

Facility: LaSalle

Scenario No.: NRC Scenario 1

Op-Test No.: 2020-301

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
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Initial Conditions: Unit 1 is at 100% power. The Diesel Fire Pump is OOS for scheduled maintenance. HPCS has been restored to service during the previous shift after breaker replacement.

Turnover: Perform a full flow test of the HPCS pump, IAW LOS-HP-Q1, Attachment 1A. Steps A.1 through A.8 have been completed by the previous shift.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP)	Perform HPCS full flow test IAW LOS-HP-Q1
2		C (BOP) T (SRO)	HPCS breaker overcurrent, secure HPCS IAW LOP-HP-04. SRO enters TS 3.5.1 Condition B
3		C (BOP)	Lowering Gland Seal Steam Pressure; Manual recovery of Seal Steam Pressure
4		R (ATC)	Minor condenser leak on '1B' Steam Jet Air Ejector, reduce reactor power IAW LGP-3-1
5		C (ATC)	'1A' TDRFP lube oil leak; Start MDRFP and manually trip the '1A' TDRFP
6		C (ATC) T (SRO)	'1B' Recirc Pump FCV slowly drifting shut, lock '1B' FCV. SRO enters TS 3.4.1 Condition B
7		M (ALL)	Condenser leak increases in size, requiring manual scram IAW LGP-3-2
8		M (ALL)	Hydraulic ATWS
9		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 Specifications

Facility: LaSalle County Station

Scenario No.: 1

## **PURPOSE**

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

## **SUMMARY OF EVENTS**

1. Perform HPCS Full Flow Test (N)  
The crew will perform the HPCS full flow test IAW LOS-HP-Q1, Attachment 1A, starting with step A.9. Once the operator completes step A.13, Event 2 will be inserted.
2. HPCS Breaker Overcurrent (C), US Enters LCO 3.5.1.B (T)  
The HPCS breaker experiences an overcurrent condition, and the 'HPCS PMP OVERCURRENT' alarm (1H13-P601-A207) will annunciate. The system engineer calls the US to report "high current readings on the HPCS pump motor and it will fail soon". The US should direct the crew to secure the HPCS pump IAW LOP-HP-04. The US should enter TS 3.5.1 Condition B for HPCS OOS.
3. Steam Seal Header Pressure CANNOT be maintained; establish manual control (C)  
Annunciator 1PM02J-A205, GLAND SEAL STEAM HDR PRESS LO will be received. The BOP Operator will note Gland Seal Steam pressure is lowering outside the normal band of 2-6 psig. The BOP Operator will throttle open 1GS-S2, Steam Seal Evaporator Outlet Steam PCV M.O. Bypass Valve, to re-establish Gland Sealing Steam.
4. Minor steam leak on '1B' Steam Jet Air Ejector (SJAE) (R)  
A minor steam leak occurs on the '1B' SJAE. The leak is unisolable and should be small enough so the operators have time to reduce power. Vacuum will lower and the 'CNDSR VAC LO' alarm (1PM03J-B511) will annunciate. The BOP or ATC may notice condenser vacuum lowering prior to the alarm annunciating. The crew may dispatch equipment operators to investigate the cause of lowering vacuum. If so, an equipment operator will report "an unisolable leak on the '1B' SJAE." The crew will take actions IAW the alarm response manual, LOR-1PM03J-B511. The crew will also reduce Reactor Power IAW LGP-3-1, to target < 75% or to stabilize condenser vacuum (based on note in the alarm manual). After lowering Reactor Power ~10%, condenser vacuum will stabilize.
5. '1A' Turbine Drive Reactor Feed Pump (TDRFP) lube oil leak, manually trip from MCR (C)  
Annunciator 1PM03J-A104, 1A/1B TDRFP BRG OIL PRESS LO will sound in the MCR. The applicants will send an Equipment Operator to the field to investigate who will report that the '1A' TDRFP has an oil leak that is unisolable and is being contained. The ATC Operator will start the MDRFP and trip the '1A' TDRFP IAW with LOA-FW-101 with oil pressure < 4 psig and the TDRFP not tripped. The crew will stabilize reactor water level.
6. '1B' Reactor Recirculation Pump Flow Control Valve (FCV) slowly drifting shut (C), US enters LCO 3.4.1 Condition B (T)  
The '1B' Reactor Recirc Pump FCV will begin to slowly drift shut. The failure should be slow enough to allow the crew to diagnose the failure and respond. The '1A RR FLOW CONTROL VLV TROUBLE' alarm (1H13-P602-A101) will annunciate. The crew will

observe a change in reactor power. The US will direct the crew to enter LOA-RR-101. The ATC will lock the '1B' FCV IAW LOA-RR-101 steps B.6 and B.7. The US should reference TS 3.4.1 and determine the applicability of LCO 3.4.1, Condition B based on total core flow and loop mismatch.

