Draft Submittal

OCONEE JUNE 2005 EXAM
50-269, 270, & 287/2005-301

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1. Operating Test Simulator Scenarios

Facility: **Oconee** Scenario No.: **1 fnl** Op-Test No.: **1**

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions:
- 100% Reactor Power (Snap 203)

Turnover:
- SASS in MANUAL for I&E troubleshooting
- AMSAC/DSS bypassed
- After turnover, the crew should place 1A Main FDW Pump on Handjack

Event No.	Malf. No.	Event Type*	Event Description
0a	Pre-Insert		SASS in manual
0b	Pre-Insert		AMSAC/DSS bypassed
1		N, BOP, SRO	Place 1A Main FDW Pump on Handjack
2	MPI150	I, BOP, SRO	PZR "A" RTD Fails LOW (TS)
3	MPS450 (33-72%)	C, BOP, SRO	1B1 RCP High Vibration (ramp over 15 minutes)
4	MCS004	I, OATC, SRO	Controlling Tave fails HIGH
5	MPS020, 2	C, ALL	1B SG tube leak 8 gpm (TS)
6		R, OATC, SRO	Manual unit shutdown due to SG tube leak
7a	MSS010 MSS020 Override	C, OATC, SRO	Both Main FDW pumps trip ATWS
7b	Override		1FDW-316 fails closed
8	MPS020, 50	M, ALL	1B SG tube leak increases to 200 gpm
9	MSS285		1B TBVs Fail OPEN

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

Op-Test No.: _____	Scenario No.: 1	Event No.: 1	Page 1 of 1
Event Description:	**Place 1A Main FDW Pump on Handjack: (N, BOP, SRO)**		

Time	Position	Applicant's Actions or Behavior
	BOP	**Crew response:** Use Enclosure 4.10 (Placing 1A FDWPT On Handjack) of OP/1106/002 B • Ensure 1A MAIN FDW PUMP (ICS) in "HAND". • Run 1A FDWPT Motor Speed Changer down to control 1A FDWPT. • Turn FPT 1A HANDJACK switch to "ON". • 1A FDWPT speed now controlled with 1A FDWPT Motor Speed Changer. • Record on Turnover Sheet control of 1A FDWPT on Motor Speed Changer. • Place "T/O SHEET" CR tag on 1A MAIN FDW PUMP (ICS) station.
		When 1A Main FDW Pump has been placed on Handjack this event is completed.

Event Description: **PZR "A" RTD Fails LOW: (I, BOP, SRO) (TS)**

Time	Position	Applicant's Actions or Behavior
		Plant response: Statalarms: • 1SA-2/C-3, RC Pressurizer Level Hi/Low • OAC, RC PZR level 1&3 mismatch • OAC, RC PZR level 2&3 mismatch Board indications: • PZR level 1 and 2 indicates ≈ 133 inches • PZR level 3 indicates ≈ 220 inches and slowly increasing **Crew response:** Refer to the ARG:
	BOP	• Check alternate PZR level indications. • Check for proper Makeup/Letdown flows and adjust to restore proper level. o RO may take 1HP-120 to manual to control PZR level.
	SRO	• Refer to Technical Specification 3.4.9, Pressurizer. • Refer to Technical Specification 3.3.8, PAM Instrumentation. o Condition H applies
	BOP	• Refer to PT/1/A/0600/001 (Periodic Instrument Surveillance). o Select PZR level 3 for level control. • Call SPOC to repair PZR "A" RTD
		This event is complete when PZR level 3 has been selected and 1HP-120 returned to AUTO or when directed by the lead examiner.

Event Description: **1B1 RCP High Vibration (ramp over 15 minutes): (C, BOP, SRO)**

Time	Position	Applicant's Actions or Behavior
	BOP SRO/BOP	**Plant response:** Statalarm 1SA-9/D-2 (RC PUMP VIBRATION HIGH) will alarm. **Crew response:** 1. The BOP should refer to the ARG 2. Verify RCP vibration conditions by using RCP OAC Display Group RCP 3. Refer to AP/16, Abnormal Reactor Coolant Pump Operation. • Determine RCP immediate trip criteria are not met by referring to Enclosure 5.1 (RCP Immediate Trip Criteria). • Notify the OSM to request an evaluation of the RCP vibration condition by the RCP Component Engineer. • GO TO Section 4B, Abnormal Vibrations • Verify RCP vibration indication is available for monitoring in Control Room. • Monitor RCS flow for indications of degradation. • Monitor RCP parameters for operational abnormalities: • Motor bearing temperatures • Seal return temperature • Seal return flow • Computer points O1A0061, O1A0062, O1A0063, O1A0781 (RCP MTR INPUT POWER) • Loose Parts Monitor ***Cue: If asked, indicate that there are no alarms on the Loose Parts Monitor.*** • Determine high vibration exists and vibration continues to increase. • Secure the 1B1 RCP as follows: • Verify four RCPs operating. • Verify Rx power is **NOT** ≤ 70% as indicated on all NIs. • Direct an RO to initiate Encl. 5,2 (Rapid Power Reduction)

Event Description: **1B1 RCP High Vibration (ramp over 15 minutes): (C, BOP, SRO)**

Time	Position	Applicant's Actions or Behavior
	BOP	4. Encl. 5,2 (Rapid Power Reduction) will direct the BOP to: • Verify ICS in AUTO. • Initiate MAXIMUM RUNBACK to ≤ 70% as indicated by all NIs. • **WHEN** Rx Power ≤ 80%, **THEN** stop the 1E1 and 1E2 HTR DRN PUMPs. • **WHEN** Rx Power is ≤ 70% as indicated by all NIs, **THEN** press MAXIMUM RUNBACK to stop runback. • Notify CR SRO that Rx Power is ≤ 70%. • Adjust CTPD SET to match CTP DEMAND.
	SRO	5. Direct the BOP to stop the 1B1 RCP. 6. Verify ICS re-ratios feedwater to establish ≈ 0° ΔTc. 7. Initiate Encl 4.3 (Special Instructions for < 4 RCP Operation) of OP/1/A/1102/004 (Operation at Power).
		When the 1B1 RCP has been secured or when directed by the lead examiner this event is completed.

