

LaSalle County Station

LICENSED OPERATOR EVALUATED SCENARIO GUIDE

19-1 NRC Exam Scenario 1

Rev. 00

Facility: LaSalle County Generating Station
Scenario 1

Scenario #: 19-1 NRC Exam

PURPOSE

Examine the ILT candidate's ability to operate the plant in normal, abnormal, and emergency conditions.

SUMMARY OF EVENTS

1. The crew will perform LOS-HP-Q1.
2. With HPCS running, the pump breaker will trip requiring the crew to place HPCS in a shutdown lineup and enter TS 3.5.1.
3. Gland seal steam PCV will fail requiring the crew to place main steam on gland sealing steam.
4. With a minor leak on 1B steam jet air ejector, the crew will lower power to recover backpressure.
5. An oil leak on 1A TDRFP will require the crew to trip the 1A TDRFP and verify operation of the MDRFP.
6. The 1B RR FCV will fail closed and the FCV lockup pushbutton will also fail. This will require the crew to take action per LOA-RR-101 and enter TS 3.4.1.
7. The SJAE leak will increase, requiring a manual scram.
8. A hydraulic ATWS will occur requiring the crew to enter LGA-010.
9. The crew will take action to initiate SBLC to combat the ATWS, the first SBLC pump discharge relief valve will fail open, requiring the crew to swap SBLC pumps.

Critical Tasks

1. After failure of ARI and with the reactor power still above 3%, inject boron using SBLC after determining the FIRST SBLC pump has failed, within 16 minutes.
2. With a reactor scram required and insufficient control rod worth inserted to maintain the reactor shutdown under all conditions without boron, inhibit ADS prior to ADS auto initiation to prevent an uncontrolled RPV depressurization, causing a significant power excursion.
3. During an ATWS with reactor power above 3%, rapidly lower RPV water level to at least -60 inches within 16 minutes and not to go below -150 inches as indicated on WR level indication.

TRAINING REQUESTS (if applicable)

1. None

OPEX (if applicable)

1. None

Operator Fundamentals

1. Monitoring plant indications and conditions closely
2. Controlling plant evolutions precisely
3. Operating the plant with a conservative bias
4. Working effectively as a team
5. Having a solid understanding of plant design, engineering principles, and sciences

SOER 10-2

1. Supervisory oversight role
2. Recognition and mitigation of risk
3. Worker performance
4. Tolerance of repetitive/long standing issues and degradation of standards
5. Operating Experience

Record of Revisions (Summary)

Rev. 0	Developed new for the ILT 19-1 NRC Exam
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INITIAL SIMULATOR SETUP/ REQUIRED DOCUMENTATION

1. Recall a full power IC 151
2. Place simulator in RUN
3. Load and run the SmartScenario file NRC 19-1 Scenario 1.ssf
4. Have a marked-up copy of LOS-HP-Q1 up to step A.9.
5. Flag annunciators, 1H13-P601-A204, -A405, -A406
6. Load HPCS Motor Screen to PPC Overhead 'C'.
7. VERIFY the Tech Spec Timeclock Sheet as follows:

TS/TRM/ODCM	System/ Component	Required Action	REQUIRED ACTION Description	Completion Time	Expiration Date/Time
3.7.j	FP/0B Diesel FP	A.1	Restore equipment to OPERABLE status	7 days	6 days

8. Perform the pre-scenario checklist (TQ-LA-150-0308)

SCENARIO OUTLINE (NRC Evaluations Only)

Event No.	Malf. No.	Event Type*	Event Description
1	None	N (BOP)	Perform HPCS full flow test IAW LOS-HP-Q1
2	MES033	C (BOP) T (SRO)	HPCS breaker overcurrent, secure HPCS IAW LOP-HP-04. SRO enters TS 3.5.1 Condition B
3	K5H03JC1	C (BOP)	Lowering Gland Seal Steam Pressure; Manual recovery of Seal Steam Pressure
4	MCN002	R (ATC)	Minor condenser leak on '1B' Steam Jet Air Ejector, reduce reactor power IAW LGP-3-1
5	R1041	C (ATC)	'1A' TDRFP lube oil leak; Start MDRFP and manually trip the '1A' TDRFP
6	K2L12P1L	C (ATC) T (SRO)	'1B' Recirc Pump FCV slowly drifting shut, lock '1B' FCV. SRO evaluates TS 3.4.1 for applicability
7	MCN002	M (ALL)	Condenser leak increases in size, requiring manual scram IAW LGP-3-2
8	MRD277 MRD278	M (ALL)	Hydraulic ATWS
9	MSL001/2	C (ATC)	Initiate second train of SBLC IAW LGA-SC-101, first train of SBLC fails on discharge relief valve stuck open
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)echnical Specification			

APPROXIMATE SCENARIO RUN TIME

90 Minutes

GENERAL OBJECTIVE: (USED THROUGHOUT THIS EXERCISE)

769.00.01	During performance of tasks, dynamic learning activities, or formal evaluations, demonstrate applicable Human Performance behaviors IAW the appropriate procedures.
762.04.00	Given an operating experience document, paraphrase the lessons learned and methods to prevent recurrence at LaSalle Station, as described in the training material.
614.010	During performance of tasks, apply the administrative requirements of PROCEDURE USE AND ADHERENCE EXPECTATIONS, IAW station procedures.

TASKS

RO - ATC	
23.003	Provided initial conditions, Respond to a Reactor Recirc Flow Control System failure to minimum demand, IAW station procedures.
23.006	Provided initial conditions, respond to Reactor Recirc FCV Runback.
77.045	Given Unit Supervisor authorization, perform Control Room actions to respond to a RFP trip, IAW station procedures.
111.002	Given Unit Supervisor authorization, respond to a Loss of Condenser Vacuum, IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
413.000	Given LGA-01, RPV Control, in progress, evaluate plant conditions and control RPV level +11" to 59.5" IAW LGA-001
431.000	Given entry in LGA-10, Failure to Scram, evaluate plant conditions and shutdown the reactor, IAW station procedures.
431.010	Given entry in LGA-10, Failure to Scram, evaluate plant conditions and insert control rods, IAW station procedures.
431.020	Given entry in LGA-010, Failure to Scram, evaluate plant conditions and perform SBLC injection, IAW station procedures.
433.000	Given entry in LGA-10, Failure to Scram, and power level, evaluate plant conditions and maintain RPV water level, IAW station procedures.

RO - BOP/ASSIST	
61.009	Given Unit Supervisor authorization, perform Control Room actions for HPCS System Inservice test, IAW station procedures.
71.035	Given Unit Supervisor authorization, perform Control Room actions to transfer between Gland Seal Steam supplies, IAW station procedures.
111.002	Given Unit Supervisor authorization, respond to a Loss of Condenser Vacuum, IAW station procedures.

SRO - UNIT SUPERVISOR	
23.003	Provided initial conditions, Respond to a Reactor Recirc Flow Control System failure to minimum demand, IAW station procedures.
23.006	Provided initial conditions, respond to Reactor Recirc FCV Runback.
61.009	Given Unit Supervisor authorization, perform Control Room actions for HPCS System Inservice test, IAW station procedures.
71.035	Given Unit Supervisor authorization, perform Control Room actions to transfer between Gland Seal Steam supplies, IAW station procedures.
77.045	Given Unit Supervisor authorization, perform Control Room actions to respond to a RFP trip, IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
431.000	Given entry in LGA-10, Failure to Scram, evaluate plant conditions and shutdown the reactor, IAW station procedures.
431.010	Given entry in LGA-10, Failure to Scram, evaluate plant conditions and insert control rods, IAW station procedures.
431.020	Given entry in LGA-010, Failure to Scram, evaluate plant conditions and perform SBLC injection, IAW station procedures.
433.000	Given entry in LGA-10, Failure to Scram, and power level, evaluate plant conditions and maintain RPV water level, IAW station procedures.
201.011	Given a set of plant conditions, identify and prepare the Technical Specification required actions IAW Tech Specs.

Event - 1		
Description: Perform HPCS full flow test IAW LOS-HP-Q1		
Initiation: Following the crew assuming the shift		
Cues: Turnover		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
61.009	BOP	Per LOS-HP-Q1 <ul style="list-style-type: none"> • At Control Room Panel 1H13-P601, START HPCS Pump 1E22-C001 • VERIFY 1E22-F012, HPCS Min Flow Vlv, OPENS • THROTTLE OPEN 1E22-F023, HPCS Test to SP Vlv to establish a flow rate of 6300 gpm as indicated on 1E22-R603, HPCS Pmp Flow • VERIFY 1E22-F012, HPCS Min Flow Vlv, CLOSES • At Panel 1H13-P601, VERIFY 1B Diesel Gen Cooling Wtr Pmp, 1E22-C002 ON
61.009	US	<ul style="list-style-type: none"> • Direct above actions

Event - 1
Description: Perform HPCS full flow test IAW LOS-HP-Q1

Simulator Operator Actions
none

Simulator Operator Role Play
As the EO in the field when asked, report, "HPCS water leg pump discharge pressure is 45 psig and stable" (A.15.1)
As the EO in the field when asked, report, "1VY02C is ON." (A.17)
As the EO in the field when asked, report, "1PDI-VY008 indicates 2 inches of H2O" (A.17)
As the EO in the field when asked, report, "1PDI-VY026 indicates 2 inches of H2O" (A.17)
Respond as required.

Floor Instructor Notes/OPEX/TR's
Terminus: When the HPCS is running at 6300 gpm and at the discretion of the Lead Evaluator.

Event - 2		
Description: HPCS breaker overcurrent		
Initiation: Following the completion of event 1		
Cues: Automatic Actions: HPCS Pump trips Expected Annunciator: 1H13-P601-A105, HPCS Pump BKR Trip Key Parameter Response: HPCS flow lowers to zero		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
61.009	BOP	Per LOR-1H13-P601-A105 <ul style="list-style-type: none"> • Dispatch operator to switchgear MCC 143 and HPCS conrener room to determine cause of trip Per LOS-HP-Q1 or LOP-HP-04 <ul style="list-style-type: none"> • CLOSE 1E22-F023, HPCS Test to SP Vlv • VERIFY 1E22-F012, HPCS Min Flow Vlv, CLOSES • SHUTDOWN the HPCS Diesel Generator Cooling Water Pump
61.009 201.001	US	<ul style="list-style-type: none"> • Direct above actions • Enter 3.5.1, condition B, RA B.1 and B.2

Event - 2
Description: HPCS breaker overcurrent

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 2

Simulator Operator Role Play	
As the EO in the field when asked, report, "the HPCS pump breaker tripped on overcurrent."	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
NOTE: Ensure a verifiable action has been performed to shutdown the HPCS system before moving on.	
Terminus: When the Tech Spec call has been made and per the Lead Evaluator.	

Event - 3		
Description: Lowering Gland Seal Steam Pressure; Manual recovery of Seal Steam Pressure		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: none Expected Annunciator: 1PM02J-A205, U1 Gland Steam Seal Header Pressure Low Key Parameter Response: lowering gland seal pressure		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
71.035	BOP	<ul style="list-style-type: none"> • Per LOR- 1PM02J-A205/ LOA-GS-101 • CHECK Gland Seal Steam Header Pressure is equal to or less than alarm setpoint • CONTROL Gland Seal Steam Header Pressure at 3-6 psig (4 psig is preferred) using 1GS-S2, Gland Seal Steam Regulator Bypass Valve, at 1PM02J • DISPATCH operator to EL. 768' in Turbine Building to INSPECT Gland Seal Steam Control Panel 1PL81J and Gland Seal Steam Evaporator Control Panel 1PA80J for proper operation • REFER to procedure LOA-GS-101, Unit 1 Turbine Gland Seal Steam System Abnormal
71.035	US	<ul style="list-style-type: none"> • Direct above actions

Event - 3
Description: Lowering Gland Seal Steam Pressure; Manual recovery of Seal Steam Pressure

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 3

Simulator Operator Role Play
As the EO sent to investigate the gland seal, report, "the PCV has failed closed."
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: When gland seal steam is on the bypass and at the discretion of the Lead Evaluator.

