

Final Submittal

**OCONEE JUNE 2003 RETAKE
EXAM 50-26912003-302**

OCTOBER 17,2003

FINAL SAMPLE PLANS / OUTLINES



CRITICAL TASKS

Scenario 1:

1. CT-1, Trip All RCPs
2. CT-3, Isolate Possible RCS Leak Paths
3. CT-10, Establish FW Flow and Feed SGs
4. **CT-20**, RCS Pressure Control To Prevent Exceeding RV P-T Limits And Comply With PTS Guidance
5. CT-27, Implementation of Control Room Habitability Guidance

Spare:

1. CT-5, Control HPI
2. CT-10, Establish FW Flow and Feed SGs
3. CT-11, Control SG pressure to Maintain RC Temperature Constant.
4. CT-26, Restore Feed Po A Dry SG

Facility: Oconee	Scenario No.: 1 R0	Op-Test No.: ___	
Examiners: _____ _____ _____	Operators: Tracey Roland (SRO-U) Kevin Cooley (RO)	_____	
Initial Conditions:			
<ul style="list-style-type: none"> • 45% Reactor Power, (Snap 201) 			
Turnover:			
<ul style="list-style-type: none"> • Startup in progress after adding oil to 1B1 RCP • SASS in MANUAL for I&E troubleshooting • 1B MDEFDW Pump OOS • After turnover, the crew should start 1B1 RCP 			
Event No.	Maif. No.	Event Type*	Event Description
0a	Pre-Insert		SASS in manual
0b	Pre-Insert MSS270		1B MDEFDW Pump OOS
0c	Pre-Insert MPI290		Block All Turbine Trips Except Manual
0d	Pre-Insert MPS350		"A" RBCU fails to receive ES signal
1		N, OATC, SRO	Start 1B1 RCP
2	Override Z342D1	C, OATC, SRO	AC Oil Lift pump will not develop adequate discharge pressure
3	MSI051 MSI061	I, OATC, SRO	Turbine Header Pressure fails LOW
4		C, ALL	BWST rupture (TS)
5	MPS110	R, OATC, SRO	Manual unit shutdown due to BWST level
6	MPI091 MPI101	I, OATC, SRO	RCS NR Pressure fails HIGH
7	MSS010 MSS020	C, OATC, SRO	Main FDW pumps trip Main Turbine Fails to trip (Lockout EHC Pumps)
a	MPS400	M, ALL	RCS leak to SBLOCA (ramp over 10 minutes)
9	MPS400, Reset		RCS leak isolated, SCM increases > 0°F

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

Scenario #1 Overview R0

Initial Conditions: Unit 1: 45% power - EOL, Unit 2: 100%, Unit 3: 100%

Turnover:

- Startup in progress after adding oil to 1B1 RCP
- SASS in **MANUAL** for I&E troubleshooting
- 1B MDEFDW Pump OOS
- After turnover, the crew should start 1B1 RCP

1) Start 1B1 RCP: (N, OATC)

∅ Reactor power was reduced so oil could be added to the 1B1 RCP. The oil addition has been completed and the crew is directed to start the 1B1 RCP per OP/1/A/1103/006.

TIME = 5 minutes

2) 1B1 RCP AC Oil Lift pump will not develop adequate discharge pressure: (C, OATC)

a) Prior to starting the 1B1 RCP, the RCP AC Oil Lift pump will be started. The OAC should be monitored and the RCP started after the low oil pressure alarm clears. The low pressure condition will not clear and the **AC Oil Lift pump** will stop after three minutes. The operator should follow procedural guidance and use the DC Oil Lift pump and complete starting the 1B1 RCP.

TIME = 5 minutes, TOTAL 10 min.

3) Turbine Header Pressure fails LOW: (I, OATC)

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- a) The crew should utilize "Plant Transient Response" to stabilize the plant. The Turbine master will transfer to manual. The OATC should **take the Diamond Panel** and the FDW Masters to manual. FDW, Control Rods, and Turbine Header pressure should be adjusted to stabilize the plant.
- b) The SRO should refer to AP/28 (ICS Instrument Failures).

TIME = 10 minutes. TOTAL 20 min.

4) BWST rupture: (C, ALL) (TS)

- a) A crane will damage the BWST resulting in level rapidly decreasing to ≈ 24 feet.
- b) The SRO should refer to TS 3.5.4 and determine that a unit shutdown is required.

TIME = 10 minutes, TOTAL 30 min.

Scenario #1 Overview R0

5) Manual unit shutdown: (R, OATC)

a) FDW, Control Rods, and Turbine Header pressure will be controlled to manually shutdown the unit.

TIME = 10 minutes, TOTAL 40 min.

6) RCS NR Pressure fails HIGH: (I, OATC)

a) After the manual unit shutdown, RCS NR Pressure will **fail** high and the crew should utilize "Plant Transient Response" to stabilize the plant.

b) The PZR heaters will **de-energize** and PZR spray (1RC-1) will open. The PORV (1RC-66) will also open. Actual RCS pressure will decrease and the reactor will trip on low pressure in about one minute without operator action.

c) The crew should refer to the ARGs and the SRO should direct the crew to **close** the PORV or 1RC-4 (Spray Block) and 1RC-1 (PZR Spray). The PZR heaters should be cycled as required to control RCS pressure.

d) The SRO should refer to AP/28 (ICS Instrument Failures).