7. Condenser Leak from SJAE becomes major, requiring manual scram (M)

The condenser leak becomes major, and a turbine trip will be imminent. The crew will manually scram IAW LGP-3-2. The vacuum will decrease below the turbine trip setpoint, and the crew will also refer to LOA-TG-101. Vacuum continues to decrease until the MSIVs must be closed.

8. Hydraulic ATWS (M)

There will be a failure to scram and the crew will implement LGA-010 for failure to scram. The ATC will attempt to insert rods IAW LGA-NB-01, and ARI fails or enough rods stay out so that reactor power will stay > 3%. The BOP will inhibit ADS IAW LGA-010 **(CT)**. Then, the ATC will drop RCS level to at least -60 inches, and not to go below -150 inches **(CT)**.

9. Initiate SBLC, Failed Open Discharge Relief Valve (C)

The ATC will initiate SBLC IAW LGA-SC-101. When the operator performs starts the first SBLC pump, its discharge relief valve will lift and stick open. The operator will notice a low discharge pressure and that SBLC is not injecting into the RPV. The operator will then perform step E.1.d and start a second SBLC pump to initiate SBLC **(CT)**.

Scenario Termination: The scenario will terminate once the crew has begun manually inserting control rods, establishing the lineup to perform Scram-Reset-Scrams and level has been lowered until APRMs read downscale.

**CRITICAL TASKS**

1. After failure of ARI and with the reactor power still above 3%, inject boron using SBLC pump 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.

**EVENT TYPES:**

ATC: 2 R, 1 C, 2 M

BOP: 1 N, 2 C, 2 M

US: 4 C, 1 N, 2 TS, 2 M

Critical Tasks: 3

**ES-301-4 Quantitative attributes:**

Total Malfunctions (5-8): 8

Malfunction(s) after EOP (1-2): 2

Abnormal Events (2-4): 4

Major Transient(s) /E-Plan entry (1-2): 2

EOPs (1-2): 1

EOP Contingencies (0-2): 1

Critical Tasks (2-3): 3

**ES-301-5 Quantitative attributes:**

BOP Normal: E1

ATC Reactivity (1 per set): E4

BOP I/C (4 / set): E2, 3

ATC I/C (4 / set): E5, 6, 9

SRO-I I/C (4 / set inc 2 as ATC): E2, 3, 5, 6, 9

SRO Tech Spec (2 per set): E2, 6

ALL Major Transients (2 per set): E7, 8

Facility: LaSalle

Scenario No.: NRC Scenario 2

Op-Test No.: 2020-301

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
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Initial Conditions: Unit 1 is at 8% power following an RFO. Unit 2 is at 100% power.

Turnover: Continue performing Normal Unit Startup IAW LGP-1-1, step E.6.18

Event No.	Malf. No.	Event Type*	Event Description
1		N (ATC)	Withdraw IRM detectors per LOP-NR-02, "Intermediate Range Monitor Operation (IRM)"
2		I (ATC)	IRM 'F' becomes stuck in the core when being withdrawn per LOP-NR-02
3		R (ATC)	Withdraw control rods until at least 1 ½ TBVs are open, continue through step E.7.3
4		C (BOP)	'1A' Turbine Building Exhaust Fan trip, manually start idle fan
5		C (ATC) T (SRO)	Control rod drifts out, insert rod to position 00. SRO enters TS 3.1.3 Condition C and TS 3.3.2.1 Condition C
6		C (BOP) T (SRO)	Inadvertent RCIC actuation, secure RCIC IAW LOP-RI-03. SRO enters TS 3.5.3 Condition A and TS 3.3.5.3 Conditions A and B.
7		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		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 Specifications