Event - 4		
Description: Minor condenser leak on '1B' Steam Jet Air Ejector		
Initiation: Per Lead Evaluator		
<p>Cues: Automatic Actions: none</p> <p>Expected Annunciator: 1N62-P600-A504, SJAЕ Inter Condenser Pressure A/B High/Low 1N62-P600-B506, Off Gas Charcoal Adsorber Train Differential Pressure High 1N62-P600-B204, Off Gas Outlet Flow Abnormal</p> <p>Key Parameter Response: degrading condenser backpressure</p>		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
111.002	ATC	<p>Per LOA-OG-101</p> <ul style="list-style-type: none"> • REDUCE load as necessary per LGP-3-1, to maintain condenser vacuum below trip setpoint <p style="text-align: center;">OR</p> <p>Per LOR-1N62-P600-B204</p> <ul style="list-style-type: none"> • If Main Condenser vacuum starts to decrease, refer to LOR-1PM03J-B511 for actions to control vacuum <p>• Per LOR-1PM03J-B511</p> <ul style="list-style-type: none"> • Monitor Condenser Vacuum Indication • VERIFY SJAЕ are operating properly per LOP-OG-07, Startup of Off Gas System • VERIFY Circulating Water System is operating properly per LOP-CW-03, Startup of Circulating Water System • If Condenser Vacuum continues to decrease, REDUCE Reactor Power per LGP-3-1, as necessary, to a point at which Condenser Vacuum has stabilized. If vacuum cannot be stabilized and Turbine Trip is imminent, MANUALLY Scram reactor per LGP-3-2, Reactor Scram.
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
111.002	US	<ul style="list-style-type: none"> • Direct above actions • Set manual scram criteria for condenser backpressure

Event - 4
Description: Minor condenser leak on '1B' Steam Jet Air Ejector

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 4

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Note: none
Terminus: When sufficient reactor power has been reduced and at the discretion of the Lead Evaluator

Event - 5		
Description: 1A' TDRFP lube oil leak		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: none		
Expected Annunciator: 1PM03J-A104, Turbine Driven Reactor Feedwater Pump Bearing Oil Pressure Low (R1041)		
Key Parameter Response: lowering TDRFP oil pressure		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
77.035 23.006	ATC	<p>Per LOR-1PM03J-A104</p> <ul style="list-style-type: none"> • DETERMINE which Turbine Driven Reactor Feedwater Pump (TDRFP) has Low Bearing Oil Pressure • If entire Turbine Oil System is failing, immediately REDUCE power per LGP-3-1 and/or LGP-2-1 to within capacity of MDRFP • PLACE an idle Reactor Feedwater Pump in service per procedure LOP-FW-03, Startup of Motor Driven Reactor Feed Pumps (MDRFP), or LOP-FW-04, Startup of a Turbine Driven Reactor Feed Pump (TDRFP) • SHUTDOWN affected TDRFP per procedure LOP-FW-05, Shutdown of Turbine Driven Reactor Feed Pump <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • MANUALLY Trip 1A TDRFP and VERIFY proper operation on MDRFP <p>Per LOA-RR-101</p> <ul style="list-style-type: none"> ○ If OPRM inop or in or near Regions 1 or 2, PERFORM Subsection B.1, Thermal Hydraulic Instability • CHECK both 1A and 1B FCVs have Run-Back properly • CHECK FCVs - none are Locked-Up ○ PRESS RAISE/LOWER pushbuttons to adjust Recirc flow to obtain balanced Recirc loop flow ○ At 1DS001, initiate TADS by DEPRESSING TDR icon
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
77.035 23.006	US	<ul style="list-style-type: none"> • Direct above actions

Event - 5
Description: 1A' TDRFP lube oil leak

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 5

Simulator Operator Role Play
If asked to investigate the 1A TDRFP as an EO, wait 3 minutes and report, " the 1A TDRFP has oil spraying from it and I can't get close enough to isolate it."
Respond as required

Floor Instructor Notes/OPEX/TR's
Note: This event is intended for the ATC.
Terminus: The 1A TDRFP tripped and MDRFP running and at the discretion of the Lead Evaluator.

Event - 6		
Description: '1B' Recirc Pump FCV slowly drifting shut		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: None Expected Annunciator: None Key Parameter Response: Lowering Reactor Power and Flow		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
23.003	ATC	Per LOA-RR-101 <ul style="list-style-type: none"> • CHECK FCV position STABLE. • Lock up FCV <ul style="list-style-type: none"> ○ PRESS 1B HPU TRIP pushbutton ○ Lockup solenoid valve at 1DS001 ○ Stop HPU Pump at 1DS001 • CHECK recirculation loop jet pump flows -LESS THAN TECH SPEC MISMATCH • At 1DS001, initiate TADS by DEPRESSING TDR icon • Within 1 hour restore flow mismatch • EVALUATE core performance
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
23.003 201.011	US	<ul style="list-style-type: none"> • Direct above actions • Enter Tech Spec 3.4.1, condition B, RA B.1

Event - 6
Description: '1B' Recirc Pump FCV slowly drifting shut
Simulator Operator Actions
none
Simulator Operator Role Play
Respond as required
Floor Instructor Notes/OPEX/TR's
Note: TECH SPEC MISMATCH. <ul style="list-style-type: none">• Within 5.425 Mlb/hr as read from 1B21-R611A/B, if core flow is greater than or equal to 75.95 Mlbm/hr.• Within 10.85 Mlb/hr as read from 1B21-R611A/B, if core flow is less than 75.95 Mlbm/hr.
Terminus: Following Tech Spec Call and at the discretion of the Lead Evaluator

Event - 7		
Description: Condenser leak increases in size, requiring manual scram IAW LGP-3-2		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: None		
Expected Annunciator: 1PM03J-B511, Condenser Vacuum Low		
Key Parameter Response: Degrading Condenser Backpressure		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
111.002	ATC	Per LOR-1PM03J-B511 <ul style="list-style-type: none"> • Monitor Condenser Vacuum Indication • If Condenser Vacuum continues to decrease, REDUCE Reactor Power per LGP-3-1, as necessary, to a point at which Condenser Vacuum has stabilized. If vacuum cannot be stabilized and Turbine Trip is imminent, MANUALLY Scram reactor per LGP-3-2, Reactor Scram. Performs Reactor Scram and LGP 3-2 on US direction. <ul style="list-style-type: none"> • ARM and DEPRESS Scram Pushbuttons • PLACE Reactor Mode Switch in SHUTDOWN • INSERT IRMs and SRMs • CHECK Control Rods INSERTED and Power Decreasing • INFORM Unit Supervisor of Control Rod Status and Reactor Power • Recognize that all rods did not insert and notify US (Hydraulic ATWS)
	BOP	Per LOR-1PM03J-B511 <ul style="list-style-type: none"> • Monitor Condenser Vacuum Indication
111.002	US	<ul style="list-style-type: none"> • Direct above actions • Set manual scram criteria for condenser backpressure

Event - 7	
Description: Condenser leak increases in size, requiring manual scram IAW LGP-3-2	

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 7

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Continued

Event - 8		
Description: Hydraulic ATWS		
Initiation: Continued		
Cues: Automatic Actions: none Expected Annunciator: Multiple Key Parameter Response: Reactor power NOT zero and multiple rods NOT full in		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
304.010 431.000 431.010 431.020 433.000	ATC	<p>Per the POWER Leg of LGA-010</p> <ul style="list-style-type: none"> • If control rods remain out: <ul style="list-style-type: none"> • Initiate ARI • If power is above 3%, initiate SBLC (CT) • Insert Control rods per LGA-NB-01 <ul style="list-style-type: none"> • Method 3 Single Rod Insert <ul style="list-style-type: none"> • Bypass RWM • Place CRD Drive Flow Trip Circuit in BYPASS • Insert control rods using Continuous Insert or Insert Button <p>Per the Level Leg of LGA-010</p> <ul style="list-style-type: none"> • If reactor power > 3% or unknown then Rapidly LOWER Level to at least –60 inches (minimizes Feedwater injection) (CT) and use only preferred systems to hold level between –100 and –60 inches. (CT) • RUNBACK Reactor Recirculation flow to minimum <ul style="list-style-type: none"> • If power is >3% then TRIP RR Pumps • Method 4 Reset Scram/Drain SDV/Re-Scram • Reset Scram/Drain SDV/Re-Scram
	BOP	<p>Per LGA-010</p> <ul style="list-style-type: none"> • Inhibit ADS (CT) • Prevent injection from HPCS, LPCS and LPCI <p>Per the PRESSURE Leg</p> <ul style="list-style-type: none"> • STABILIZE pressure <1059 psig using main turbine bypass valves • VERIFY required automatic actions occur
304.010 431.000 431.010 431.020 433.000	US	<ul style="list-style-type: none"> • Directs Inhibit ADS (CT) • Directs rapidly lowering vessel level to –60".(CT) • Directs controlling level –100" to –60".(CT) • Directs start of SBLC and/or insert control rods.(CT) • Directs method of control rod insertion per LGA-NB-01 <ul style="list-style-type: none"> ○ May direct Method 3 for Single Rod Insertion ○ May direct Method 4 Reset Scram/Drain SDV/Re-Scram

Event - 8
Description: Hydraulic ATWS

Simulator Operator Actions	
When directed by the Lead Evaluator	Release LGA jumpers and keys

Simulator Operator Role Play
When each LGA action is complete, report the completion to the crew.
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Continued

Event - 9		
Description: Initiate second train of SBLC IAW LGA-SC-101, first train of SBLC fails on discharge relief valve stuck open		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: None Expected Annunciator: None Key Parameter Response: SBLC pump discharge pressure less than reactor pressure		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
431.020	ATC	<ul style="list-style-type: none"> • Determine the first SBLC Pump has failed • Start the standby SBLC Pump (CT) • Update the crew <p style="margin-left: 20px;">Per LGA-NB-01</p> <ul style="list-style-type: none"> • Reset the scram ○ When SDV is drained, depress RPS scram pushbuttons
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
431.020	US	<ul style="list-style-type: none"> • Direct above actions • Directs starting standby SBLC Pump (CT)

Event - 9	
Description: Initiate second train of SBLC IAW LGA-SC-101, first train of SBLC fails on discharge relief valve stuck open	

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 9

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: When RPS has been reset and at the discretion of the Lead Evaluator.

REFERENCES

<u>Procedure</u>	<u>Rev</u>	<u>Title</u>
1. INPO 15-004		Operations Fundamentals
2. SOER 10-2		Engaged, Thinking Organizations
3. LOR-1H13-P601-A105	3	HPCS Pump BKR Trip
4. LOR-1PM02J-A205	3	U1 Gland Steam Seal Header Pressure Low
5. LOR-1PM03J-B511	6	Condenser Vacuum Low
6. LOR-1PM03J-A104	1	Turbine Driven Reactor Feedwater Pump Bearing Oil Pressure Low
7. LOR-1N62-P600-A504	2	SJAE Inter Condenser Pressure A/B High/Low
8. LOR-1N62-P600-B506	1	Off Gas Charcoal Adsorber Train Differential Pressure High
9. LOR-1N62-P600-B204	9	Off Gas Outlet Flow Abnormal
10. LOA-GS-101	8	Gland Seal Steam System Abnormal
11. LOA-RR-101	43	Reactor Recirc System Trouble
12. LOA-OG-101	25	Off Gas System Abnormal
13. LOS-HP-Q1	76	HPCS Inservice Test
14. LOP-FW-05		Shutdown of Turbine Driven Reactor Feedwater Pump
15. LOP-HP-04	13	Shutdown of the High Pressure Core Spray System after an automatic initiation
16. LOP-RR-07		Operation of the Reactor Recirc Flow Control System
17. LGP-3-2	75	Reactor Scram
18. LGP-3-1	70	Power Changes
19. LGA-001	18A	RPV Control
20. LGA-010	18	Failure to Scram
21. LGA-NB-01	19	Alternate Rod Insertion
22. LGA-MS-101	4	Using the Main Condenser as a Heat Sink during an ATWS
23. LGA-RH-101	5	Alternate Vessel Injection using Shutdown Cooling return
24. OP-LA-101-111-1002	81	LaSalle Operations Philosophy Handbook.
25. OP-LA-103-102-1002	21	Strategies for Successful Transient Mitigation

U1 SUPERVISOR TURNOVER

Shift: Days
Date: Today
Mode: 1
OLR: Green
Work Week: Div 3

Unit 1 power level

- 100 % Power
-
-
-

Unit 2 power level

- 100 % Power
-
-
-

U1 Thermal Limit Issues /Power Evolutions

- None

U2 Thermal Limit Issues /Power Evolutions

- None

Existing LCOs, date of next surveillance

- TRM 3.7.j Required Action A.1

Existing LCOs, date of next surveillance

- None

LOSs in progress or major maintenance

- LOS-HP-Q1

LOSs in progress or major maintenance

- None

⇒ Equipment removed from service or currently unavailable

- None

- None

Grid Status is Green

⇒ Comments, evolutions, problems, etc.

- '0B' Diesel Fire Pump is OOS for Maintenance, scheduled to be returned in 24 hours
- Perform LOS-HP-Q1 starting at step A.9

⇒ Comments, evolutions, problems, etc.

- Non-Div Workweek. OLR is Green

LaSalle County Station

LICENSED OPERATOR EVALUATED SCENARIO GUIDE

19-1 NRC Exam Scenario 2

Rev. 00

Facility: LaSalle County Generating Station
Scenario 2

Scenario #: 19-1 NRC Exam

PURPOSE

Examine the ILT candidate's ability to operate the plant in normal, abnormal, and emergency conditions.