Op-Test No.: _____ Scenario No.: 1 Event No.: 4 Page 1 of 1

Event Description: **Controlling Tave fails HIGH: (I, OATC, SRO)**

Time	Position	Applicant's Actions or Behavior

	OATC
	
	SRO
		Plant response:
		• 1SA-02/A-12, ICS Tracking, will actuate due to neutron and feedwater cross-limits.
		• Controlling Tave will indicate ≈ 596.4° F.
		• Actual loop A & B Tave will decrease until operator stops transient.
		• RCS pressure and temperature will decrease.
		Crew response:
		• When the ICS TRACKING alarm is received, the candidates should utilize the "Plant Transient Response" process to stabilize the plant and recognize that the controlling Tave has failed. RX will trip on variable low pressure with no operator action.
		• Verbalize to the SRO reactor power level and direction of movement.
		• Place the FDW Masters and Diamond in manual and stabilize the plant. Use control rods and FDW to stabilize the plant
		• The SRO should:
		  • Refer to AP/28, ICS Instrument Failures
		  o Transfer to Section 4A, Controlling Tave
		  • Contact SPOC to repair controlling Tave.
		Note: The ICS will remain in manual for the remainder of the scenario.

		When the SRO reaches the WHEN step in Section 4A or when directed by the lead examiner this event is completed.

Op-Test No.: _____	Scenario No.: 1	Event No.: 5	Page 1 of 1
Event Description:	**1B SG tube leak 8 gpm: (C, ALL) (TS)**		

Time	Position	Applicant's Actions or Behavior
	ALL SRO	**Plant response:** Statalarms: • 1SA-8/A-9, RM AREA MONITOR RADIATION HIGH • 1SA-8/B-9, RM PROCESS MONITOR RADIATION HIGH • 1SA-8/D-10, RM CSAE EXHAUST RADIATION HIGH • 1SA-8/E10, N16 RM PRI TO SEC TUBE LEAK Control board indications: 1. PZR level will decrease. 2. RIA CRT – 1RIA-60 ≈ 3.5 gpm increasing **Crew response:** 1. Diagnose and take actions for a tube leak in the 1B SG: 2. Refer to the ARG for the following above alarms: 3. Refer to AP/31 (Primary to Secondary Leakage) • Monitor primary parameters; PZR Level and LDST level or RIAs to determine that gross leakage exist and transfer to step 4.80. • Greater than 25 gpm will require entering the EOP. • Make notifications of primary to secondary leakage per OMP 1-14 (Notifications). • Log RIA readings (a rough log is adequate) • Initiate a Unit shutdown to met requirements of Encl. 5.1 (Unit Shutdown Requirements). (Per Enclosure 5.1 reduce power < 50% in 1 hour and TS 3.4.13 applies). ➢ Initiate a unit shutdown using OP/1/A/1102/004 (Operation At Power)
		Event is complete when a unit shutdown is directed by the SRO or when directed by the Lead Examiner.

Event Description: **Manual unit shutdown due to SG tube leak: (R, OATC, SRO)**

Time	Position	Applicant's Actions or Behavior
	SRO	**Crew response:** 1. Direct unit shutdown per OP/1/A/1102/004 (Operation At Power) Encl. 4.2, Power Reduction.
	OATC	2. OP/1/A/1102/004 (Operation At Power) Encl. 4.2, Power Reduction • Review Limits and Precautions • Notify OSM to contact NRC if required. • Refer to OP/1106/001 (Turbine Generator) to ensure operating limits are NOT exceeded during shutdown. • **IF** reducing CTP > 6%, notify Secondary Chemistry of power reduction.
		NOTE: Absence of a Maneuvering Plan should **NOT** delay an unplanned CTP reduction.
		• **IF** available, refer to Maneuvering Plan to view guidelines for power decrease. • 2.4.1 **IF** CTP will be changed ≥ 15% within a 1 hour period, notify Primary Chemistry to perform TS SR 3.4.11.2 as required. • Notify System Operations Center (SOC) or lead reduction. • **IF** required, advise plant personnel of load reduction. • Notify WCC SRO to review Hot List for items to be worked during power reduction or Unit shutdown. • Start the 1A and 1B FDWP SEAL INJECTION PUMPs • Reduce reactor power in manual by inserting control rods with the Diamond, controlling FDW flow with the FDW Masters.
		Event is complete when reactor power has been reduced 5% or when directed by the Lead Examiner.

Op-Test No.: _____	Scenario No.: **1**	Event No.: 7	Page 1 of 2
Event Description:	**Both Main FDW pumps trip** **ATWS: (C, OATC)**		

Time	Position	Applicant's Actions or Behavior
	OATC	Recognize that the Reactor should have tripped and begin performing Immediate Manual Actions. • Depress REACTOR TRIP pushbutton • Verify reactor power < 5% FP and decreasing The OATC should recognize that Power Range NIs are not < 5% FP and perform Rule 1. (**CT-24**) • Verify that at least one Power Range NI is ≥5% FP. • Initiate manual control rod insertion to the IN LIMIT. • Open 1HP-24 & 1HP-25 (1A and 1B BWST Suction) • Ensure 1A or 1B HPIP is operating. • Start 1C HPIP. • Open 1HP-26 & 1HP-27 (1A and 1B HP Injection) • Dispatch operators to the Cable Room and to the 600V Load Centers 1X9 and 2X1 to de-energize the CRD System. • Notify the SRO to **GO TO** UNPP tab.
	BOP	The BOP: • Performs a Symptoms Check and then may perform Rule 3 based on loss of Main FDW. • Takes manual control and throttles 1FDW-315 and 1FDW-316 to reduce EFDW header flow < 1000 gpm/header per Rule 7.
	SRO	Transfer to the UNPP tab from IMAs and direct the following actions: • Announce plant conditions • Ensure Rule 1 is in progress or complete. • Verify Main FDW available. • **IAAT** <u>all</u> power range NIs are <5% FP, **THEN** trip the turbine-generator. • Verify <u>any</u> wide range NIs ≥1% FP. • Open 1RC-4 and 1HP-5 • Maximize letdown.