Facility: LaSalle County Station

Scenario No.: 2

## **PURPOSE**

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

## **SUMMARY OF EVENTS**

1. Withdraw IRM Detectors (N)  
The crew will continue with performing the normal unit startup IAW LGP-1-1, step E.6.18 by withdrawing IRM detectors from the core per LOP-NR-02, "Intermediate Range Monitor Operation."
2. IRM 'F' becomes stuck in the core when being withdrawn per LOP-NR-02 (I)  
While withdrawing IRM detectors from the core IAW LGP-1-1 and LOP-NR-02, the 'F' IRM becomes stuck and remains in the core. The crew will bypass the 'F' IRM IAW LOA-NR-101, "Neutron Monitoring Trouble."
3. Withdraw Control Rods (R)  
The crew will continue performing the normal unit startup IAW LGP-1-1, step E.7.1. The ATC will withdraw control rods until at least 1 ½ turbine bypass valves have opened. Step E.7.2 will be N/A in the crew's copy of the procedures, or the crew will be prompted that Step E.7.2 is N/A. Once the crew has dispatched equipment operators to perform step E.7.3, Event 4 will be inserted.
4. '1A' Turbine Building Exhaust Fan trip (C)  
The '1A' Turbine Building Exhaust Fan will trip, and the 'TB 1A EXH FAN AUTO TRIP' alarm (1PM06J-B402) will annunciate. The crew will perform the actions in the alarm response manual and start the '1C' Turbine Building Exhaust Fan. The crew may dispatch an equipment operator to investigate. After two minutes, the operator will report the fan tripped on over current.
5. Control rod drifts out (C) (T)  
One of the control rods will begin to drift out, and the ATC will observe the position of the control rod drifting out. The 'CRD DRIFT' alarm (1H13-P603-A504) will annunciate. The SRO will direct the crew to enter LOA-RD-101. The ATC will perform through Step B.2.4 in LOA-RD-101 to fully insert the drifting rod to position 00. The SRO should enter TS 3.1.3 Condition C for an inoperable control rod which is not stuck and TS 3.3.2.1 Condition C for the Rod Block Monitor in BYPASS during a reactor startup.
6. Inadvertent RCIC Actuation (C) (T)  
RCIC will actuate, and the system engineer will call the control room and inform the US he accidentally bumped (breaker, cabinet, etc). The ATC will observe RPV Level rising and reactor power rising. The 'RCIC RUNNING' alarm (1H13-P601-D406) will annunciate. The crew will determine RCIC actuation is inadvertent and shutdown RCIC IAW LOP-RI-03. The US should enter TS 3.5.3 Condition A for RCIC inoperable and TS 3.3.5.3 Conditions A and B for a failed low RPV level RCIC initiation channel.
7. Unisolable Steam Leak in RCIC Room (M)

The steam leak on the weld upstream of MOV-F008 becomes major and is unisolable. The US will direct the crew to enter LGA-002 for Area Temperature/Radiation above max normal in the RCIC Room. The ATC will scram the reactor before any Area Temperature/Radiation level reaches the max safe value **(CT)**. The max safe temperature/radiation level will be reached in the RCIC Room and the LPCS Ventilation Cubicle. The crew will wait until two areas are above the max safe values of the same parameter and will transition to LGA-004 **(CT)**.

8. Blowdown, 4 ADS valves fail to open (C)

The crew will enter LGA-004. When the BOP initiates ADS, only 3 ADS valves open (related to the earlier ADS failure). The BOP will manually open the other SRVs, one at a time, until a total of 7 are open within **10 minutes** of initiating ADS **(CT)**.

Scenario Termination: The scenario will terminate 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.

**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 RCIC Steam Line Tunnel. The crew will wait until two or more areas are above the max safe value of the same parameter (in the RCIC Room and RCIC Steam Line Tunnel) 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 crew will manually open SRVs, one at a time, until 7 SRVs are open within 10 minutes of manually initiating ADS.