SUMMARY OF EVENTS

1. The crew will withdraw all IRMs as directed per the turnover and LGP-1-1.
2. When withdrawing IRMs, the 'F' IRM will stick and require the crew to bypass the stuck IRM IAW LOA-NR-101.
3. The crew will withdraw control rods per LGP-1-1 and LOP-RM-01 until 1 ½ bypass valves are open.
4. The 1A VT Exhaust Fan will trip, requiring the crew to start the 1C VT Exhaust Fan
5. A control rod will drift out, requiring the crew to take action per LOA-RD-101, to insert the control rod and enter Tech Specs.
6. RCIC will spuriously initiate, requiring the crew to secure RCIC and enter Tech Specs.
7. A leak will occur in the RCIC system that will require and isolation. The isolations will fail both manually and automatically requiring a scram per LGA-002. With two areas above max safe, blowdown per LGA-004 will be required.
8. With ADS initiated, only 3 SRVs will open requiring the crew to manually open 4 SRVs.

Critical Tasks

1. With a steam leak in the RCIC Room and the temperature and radiation levels trending toward the max safe values, the crew will scram the reactor IAW LGA-002 before reaching any area radiation/temperature max safe value.
2. With a steam leak in the RCIC Room, temperature and radiation levels will reach the max safe values in the RCIC Room and LPCS Ventilation. The crew will wait until two or more areas are above the max safe value of the same parameter (in the RCIC Room and LPCS Ventilation) to transition to LGA-004 to blowdown within 20 minutes.
3. With blowdown required by LGA-002, the crew will initiate blowdown per LGA-004. When the BOP manually initiates ADS, only 3 of the required 7 ADS valves will open. The BOP will manually open SRVs, one at a time, until 7 SRVs are open within 10 minutes of manually initiating ADS.

TRAINING REQUESTS (if applicable)

1. None

OPEX (if applicable)

1. None

Operator Fundamentals

1. Monitoring plant indications and conditions closely
2. Controlling plant evolutions precisely
3. Operating the plant with a conservative bias
4. Working effectively as a team
5. Having a solid understanding of plant design, engineering principles, and sciences

SOER 10-2

1. Supervisory oversight role
2. Recognition and mitigation of risk
3. Worker performance
4. Tolerance of repetitive/long standing issues and degradation of standards
5. Operating Experience

Record of Revisions (Summary)

Rev. 0	Developed new for the ILT 19-1 NRC Exam
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INITIAL SIMULATOR SETUP/ REQUIRED DOCUMENTATION

1. Recall a full power IC 201 Password 0201
2. Place simulator in RUN
3. Load and run the SmartScenario file NRC 19-1 Scenario 2.ssf
4. Update the Tech Spec Timeclock Sheet as follows:

TS/TRM/ODCM	System/ Component	Required Action	REQUIRED ACTION Description	Completion Time	Expiration Date/Time
N/A	N/A	N/A	N/A	N/A	N/A

5. Perform the pre-scenario checklist (TQ-LA-150-0308)

SCENARIO OUTLINE (NRC Evaluations Only)

Event No.	Malf. No.	Event Type*	Event Description
1	none	N (ATC)	Withdraw IRM detectors per LOP-NR-02, "Intermediate Range Monitor Operation (IRM)"
2	MNI047	I (ATC)	IRM 'F' becomes stuck in the core when being withdrawn per LOP-NR-02
3	none	R (ATC)	Withdraw control rods until at least 1 ½ TBVs are open, continue through step E.7.3
4	R1479	C (BOP)	'1A' Turbine Building Exhaust Fan trip, manually start idle fan
5	MRD093	C (ATC) T (SRO)	Control rod drifts out, insert rod to position 00. SRO enters TS 3.1.3 Condition C
6	MNB080	C (BOP) T (US)	Inadvertent RCIC actuation, secure RCIC IAW LOP-RI-03. SRO enters TS 3.5.3 Condition A
7	MES019	M (ALL)	Increase leak to a major unisolable steam leak at pipe weld upstream of MOV-F008. Two areas (RCIC equipment room, LPCS Vent) reach Max Safe Temperature/ RPV Blowdown
8	ISRVFUSE 14/16/17/1 8	C (BOP)	ADS initiation opens only 3 ADS Valves, manually open SRVs until 7 are open
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)echnical Specification			

APPROXIMATE SCENARIO RUN TIME

90 Minutes

SRRS 3D.126/3D.111: Retain approved lessons for life of plant OR Life of Insurance Policy + 1 Yr for RP lesson plans. May be retained in department for two years, then forwarded to Records Management.

GENERAL OBJECTIVE: (USED THROUGHOUT THIS EXERCISE)

769.00.01	During performance of tasks, dynamic learning activities, or formal evaluations, demonstrate applicable Human Performance behaviors IAW the appropriate procedures.
762.04.00	Given an operating experience document, paraphrase the lessons learned and methods to prevent recurrence at LaSalle Station, as described in the training material.
614.010	During performance of tasks, apply the administrative requirements of PROCEDURE USE AND ADHERENCE EXPECTATIONS, IAW station procedures.

TASKS

RO - ATC	
32.019	Given plant conditions, Perform Control Room actions for a RCIC System steam Line break, IAW Station Procedures.
42.001	Given Unit Supervisor authorization, perform Control Room actions for an Intermediate Range or Source Range Monitor Insert/Withdraw failure, IAW station procedures.
47.004	Given Unit Supervisor authorization, perform a continuous Control Rod Insertion, IAW station procedures.
303.020	Given Unit Supervisor authorization, Reduce power from 100% to 60 % power, IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
413.000	Given LGA-01, RPV Control, in progress, evaluate plant conditions and control RPV level +11" to 59.5" IAW LGA-001
427.000	Given entry conditions, evaluate plant conditions and isolate all primary systems discharging outside primary and secondary containment not required for other LGA actions, IAW Station Procedures.
428.000	With a blowdown required, evaluate plant conditions and rapidly depressurize the RPV using SRVs via the ADS system, IAW Station procedures.

RO - BOP/ASSIST	
32.019	Given plant conditions, Perform Control Room actions for a RCIC System steam Line break, IAW Station Procedures.
119.015	Given Unit Supervisor authorization, respond to a Turbine Building abnormal condition, IAW station procedures.
427.000	Given entry conditions, evaluate plant conditions and isolate all primary systems discharging outside primary and secondary containment not required for other LGA actions, IAW Station Procedures.
428.000	With a blowdown required, evaluate plant conditions and rapidly depressurize the RPV using SRVs via the ADS system, IAW Station procedures.

SRO - UNIT SUPERVISOR	
32.019	Given plant conditions, Perform Control Room actions for a RCIC System steam Line break, IAW Station Procedures.
42.001	Given Unit Supervisor authorization, perform Control Room actions for an Intermediate Range or Source Range Monitor Insert/Withdraw failure, IAW station procedures.
42.004	Given Unit Supervisor authorization, perform Control Room actions to operate the Intermediate Range Monitors, IAW station procedures.
47.004	Given Unit Supervisor authorization, perform a continuous Control Rod Insertion, IAW station procedures.
119.015	Given Unit Supervisor authorization, respond to a Turbine Building abnormal condition, IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
413.000	Given LGA-01, RPV Control, in progress, evaluate plant conditions and control RPV level +11" to 59.5" IAW LGA-001
427.000	Given entry conditions, evaluate plant conditions and isolate all primary systems discharging outside primary and secondary containment not required for other LGA actions, IAW Station Procedures.
428.000	With a blowdown required, evaluate plant conditions and rapidly depressurize the RPV using SRVs via the ADS system, IAW Station procedures.
201.011	Given a set of plant conditions, identify and prepare the Technical Specification required actions IAW Tech Specs.

Event - 1		
Description: Withdraw IRM detectors per LOP-NR-02, "Intermediate Range Monitor Operation (IRM)"		
Initiation: Following turnover		
Cues: Automatic Actions: none Expected Annunciator: none Key Parameter Response: IRM Full-in lights extinguish and Full-out light illuminate		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
42.001	ATC	Per LOP-NR-02 <ul style="list-style-type: none"> • When in the RUN mode, DEPRESS all inserted IRM select buttons, DEPRESS the Drive-Out button, and HOLD until all IRM detectors are out of the core and all IRM OUT lights are illuminate • Once IRM's are fully withdrawn, RANGE IRM's as necessary to maintain upscale and downscale trip lights clear
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
42.001	US	<ul style="list-style-type: none"> • Direct above actions

Event - 1
Description: Withdraw IRM detectors per LOP-NR-02, "Intermediate Range Monitor Operation (IRM)"

Simulator Operator Actions
None

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Note: This event is intended for the ATC.
Terminus: Continued

Event - 2		
Description: IRM 'F' becomes stuck in the core when being withdrawn per LOP-NR-02		
Initiation: Automatic		
Cues: Automatic Actions: none Expected Annunciator: none Key Parameter Response: 'F' IRM "Full-in" light does not extinguish		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
42.004	ATC	Per LOA-NR-101 <ul style="list-style-type: none"> • STOP all control rod motion/power change • VERIFY Detector Drive and Position Indication POWER ON light -ILLUMINATED • VERIFY desired detectors SELECTED • CHECK selected detectors MOVE • BYPASS affected channel
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
42.004	US	<ul style="list-style-type: none"> • Direct above actions

Event - 2	
Description: IRM 'F' becomes stuck in the core when being withdrawn per LOP-NR-02	

Simulator Operator Actions	
When directed by the Lead Evaluator if the crew does not continue with the startup	As Shift Manager, call Unit Supervisor with report below

Simulator Operator Role Play	
When requested to replace fuses, as IMD, report, "We'll develop a trouble shooting package for the stuck IRM."	
As Shift Manager, inform the Unit Supervisor, "Continue with the Startup per LGP-1-1."	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
Note: This event is intended for the ATC.	
Terminus: and at the discretion of the Lead Evaluator.	

Event - 3		
Description: Withdraw control rods until at least 1 ½ TBVs are open		
Initiation: Following the crew assuming the shift		
Cues: Turnover		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
47.004	ATC	<p>Per LGP-1-1</p> <ul style="list-style-type: none"> • CONTINUE control rod withdrawal until at least 1½ Bypass Valves are open for initial generator loading <p>Per LOP-RM-01</p> <ul style="list-style-type: none"> • VERIFY CRD Drive Flow Trip Circuit Bypass Switch is in the BYPASS position • VERIFY CRD Drive Flow Trip Circuit Test Switch is in the NORMAL position • Simultaneously DEPRESS and HOLD both CONTINUOUS WITHDRAW and WITHDRAW push-button. Selected rod will continuously withdraw until one (1) push-button is released • CHECK the following: <ul style="list-style-type: none"> • Rod Withdraw Sequence begins • CONTINUOUS WITHDRAW indication appears as long as both pushbuttons are depressed • OBSERVE changes in nuclear instrumentation indications • Wheneither push-button is released, Rod SETTLE indication is lit for approximately 2 seconds • New rod position will be indicated on the ROD SELECT Display, STATUS Display and CORE MAP Display
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
47.004	US	<ul style="list-style-type: none"> • Direct above actions

Event - 3
Description: Withdraw control rods until at least 1 ½ TBVs are open

Simulator Operator Actions
none

Simulator Operator Role Play
Respond as required.

Floor Instructor Notes/OPEX/TR's
Terminus: When sufficient power increase has been performed per the Lead Evaluator.

Event - 4		
Description: '1A' Turbine Building Exhaust Fan trip		
Initiation: As directed by the Lead Evaluator		
Cues: Automatic Actions: 1A VT Exhaust Fan Trips Expected Annunciator: 1PM06J-B402, Turbine Building Ventilation Exhaust Fan 1VT02CA Automatic Trip Key Parameter Response: None		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
119.015	BOP	Per LOR-1PM06J-B402 <ul style="list-style-type: none"> • START idle Turbine Building Ventilation Exhaust Fan • ENTER LOA-VT-101, "Unit 1 Turbine Building Ventilation Abnormal" • REFER to LOP-VT-01, "Turbine Building Ventilation System Startup" for follow-up actions • DETERMINE cause of TRIP
119.015	US	<ul style="list-style-type: none"> • Direct above actions

Event - 4
Description: '1A' Turbine Building Exhaust Fan trip

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 4

Simulator Operator Role Play	
As the EO in the field when asked, report, "the '1A' VT Exhaust Fan tripped on overcurrent."	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
Terminus: When the '1C' VT Exhaust Fan is running and per the Lead Evaluator.	

