	BOP SRO	Secure 1B RHR from SP lowering lineup IAW LOP-RH-16.
3	CAEP	I	BOP SRO	1B RHR min flow valve 1E12-F064B fails to open.
4	MNI098	I	RO SRO	APRM C fails upscale. This results in half-scam on RPS bus A.
5	CAEP	C	RO SRO	Blown RPS fuse 1C71-F18C occurs during reset of half scam.
6	MCN002	C	BOP SRO	Rupture in OG piping results in loss of condenser vacuum.
7	MRD277 MRD278	M	ALL	Manual Scram/ATWS/Hydraulic lock of Scram Discharge Volume.
8	CAEP		BOP SRO	MDRFP trips on low lube oil pressure (leak degrades).

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

NARRATIVE SUMMARY

Event(s)	Description
1.2.1	After the crew has taken the shift, the SRO should direct the RO to continue with control rod pulls to maintain heatup/pressurization rate.
1.2.2, 3	The SRO should also direct the BOP to secure the 1B RHR system from the suppression pool level lowering lineup. The BOP should shutdown the RHR loop in accordance with LOP-RH-16. While securing the RHR loop, the RHR minimum flow valve, 1E12-F064B, will fail to open because of a bad flow switch instrument. The operator will be able to open the valve manually, but it must be considered inoperable and appropriate tech spec actions taken.
1.2.4, 5	Once the BOP operator has responded to the RHR min flow valve problem and the RO has withdrawn sufficient control rods to meet the reactivity change requirements, APRM C fails upscale. This results in half-scam on RPS bus A. The crew should respond in accordance with the abnormal operating procedures and will have to bypass the failed APRM and reset the half scram. When the RO resets the half scram signal, RPS fuse 1C71-F18C will blow. The crew will follow the abnormal procedure, re-insert the half scram, replace the fuse, and reset the half scram. The SRO should refer to tech specs for required actions.
1.2.6	Once the crew has addressed the RPS problems, a rupture occurs in the OG piping that will result in a loss of condenser vacuum and ultimately a loss of the main condenser. The BOP/RO should acknowledge/announce the applicable OG system alarms and refer to the alarm procedures. The SRO should direct the RO to scram the reactor when he/she has determined vacuum will not be recovered.
1.2.7, 8	When the RO attempts to scram the reactor, he/she should recognize that all rods did not insert and report this to the SRO. The RO should also initiate the alternate rod insertion (ARI) system. The SRO should enter the emergency operating procedures for a failure to scram. The SRO should direct the RO to perform alternate rod insertion in accordance with LGA-NB-01. The SRO should direct the BOP to start suppression pool cooling in anticipation of a loss of the main condenser. The success path is to perform method 4 of LGA-NB-01 to insert the control rods. This step will allow drainage of the scram discharge volume to allow the rods to insert. Overall plant control will be further complicated by a trip of the Motor Driven Reactor Feed Pump. RPV normal injection sources will be limited to Condensate, RCIC and CRD.

Critical Steps

1. Crew initiates a manual scram before reactor pressure reaches the auto scram setpoint (1043 psig).
2. With ATWS conditions, crew injects boron and/or performs alternate rod insertion in accordance with the emergency operating procedures to shutdown the reactor.

Facility: LaSalle Station Scenario No.: ESG 1.3 Op Test No.: 1

Examiners: _____ Operators: _____

Initial Conditions:

- Unit 1 is operating at 85% reactor power with flow control line at 107%.
- TLO Temperature controller in manual..
- 1C RHR Pump is OOS for breaker repair.
- 1B IN Compressor is OOS for lube oil change.
- Online Safety level is green.
- Unit 2 is operating at 100% power.

Turnover:

- Unit 1 is in a Division 2 work week.
- LOS-CM-M1 is scheduled to be performed this shift.
- A power ascension for load following is also scheduled for this shift.

Event No.	Malf. No.	Event Type*		Event Description
1	N/A	R	RO SRO	Power ascension to 100% power at 300 MWE/hour.
2	N/A	N	BOP SRO	Complete LOS-CM-M1, start both Post-LOCA H2/O2 monitors IAW LOP-CM-02.
3	CAEP	I	BOP SRO	Div 1 Post LOCA H2/O2 Monitor fails upscale.
4	MAI003	C	BOP SRO	Trip of the running Instrument Nitrogen (IN) compressor.
5	CAEP	C	RO SRO	Trip of running TDRFP seal injection pump with failure of standby pump auto start.
6	MCF123	I	RO SRO	Output signal from the TDRFP A manual-auto (M/A) control station fails low.
7	MCA005	I	BOP SRO	Broken Division 1 containment monitoring instrument line.
8	MNB104	M	ALL	Major steam leak propagates inside the primary containment.

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

NARRATIVE SUMMARY

Event(s)	Description
1.3.1	Once the crew has accepted the unit, the SRO should direct the RO to commence the power ascension to 100% power at 300 MWE/hour in accordance with LGP 3-1 and LOP-RR-07.
1.3.2	The SRO should also direct the BOP to complete LOS-CM-M1. The BOP will need to start both Post-LOCA hydrogen-oxygen monitors in accordance with LOP-CM-02.
1.3.3	After both Post-LOCA hydrogen-oxygen monitors are started, the Division 1 monitor O ₂ channel will fail upscale. The crew will have to address the tech spec requirements for the monitor being inoperable.
1.3.4	When the crew has addressed the containment monitoring problem, a trip of the running Instrument Nitrogen (IN) compressor will occur. The BOP should acknowledge/announce the control room alarms and refer to the applicable alarm and abnormal procedures. The BOP should cross-tie IN with the Instrument Air (IA) system. An operator should be dispatched locally to investigate and restore IN.
1.3.5	After the IN system has been restored, the operating TDRFP seal injection pump will trip and the standby pump will fail to auto start. The crew will be able to start the standby pump manually.
1.3.6	Once the crew has restored seal injection, the output signal from the TDRFP A manual-auto (M/A) control station will fail low. As a result, TDRFP A will be driven to minimum speed. The RO may attempt to stabilize reactor water level; however, if the RO/SRO determines that water level cannot be stabilized, the RO should manually scram the reactor and carry out the actions of LGP 3-2.
1.3.7	A malfunction was initially inserted to simulate a broken containment monitoring instrument line. This break will have the following effects: - Fail Division 1 drywell pressure indication - Fail Division 1 ECCS and EDG automatic initiation - Prevent remote operation of Division 1 drywell spray The diagnosis of the exact cause of these failures is not the immediate concern while performing the actions of the symptom-based LGAs. More importantly is that the operators recognize the impact of these failures in performing the EOPs (e.g., using redundant instrumentation, manually initiating affected systems if needed).
1.3.8	Once the reactor is manually scrammed or reactor water level is stabilized, a major steam leak propagates inside the primary containment which requires entry into the LGAs. Actions will include initiating suppression chamber sprays and drywell sprays. As previously mentioned, the operators will need to recognize the impact of the containment line instrument break and take appropriate compensatory actions.

Critical Steps

1. Crew recognizes failure of Division 1 ECCS to initiate and take action to manually initiate Division 1 logic and systems as required.
2. Crew initiates Drywell Sprays before drywell pressure exceeds the limits of the Pressure Suppression Pressure curve in the emergency operating procedures.