**EVENT TYPES:**

ATC: 1 C, 1 I, 1 R, 1 N, 1 M

BOP: 3 C, 1 M

US: 4 C, 1 I, 2 TS, 1 M

Critical Tasks: 3

**ES-301-4 Quantitative attributes:**

Total Malfunctions (5-8): 6

Malfunction(s) after EOP (1-2): 1

Abnormal Events (2-4): 4

Major Transient(s) /E-Plan entry (1-2): 1

EOPs (1-2): 2

EOP Contingencies (0-2): 1

Critical Tasks (2-3): 3

**ES-301-5 Quantitative attributes:**

ATC Normal: E1

ATC Reactivity (1 per set): E3

BOP I/C (4 / set): E4, 6, 8

ATC I/C (4 / set): E2, 5

SRO-I I/C (4 / set inc 2 as ATC): E2, 4, 5, 6, 8

SRO Tech Spec (2 per set): E5, 6

ALL Major Transients (2 per set): E7



Facility: LaSalle

Scenario No.: NRC Scenario 3

Op-Test No.: 2020-301

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_

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Initial Conditions: Unit 1 is in a startup IAW LGP 1-1 at step E.7.4 following a refueling outage and is at 10% power. The turbine generator is about to be synchronized to the grid IAW LOP-TG-02 step E.35.

Turnover: Continue performing LOP-TG-02 which has been completed up to step E.35. Risk is Green and Grid is Green/Normal.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP)	Synchronize to the grid IAW LGP 1-1, step E.7.4 and LOP-TG-02, step E.35
2		R (ATC)	Raise power with control rods to 15% power IAW LGP 1-1, step E.7.6
3		C (BOP) T (SRO)	SBGTS Low Flow after Autostart on a failure of the manual system initiation logic. SRO enters TS 3.6.4.3 Condition A
4		I (ATC)	Loss of 'A' Rod Control Management System Interface
5		T (SRO)	Control Room Ventilation Radiation Monitor Fails. SRO enters TS 3.3.7.1 Condition A
6		I (ATC)	Downscale failure of the MDRFP Flow Instrument 1C34-R612
7		C (BOP)	High Vibrations on Main Turbine Bearings Requiring Manual Trip of Turbine; One Generator Output Breaker Fails to Open
8		M (ALL)	Large steam leak in Main Steam Tunnel resulting in significant fuel failure and entry into LGA-002 on high MST temperature
9		C (ALL)	Close MSIVs to stop the leak but both "A" loop MSIVs fail open
10		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 Specifications			

Facility: LaSalle County Station

Scenario No.: 3

## **PURPOSE**

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

## **SUMMARY OF EVENTS**

1. Synchronize main generator (N)  
The crew will place the generator on-line in accordance with LOP-TG-02, "Turbine Generator Startup". The evolution will be complete when the second generator output OCB is closed.
2. Raise power after synchronization of the main generator (R)  
Using LGP-1-1, "Normal Unit Startup," step E.7.6 the crew will raise power with control rods from 10% to 15% as part of the normal startup.
3. SBGTS Low Flow after Autostart on failure of the manual system initiation logic. SRO enters LCO 3.6.4.3 (C) (T)  
The Unit 1 SBGTS will autostart on a failure of the manual system initiation logic. Unit 1 SBGTS will not develop sufficient flow. The SRO declares Unit 1 SBGTS inoperable due to low flow and enter TS 3.6.4.3, Condition A. The BOP will then secure the Unit 1 SBGTS IAW LOP-VG-02, step E.2.
4. Loss of 'A' Rod Control Management System (RCMS) Interface (I)  
One transponder power supply will trip and any control rod manipulation will briefly stop. Annunciator 1H13-P603-A402, "RCMS Trouble/Test" will activate. Enter LOA-RM-101, "Unit 1 RCMS Abnormal Situations."
5. Failure of Control Room Radiation Monitor. SRO enters LCO 3.3.7.1 (T)  
The BOP will respond in accordance with annunciator procedure LOR-1PM13J-B401, "CR CAM PANEL TROUBLE". Computer point R1388, "CR HVAC Intake A/B Instr Failure" will show CR HVAC Intake A has an Instrument Failure. The SRO will enter TS 3.3.7.1, Condition A and direct the performance of LOA-AR-101, "Unit 1 Area Radiation Monitoring System Abnormal."
6. Downscale failure of the MDRFP Flow Instrument 1C34-R612 (I)  
Operators will receive 1H13-P603-A511, RWLCS TROUBLE when the MDRFP Flow Instrument 1C34-R612 fails downscale. The crew will check the 1DS001 and note alarm message, "Dev Header/Pump Flow". Per the annunciator response procedure the crew will enter LOP-FW-16 and address the alarming condition by taking manual control of the MDRFP Minimum Flow Valve IHK-FW340 and return it to its correct throttled position.
7. High Vibration on the T/G Resulting in a Manual Turbine Trip (C)  
High vibration on multiple bearings (1-10) and when checked one or more will read 11

mils. The crew will refer to procedure LOA-TG-101, Attachment A and determine that if less than 12 mils but greater than 10 mils then they have 15 minutes to trip the T/G. The crew will manually trip the T/G. When the T/G is manually tripped all equipment will operate as required except that one output OCB will fail to trip. The OCB will open when the operator manually operates the switch.