Event - 5		
Description: Control rod drifts out (Rod 06-39)		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: none Expected Annunciator: 1H13-P603-A504, Control Rod Drive Drift Alarm Key Parameter Response: Rod 06-39 drifting out		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
44.002	ATC	<ul style="list-style-type: none"> • Per LOA-RD-101 • CONTINUALLY CHECK control rods status • CHECK Control Rods -No control rod currently moving • SELECT drifting control rod • VERIFY insertblock indication OFF at ROD SELECT or STATUS Display • PLACE the RWM Select switch to BYPASS • INSERT control rod to position 00 • PLACE CRD DRIVE FLOW TRIP CIRCUIT BYPASSSwitch to BYPASS • CHECK control rod remains at position 04 or less • If control rod will NOT remain at position 04 or less and manpower allows, DEPRESS AND HOLD Insert push-button while continuing here • If desired: <ul style="list-style-type: none"> ○ PLACE control rod OOS on RCMS ○ DISARM control rod electrically on RCMS • ENTER Mispositioned Control Rod(s)subsection while continuing here
	BOP	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
44.002 201.001	US	<ul style="list-style-type: none"> • Direct above actions • Give manual scram criteria of no more than 1 rod moving or rods drifted full in • Enter Tech Spec 3.1.3 Condition C <ul style="list-style-type: none"> • Required Action C.1 and C.2 • Enter Tech Spec 3.3.2.1. Condition C <ul style="list-style-type: none"> • Required Action C.1 or <ul style="list-style-type: none"> • Required Action C.2.1.1 or C.2.1.2, and C.2.2 ○ Refer to Tech Spec 3.1.6

Event - 5
Description: Control rod drifts out

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 5

Simulator Operator Role Play	
As the EO sent to investigate the HCU, report, "there is nothing abnormal at the HCU."	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
Terminus: When the control rod is full in with weighted device on insert button and the Tech Spec call has been made and at the discretion of the Lead Evaluator.	

Event - 6		
Description: Inadvertent RCIC actuation		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: RCIC starts Expected Annunciator: 1H13-P601-D406, Reactor Core Isolation Cooling Running Key Parameter Response: Rising Reactor level		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
	BOP	Per LOR-1H13-P601-D406 <ul style="list-style-type: none"> • If RCIC injection is inadvertent or NOT desired, PERFORM the following: • TRIP RCIC Turbine • SHUTDOWN RCIC per LOP-RI-03
201.001	US	<ul style="list-style-type: none"> • Direct above actions • Enter Tech Spec 3.3.5.3 <ul style="list-style-type: none"> • Condition A, RA A.1 • Condition B, RA B.1 and B.2 • Tech Spec 3.5.3 <ul style="list-style-type: none"> • Condition A, RA A.1 and A.2

Event - 6
Description: Inadvertent RCIC actuation

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 6

Simulator Operator Role Play	
After call to investigate, wait 3 minutes and report, "The RCIC level 2 trip unit has failed"	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
Terminus: When RCIC has been secured and Tech Spec call made and at the discretion of the Lead Evaluator	

Event - 7		
Description: Major unisolable steam leak at pipe weld upstream of MOV-F008. Two areas reach Max Safe Temperature/ RPV Blowdown		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: none Expected Annunciator: 1H13-P601-B110, Reactor Building Radiation High Key Parameter Response: Rising secondary containment temperatures and rad levels		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
32.019 304.010 413.000 427.000	ATC	<ul style="list-style-type: none"> Performs Reactor Scram and LGP 3-2 • ARM and DEPRESS Scram Pushbuttons (CT) • PLACE Reactor Mode Switch in SHUTDOWN (CT) • INSERT SRMs • CHECK Control Rods INSERTED and Power Decreasing • INFORM Unit Supervisor of Control Rod Status and Reactor Power • Operate Feedwater and/or ECCS as necessary to maintain RPV Water Level 20" to 50" or as specified by Unit Supervisor • Place LFFRV in AUTO • REPORT to the Unit Supervisor the status of RPV Level and Pressure • If needed for level control: • Place the FRV in AUTO • STABILIZE Reactor Pressure <1020 psig
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Collect LGA-002 data Per LGA-002 • Isolate all discharges into the affected areas except systems needed for damage control and LGA actions <ul style="list-style-type: none"> • Attempt to CLOSE 1E51-F008 and 1E51-F063 (FAIL) • Monitor radiation release for potential entry into LGA-009
32.019 304.010 413.000 427.000	US	<ul style="list-style-type: none"> • Direct above actions • Enter LGA-002 • Direct scram prior to MAX Safe (CT)

Event - 7
Description: Major unisolable steam leak at pipe weld upstream of MOV-F008. Two areas reach Max Safe Temperature/ RPV Blowdown

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 7

Simulator Operator Role Play
As an EO, if asked to investigate the RCIC leak, wait 1 minute and report, "A large amount of steam is coming from the RCIC corner room."
Respond as required

Floor Instructor Notes/OPEX/TR's
Note: The reactor scram must occur prior to 212 degrees as indicated in the RCIC Equipment Room and RCIC/LPCS Room Vent Temps.
Terminus: Continued

Event – 8		
Description: ADS initiation opens only 3 ADS Valves, manually open SRVs until 7 are open		
Initiation: Per Lead Evaluator		
<p>Cues: Automatic Actions: 3 SRVs open</p> <p>Expected Annunciator: multiple</p> <p>Key Parameter Response: the open indicated on 3 SRVs illuminate</p>		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
428.000	BOP	<p>Per LGA-004</p> <ul style="list-style-type: none"> • Prevent LPCS and LPCI injection not needed for core cooling • CHECK suppression pool level above -18 feet • Initiate ADS • VERIFY 7 ADS valves open (CT) • Open other SRVs until a total of 7 are open (CT) • Leave SRVs open. Allow RPV to depressurize
428.000	US	<ul style="list-style-type: none"> • Direct entry into LGA-004 • Direct initiation of ADS (CT)

Event - 8
Description: ADS initiation opens only 3 ADS Valves, manually open SRVs until 7 are open

Simulator Operator Actions
none

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: When a total of 7 SRVs are open, RPV is depressurized, and the crew has established RPV level control in the normal shutdown level band and at the discretion of the Lead Evaluator.

REFERENCES

<u>Procedure</u>	<u>Rev</u>	<u>Title</u>
1. INPO 15-004		Operations Fundamentals
2. SOER 10-2		Engaged, Thinking Organizations
3. LOR-1H13-P603-A504	4	Control Rod Drive Drift Alarm
4. LOR-1PM06J-B402	2	Turbine Building Ventilation Exhaust Fan 1VT02CA Automatic Trip
5. LOR-1H13-P601-D406	5	Reactor Core Isolation Cooling Running
6. LOR-1H13-P601-D104	3	RCIC Turbine Trip
7. LOR-1H13-P601-B110	1	Reactor Building Radiation High
8. LOA-AR-101	5	Area Radiation Monitoring System Abnormal
9. LOA-NR-101	20	Neutron Monitoring Trouble
10. LOA-RD-101	21	Control Rod Drive Abnormal
11. LOA-VT-101	4	Unit 1 Turbine Building Ventilation System Abnormal
12. LOP-NR-02	21	Intermediate Range Monitor Operation
13. LOP-VT-01	24	Turbine Building Ventilation System Startup
14. LGP-3-2	75	Reactor Scram
15. LGP-3-1	70	Power Changes
16. LGP-1-1	126	Normal Reactor Startup
17. LGA-VQ-101	1	Unit 1 Containment Vent
18. LGA-001	18A	RPV Control
19. LGA-002	10	Secondary Containment Control
20. LGA-004	9	RPV Blowdown
21. OP-LA-101-111-1002	81	LaSalle Operations Philosophy Handbook.
22. OP-LA-103-102-1002	21	Strategies for Successful Transient Mitigation

U1 SUPERVISOR TURNOVER

Shift: Days
Date: Today
Mode: 1
OLR: Green
Work Week: Div 2

Unit 1 power level

- 8 % Power
- LGP-1-1 Startup In-progress
-
-

Unit 2 power level

- 100 % Power
-
-
-

U1 Thermal Limit Issues /Power Evolutions

- None

U2 Thermal Limit Issues /Power Evolutions

- None

Existing LCOs, date of next surveillance

- None

Existing LCOs, date of next surveillance

- None

LOSs in progress or major maintenance

- None

LOSs in progress or major maintenance

- None

⇒ Equipment removed from service or currently unavailable

- None

- None

Grid Status is Green

⇒ Comments, evolutions, problems, etc.

- Withdraw IRMs per LGP-1-1 step E.6.18 IAW LOP-NR-02 step E.2.1.8
- Step E.6.19 is COMPLETE
- Raise reactor power per LGP-1-1 step E.7.1

⇒ Comments, evolutions, problems, etc.

- Non-Div Workweek. OLR is Green

LaSalle County Station

LICENSED OPERATOR EVALUATED SCENARIO GUIDE

19-1 NRC Exam Scenario 3

Rev. 00

Facility: LaSalle County Generating Station
Scenario 3

Scenario #: 19-1 NRC Exam

PURPOSE

Examine the ILT candidate's ability to operate the plant in normal, abnormal, and emergency conditions.

SUMMARY OF EVENTS

1. The crew will synchronize the main generator to the grid per LOP-TG-02.
2. The crew will raise reactor power per the turnover using control rods per LGP-1-1 step E.7.6.
3. Due to a failure of the manual initiation logic, the SGBT system to auto start. Once started, the primary fan will indicate a low flow condition and require a system shutdown and Tech Specs to be entered.
4. A loss of 'A' RCMS Interface will occur, causing the crew to take actions to reset per LOA-RM-101.
5. A VC Rad Monitor will fail, causing the Unit Supervisor to enter Tech Specs.
6. The MDRFP flow instrument will fail upscale requiring the crew to take manual control and open the min flow valve.
7. Main Turbine vibrations will rise, causing the crew to initiate a turbine trip. With a turbine/generator trip, OCB 10-11 will fail to auto trip and must be manually tripped.
8. A leak will develop in the 'A' MSL to the MST causing LGA-002 entry and scram.
9. With a leak from 'A' MSL the crew will attempt to isolate the leak by closing MSIVs and drains. Both 'A' line MSIVs will fail to close.
10. With a high offsite release due to a failure of 1VT79A/B/C, the crew will perform an RPV blowdown per LGA-004.

Critical Tasks

1. Scram the reactor prior to one reactor building designated area (MSL Tunnel) temperature reaching its Maximum Safe value.
2. With a primary system discharging outside primary and secondary containment, manually scram the reactor if a reactor scram has not yet been initiated, enter LGA-001, and INITIATE emergency depressurization before offsite release rate reaches the "General Emergency" level.

TRAINING REQUESTS (if applicable)

1. None

OPEX (if applicable)

1. None

Operator Fundamentals

1. Monitoring plant indications and conditions closely
2. Controlling plant evolutions precisely
3. Operating the plant with a conservative bias
4. Working effectively as a team
5. Having a solid understanding of plant design, engineering principles, and sciences

SOER 10-2

1. Supervisory oversight role
2. Recognition and mitigation of risk
3. Worker performance
4. Tolerance of repetitive/long standing issues and degradation of standards
5. Operating Experience

Record of Revisions (Summary)

Rev. 0	Developed new for the ILT 19-1 NRC Exam
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INITIAL SIMULATOR SETUP/ REQUIRED DOCUMENTATION

1. Recall a full power IC 201 Password 0201
2. Place simulator in RUN
3. Load and run the SmartScenario file NRC 19-1 Scenario 3.ssf
4. Update the Tech Spec Timeclock Sheet as follows:

TS/TRM/ODCM	System/ Component	Required Action	REQUIRED ACTION Description	Completion Time	Expiration Date/Time
N/A	N/A	N/A	N/A	N/A	N/A

5. Perform the pre-scenario checklist (TQ-LA-150-0308)

SCENARIO OUTLINE (NRC Evaluations Only)

Event No.	Malf. No.	Event Type*	Event Description
1	none	N (BOP)	Synchronize to the grid IAW LGP 1-1, step E.7.4 and LOP-TG-02, step E.24
2	none	R (ATC)	Raise power with control rods to 15% power IAW LGP 1-1, step E.7.6
3	KDD01PE V KDD01BO V	C (BOP) T (SRO)	SBGTS Low Flow after Autostart on a failure of the manual initiation logic – SRO enters TS 3.6.4.3 condition A
4	MRD343	I (ATC)	Loss of ‘A’ Rod Control Management System Interface
5	MRM039	T (SRO)	Control Room Ventilation Radiation Monitor Fails. SRO Enters TS 3.3.7.1 Condition A
6	MCF074	I (ATC)	Upscale failure of the MDRFP Flow Instrument 1C34-R612
7	MMS056 MEE065	C (BOP)	High Vibrations on Main Turbine Bearings Requiring Manual Trip of Turbine; One Output Breaker Fails to Open
8	MNB106 MNB103	M (ALL)	Large steam leak in Main Steam Tunnel resulting in significant fuel failure and entry into LGA-002 on high MST temperature
9	MNB109 MNB113	C (ALL)	Close MSIVs to stop the leak but both “A” loop MSIVs fail open
10	MVT001	M (ALL)	Turbine building dampers 1VT79YA/B/C Fail OPEN, High Off-site Release/ RPV Blowdown
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)echnical Specification			

APPROXIMATE SCENARIO RUN TIME

90 Minutes

SRRS 3D.126/3D.111: Retain approved lessons for life of plant OR Life of Insurance Policy + 1 Yr for RP lesson plans. May be retained in department for two years, then forwarded to Records Management.