Event Description: **Both Main FDW pumps trip**
ATWS: (C, OATC)

Time	Position	Applicant's Actions or Behavior
	SRO	• Verify overcooling **NOT** in progress. • Secure makeup to the LDST. **Note: The CRD breakers will be opened in four minutes.** • **WHEN** <u>all</u> Nis are <1% FP, **AND** decreasing, **THEN** continue in this tab. • Adjust SG pressure as necessary to stabilize RCS temperature using TBVs. • Throttle HPI per Rule 6 (HPI). • Adjust letdown flow as desired. • Verify RCP seal injection available. • **GO TO** Subsequent Actions tab.
		This event is complete when the SRO transfers to Subsequent Actions tab or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: 1	Event No.: 7a	Page 1 of 1
Event Description:	**1FDW-316 fails CLOSED**		

Time	Position	Applicant's Actions or Behavior
		Note: After transfer is made to Subsequent Action, 1FDW-316 will fail closed. • RO should diagnose the failure of 1FDW-316 and re-perform Rule 3. Rule 3 will direct the RO to Enclosure 5.27 which will align flow through the startup control valve.
		This event is complete when the SRO transfers to Subsequent Actions tab or when directed by the lead examiner.

Event Description: **1B SG Tube Leak increases to 200 gpm: (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	SRO	**Plant response:** 1. Control board indications: • PZR level will decrease due to the leak. **Crew response:** 1. The SRO should transfer to the SGTR tab of the EOP based on a Parallel Action page. 2. SGTR tab will: • Verify Rx tripped. • Maintain Pzr level 140" - 180" by initiating Encl 5.5 (Pzr and LDST Level Control). • Start the A/B and 3A/3B Outside Air Booster Fans. (**CT-27**) • Monitor RIAs 16 and 17 to SGs with a tube rupture. • Dispatch an operator to open the A and B TURB BLDG SUMP PUMP BKRs. • Notify RP to survey both MS lines for radiation. • Secure any unnecessary offsite release paths. (Main Vacuum Pumps, TDEFDWP, Emergency Steam Air Ejector, etc.). • Open 1HP-24 and 1HP-25 **NOTE** If normal pzr spray is available, efforts should be made to minimize core SCM ≤ 15°F. Otherwise, minimize core SCM as low as safely achievable. • Minimize core SCM using the following methods: (**CT-07**) ➢ De-energize all Pzr heaters ➢ Use Pzr spray ➢ Maintain Pzr level 140" - 180

Op-Test No.: _____	Scenario No.: 1	Event No.: 8	Page 2 of 2
Event Description:	**1B SG Tube Leak increases to 200 gpm: (M, ALL)**		

Time	Position	Applicant's Actions or Behavior
		• Maintain RCP NPSH by using the OAC and/or Encl 5.18 (P/T Curve. • Verify 1MS-24 or 1MS-33 open. • Verify any SG available and unaffected. • Open 1MS-24 • Close 1MS-33 • Open 1AS-40 while closing 1MS-47. • Close 1MS-76, 1MS-84, and 1MS-36 • Close 1SSH-1, 1SSH-3, and 1SSH-9. • Select OFF for both digital channels on AFIS HEADER A and B. • Initiate a cooldown as follows: • Decrease SG pressure to 835 - 845 psig using any of the following: o TBV setpoint adjustment o TBVs in manual o ADVs • Maximize cooldown rate limited only by the ability to maintain Pzr level > 100". • **WHEN** SG pressure is 835 - 845 psig, **THEN** adjust SG pressure as necessary to maintain an RCS temperature band of 525°F - 532°F.
		This event is complete when a cooldown has been initiated or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: **1**	Event No.: 9	Page 1 of 1
Event Description:	**1B TBVs Fail open: (M, ALL)**		

Time	Position	Applicant's Actions or Behavior
	ALL	**Plant response:** • 1B main steam line pressure will decrease. **Crew response:** 1. Crew should determine that an Excessive Heat Transfer event is in progress. 2. An RO should perform Rule 5 (Main Steam Line Break). (**CT-17**) 3. The SRO should transfer to EHT tab of the EOP based on the Parallel Actions page. 4. EHT tab will: • If any SG pressure < 550 psig, Ensure Rule 5 (Main Steam Line Break) in progress or complete. • Place 1FDW-41 and 1FDW-44 in HAND and decrease demand to zero. • Close 1FDW-382, 1MS-26, 1MS-76, 1MS-36, 1MS-84, and 1FDW-369. • **IAAT** core SCM is > 0°F, **THEN** Throttle HPI to stabilize RCS pressure and maintain Pzr level > 100". • Verify letdown in service. • Feed and steam all intact SGs to stabilize RCS P/T using either of the following: (**CT-11**) o TBVs o Dispatch two operators to perform Encl 5.24 (Operation of the ADVs).
		This event and the scenario is complete when the "B" SG has been isolated and the plant stabilized or when directed by the Lead Examiner.

CRITICAL TASKS

1. CT-24, Shutdown Reactor - ATWS
2. CT-07, Minimize SCM
3. CT-17, Isolate Overcooling SG
4. CT-11, Control SG pressure to Maintain RC Temperature Constant.
5. CT-27, Implementation of Control Room Habitability Guidance

Facility: **Oconee** Scenario No.: **2 fnl** Op-Test No.: 1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions:
- 45% Reactor Power (Snap 201)

Turnover:
- Startup in progress after adding oil to 1B1 RCP
- SASS in MANUAL for I&E troubleshooting
- 1A Main FDW pump operating
- After turnover, the crew should start 1B1 RCP

Event No.	Malf. No.	Event Type*	Event Description
0a	Pre-Insert		SASS in manual
0b	Pre-Insert MPI290 Override		Block All Turbine Trips Except Manual Turbine trip pushbutton Blocked
0c	Pre-Insert MPS350		"A" RBCU fails to receive ES signal
0d	Pre-Insert Override		1B1 RCP fails to trip
0e			1C HPI pump fails to start on ES
1		N, BOP, SRO	Start 1B1 RCP
2	Override Z3424D1	C, BOP, SRO	AC Oil Lift pump will not develop adequate discharge pressure
3	MPI281	I, OATC, SRO	Δ Tc controller failure
4	MPS120	TS, ALL	1A HPI pump breaker failure (TS)
5		R, OATC, SRO	UST leak requiring a manual shutdown (TS)
6	Override	C, OATC, SRO	PORV Fails OPEN
7	Override	C, OATC, SRO	Main Turbine Fails to trip (Lockout EHC Pumps)
8 8a 8b	MPS400, 4 Override MPS350	M, ALL	RCS leak to SBLOCA (ramp over 5 minutes) - 1B1 RCP fails to trip - "A" RBCU fails to receive ES signal
9	MPS400, 100		LBLOCA