8. Main Steam Line Failure (M)

A Large steam leak from the 'A' Main Steam line will develop in the Main Steam Tunnel. This initiates a significant fuel failure. Operators will enter LOA-MS-101 and step B.2.1 will find that the MST has increased greater than 60 degrees in the first 30 minutes and will commence a shutdown per LGP-2-1. Section B.1 will cause them to SCRAM – LGA-001 (CT). EOP – LGA-002. Reference annunciators 1H13-P601-E407, "DIV 2 MSL PIPE TUNNEL DIFF TEMP HI," 1H13-P601-E307, "DIV 2 MSL PIPE TUNNEL AMB TEMP HI," and 1H13-P601-F404, "LD MSL PIPE TUNNEL AMB TEMPERATURE HI."

9. MSIVs are closed but "A" loop MSIVs fail open (C)

A Group 1 MSIV Isolation will occur at 65 degrees delta T between MSTs. Both "A" loop MSIVs will fail open and will not close even by manual hand-switch.

10. VT Dampers fail open (M)

A release outside normal pathways will result and the dose onsite will be high as dampers 1VT79YA/B/C fail in the open position. Entry into LGA-009 will be required due to offsite release rates, and entry into LGA-004 to perform an RPV Blowdown will be required prior to exceeding the General Emergency threshold for offsite release (CT) with an unisolable release outside of both primary and secondary containment occurring.

Scenario Termination: The reactor is depressurized and RPV level controlled in the normal shutdown RPV Level band.

**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.

**EVENT TYPES:**

ATC: 1 R, 2 I, 2 M

BOP: 1 N, 2 C, 2 M

US: 3 C, 2 I, 1 N, 2 TS, 2 M

Critical Tasks: 2

**ES-301-4 Quantitative attributes:**

Total Malfunctions (5-8): 9  
Malfunction(s) after EOP (1-2): 3  
Abnormal Events (2-4): 4  
Major Transient(s) /E-Plan entry (1-2): 2  
EOPs (1-2): 3  
EOP Contingencies (0-2): 1  
Critical Tasks (2-3): 2

**ES-301-5 Quantitative attributes:**

BOP Normal: E1  
ATC Reactivity (1 per set): E2  
BOP I/C (4 / set): E3, 7  
ATC I/C (4 / set): E4, 6  
SRO-I I/C (4 / set inc 2 as ATC): E3, 4, 6, 7, 9  
SRO Tech Spec (2 per set): E3, 5  
ALL Major Transients (2 per set): E8, 10

Facility: LaSalle

Scenario No.: NRC Scenario 4

Op-Test No.: 2020-301

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
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Initial Conditions: Unit 1 at 100% RTP. No significant equipment is out of service. 'B' FC pump is running.

Turnover: Engineering has requested that the "A" WT pump be placed in service for vibration readings. On line risk is Green and the Grid is Green.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP)	Shift running Turbine Building Closed Cooling Water (TBCCW) from the 'B' Pump to the 'A' Pump
2		C (BOP)	1A RWCU Recirc Pump Auto Trip (Instantaneous overcurrent) and Startup of 1B RT Recirc Pump
3		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		C (BOP)	Loss of Bus 138
5		R (ATC)	Emergency Power Reduction due to a Loss of Feedwater Heating 16A Heater High Level Switch Failure
6		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		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		C (ATC)	Electrical ATWS, ARI Successful
9		C (BOP)	Low Pressure Core Spray Fails to Auto Actuate
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (T)echnical Specifications			