GENERAL OBJECTIVE: (USED THROUGHOUT THIS EXERCISE)

769.00.01	During performance of tasks, dynamic learning activities, or formal evaluations, demonstrate applicable Human Performance behaviors IAW the appropriate procedures.
762.04.00	Given an operating experience document, paraphrase the lessons learned and methods to prevent recurrence at LaSalle Station, as described in the training material.
614.010	During performance of tasks, apply the administrative requirements of PROCEDURE USE AND ADHERENCE EXPECTATIONS, IAW station procedures.

TASKS

RO - ATC	
31.013	Given Unit Supervisor authorization, complete the control room actions associated with RWLCS Trouble alarm, IAW station procedures.
47.004	Provided initial indications, perform continuous Control Rod Withdrawal, IAW station procedures.
47.013	Provided initial indications, perform the Main Control Room actions associated with Rod Control Management System Alarms, IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
413.000	Given LGA-01, RPV Control, in progress, evaluate plant conditions and control RPV level +11" to 59.5" IAW LGA-001
427.000	Given entry conditions, evaluate plant conditions and isolate all primary systems discharging outside primary and secondary containment not required for other LGA actions, IAW Station Procedures.
428.000	With a blowdown required, evaluate plant conditions and rapidly depressurize the RPV using SRVs via the ADS system, IAW Station procedures.

RO - BOP/ASSIST	
71.010	Given Unit Supervisor authorization, Perform actions for Main Turbine startup and synchronization, IAW station procedures.
71.028	Provided initial conditions, perform Control Room actions for Main Turbine Generator trip (load < 25%), IAW station procedures.
71.030	Provided initial conditions, perform Control Room actions for Main Turbine Generator high vibration or noise, IAW station procedures.
117.016	Provided initial indications, respond to VC/VE system abnormalities (i.e. hi rad, smoke, etc.), IAW station procedures.
426.000	Given LGA-009, Radioactivity Release Control, in progress, evaluate plant conditions and establish a monitored release path, IAW station procedures.
427.000	Given entry conditions, evaluate plant conditions and isolate all primary systems discharging outside primary and secondary containment not required for other LGA actions, IAW Station Procedures.
428.000	With a blowdown required, evaluate plant conditions and rapidly depressurize the RPV using SRVs via the ADS system, IAW Station procedures.

SRO - UNIT SUPERVISOR	
31.013	Given Unit Supervisor authorization, complete the control room actions associated with RWLCS Trouble alarm, IAW station procedures.
47.004	Provided initial indications, perform continuous Control Rod Withdrawal, IAW station procedures.
47.013	Provided initial indications, perform the Main Control Room actions associated with Rod Control Management System Alarms, IAW station procedures.
71.010	Given Unit Supervisor authorization, Perform actions for Main Turbine startup and synchronization, IAW station procedures.
71.028	Provided initial conditions, perform Control Room actions for Main Turbine Generator trip (load < 25%), IAW station procedures.
71.030	Provided initial conditions, perform Control Room actions for Main Turbine Generator high vibration or noise, IAW station procedures.
117.016	Provided initial indications, respond to VC/VE system abnormalities (i.e. hi rad, smoke, etc.), IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
413.000	Given LGA-01, RPV Control, in progress, evaluate plant conditions and control RPV level +11" to 59.5" IAW LGA-001
421.010	Given plant conditions, cool the Suppression Pool, IAW Station Procedures.
426.000	Given LGA-009, Radioactivity Release Control, in progress, evaluate plant conditions and establish a monitored release path, IAW station procedures.
427.000	Given entry conditions, evaluate plant conditions and isolate all primary systems discharging outside primary and secondary containment not required for other LGA actions, IAW Station Procedures.
428.000	With a blowdown required, evaluate plant conditions and rapidly depressurize the RPV using SRVs via the ADS system, IAW Station procedures.
201.011	Given a set of plant conditions, identify and prepare the Technical Specification required actions IAW Tech Specs.

Event - 1		
Description: Synchronize to the grid IAW LGP 1-1		
Initiation: Following the crew assuming the shift		
Cues: Turnover		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
71.010	BOP	<p>Per LOP-TG-02</p> <ul style="list-style-type: none"> • VERIFY GENERATOR FIELD VOLTS ADJUST at minimum position as indicated by LOWER LIMIT light on • VERIFY U1 GENERATOR REGULATOR MODE TRANSFER in MANUA • VERIFY U1 GENERATOR VOLTMETER SELECTOR is NOT OFF • CLOSE U1 GENERATOR FIELD BREAKER and OBSERVE the following: <ul style="list-style-type: none"> • 1EI-MP002, U1 GENERATOR FIELD VOLTS indication rises. • 1EI-MP021, U1 GENERATOR KILOVOLTS indication rises. • VERIFY 1EI-MP021, U1 GENERATOR KILOVOLTS indicates 18 KV to 22 KV. • Using GENERATOR FIELD VOLTS ADJUST, RAISE 1EI-MP021, U1 GENERATOR KILOVOLTS to 23.5 KV to 24.0 KV • CHECK all three phases of generator voltage approximately 23.7 KV using U1 GENERATOR VOLTMETER SELECTOR • VERIFY Main Power Transformer Trouble alarms are clear at Panel 1PM01J windows A203 and A204 • PLACE Generator control in automatic as follows: <ul style="list-style-type: none"> • ADJUST U1 GENERATOR TERMINAL VOLTS ADJUST until 1EI-MP003, U1 GEN REGULATOR TRANSFER VOLTS indicates zero • PLACE U1 GENERATOR REGULATOR MODE TRANSFER in AUTO • VERIFY proper operation of the Main Generator Voltage Regulator in Auto by lowering and raising the voltage using the GENERATOR TERMINAL VOLTS ADJUST by 1 KV • At Panel 0PM11J VERIFY OCB 9-10 Auto Recloser is OFF • VERIFY the following control switches are NOT in PULL-TO-LOCK: 9-10 and 10-11 • Place one of the following in ON: 9-10 or 10-11 • Manually ADJUST Generator speed using Load Raise/Lower pushbuttons so generator output frequency is slightly higher than grid frequency, U1 GENERATOR SYNCHROSCOPE, meter on 1PM01J rotates slowly in the FAST direction • Adjust Main Generator output voltage to make incoming slightly higher than running • Just prior to U1 GENERATOR SYNCHROSCOPE, meter reaching 12 o'clock position CLOSE OCB 9-10 or 10-11 • At 1PM02J EHC Workstation, RAISE Load Set Stpt to 105.0 % using either the Load Set Manual Adj. Raise pushbutton or by entering a target Load Set Setpoint and Ramp Rate • Turn the SYNC scope OFF for the beaker just CLOSED and ON for the next breaker to be CLOSED • VERIFY U1 GENERATOR SYNCHROSCOPE, meter in 12 o'clock position • U1 GENERATOR INCOMING VOLTS, and U1 GENERATOR RUNNING VOLTS are approximately equal • CLOSE the selected OCB and CHECK the breaker closes and turn the SYNC scope OFF • If the Generator voltage regulator is in MANUAL and it is desired to transfer to AUTO • ADJUST U1 GENERATOR TERMINAL VOLTS ADJUST until 1EI-MP003, U1 GEN REGULATOR TRANSFER VOLTS indicates zero • PLACE U1 GENERATOR REGULATOR MODE TRANSFER in AUTO • PLACE OCBs 9-10 and 10-11 in NAC on the 1PM11J • Inform TSO
71.010	US	<ul style="list-style-type: none"> • Direct above actions

Event - 1
Description: Synchronize to the grid IAW LGP 1-1

Simulator Operator Actions
none

Simulator Operator Role Play
Respond as required.

Floor Instructor Notes/OPEX/TR's
Terminus: When the Main Generator synced to the grid with the voltage regulator in AUTO and at the discretion of the Lead Evaluator.

Event - 2		
Description: Raise power with control rods to 15% power IAW LGP 1-1		
Initiation: Following the completion of event 1		
Cues: turnover		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
47.004	ATC	<p>Per LGP-1-1 and LOP-RM-01</p> <ul style="list-style-type: none"> • CONTINUE control rod withdrawal until at least 1½ Bypass Valves are open for initial generator loading <p>Per LOP-RM-01</p> <ul style="list-style-type: none"> • VERIFY CRD Drive Flow Trip Circuit Bypass Switch is in the BYPASS position • VERIFY CRD Drive Flow Trip Circuit Test Switch is in the NORMAL position • Simultaneously DEPRESS and HOLD both CONTINUOUS WITHDRAW and WITHDRAW push-button. Selected rod will continuously withdraw until one (1) push-button is released • CHECK the following: <ul style="list-style-type: none"> • Rod Withdraw Sequence begins • CONTINUOUS WITHDRAW indication appears as long as both pushbuttons are depressed • OBSERVE changes in nuclear instrumentation indications • When either push-button is released, Rod SETTLE indication is lit for approximately 2 seconds • New rod position will be indicated on the ROD SELECT Display, STATUS Display and CORE MAP Display
	BOP	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
47.004	US	<ul style="list-style-type: none"> • Direct above actions

Event - 2
Description: Raise power with control rods to 15% power IAW LGP 1-1

Simulator Operator Actions
None

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: When a sufficient power increase has been observed per the Lead Evaluator.

Event - 3		
Description: SBGTS Low Flow after Auto-start		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: SBGT starts Expected Annunciator: 1PM07J-A301, Standby Gas Treatment System Manual Initiation 1PM07J-A401, Standby Gas Treatment System Primary Fan Flow High-Low Key Parameter Response: Reactor Building D/P fluctuates		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
	BOP	Per LOR-1PM07J-A401 <ul style="list-style-type: none"> • VERIFY SBGT Primary Fan 1VG01C is running • VERIFY following dampers are Open: <ul style="list-style-type: none"> • 1VG001, SBGT Suction from Reactor Building, or 1VQ041, SBGT Suction from Return Air Riser • 1VG003, SBGT Train Outlet • 1VG05Y, SBGT Primary Fan Gravity Damper • VERIFY SBGT Flow Control Damper 1VG002 is modulating to control flow • If unable to obtain proper flow and SBGT is required for accident conditions, manually initiate the other SBGT system <ul style="list-style-type: none"> • Per LOP-VG-02 • STOP 1VG01C, Standby Gas Treatment Primary Fan by placing Control Switch to PULL TO LOCK • VERIFY 1VG02C, Standby Gas Treatment Cooling Fan AUTO starts • VERIFY 1VG01A, SBGT Air Heater shuts off as flow decreases through the Train • VERIFY 1VG003, Standby Gas Treatment Outlet Damper closes, then RE-OPENS • PULL Pistol Grip for 1VG001, Standby Gas Treatment Suction from Reactor Building Atmosphere out • CLOSE 1VG001, Standby Gas Treatment Suction from Reactor Building Atmosphere
201.011	US	<ul style="list-style-type: none"> • Direct above actions • Enter Tech Spec 3.6.4.3, condition A, RA A.1

Event - 3
Description: SBGTS Low Flow after Auto-start

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 3

Simulator Operator Role Play	
As IMD, if asked to investigate the SBGT initiation, report, "that we report to the control room."	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
Terminus: When SBGT is secured and Tech Spec call has been made and at the discretion of the Lead Evaluator.	

Event - 4		
Description: Loss of 'A' Rod Control Management System Interface		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: none		
Expected Annunciator: 1H13-P603-A511, RWLCS		
Key Parameter Response: loss of transponder power		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
47.013	ATC	Per LOA-RM-101 <ul style="list-style-type: none"> • CHECK Core Map, Rod Select Display and Status Display all indicate NO DATA AVAILABLE • EXIT to LOP-RM-03 <ul style="list-style-type: none"> • Per LOP-RM-03 • At the MAINTENANCE Display, panel 1H13-P659, PLACE the SYSTEM SELECT Switch as follows: BYPASS A to bypass RCMS Interface Unit A • If Transponder Power has been turned OFF, PERFORM the following: • At the ROD SELECT Display, or STATUS Display, whichever is in CONTROL Mode, NAVIGATE to the SET CHAN PARAMETERS screen • SELECT the desired Transponder Power, LEFT CORE HALF (L1) or RIGHT CORE HALF (R1) using the UP/DOWN arrows. • SELECT ON using the RIGHT/LEFT arrows • PRESS ACCEPT to change transponder power to ON • ACKNOWLEDGE any screen message
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
47.013	US	<ul style="list-style-type: none"> • Direct above actions

Event - 4
Description: Loss of 'A' Rod Control Management System Interface

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 4
When directed by the crew to take "Bypass A to bypass RCMS Interface Unit A"	Release BYPASS A RCMS Interface

Simulator Operator Role Play	
As the EO sent to AEER, when ordered to Bypass A RCMS Interface, wait 2minutes, preform the above action and report back, "RCMS Interface Unit A is in Bypass A."	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
Note: none	
Terminus: When transponder power has been restored and at the discretion of the Lead Evaluator	

Event - 5		
Description: Control Room Ventilation Radiation Monitor Fails		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: none Expected Annunciator: 1PM13J-B401, Control Room HVAC or Radwaste Reboiler Steam Outlet High Radiation or Instrument Failure (r1387) Key Parameter Response:		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
117.016	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
	BOP	Per LOR-1PM13J-B401 <ul style="list-style-type: none"> • CHECK alarm typer printout to determine if alarm is due to Control Room HVAC High Radiation, Reboiler High Radiation, or Rad Instrument Failure • If alarm is due to a failed instrument: • VERIFY affected instrument is energized per LOP-PR-01E • SEE LOA-PR-101, Unit 1 Process Radiation Monitoring System Abnormal
117.016 201.011	US	<ul style="list-style-type: none"> • Direct above actions • Enter Tech Spec 3.3.7.1, condition A, RA A.1 and A.2

Event - 5
Description: Control Room Ventilation Radiation Monitor Fails

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 5

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Note: The Control Room Air Intake Radiation—High Function consists of eight independent monitors, with four monitors associated with one CRAF subsystem and the other four monitors associated with the other CRAF subsystem. Each of the four monitors associated with a CRAF subsystem are arranged in two trip systems, with each trip system containing two radiation monitors.
Terminus: When the Tech Spec call has been made and at the discretion of the Lead Evaluator.