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

Op-Test No.: _____ Scenario No.: **2** Event No.: 1 Page 1 of 1

Event Description: **Start 1B1 RCP: (N, BOP, SRO)**

Time	Position	Applicant's Actions or Behavior
	BOP	**Crew response:** The BOP should use the in progress procedure OP/1/A/1103/006 (RCP Operation) Enclosure 4.1 (RCP Start) to start the 1B1 RCP. • Open 1LPSW-9&10 (1B1 RC PUMP MTR CLR IN & OUT) and verify both valves open by using the OAC indications. • Review Limit and Precautions
		Note: • No more than two RCP(s) may be operated when RCS is < 250 °F. • Either AC or DC Oil Lift Pump may be used • AC Oil Lift Pump may take > 2 minutes to develop adequate discharge pressure • AC and DC Oil Lift Pumps will automatically trip after 3 minutes • Oil Lift Pump may **NOT** start unless switch has been placed to "OFF" after last start
		• Announce "Starting 1B1 RCP" via plant page. • Start AC Oil Lift Pump on 1B1 RCP.
		When the 1B1 RCP AC Oil Lift Pump has been started or when directed by the Lead Examiner this event is completed.

Op-Test No.: _____	Scenario No.: **2**	Event No.: 2	Page 1 of 1
Event Description:	**1B1 RCP AC Oil Lift pump will not develop adequate discharge pressure: (C, BOP, SRO)**		

Time	Position	Applicant's Actions or Behavior
	BOP	**Note: The AC Oil Lift Pump will not develop adequate discharge press to clear the Low Press indication prior to tripping off. The operator will have to determine that the AC Oil Lift Pumped tripped and start the DC Oil Lift Pump.** • **IF** AC Oil Lift Pump automatically trips after 3 minutes, start DC Oil Lift Pump. • Monitor the status of DC Oil Lift Pump low discharge pressure on the OAC and when it clears, start 1B1 RCP. • After RCP is at full speed, ensure Oil Lift Pump stopped. • Position any Oil Lift Pump switch(s) that were operated to "OFF". • Use the OAC to monitor RCP parameters for proper operation.
		This event is complete when the 1B1 RCP is started or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: 2	Event No.: 3	Page 1 of 1
Event Description:	**ΔTc Fails HI: (I, OATC, SRO)**		

Time	Position	Applicant's Actions or Behavior
		Plant response: When the $1B_1$ RCP is started ΔT_c fails HIGH • Statalarm 1SA-02/B-5 (RC Cold Leg Diff. Temperature High) will actuate. • FDW flow will ratio based on the failure • "A" FDW flow will increase causing "A" loop Tc to decrease. • "B" FDW flow will decrease causing "B" loop Tc to increase. • This will cause actual ΔT_c to increase **Crew response:**
	OATC	• The candidates should utilize the "Plant Transient Response" to stabilize the plant and recognize that ΔT_c has failed by observing the ΔT_c meter on 1UB1. It should return to zero but is staying a + 3.3 degrees. • Take the Diamond and Feedwater Masters to MANUAL and re-ratio feedwater using the loop Tc meters to return actual ΔT_c to near zero.
	SRO	• Refer to AP/28, ICS Instrument Failures o Section 4F, Delta Tc • SPOC should be contacted to repair Delta Tc. **Note: The ICS will remain in manual for the remainder of the scenario.**
		When the OATC has re-ratioed FDW and returned Tc to near zero or when directed by the lead examiner this event is completed.

Op-Test No.: _____	Scenario No.: **2**	Event No.: 4	Page 1 of 1
Event Description:	**1A HPI pump breaker failure: (TS, SRO)**		

Time	Position	Applicant's Actions or Behavior
		Plant response: Statalarms: 1. 1SA-2/B-2, HP RCP SEAL INLET HEADER FLOW HIGH/LOW 2. 1SA-2/C-2, INJECTION PUMP DISCH HEADER PRESSURE LOW **Crew response:**
	BOP	1. Refer to the ARGs • Check pump amps to verify the STBY HPI pump started.
	SRO	2. Refer to TS 3.5.2 (HPI) • Determine TS 3.5.2 Conditions "A" met. 72 hour completion time. 3. Inform team of TS requirements.
		Event is complete when TS has been referenced or when directed by the Lead Examiner.

Op-Test No.: _____	Scenario No.: **2**	Event No.: 5	Page 1 of 2
Event Description:	**Upper Surge Tank leak requiring a MANUAL unit shutdown: (R, OATC, SRO)**		

Time	Position	Applicant's Actions or Behavior
		Plant response: • 1SA-06/A-11, UPPER SURGE TANK LEVEL LOW **Crew response:**
	BOP	1. Refer to ARG • Open DW-4 (#1 UST Makeup Control) • Check hotwell level to determine if hotwell level control valves have malfunctioned • Check CST lineup to verify CST pumps lined up to UST. • Check system for leaks if it appears that water is being lost.
		Note: An NLO will notify the CR that water is leaking out of the UST and cannot be isolated.
	SRO	2. The SRO should determine that TS 3.7.6 (UST and HW) is not met. • Required action is to be in MODE 3 in 12 hours. • SRO should determine a unit shutdown is required.
		Note: After the SRO makes the decision to shut down, the Unit Coordinator will inform the crew that management has determined that a unit shutdown using AP/29 (Rapid Unit Shutdown) is required. Initially only the Main Turbine should be taken off line.
		3. Direct unit shutdown per AP/29 (Rapid Unit Shutdown)
	BOP	4. Initiate Encl 5.1 (Support Actions During Rapid Unit Shutdown). • Verify Turbine-Generator shutdown is required. • Transfer 6.9 KV electrical auxiliaries by place 1TA/1TB transfer switches to MAN, Closing 1TA/1TB SU 6.9 KV FDR and verifying 1TA/1TB NORMAL 6.9 KV FDR opens. • Transfer 4 KV electrical auxiliaries by place MFB1/MFB2 transfer switches to MAN, Closing E1/E2, Startup FDR and verifying N1/N2 Normal FDR opens. • Notify CR SRO that unit auxiliaries have been transferred.