Facility: LaSalle County Station

Scenario No.: 4

## **PURPOSE**

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

## **SUMMARY OF EVENTS**

1. Shift the running WT (TBCCW) pump from the 'B' to the 'A' pump. (N)  
Engineering has requested that the running pump be shifted from the 'B' pump to the 'A' pump so that they can take additional running vibration data. Reference LOP-WT-02, Section E.2.
2. 1A RT Pump Auto Trip and Startup of 1B RT Recirc Pump. (C)  
The 1A RT will auto trip and bring in annunciator 1H13-P602-A106. When the operator checks locally the instantaneous overcurrent relay flag will show. If necessary, include a Shift Manager cue for the crew to restore RT on the standby pump. The ATC will start the 1B RT pump in accordance with LOA-RT-101.
3. HPCS Inadvertent Initiation and Entry into TS 3.5.1, Condition B. (I) (T)  
Per LOR 1H13-P601-A205, the BOP recognizes that HPCS has no valid initiation signal and must be shutdown to prevent injection to the RPV. Manually isolates the pump and takes the pump to PULL-TO-LOCK. Secures the DG after the required cool-down period. SRO enters TS 3.5.1, Condition B for inoperable HPCS and TS 3.3.5.1 for an inoperable HPCS initiation logic channel.
4. Loss of Bus 138. (C)  
The supply breaker to Bus 138 trips resulting in a de-energization of the bus. A call from the field, will report that a contractor working in the area of 142X accidentally bumped the breaker. The BOP will re-energize Bus 138 when no damage is identified, and coordinate with Equipment Operators in the field to restore affected loads.
5. Emergency Power Reduction for loss of Feedwater Heating. (R)  
The crew will enter LOA-HD-101 when the 16A heater isolates and will reduce reactor power as necessary without entering Region 2. Reduce RR flow, insert control rods from the back of the sequence and reduce core flow at least 5 Mlbm/hr for every 10°F that Feedwater drops below nominal on the curve.
6. Motor Cooler Leak on 1A RR will Result in Manually Tripping the RR Pump. (C) (T)  
The 1A RR pump will develop a motor cooler leak resulting in annunciator 1H13-P602-A304 alarming. When both the Low Flow and Cooler Leaking annunciator R-points are received the crew is required to trip the 1A RR pump immediately. The SRO is expected to direct actions per LOA-RR-101 and make a Technical Specification determination that TS 3.4.1, Condition C is applicable.
7. Unisolable Feedwater Rupture Inside Primary Containment. (M)  
Following the manual trip of the 1A RR the feedwater system will develop a large rupture inside the drywell and suppression pool to drywell bypass pathway. The crew will attempt to isolate feedwater. The crew may determine that HPCS is available and take it

out of PULL-TO-LOCK. The rise in containment pressure requires the crew to initiate both suppression pool and drywell spray in order to prevent the containment from exceeding PCPL **(CT)**.

8. Electrical ATWS with Successful Alternate Rod Insertion. (C)

With numerous Automatic Scram signals present, RPS 'B' Scram Solenoids will remain energized resulting in an electrical ATWS. The crew will be required to insert control rods prior to Suppression Pool Temperature exceeding 110°F **(CT)**. ATWS-ARI automatic signal on low level fails requiring crew to manually initiate ARI.

9. Low Pressure Core Spray Fails Automatically Actuate. (C)

LPCS will not start on High DW and LO-LO-LO Level start signals but will start when the hand-switch is taken to start.

Scenario Termination: RPV Level in the normal shutdown band and Primary Containment Conditions being controlled within the parameters of the LGA-003 curves.

**CRITICAL TASKS**

1. In LGA-003, Primary Containment Control, with suppression chamber pressure above 12 psig, containment flood level below 723 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°F.

**EVENT TYPES:**

ATC: 1 R; 2 C; 1 M

BOP: 1 N; 1 I; 3 C; 1 M

US: 2 TS; 1 N; 5 C; 1 I; 1 M

Critical Tasks: 2

**ES-301-4 Quantitative attributes:**

Total Malfunctions (5-8): 8  
Malfunction(s) after EOP (1-2): 2  
Abnormal Events (2-4): 4  
Major Transient(s) /E-Plan entry (1-2): 1  
EOPs (1-2): 2  
EOP Contingencies (0-2): 1  
Critical Tasks (2-3): 2

**ES-301-5 Quantitative attributes:**

BOP Normal: E1  
ATC Reactivity (1 per set): E5  
BOP I/C (4 / set): E2, 3, 4, 9  
ATC I/C (4 / set): E6, 8  
SRO-I I/C (4 / set inc 2 as ATC): E2, 3, 4, 6, 8, 9  
SRO Tech Spec (2 per set): E3, 6  
ALL Major Transients (2 per set): E7