Event - 6		
Description: Upscale failure of the MDRFP Flow Instrument		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: None Expected Annunciator: 1H13-P603-A511, RWLCS Trouble Key Parameter Response: Lowering Reactor Level		
Task/Obj.	Position	EXPECTED OPERATOR RESPONSE
31.013	ATC	Per LOR-1H13-P603-A511 <ul style="list-style-type: none"> • At the 1DS001 Operation Station Event List, Check alarm message • If alarm message is "Dev Header/Pump Flow" then CHECK for failing reactor feed pump discharge flow signal • If a Reactor feed pump discharge flow signal has failed: <ul style="list-style-type: none"> • VERIFY the corresponding reactor feed pump minflow M/A station is in manual • POSITION the corresponding reactor feed pump minflow as required for plant conditions • REFER to LOP-FW-16 to determine cause of alarm and required actions <p style="text-align: center;">OR</p> Per LOP-FW-16 <ul style="list-style-type: none"> • If a feedwater pump discharge flow indicator has failed <ul style="list-style-type: none"> • VERIFY the affected feedwater pump minflow valve is in Manual control • VERIFY affected minflow valve is positioned properly for plant conditions
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
31.013	US	<ul style="list-style-type: none"> • Direct above actions • Set manual scram criteria RPV level is 20" to 50" and/or IN CONTROL

Event - 6
Description: Upscale failure of the MDRFP Flow Instrument

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 6

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: When level is stable and MDRFP Min Flow Valve M/A station is in manual and at the discretion of the Lead Evaluator

Event - 7		
Description: High Vibrations on Main Turbine Bearings Requiring Manual Trip of Turbine; One Output Breaker Fails to Open		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: None Expected Annunciator: 1PM02J-A401, U1 Turbine Generator Vibration High 1PM02J-B405, U1 Turbine Generator Vibration Hi Hi Key Parameter Response: Rising Turbine Vibes		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
71.028 71.030	BOP	Per LOA-TG-101 <ul style="list-style-type: none"> • CHECK Vibration levels - REFER to the limits identified in Attachment A • At direction of Unit Supervisor REDUCE Reactor power • If bearing vibration limits exceed Attachment A then MANUALLY trip the main turbine • CHECK Turbine Bypass Valves - controlling Reactor pressure • CHECK Turbine – TRIPPED • START 1TG09P, Emer Brg Oil Pmp • At either EHC Workstation on “Speed-Load” screen, from control menu, CHECK Speed Cmd - CLOSE VALVES • CHECK Generator OCBs 9-10 and 10-11 – OPEN • CHECK Generator field breaker - OPEN
71.028 71.030	US	<ul style="list-style-type: none"> • Direct above actions

Event - 7
Description: High Vibrations on Main Turbine Bearings Requiring Manual Trip of Turbine; One Output Breaker Fails to Open

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 7

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Continued

Event - 8		
Description: Large steam leak in Main Steam Tunnel with fuel failure		
Initiation: Continued		
Cues: Automatic Actions: none		
Expected Annunciator: Multiple		
Key Parameter Response: Rising secondary containment radiation levels and temperatures		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
304.010 413.000 427.000	ATC	Performs Reactor Scram and LGP 3-2 (CT) <ul style="list-style-type: none"> • ARM and DEPRESS Scram Pushbuttons • PLACE Reactor Mode Switch in SHUTDOWN • INSERT SRMs • CHECK Control Rods INSERTED and Power Decreasing • INFORM Unit Supervisor of Control Rod Status and Reactor Power • Operate Feedwater and/or ECCS as necessary to maintain RPV Water Level 20" to 50" or as specified by Unit Supervisor • Place LFFRV in AUTO • REPORT to the Unit Supervisor the status of RPV Level and Pressure • If needed for level control: • Place the FRV in AUTO • STABILIZE Reactor Pressure <1020 psig
427.000	BOP	<ul style="list-style-type: none"> • Collect LGA-002 data • Update the crew of changing secondary containment conditions
304.010 413.000 427.000	US	<ul style="list-style-type: none"> • Enter LGA-002 • Direct manual scram on 1 area approaching Max Safe level and not able to be isolated at power (CT) • Direct above actions

Event - 8
Description: Large steam leak in Main Steam Tunnel with fuel failure

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 8

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Continued

Event - 9		
Description: Close MSIVs to stop the leak but both "A" loop MSIVs fail open		
Initiation: Continued		
Cues: Automatic Actions: none Expected Annunciator: Multiple Key Parameter Response: Rising secondary containment radiation levels and temperatures		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
427.000	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required • Maintain reactor water level per LGA-001
427.000	BOP	Per LGA-002 <ul style="list-style-type: none"> • Reactor Building Vent. isolated or should have isolated on Reactor Building Hi-Hi radiation • Isolate all discharges into affected areas except systems needed for: <ul style="list-style-type: none"> • Damage control • LGA actions • Monitor radiation release limits for potential entry into LGA-009, Radioactivity Release Control
427.000	US	<ul style="list-style-type: none"> • Direct above actions • Direct LGA-002 actions • Direct leak isolation

Event - 9
Description: Close MSIVs to stop the leak but both “A” loop MSIVs fail open

Simulator Operator Actions
none

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Continued

Event - 10		
Description: Turbine building dampers 1VT79YA/B/C Fail OPEN, High Off-site Release/ RPV Blowdown		
Initiation: Continued		
Cues: Automatic Actions: none Expected Annunciator: Multiple Key Parameter Response: Rising WRGM release rates		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required • Maintain reactor water level per LGA-001
426.000 428.000	BOP	<p>Per LGA-009</p> <ul style="list-style-type: none"> • Isolate all primary system discharges outside primary and secondary containments except systems needed for other LGA actions • DETERMINE Offsite release rate trending toward GSEP "General Emergency" level <p>Per LGA-004</p> <ul style="list-style-type: none"> • Prevent LPCS and LPCI injection not needed for core cooling • CHECK suppression pool level above -18 feet • Initiate ADS • VERIFY 7 ADS valves open • Leave SRVs open. Allow RPV to depressurize
426.000 428.000	US	<ul style="list-style-type: none"> • Direct above actions • Anounce entry into LGA-009 and LGA-004

Event - 10
Description: Turbine building dampers 1VT79YA/B/C Fail OPEN, High Off-site Release/ RPV Blowdown

Simulator Operator Actions
none

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Reactor is depressurized and RPV level controlled in the normal shutdown RPV Level band

REFERENCES

<u>Procedure</u>	<u>Rev</u>	<u>Title</u>
1. INPO 15-004		Operations Fundamentals
2. SOER 10-2		Engaged, Thinking Organizations
3. LOR-1PM07J-A301	3	Standby Gas Treatment System Manual Initiation
4. LOR-1PM07J-A401	3	Standby Gas Treatment System Primary Fan Flow High-Low
5. LOR-1PM13J-B401	9	Control Room HVAC or Radwaste Reboiler Steam Outlet High Radiation or Instrument Failure
6. LOR-1H13-P603-A511	2	RWLCS
7. LOR-1PM02J-A401	2	U1 Turbine Generator Vibration High
8. LOA-AR-101	5	Area Radiation Monitoring System Abnormal
9. LOA-RM-101	23	Unit 1 RCMS Abnormal Situations
10. LOA-TG-101	22	Unit 1 Turbine Generator
11. LOP-FW-16	37	1 and 2DS001 Operator Station Alarm Message Interpretation
12. LOP-RL-01	26	Operation of the Reactor Level Control System
13. LOP-RM-05	7	RCMS Power Supplies and Transfers
14. LOP-TG-02	84	Turbine Generator Startup
15. LGP-3-2	75	Reactor Scram
16. LGP-3-1	70	Power Changes
17. LGP-1-1	126	Normal Unit Startup
18. LGA-001	18A	RPV Control
19. LGA-002	9	Secondary Containment Control
20. LGA-004	9	RPV Blowdown
21. LGA-009	8	Radioactive Release Control
22. OP-LA-101-111-1002	81	LaSalle Operations Philosophy Handbook.
23. OP-LA-103-102-1002	21	Strategies for Successful Transient Mitigation

U1 SUPERVISOR TURNOVER

Shift: Days
Date: Today
Mode: 1
OLR: Green
Work Week: Div 2

Unit 1 power level

- 10 % Power
- LGP-1-1 Startup In-progress
-
-

Unit 2 power level

- 100 % Power
-
-
-

U1 Thermal Limit Issues /Power Evolutions

- None

U2 Thermal Limit Issues /Power Evolutions

- None

Existing LCOs, date of next surveillance

- None

Existing LCOs, date of next surveillance

- None

LOSs in progress or major maintenance

- None

LOSs in progress or major maintenance

- None

⇒ Equipment removed from service or currently unavailable

- None

- None

Grid Status is Green

⇒ Comments, evolutions, problems, etc.

- Perform LGP-1-1, step E.7.4 IAW LOP-TG-02, step E.24
- Raise reactor power to 15% per LGP-1-1, step E.7.6

⇒ Comments, evolutions, problems, etc.

- Non-Div Workweek. OLR is Green

LaSalle County Station

LICENSED OPERATOR EVALUATED SCENARIO GUIDE

19-1 NRC Exam Scenario 4

Rev. 00

Facility: LaSalle County Generating Station
Scenario 4

Scenario #: 19-1 NRC Exam

PURPOSE

Examine the ILT candidate's ability to operate the plant in normal, abnormal, and emergency conditions.

SUMMARY OF EVENTS

1. The crew will swap from 1B WT pump to 1A WT pump per LOP-WT-02.
2. The 1A RT Pump will trip requiring the crew perform a 5 minute flush and start the 1B RT pump per LOA-RT-101 and LOP-RT-02.
3. HPCS will spuriously start due to a failure of the Level 2 instrumentation and the crew will secure HPCS and enter Tech Specs.
4. A loss bus 138 due to a contractor knocking the breaker, the crew will re-energize bus 138.
5. A failure of the level instrumentation will cause the 16A heater to isolate and the crew to reduce power per LOA-HD-101.
6. A leak in the motor of the 1A RR pump will require the crew to trip the RR pump and enter Tech Specs.
7. A large break in the feedwater system inside the drywell with a bypass path will cause the crew to scram and take action per LGA-001 and LGA-003.
8. With a scram required, RPS 'B' will fail, requiring the crew to insert rods using ARI.
9. With ECCS signals present, LPCS will fail to auto start, requiring the crew to manually start LPCS to maintain RPV level.

Critical Tasks

1. In LGA-003, Primary Containment Control, with suppression chamber pressure above 12 psig, containment flood level below 722 feet, and drywell parameters below the Drywell Spray Initiation Limit; trip all recirculation pumps and start drywell sprays using RHR pumps not needed for adequate core cooling prior to 60 psig drywell pressure.
2. With a Scram signal present and the reactor not shutdown, commence inserting control rods (ARI) prior to Suppression Pool temperature exceeding 110 degrees F.