Event Description: **Upper Surge Tank leak requiring a MANUAL unit shutdown: (R, OATC, SRO)**

Time	Position	Applicant's Actions or Behavior
	OATC	5. Notify WCC SRO to initiate Encl 5.2 (WCC SRO Support During Rapid Unit Shutdown). 6. Announce AP entry using the PA system. 7. Verify ICS is NOT in AUTO and Initiate manual power reduction to desired power level. 8. Reduce reactor power in manual by inserting control rods with the Diamond, controlling FDW flow with the FDW Masters. **Note: Event six will occur during the manual shutdown.** 9. Verify Rx shutdown is NOT required. 10. Maintain Pzr level between 220" - 250". 11. **WHEN** NI power is ≈15%, **THEN** deselect MAXIMUM RUNBACK. **(cannot perform, ICS in manual)** 12. Verify Turbine-Generator shutdown is required. 13. Start the TURBINE TURNING GEAR OIL PUMP. 14. Start 1A through 1E TURBINE BRNG OIL LIFT PUMPS. 15. Start the TURBINE MOTOR SUCTION PUMP. 16. Depress turbine TRIP pushbutton.
		Event is completed when the turbine trip pushbutton has been depressed or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: **2**	Event No.: 6	Page 1 of 1
Event Description:	**1RC-66 (PORV) Fails OPEN: (C, OATC, SRO)**		

Time	Position	Applicant's Actions or Behavior
		Plant response: Statalarms: • 1SA-18/A-1, PRESSURIZER RELIEF VALVE FLOW **Control Board Indications:** • PZR Relief Flow Detector lights lit • RCS pressure decreasing **Crew response:**
	BOP	• Refer to ARG
	SRO	• Direct the OATC to isolate the PORV by closing 1RC-4
	OATC	• Close 1RC-4 (PORV BLOCK VALVE) **Note: Crew should continue with Event 5 and take the turbine off line.**
		Event is completed when the turbine trip pushbutton has been depressed or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: 2	Event No.: 7	Page 1 of 1
Event Description:	**Main Turbine Fails to trip (Lockout EHC Pumps) (C, OATC, SRO)**		

Time	Position	Applicant's Actions or Behavior
	OATC	**Plant response:** • When the turbine trip pushbutton is depressed the Main Turbine should trip but does not. **Crew response:** • Verify all turbine stop valves closed (**CT-18**) **Note: The OATC should diagnose that the turbine did not trip and then perform the RNO step which will stop and lock out both EHC pumps. This will cause the turbine to trip.**
		Event is complete when EHC pumps have been tripped or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: **2**	Event No.: 8	Page 1 of 4
Event Description:	**RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**		

Time	Position	Applicant's Actions or Behavior
		Plant response: 1. Statalarms: • 1SA-9/A-6, RB Reactor Bldg Norm Sump Level High/Low • 1SA-8/B-9, Process Radiation Monitor High 2. Control board indications: • RBNS level increases • PZR level will decrease due to the leak **Crew response:**
	BOP	1. Refer to ARG for 1SA-9/A-6, RB Reactor Bldg Norm Sump Level High/Low
	SRO	2. Refer to AP/2, Excessive RCS Leakage • **IAAT** RC makeup flow is > 100 gpm, **AND** Pzr level is decreasing, Close 1HP-5 (Letdown Isolation) • **IAAT** RCS leakage > NORMAL MAKEUP CAPABILITY with letdown isolated, **AND** Pzr level decreasing, **THEN** trip Rx. • Initiate makeup to LDST using BHUTs as required. 3. **IAAT** LDST level is ≤ 40", ensure open 1HP-24 and 1HP-25 (1A/1B BWST Suction) 4. Place 1HP-14 in NORMAL. 5. Announce AP entry using the PA system. 6. Initiate Encl. 5.1 (Leak Rate Determination) 7. Ensure OSM, STA, RP are notified **Note: If 1C HPI pumps is used to increase HPI flow it will not start.** **Note: The RCS leak rate will increase requiring a manual reactor trip.** **Note: The RCS will eventually saturate with all HPI injecting.**

Event Description: **RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**

Time	Position	Applicant's Actions or Behavior
		Plant response: • RCS subcooling margin will = 0°F. **Crew response:**
	SRO	1. SRO should direct the OATC to perform a symptoms check.
	BOP	2. The BOP should inform the SRO that the RCS has saturated and obtain SRO concurrence to perform Rule #2, Loss of SCM. • Verify that reactor power is < 1%. • Trip RCPs within 2 min of LOSCM (**CT-1**) ▪ 1B1 RCP will not trip by the switch. The RNO will de-energize the 6900 volt switchgear to trip the pump. • Notify SRO of RCP status. • Open 1HP-24 and 1HP-25. • Start all available HPI pumps (**Only the 1B will operate**) • Open 1HP-26 and 1HP-27. • Verify a least two HPI pumps operating using two diverse indications. (**Only one HPI pump is operating**) • Maximize HPI flow ≤ 475 gpm (including seal injection for "A" hdr only) • Dispatch two operators to perform Encl. 5.24 (Operation of the ADVs) • Disable both channels of AFIS. • Notify SRO to Suspend Rule 3 (Loss of Main or Emergency FDW) until directed by LOSCM tab.

Op-Test No.: _____	Scenario No.: 2	Event No.: 8	Page 3 of 4
Event Description:	**RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**		

Time	Position	Applicant's Actions or Behavior
	ALL	3. ES Channels 1 through 6 will actuate. 4. An operator should inform the SRO that ES has actuated. 5. The SRO should initiate EOP Encl. 5.1, ES Actuation per the parallel actions page of Subsequent Actions section or of the LOSCM Tab. 6. When running Encl. 5.1, the operator will: • Determine all ES channels should have actuated based on RCS pressure and RB pressure. • Verify all ES digital channels associated with actuation setpoints have actuated. • Place HPI in Manual. • Verify Rule 2 in progress or complete. • Place LPI pumps in manual control. • At SRO direction secure LPI pumps. • Ensure A and B and 3A and 3B Outside Air Booster Fans are operating. (**CT-27**) • Secure makeup to the LDST. • Place 1LPSW-251 and 1LPSW-252 FAIL SWITCH in the FAIL OPEN position. • Open 1LPSW-4 and 1LPSW-5. • Dispatch an operator to perform Encl. 5.2 (Placing RB Hydrogen Analyzers In Service) • Dispatch an operator to establish ≈ 1000 cfm flow in each PRVS filter train. • Verify all ES channels 5 & 6 components are in the ES positions. **Note: "A" RBCU will not receive an ES signal and will remain in HIGH speed. The operator should diagnose this and inform the SRO who should direct the RO to place the "A" RBCU in LOW speed.** • Notify SRO to evaluate components NOT in ES position. • The operator must get SRO approval to exit this enclosure.

Op-Test No.: _____	Scenario No.: **2**	Event No.: 8	Page 4 of 4
Event Description:	**RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**		

Time	Position	Applicant's Actions or Behavior
		7. The SRO should **GO TO** the LOSCM Tab per the Parallel Actions page of the EOP Subsequent Actions section. LOSCM Tab will: • Ensure that Rule #2 is in progress or complete. • Verify that station ASW is **not** feeding any SG. • Verify that the LOSCM is **not** caused by excessive heat transfer. • **IAAT** either of the following exists: o LPI FLOW TRAIN A plus FLOW TRAIN B ≥ 3400 GPM o Only one LPI header in operation with header flow ≥ 2900 gpm **THEN GO TO LOCA CD** tab. (**will not meet at this time**) • Verify SSF activated per AP/25. (**it will not be**) • Verify all of the following exist: o NO RCPs operating o HPI Flow in both HPI headers (**do not meet**) o Adequate total HPI flow per Figure 1 (Total Required HPI Flow) • Start both MDEFDW pumps • Start TDEFDW pump • Establish 300 gpm to A and B SG • Initiate full depressurization of both SGs utilizing TBVs or ADVs. (**CT-11**) • Initiate feed to all available SGs to LOSCM setpoint at maximum allowable rate (per Table 3 (Emergency FDW Pump and Header Maximum Flow Limits) of Rule 7 (SG Feed Control)). (**CT-10**) • Trip both Main FDW Pumps • Ensure Rule 3 (Loss of Main or Emergency FDW) is in progress or complete. • Open 1AS-40 while closing 1MS-47.
		This event is complete when the full depressurization of the SGs is initiated or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: **2**	Event No.: 9	Page 1 of 1
Event Description:	**LBLOCA: (M, ALL)**		

Time	Position	Applicant's Actions or Behavior
	ALL	**Plant response:** • RCS pressure will decrease rapidly to RB pressure • LPI will begin injecting into the core. **Crew response:** 1. The SRO should determine that the IAAT step for LPI flow is now met and transfer to the LOCA CD tab. 2. The LOCA CD tab will: • **IAAT** BWST level ≤ 19 feet transfer ECCS suctions to the RBES. • Verify ES is actuated. • Ensure all RBCUs in low speed and open 1LPSW-18, 1LPSW-21, 1LPSW-24. • Initiate Encl. 5.35, Containment Isolation • Start all RB Aux fans • Dispatch an operator to close the breakers for 1CF-1/1CF-2 (1A/1B CFT OUTLET). • Close 1CF-1 and 1CF-2. • Initiate Encl. 5.36 (Equipment Alignment For Plant Shutdown)
		Event is complete when transfer is made to the LOCA CD tab or when directed by the Lead Examiner.

Critical Tasks

1. CT-18, Turbine Trip
2. CT-01, Trip All RCPs
3. CT-10, Establish FW Flow and Feed SGs
4. CT-11, Control SG Pressure to Maintain Appropriate Pri-Sec deltaT CD rate
5. CT-27, Implementation of Control Room Habitability Guidance

Facility: **Oconee** Scenario No.: **3 fnl** Op-Test No.: **1**

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions:
- 3% Reactor Power (Snap 202)

Turnover:
- Unit Startup in progress
- ICS in AUTO
- SASS in MANUAL for I&E testing
- Keowee Unit 1 OOS
- LCT energizing the STBY Bus
- 1B HPI pump in OFF
- H_2 needs to be added to the LDST after turnover

Event No.	Malfunction No.	Event Type*	Event Description
0a	Pre-Insert		SASS in Manual
0b	Pre-Insert		AMSAC/DSS bypassed
0c	Pre-Insert		Keowee Unit 1 Emergency Lockout
1		N, BOP, SRO	Pressurize LDST with H2
2		C, BOP, SRO	1H-1, LDST Supply, fails open (TS)
3	Override	C, BOP, SRO	"A" LPSW pump suction valve closes and Standby pump does not auto start (TS)
4	Override	C, OATC, SRO	1HP-31 fails open in AUTO
5	MNI031 MNI081	I, OATC, SRO	Controlling NI fails HIGH
6	MCR070	C, OATC, SRO	Drop Group 6 control rods
7	MPS400	M, ALL	Large Break LOCA Switchyard Isolation
8	MEL020 MEL170		Lee Combustion Turbine trip (blackout) CT-1 Lockout

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

Op-Test No.: _____ Scenario No.: **3** Event No.: **1** Page 1 of 1

Event Description: **Pressurize LDST with H2 (N, BOP, SRO)**

Time	Position	Applicant's Actions or Behavior
	SRO	**Crew response:** 1. Direct the BOP to add H2 to the LDST using OP/1/A/1106/017 (Hydrogen System) Enclosure 3.5 (Unit 1 LDST H2 Addition).
	BOP	2. Enclosure 3.5 (Unit 1 LDST H2 Addition) will: **NOTE:** • OP/0/A/1108/001 (Curves And General Information) and computer may be referred to for LDST Pressure vs. Level curve. • LDST Maximum Pressure vs Indicated Level Curve should **NOT** be exceeded when pressurizing LDST. • Immediately prior to pressurization determine lowest reading of diverse LDST level indications: _____ inches. • For existing LDST level determine LDST Pressure allowable per LDST Pressure vs. Level curve: _____ psig. • Notify Operator at H2 Cage to pressurize primary hydrogen. **NOTE:** Operator should be in constant communication with CR to close 1H-26 if 1H-1 fails open. • Direct Operator to open 1H-26 (LDST Block). • Cycle 1H-1 (LDST SUPPLY) as required to pressurize LDST per LDST Pressure vs Level curve. **Note: 1H-1 (LDST SUPPLY) will fail open.**
		Event is complete when 1H-1 is open or when directed by the lead examiner.