TRAINING REQUESTS (if applicable)

1. None

OPEX (if applicable)

1. None

Operator Fundamentals

1. Monitoring plant indications and conditions closely
2. Controlling plant evolutions precisely
3. Operating the plant with a conservative bias
4. Working effectively as a team
5. Having a solid understanding of plant design, engineering principles, and sciences

SOER 10-2

1. Supervisory oversight role
2. Recognition and mitigation of risk
3. Worker performance
4. Tolerance of repetitive/long standing issues and degradation of standards
5. Operating Experience

Record of Revisions (Summary)

Rev. 0	Developed new for the ILT 19-1 NRC Exam
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INITIAL SIMULATOR SETUP/ REQUIRED DOCUMENTATION

1. Recall a full power IC 201 Password 0201
2. Place simulator in RUN
3. Load and run the SmartScenario file NRC 19-1 Scenario 4.ssf
4. Update the Tech Spec Timeclock Sheet as follows:

TS/TRM/ODCM	System/ Component	Required Action	REQUIRED ACTION Description	Completion Time	Expiration Date/Time
N/A	N/A	N/A	N/A	N/A	N/A

5. Perform the pre-scenario checklist (TQ-LA-150-0308)

SCENARIO OUTLINE (NRC Evaluations Only)

Event No.	Malif. No.	Event Type*	Event Description
1	None	N (BOP)	Shift running Turbine Building Closed Cooling Water (TBCCW) from the 'B' Pump to the 'A' Pump
2	MRW001	C (ATC)	1A RWCU Recirc Pump Auto Trip (Instantaneous overcurrent) and Startup of 1B RT Recirc Pump
3	MNB078	I (BOP) T (SRO)	HPCS Spurious Initiation; SRO enters TS 3.5.1, Condition B and TS 3.3.5.1 Conditions A and B
4	K6L09JT8	C (BOP)	Loss of Bus 138
5	VRHT59A D	R (ATC)	Emergency Power Reduction due to a Loss of Feedwater Heating 16A Heater High Level Switch Failure
6	R0591 R0593	C (ATC) T (SRO)	Motor Cooler Leak on 1A RR Pump Results in the Crew Manually Tripping the Pump; SRO enters TS 3.4.1, Condition C
7	MCF034	M (ALL)	Unisolable Feedwater Rupture Inside Primary Containment. Rupture will be large enough to de-pressurize the RPV and lower level. A suppression chamber to drywell bypass pathway will occur.
8	MRP018	C (ATC)	Electrical ATWS, ARI Successful
9	MES039	C (BOP)	Low Pressure Core Spray Fails to Auto Actuate
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)echnical Specification			

APPROXIMATE SCENARIO RUN TIME

90 Minutes

SRRS 3D.126/3D.111: Retain approved lessons for life of plant OR Life of Insurance Policy + 1 Yr for RP lesson plans. May be retained in department for two years, then forwarded to Records Management.

GENERAL OBJECTIVE: (USED THROUGHOUT THIS EXERCISE)

769.00.01	During performance of tasks, dynamic learning activities, or formal evaluations, demonstrate applicable Human Performance behaviors IAW the appropriate procedures.
762.04.00	Given an operating experience document, paraphrase the lessons learned and methods to prevent recurrence at LaSalle Station, as described in the training material.
614.010	During performance of tasks, apply the administrative requirements of PROCEDURE USE AND ADHERENCE EXPECTATIONS, IAW station procedures.

TASKS

RO - ATC	
22.015	Given Unit Supervisor authorization, perform the Control Room actions to respond to a loss of one or both RR pumps, IAW station procedures.
079.017	Given Unit Supervisor authorization, respond to a heater Hi/Lo Level alarm, IAW station procedures.
079.020	Provided initial conditions, respond to an automatic heater string isolation at power, IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
413.000	Given LGA-01, RPV Control, in progress, evaluate plant conditions and control RPV level +11" to 59.5" IAW LGA-001
431.000	Given entry in LGA-010, Failure to Scram, evaluate plant conditions and shutdown the reactor, IAW station procedures.

RO - BOP/ASSIST	
4.009	Provided initial conditions, Respond to a loss of a 480 VAC ESS bus, IAW station procedures.
27.001	Given Unit Supervisor authorization, Perform the Main Control Room actions to Warm Up, Flush and Startup the Reactor Water Cleanup (RWCU) System, IAW station procedures.
61.006	Given Unit Supervisor authorization, perform Control Room actions to shutdown HPCS after an Auto Initiation, IAW station procedures.
079.017	Given Unit Supervisor authorization, respond to a heater Hi/Lo Level alarm, IAW station procedures.
079.020	Provided initial conditions, respond to an automatic heater string isolation at power, IAW station procedures.
113.004	Given Unit Supervisor authorization, perform the Main Control Room actions to swap Turbine Building Closed Cooling Water (TBCCW) Pumps, IAW station procedures.
419.020	Given LGA-003, Primary Containment Control in progress, spray the Suppression Pool, IAW station procedures.
419.030	Given LGA-003, Primary Containment Control in progress, spray the Drywell, IAW station procedures.
421.010	Given plant conditions, cool the Suppression Pool, IAW Station Procedures.

SRO - UNIT SUPERVISOR	
4.009	Provided initial conditions, Respond to a loss of a 480 VAC ESS bus, IAW station procedures.
22.015	Given Unit Supervisor authorization, perform the Control Room actions to respond to a loss of one or both RR pumps, IAW station procedures.
27.001	Given Unit Supervisor authorization, Perform the Main Control Room actions to Warm Up, Flush and Startup the Reactor Water Cleanup (RWCU) System, IAW station procedures.
61.006	Given Unit Supervisor authorization, perform Control Room actions to shutdown HPCS after an Auto Initiation, IAW station procedures.
079.017	Given Unit Supervisor authorization, respond to a heater Hi/Lo Level alarm, IAW station procedures.
079.020	Provided initial conditions, respond to an automatic heater string isolation at power, IAW station procedures.
113.004	Given Unit Supervisor authorization, perform the Main Control Room actions to swap Turbine Building Closed Cooling Water (TBCCW) Pumps, IAW station procedures.
304.010	Given Unit Supervisor authorization, perform actions for a reactor scram IAW station procedures
413.000	Given LGA-01, RPV Control, in progress, evaluate plant conditions and control RPV level +11" to 59.5" IAW LGA-001
419.020	Given LGA-003, Primary Containment Control in progress, spray the Suppression Pool, IAW station procedures.
419.030	Given LGA-003, Primary Containment Control in progress, spray the Drywell, IAW station procedures.
421.010	Given plant conditions, cool the Suppression Pool, IAW Station Procedures.
431.000	Given entry in LGA-010, Failure to Scram, evaluate plant conditions and shutdown the reactor, IAW station procedures.
201.011	Given a set of plant conditions, identify and prepare the Technical Specification required actions IAW Tech Specs.

Event - 1		
Description: Shift running Turbine Building Closed Cooling Water (TBCCW) from the 'B' Pump to the 'A' Pump		
Initiation: Following the crew assuming the shift		
Cues: Turnover		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
119.014	BOP	Per LOP-TG-02 <ul style="list-style-type: none"> • START idle A Turbine Building Closed Cooling Water Pump, 1WT01PA. • At panel 1PM10J, OBSERVE pressure increase on TBCCW Pump discharge pressure indicator 1PI-WT008 • STOP B Turbine Building Closed Cooling Water Pump, 1WT01PB • OBSERVE TBCCW Pump discharge pressure returns to approximately same pressure prior to pump shifting
119.014	US	<ul style="list-style-type: none"> • Direct above actions

Event - 1
Description: Shift running Turbine Building Closed Cooling Water (TBCCW) from the 'B' Pump to the 'A' Pump

Simulator Operator Actions
none

Simulator Operator Role Play
As the EO in the field, when ordered to vent the 1A WT pump, "report the 1A WT pump has been vented." (E.2.2)
As the EO in the field, when ordered to ensure cooling of all running SACs, wait 1 minute and report, "All SACs are being properly cooled." (E.2.6)
Respond as required.

Floor Instructor Notes/OPEX/TR's
Terminus: When 1A WT pump is running with 1B WT pump secured and at the discretion of the Lead Evaluator.

Event - 2		
Description: 1A RWCU Recirc Pump Auto Trip (Instantaneous overcurrent) and Startup of 1B RT Recirc Pump		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: 1A RT Pump Trips Expected Annunciator: 1H13-P602-A206, Reactor Water Cleanup Recirculation Pumps 1G33-C001A/B Flow Low 1H13-P602-B103, Reactor Water Cleanup Filter Demineralizer Trouble 1H13-P602-A106, Reactor Water Cleanup Recirculation Pump 1G33-C001A Automatic Trip		
Key Parameter Response: Lowering RT flow		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
303.020	ATC	Per LOA-RT-101 <ul style="list-style-type: none"> • CHECK RWCU –NOT ISOLATED • FLUSH system piping to the Main Condenser as follows: • CLOSE 1G33-F042, RWCU Return Upstrm Isol Vlv • OPEN 1G33-F034, RWCU Reject to Main Condenser Vlv • OPEN 1G33-F033, RWCU Reject Flow Control Valve to establish 100 –150 gpm flow • After 5 minutes of flow to the Main Condenser, thenCLOSE 1G33-F033, RWCU Reject Flow Control Valve • CLOSE 1G33-F034, RWCU Reject to Main Condenser Vlv • START Standby RWCU Pump per LOP-RT-02 Per LOP-RT-02 <ul style="list-style-type: none"> • VERIFY RBCCW valved in to RWCU pump heat exchanger • SEND an operator to the RWCU pump rooms to VERIFY the following and standby for pump start • START the standby RWCU Recirc pump, 1G33-C001B
303.020	BOP	<ul style="list-style-type: none"> • Monitor plant conditions and update the crew as required • Provide peer checks as required
303.020	US	<ul style="list-style-type: none"> • Direct above actions

Event - 2
Description: 1A RWCU Recirc Pump Auto Trip (Instantaneous overcurrent) and Startup of 1B RT Recirc Pump

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 2

Simulator Operator Role Play	
If asked as the Ops Director, if 'B' RT pump is authorized per LOP-RT-02, report, "B RT pump is not an FME concern and is authorized." (E.3.1)	
As the EO in the field, if asked if WR is lined up to 'B' RT Pump, report, "WR is lined up to 1B RT pump." (E.3.2)	
As the EO in the field, if asked if 'B' RT Pump is lined up, report, "1B RT Pump is lined up for operation per LOP-RT-02 step E.3.2."	
As the EO in the field, if asked what casing temperature is, report, "1B RT pump casing temperature is 450 degrees." (E.3.3)	
As the EO in the field, if asked the status of post start checks, report, "post start checks are SAT."	
Respond as required	

Floor Instructor Notes/OPEX/TR's	
Terminus: When 1B RT pump is running and per the Lead Evaluator.	

Event - 3		
Description: HPCS Spurious Initiation		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: HPCS Pump and 1B Diesel Generator start		
Expected Annunciator: 1H13-P601-A201, HPCS Diesel Generator 1B Engine Running 1H13-P601-A205, HPCS System Actuated 1H13-P601-A208, Reactor Vessel Water Level 2 Lo-Lo 1H13-P601-A308, Reactor Vessel Water Level 2 Lo-Lo		
Key Parameter Response: Rising Reactor Water Level		
Task/Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<p>Per LOA-PWR-101</p> <ul style="list-style-type: none"> • CHECK RPS setpoints NOT exceeded • CHECK Reactor Power is < 100% RTP (3546 MWt) • REDUCE Power to ≤ 100% RTP by using RR FCV's or Control Rods • CHECK Reactor Pressure is LESS than 1005 psig • CHECK Reactor Power and core flow - OUTSIDE REGIONs 1 & 2 of the Power to Flow Map • CHECK FCL is LESS than MELLLA (113.2% FCL) on the Power to Flow Map (Attachment A in LOA-RR-101) • RUN OD-20 • CHECK the following rad indications NORMAL • NOTIFY Chemistry to sample reactor coolant for iodine activity
61.006	BOP	<p>Per LOR-1H13-P601-A205/208/308</p> <ul style="list-style-type: none"> • CHECK Reactor Vessel Water Level indication on panels 1H13-P601 and 1H13-P603 • If Shutdown of HPCS after Auto Initiation is required, REFER to LOP-HP-04 <p>Per LOR-1H13-P601-A201</p> <ul style="list-style-type: none"> • DETERMINE cause for start of Diesel Generator 1B ○ If appropriate, SHUTDOWN Diesel Generator 1B per LOP-DG-03, Diesel Generator Shutdown <p>Per LOA-PWR-101</p> <ul style="list-style-type: none"> • If there is a spurious HPCS injection, IMMEDIATELY SHUTDOWN HPCS • VERIFY lineup of HPCS with LOP-HP-04, Shutdown of HPCS After an Automatic Initiation <p>Per LOP-HP-04</p> <ul style="list-style-type: none"> • CLOSE 1E22-F004, HPCS Injection Line Isolation • VERIFY CLOSED 1E22-F012, HPCS Pump Minimum Flow Stop ○ When plant conditions permit, PLACE the HPCS system in standby per LOP-HP-03
61.006 201.011	US	<ul style="list-style-type: none"> • Direct above actions • Enter Tech Spec 3.3.5.1 <ul style="list-style-type: none"> • Condition A, RA A.1 • Condition B, RA B.2 and B.3 ○ Enter Tech Spec 3.5.1 <ul style="list-style-type: none"> ○ Condition B, RA B.1 and B.2

Event - 3
Description: HPCS Spurious Initiation

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 3

Simulator Operator Role Play
As the EO sent to investigate the instrument racks for HPCS, wait 2 minutes and report, "All level 2 instruments look like they tripped."
Respond as required

Floor Instructor Notes/OPEX/TR's
NOTE: Per Tech Spec 3.3.5.1, required action B.2, HPCS must be declared INOP within 1 hour. This means that Tech Spec 3.5.1 does not have to be entered until the 1 hour time clock is complete but may be declared prior.
Terminus: When SBGT is secured and Tech Spec call has been made and at the discretion of the Lead Evaluator.

Event - 4		
Description: Loss of Bus 138		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: Bus 138 de-energizes Expected Annunciator: 1PM01J-B505, 480V Bus 132X/Y 134X/Y 138 Undervoltage (R0943 480V Bus 138 Voltage Lo) Key Parameter Response: None		
Task/Obj.	Position	EXPECTED OPERATOR RESPONSE
	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
5.009	BOP	Per LOR-1PM01J-B505 <ul style="list-style-type: none"> • DETERMINE which Bus has undervoltage condition by checking alarm typer • DISPATCH operator to INVESTIGATE cause of alarm • CORRECT cause of alarm and REENERGIZE Bus if possible
5.009	US	<ul style="list-style-type: none"> • Direct above actions

Event - 4
Description: Loss of Bus 138

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 4

Simulator Operator Role Play
As the EO sent to investigate the loss of bus 138, wait 2 minutes and report, "A contractor says they bumped the breaker, there is no damage to the bus."
Respond as required

Floor Instructor Notes/OPEX/TR's
Note: none
Terminus: When bus 138 is re-energized and at the discretion of the Lead Evaluator

Event - 5		
Description: Loss of Feedwater Heating 16A Heater High Level Switch Failure		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: 16A Heater Isolates Expected Annunciator: 1PM03J-B101, High Pressure Heater 16A/B Level High 1PM03J-B201, High Pressure Heater 16 Spill Valve Open 1PM03J-B401, High Pressure Heater 16 Extraction Steam Check Valve Not Open Key Parameter Response: Lower CD/CB Suction Header Pressure		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
079.017 079.020	ATC	<ul style="list-style-type: none"> • Per LOA-HD-101 • REDUCE Reactor Power as necessary without entering Region 2 <ul style="list-style-type: none"> ○ Reduce RR Flow ○ INSERT CRAM Arrays, if available ○ INSERT control rods continuing from the back of the sequence • MONITOR feedwater temperature • REDUCE core flow at least 5 Mlbs/hr for every 10°F feedwater temperature drops below the nominal temperature curve
079.017 079.020	BOP	Per LOA-HD-101 <ul style="list-style-type: none"> • For any heater with a HIGH HIGH Level Trip, VERIFY CLOSED <ul style="list-style-type: none"> ○ ES Supply or ○ ES Non-Return Check • CHECK Main Turbine - ON LINE • CHECK all 13A/B/C heaters are on line
079.017 079.020	US	<ul style="list-style-type: none"> • Direct above actions

Event - 5
Description: Loss of Feedwater Heating 16A Heater High Level Switch Failure

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 5

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: When reactor power has been reduced with the plant stable and at the discretion of the Lead Evaluator.

Event - 6		
Description: Motor Cooler Leak on 1A RR Pump		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: None Expected Annunciator: 1H13-P602-A304, RR 1A Motor Cooling Water Flow Low OR Motor Winding Cooler Leakage Key Parameter Response: None		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
22.015	ATC	Per LOR-1H13-P602-A304 <ul style="list-style-type: none"> • The pump should be TRIPPED immediately if any of the following are met: <ul style="list-style-type: none"> • Leakage into the windings occur: <ul style="list-style-type: none"> • both R pts are received • REFER to LOA-RR-101, Reactor Recirc System Abnormal • MONITOR abnormal trends or parameters until problem has been fully evaluated
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
022.015 201.011	US	<ul style="list-style-type: none"> • Direct above actions • Enter Tech Spec 3.4.1, condition C, RA C.1

Event - 6
Description: Motor Cooler Leak on 1A RR Pump

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 6

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: When the Tech Spec call has been made and at the discretion of the Lead Evaluator

Event - 7		
Description: Unisolable Feedwater Rupture Inside Primary Containment		
Initiation: Per Lead Evaluator		
Cues: Automatic Actions: None		
Expected Annunciator: 1H13-P603-B501, Primary Containment Pressure Hi/Lo		
Key Parameter Response: Rising Containment Pressure and deviation between MS and FW Flow.		
Task/Obj.	Position	EXPECTED OPERATOR RESPONSE
304.010 413.000	ATC	<ul style="list-style-type: none"> Performs Reactor Scram and LGP-3-2 • ARM and DEPRESS Scram Pushbuttons • PLACE Reactor Mode Switch in SHUTDOWN • INSERT SRMs • CHECK Control Rods INSERTED and Power Decreasing
419.020 419.030 421.010	BOP	<ul style="list-style-type: none"> Per LGA-RH-103 • Place Div 1/2 Inj Override Switch to NON-ATWS • Div I: With an ECCS signal present Verify White Manual Override light for 1E12-F042A AND 1E21-F005 Illuminated • Div II: With an ECCS signal present Verify White Manual Override light for 1E12-F042B AND 1E12-F042C Illuminated Per LGA-RH-103 • When directed places Suppression Pool Cooling in service: • Startup RHR Service Water as follows: • OPEN 1A/1B RHR Hx Service Water Outlet Valve: 1E12-F068A/B • At approximately 9 to 10 seconds after taking the 1E12-F068A/B switch to OPEN, START first RHR Service Water Pump: 1A or 1B/C or D • When indicated flow reaches 3000 gpm, START second RHR Service Water Pump. • Startup RHR • Start 1A/1B RHR Pump • Establish RHR flow of 1500 to 7450 gpm: • Throttle 1E12-F024A/B (Test Valve) OPEN. • Close 1E12-F048A/B (HX Bypass) • Place A/B HTX Bypass Throttle/Seal in switch to THROTTLE and THROTTLE CLOSED 1E12-F048A/B. • Place A/B HTX Bypass Throttle/Seal in switch to SEAL IN and CLOSE 1E12-F048A/B • When directed establish Suppression Chamber Spray: • VERIFY 1A/1B RHR Pump is running • OPEN 1E12-F027A/B • When directed establish Drywell Spray: (CT) • VERIFY 1A/1B RHR Pump is running • THROTTLE 1E12-F024A/B CLOSED • OPEN: 1E12-F016A/B and 1E12-F017A/B
304.010 413.000 419.020 419.030 421.010	US	<ul style="list-style-type: none"> • May direct a manual reactor scram prior to reaching 1.93 psig in the Drywell • Enters and directs actions of LGA-001 LEVEL LEG • Establishes a RPV water level band of 20 to +50 inches • Enters and directs actions of LGA-001 PRESSURE LEG

SRRS 3D.126/3D.111: Retain approved lessons for life of plant OR Life of Insurance Policy + 1 Yr for RP lesson plans. May be retained in department for two years, then forwarded to Records Management.

	<ul style="list-style-type: none"> • STABILIZE Reactor Pressure below 1059 psig • When Drywell Pressure exceeds 1.93 psig, enters and directs actions of LGA-003 • Before Suppression Chamber Pressure exceeds 12 psig • Verifies Containment Flood level below 723 ft. • Directs start of Suppression Chamber Sprays • When Suppression Chamber Pressure exceeds 12 psig, direct initiation of Drywell sprays • Verifies Containment Flood level below 722 ft. • Verifies Drywell Pressure and Temperature permit Drywell Sprays per Figure D • Verifies both Recirc Pumps are tripped • Direct initiation of Drywell sprays (CT) • When Suppression Pool temperature exceeds 105°F initiation of direct initiation of Suppression Pool Cooling
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Event - 7
Description: Unisolable Feedwater Rupture Inside Primary Containment

Simulator Operator Actions	
When directed by the Lead Evaluator	Release Event 7

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Continued

Event - 8		
Description: Electrical ATWS, ARI Successful		
Initiation: Continued		
Cues: Automatic Actions: none Expected Annunciator: Multiple Key Parameter Response: Rising secondary containment radiation levels and temperatures		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
304.010 413.000 431.000	ATC	Performs Reactor Scram and LGP 3-2 <ul style="list-style-type: none"> • INITIATE ARI (CT) • INFORM Unit Supervisor of Control Rod Status and Reactor Power • Operate Feedwater and/or ECCS as necessary to maintain RPV Water Level 20" to 50" or as specified by Unit Supervisor • Place LFFRV in AUTO • REPORT to the Unit Supervisor the status of RPV Level and Pressure • If needed for level control: • Place the FRV in AUTO • STABILIZE Reactor Pressure <1020 psig
	BOP	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required
304.010 413.000 431.000	US	<ul style="list-style-type: none"> • Direct above actions

Event - 8
Description: Electrical ATWS, ARI Successful

Simulator Operator Actions
None

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: Continued

Event - 9		
Description: Low Pressure Core Spray Fails to Auto Actuate		
Initiation: Continued		
Cues: Automatic Actions: none Expected Annunciator: Multiple Key Parameter Response: LPCS Pump not running		
Task/ Obj.	Position	EXPECTED OPERATOR RESPONSE
413.000	ATC	<ul style="list-style-type: none"> • Monitor plant parameters and update the crew as required • Provide peer checks as required • Maintain reactor water level as directed by Unit Supervisor
	BOP	Per LGA-001 <ul style="list-style-type: none"> • With an actuation level reached, VERIFY needed auto actions occur • ECCS (LPCS) start
413.000	US	<ul style="list-style-type: none"> • Direct above actions

Event - 9
Description: Low Pressure Core Spray Fails to Auto Actuate

Simulator Operator Actions
none

Simulator Operator Role Play
Respond as required

Floor Instructor Notes/OPEX/TR's
Terminus: RPV Level restored above TAF and Primary Containment Conditions being controlled within the parameters of the LGA-003 curves and per the Lead Evaluator.

REFERENCES

<u>Procedure</u>	<u>Rev</u>	<u>Title</u>
1. INPO 15-004		Operations Fundamentals
2. SOER 10-2		Engaged, Thinking Organizations
3. LOR-1H13-P602-A106	4	Reactor Water Cleanup Recirculation Pump 1G33-C001A Automatic Trip
4. LOR-1H13-P602-A206	3	Reactor Water Cleanup Recirculation Pumps 1G33-C001A/B Flow Low
5. LOR-1H13-P602-A304	7	RR 1A Motor Cooling Water Flow Low OR Motor Winding Cooler Leakage
6. LOR-1H13-P602-B103	1	Reactor Water Cleanup Filter Demineralizer Trouble
7. LOR-1H13-P601-A201	3	HPCS Diesel Generator 1B Engine Running
8. LOR-1H13-P601-A205	3	HPCS System Actuated
9. LOR-1H13-P601-A208	3	Reactor Vessel Water Level 2 Lo-Lo
10. LOR-1H13-P601-A308	3	Reactor Vessel Water Level 2 Lo-Lo
11. LOR-1PM01J-B505	2	480V Bus 132X/Y 134X/Y 138 Undervoltage
12. LOR-1PM03J-B101	2	High Pressure Heater 16A/B Level High
13. LOR-1PM03J-B201	3	High Pressure Heater 16 Spill Valve Open
14. LOR-1PM03J-B401	1	High Pressure Heater 16 Extraction Steam Check Valve Not Open
15. LOA-AP-101	60	AC Power System Abnormal
16. LOA-HD-101	39	Heater Drain System Trouble
17. LOA-PWR-101	16	Unplanned Reactivity Addition
18. LOA-RR-101	43	Reactor Recirc System Abnormal
19. LOA-RT-101	21	Loss of Reactor Water Cleanup System
20. LOP-RT-02	54	RWCU System Startup and Pump Transfer
21. LOP-WT-02	17	Startup and Operation of the Turbine Building Closed Cooling Water System
22. LGP-3-2	75	Reactor Scram
23. LGP-3-1	70	Power Changes
24. LGA-001	18	RPV Control
25. LGA-003	18	Primary Containment Control
26. OP-LA-101-111-1002	71	LaSalle Operations Philosophy Handbook.
27. OP-LA-103-102-1002	17	Strategies for Successful Transient Mitigation

U1 SUPERVISOR TURNOVER

Shift: Days
Date: Today
Mode: 1
OLR: Green
Work Week: Div 2

Unit 1 power level

- 100 % Power
-
-
-

Unit 2 power level

- 100 % Power
-
-
-

U1 Thermal Limit Issues /Power Evolutions

- None

U2 Thermal Limit Issues /Power Evolutions

- None

Existing LCOs, date of next surveillance

- None

Existing LCOs, date of next surveillance

- None

LOSs in progress or major maintenance

- None

LOSs in progress or major maintenance

- None

⇒ Equipment removed from service or currently unavailable

- None

- None

Grid Status is Green

⇒ Comments, evolutions, problems, etc.

- Swap from 'B' WT pump to 'A' WT pump per LOP-WT-02, Section E.2

⇒ Comments, evolutions, problems, etc.

- Non-Div Workweek. OLR is Green