Op-Test No.: _____ Scenario No.: **3** Event No.: **2** Page 1 of 1

Event Description: **1H-1, LDST Supply, fails OPEN: (C, BOP, SRO) (TS)**

Time	Position	Applicant's Actions or Behavior
	BOP	**Plant response:** 1. LDST pressure will continue to increase. 2. 1SA-02/D-2, HP Approaching LDST Operating Limits, actuates **Crew response:** 1. BOP should determine that 1H-1 has failed open and direct the NLO to close 1H-26.
	SRO	2. Refer to the ARG. • Verify LDST pressure/level are within the acceptable operating region of the LDST PRESSURE vs. LEVEL enclosure in OP/0/A/1108/001 (Curves and General Information). • **IF** necessary, vent LDST to GWD per OP/1/A/1104/002 (HPI System). 3. LDST PRESSURE vs. LEVEL enclosure in OP/0/A/1108/001 (Curves and General Information) directs the following: • If LDST Pressure Vs. Level is above and to the left of Curve 1, then declare **BOTH** trains of HPI INOPERABLE. o Immediately depressurize LDST below Curve 1. o Refer to TS 3.0.3 for shutdown requirements. o Make notifications as required by OMP 1-14 (Notifications). 4. Direct the ROs to vent LDST to GWD per OP/1/A/1104/002 (HPI System).
		Event is complete when decision to vent the LDST is made or when directed by the lead examiner.

Op-Test No.: _____	Scenario No.: **3**	Event No.: **3**	Page 1 of 1
Event Description:	**"A" LPSW pump suction valve closes and standby pump does not auto start: (C, BOP, SRO) (TS)**		

Time	Position	Applicant's Actions or Behavior
		Plant response: Statalarms: • 1SA-9/A-9, LPSW Header A/B Press Low Control board indications: • LPSW-2 ("A" LPSW Pump Suction) indicates closed (also an OAC alarm) • "A" LPSW pump amps are cycling • LPSW Header A/B Pressure Low
	BOP	**Crew response:** 1. Refer to ARG for 1SA-9/A-9, LPSW Header A/B Press Low
	SRO	2. Refer to AP/24 (Loss of LPSW) • Ensure LPSW pump suction valves are open.
		Note: LPSW-2 ("A" LPSW pump suction valve) will indicate closed. The team may dispatch an NEO to open LPSW-2. The valve will not be able to be opened locally.
	BOP	• Verify LPSW pumps are cavitating ➢ Pump amps erratic ➢ LPSW header pressure fluctuating • Place the Unit 1/2 STANDBY LPSW PUMP AUTO START CIRCUIT in DISABLED. • Stop the affected pump. Stop "A" LPSW pump. • Ensure all available (NOT previously cavitating) LPSW pumps operating. Start "C" LPSW pump. • Verify normal LPSW System operation is restored.
	SRO	• The SRO should call SPOC to troubleshoot the reason for the suction valve closing, the Auto Start failure and determine if the "A" LPSW pump was damaged due loss of suction. • The SRO should refer to TS: ➢ TS 3.7.7 (Low Pressure Service Water System) Condition "A" applies. Restore required LPSW pump to operable status. 72 hours completion time. ➢ TS 3.3.28 (LPSW pump Auto-Start Circuitry) Condition "A". Restore Auto-Start Circuitry to operable. 7 day completion time.
		Event is complete when SRO has referred to TS 3.7.7 or when directed by the Lead Examiner.

Op-Test No.: _____ Scenario No.: **3** Event No.: **4** Page 1 of 1

Event Description: **1HP-31 fails OPEN in AUTO: (C, OATC, SRO)**

Time	Position	Applicant's Actions or Behavior
		Plant response: Statalarms: • 1SA-2/B-2, HP RCP Seal Inlet Header Flow High/Low Front board (1UB1) indications: 1. 1HP-31 (RCP Seal Flow Control) throttles full open 2. Seal injection flow increases **Crew response:**
	OATC	1. Refer to ARG: • Verify high seal flow conditions with individual RCP seal flow indications. • Adjust 1HP-31 (RCP Seal Flow Control) per OP/1/A/1104/002 (HPI System). • **IF** flow **CANNOT** be reduced in above manner, 1HP-31 may have failed open/mid-position. Take manual control of 1HP-31 and throttle to maintain 32 gpm.
	SRO	2. SRO should direct the OATC to take 1HP-31 to manual and establish 32 gpm seal injection flow.
		When seal injection flow has been returned normal or when directed by the lead evaluator this event is completed.

Op-Test No.: _____ Scenario No.: **3** Event No.: **5** Page 1 of 1

Event Description: **Controlling NI Fails HIGH: (I, OATC)**

Time	Position	Applicant's Actions or Behavior
		Plant response: • 1SA-01/A-1, RP Channel A Trip • 1SA-01/A-8, RP NI-5 High Flux Trip • NI-5 and NI-9 indicate 125% **Crew response:**
	OATC	• When the RPS Statalarms are received, the candidates should utilize the "Plant Transient Response" process to stabilize the plant and recognize that "A" SG Startup level has failed. • Verbalize to the SRO reactor power level and direction of movement. • Place the Diamond and both FDW Masters in manual to stabilize the plant.

	SRO	• The SRO should:
		  • Refer to AP/28, ICS Instrument Failures
		  • Contact SPOC to repair controlling NI.
		Note: The ICS will remain in manual for the remainder of the scenario.

		When the plant is stable or when directed by the lead examiner this event is completed.

Op-Test No.: _____ Scenario No.: **3** Event No.: **6** Page 1 of 1

Event Description: **Group 6 controls drop into core: (C, OATC, SRO)**

Time	Position	Applicant's Actions or Behavior
	OATC	**Plant response:** Statalarms: • 1SA-2/A-12, ICS TRACKING • 1SA-2/B-4, RC AVERAGE TEMP LOW • 1SA-2/C-3, RC PRESSURIZER LEVEL HI/LOW • 1SA-2/D-3, RC PRESS HI/LOW Control board indications: • Group 6 control rods will have in-limit lights • Reactor power will decrease • RCS pressure and temperature will decrease **Crew response:** • The crew should implement Plant Transient Response. • OATC should determine that more than 1 control rod has dropped into the core and manually trip the reactor.
		When the reactor has been manually tripped or when directed by the lead examiner this event is completed.

Op-Test No.: _____ Scenario No.: **3** Event No.: **7** Page 1 of 2

Event Description: **Large Break LOCA and Switchyard Isolation: (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	ALL	**Plant response:** Control board indications: • ES 1-6 actuate • A Switchyard Isolation will occur • RCS subcooling margin will indicate 0°F • Power will be lost and then regained from the STBY Bus **Crew response:**
	OATC BOP	1. The OATC perform IMAs the OATC to perform a symptom check. 2. The BOP should report symptoms and inform the SRO that the RCS has saturated and obtain SRO concurrence to perform Rule 2, Loss of SCM. • Verify that reactor power is < 1%. • Trip RCPs within 2 min of LOSCM (**CT-1**) • Notify SRO of RCP status. • Verify any HPI pump is available. • Open 1HP-24/25 (1A/1B BWST Suction) open • Start all available HPI pumps operating. • Open 1HP-26/27 (1A/1B HP Injection) open • Verify at least two HPI pumps are operating using two diverse indications. (**i.e. pump amps and flow**) • **IAAT** HPI flow in any header is in the Unacceptable Region of Figure 1 **THEN** perform Steps 10 -12. (**flow is acceptable**) • Throttle "B" HPI flow to < 475 gpm. • IAAT either of the following exist: ➢ LPI FLOW TRAIN A plus LPI FLOW TRAIN B ≥ 3300 GPM (**LPI flow will be met**) ➢ Only one LPI header operating, AND flow in that header is ≥ 2850 gpm. **GO TO** Step 14. • **WHEN** directed by the CR SRO **THEN EXIT** this rule.

Op-Test No.: _____ Scenario No.: **3** Event No.: **7** Page 2 of 2

Event Description: **Large Break LOCA and Switchyard Isolation: (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	OATC	3. OATC will perform Enclosure 5.1 (ES actuation) • Determine all ES channels should have actuated based on RCS pressure and RB pressure. • Verify all ES digital channels associated with actuation setpoints have actuated. • Place HPI in Manual. • Verify Rule 2 in progress or complete. • Place LPI pumps in manual control. • Ensure A and B and 3A and 3B Outside Air Booster Fans are operating. (**CT-27**) • Secure makeup to the LDST. • Place 1LPSW-251 and 1LPSW-252 FAIL SWITCH in the FAIL OPEN position. • Open 1LPSW-4 and 1LPSW-5. • Dispatch an operator to perform Encl. 5.2 (Placing RB Hydrogen Analyzers In Service) • Dispatch an operator to establish ≈ 1000 cfm flow in each PRVS filter train. • Notify SRO to evaluate components NOT in ES position. • The operator must get SRO approval to exit this enclosure.
		When the SRO transfers to LOCA CD tab or when directed by the lead examiner this event is concluded.

Op-Test No.: _____ Scenario No.: **3** Event No.: **7** Page 2 of 2

Event Description: **Large Break LOCA and Switchyard Isolation: (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	SRO	4. The SRO should refer to the Parallel Actions and transfer to the LOSCM tab. 5. The LOSCM tab will: • Refer to Parallel Actions and: ➢ Direct an RO to Initiate AP/11 (Recovery from Loss of Power) **Note: AP/11 can not be implemented until an RO completes either Rule 2 or Enclosure 5.1.** ➢ Direct an RO to announce plant conditions. • Ensure Rule 2 (Loss of SCM) is in progress or complete. • Verify Station ASW feeding any SG. • **IAAT** either of the following exists: ➢ LPI FLOW TRAIN A plus LPI FLOW TRAIN B = 3300 gpm ➢ Only one LPI header in operation with header flow = 2850 gpm • **THEN GO TO** LOCA CD tab. The LOCA CD tab will: • **IAAT** BWST level is = 19', **THEN** initiate Encl 5.12 (ECCS Suction Swap to RBES). • Verify ES actuated. • Perform the following: ➢ Ensure all RBCUs in low speed. ➢ Open 1LPSW-18. ➢ Open 1LPSW-21. ➢ Open 1LPSW-24.
		When the SRO transfers to LOCA CD tab or when directed by the lead examiner this event is concluded.

Op-Test No.: _____ Scenario No.: **3** Event No.: **8** Page 1 of 2

Event Description: **LCT and CT-1 lockout (blackout):**

Time	Position	Applicant's Actions or Behavior
	SRO	**When directed by the Lead Examiner the LCT will trip and CT-1 will lock out.** **Plant response:** • Loss of power to the Main Feeder Buses (Blackout) will occur. • The unit will remain in a Blackout condition until actions are taken by the operators per Enclosure 5.38 (Restoration Of Power). • The TD EFDW pump will be feeding the SG to remove decay heat. **Crew response:** The SRO will transfer to the Blackout tab which will: • Verify two ROs available to perform Control Room actions.
		NOTE During performance of Encl 5.38 (Restoration of Power), progression through the Blackout tab should continue.
	OATC	• Notify one RO to perform Encl 5.38 (Restoration of Power). • **IAAT** power is restored to any of the following: ➢ 1TC ➢ 1TD ➢ 1TE **THEN GO TO** Step 4. • Verify any SG is being fed. • Feed and steam available SGs as necessary to stabilize RCS P/T. • **IAAT NO** SGs are being fed **AND** any source of EFDW (Unit 1 or another unit) becomes available, **THEN** perform Steps 9 - 11. **GO TO** Step 12. • **IAAT** EFDW from any source is insufficient to maintain stable RCS P/T, **THEN** notify SSF operator that feeding SGs with SSF ASW is required • Verify Encl 5.38 (Restoration of Power) in progress or complete.

Op-Test No.: _____ Scenario No.: **3** Event No.: **8** Page 2 of 2

Event Description: **LCT and CT-1 lockout (blackout):**

Time	Position	Applicant's Actions or Behavior
	BOP	The BOP will perform Encl 5.38 (Restoration of Power) which will: • Place 1HP-31 in HAND and reduce demand to 0. • Close 1HP-21. • Verify either MFB energized (**MFBs are de-energized**) • Verify CT-1 indicates 4160 volts. (**CT-1 has no voltage**) • • Verify both Standby Bus #1 and Standby Bus #2 are de-energized. • Verify all Keowee units operating. (**Keowee 1 is locked out**) • Emergency start both Keowee units • Notify Keowee Operator to place all operating Keowee units in Oconee Control. • Close UNIT 2 EMER FDR ACB 4 (**power will be restored**) (**CT-8**)
		When the Main Feeder Buses are energized or when directed by the Lead Examiner the event and scenario is completed.

CRITICAL TASKS

1. CT-01, Trip All RCPs
2. CT-27, Implementation of Control Room Habitability Guidance
3. CT-08, Electrical power alignment