TIME = 5 minutes, TOTAL 45 min.

7) Main FDW pumps trip and Main Turbine Fails to trip (Lockout EHC Pumps): (C, OATC)

a) Both Main FDW pumps will trip resulting in a reactor trip. The Main Turbine should trip but does not. This will result in a reduction in steam pressure in both SGs until actions are taken to trip the turbine. **The** will result in RCS overcooling until the Main Turbine is tripped.

b) While performing IMAs, the OATC should diagnose that the turbine did not **trip** and then perform the RNO step which will stop both EHC pumps. This will cause the turbine to trip.

TIME = 1 minutes, TOTAL 46 min.

8) RCS leak to SBLOCA (ramp over 10 minutes): (M, ALL)

a) The RCS leak will require entry into AP/2 (Excessive RCS Leakage). The leak will increase causing a loss of SCM.

b) RULE 2 (Loss of SCM) will be implemented and the SRO will transfer to the Loss of Subcooling Margin (LOSCM) **tab** of the EOP. The SRO will then transfer to the LOCA Cosldown (LOCA CD) tab of the EOP.

c) EOP Enclosure 5.1 (ES Actuation) will be implemented. The "A" RBCU will not receive an ES signal and will not go to LOW speed. The RO should diagnose this and place the "A" RBCU in LOW speed.

TIME = 20 minutes, TOTAL 66 min.

Scenario #1 Overview RO

9) RCS leak isolated, SCM increases > 0°F: (M, ALL)

- a) After transfer *is* made to **the LOCA CD tab of the EOP** the leak *will* be isolated. This **will** cause SCM to increase > 0°F **and** a transfer should then be made to **Subsequent Actions**. After the transfer to **Subsequent Actions** is made the scenario may be stopped.

TIME = 10 minutes, TOTAL 76 min.

Facility: Oconee	Scenario No.: SPARE R0	Op-Test No.: _____	
Examiners: _____ _____ _____	Operators: Tracey Roland (SRO-U) Kevin Cooley (RO) _____		
Initial Conditions:			
<ul style="list-style-type: none"> • 100% Reactor Power, (16-41) 			
Turnover:			
<ul style="list-style-type: none"> • AMSAC/DSS bypassed for I&E testing • Unit 1 TDEFDWP has been out of service for bearing replacement for about 16 hours. Expect it to be returned to service within the next 2 hours. 			
Event No.	Malif. No.	Event Type*	Event Description
0a	Pre-Insert		AMSAC/DSS bypassed
0b	Pre-insert MSS330		TDEFWP fails to start
0c	Pre-Insert		1FDW-316 Failed CLOSED
0d	Pre-insert MSS260		1A MDEFDWP fails to start
1		N, OATC, SRO	Pressurize LDST with H2
2	Override	C, OATC, SRO	■i-I , LDST Supply, fails open (TS)
3	MPI171, 100 MPI500, 100	I, OATC, SRO	T _h Fails HIGH
4	MPS290 Override	C, OATC, SRO	1A CC Pump trips (1B CC Pump fails to auto start)
5	MPS110	C, OATC, SRO	1HP-5 Fails closed
6		C, ALL	1D1 Heater Drain Pump oil leak
7		R, OATC, SRO	Manual reactor power decrease
8	MSS010 MSS020	M, ALL	Loss of Main Feedwater with 1FDW-316 Failed CLOSED
9	MSS270	M, ALL	Loss of Main and Emergency Feedwater, 1B MDEFDWP trips (CBP Feed)
10	MSS330 Reset		TDEFWP returned (CBP recovery)

na (R)eactivity (i)nstrument, (C)omponent, (M)ajor

Scenario Spare Overview R0

Initial Conditions: Unit 1: 100% power - EOL, Unit 2: 100%, Unit 3: 100%

Turnover:

- AMSAC/DSS bypassed for I&E testing
- Unit 1 TDEFWP has been out of service for bearing replacement for about 16 hours. Expect it to be returned to service within the next 2 hours.

1) Pressurize the LDST with H²: (N, OATC)

Statelarm will actuate indicating that the LDST H² pressure is low. Crew should refer to the ARG and the "LDST Pressure vs bevel" curve. The crew should then add H² to the LDST.

TIME = 10 minutes

2) 1H-1 fails OPEN: (C, OATC) (TS)

During the H² addition to the LDST, 1H-1 (LDST Supply) will fail OPEN requiring the OATC to direct the primary NEO to close the isolation valve to stop the H² addition. Isolation by the NEO will be delayed and BOTH trains of HPI must be declared inoperable due to operation outside of permissible Operating Region on the "LDST Pressure vs bevel" curve.

TIME = 5 minutes, TOTAL 15 min

3) T_{hot} fails HIGH: (I, OATC)

- a) The crew **should** diagnose the failure and stabilize the plant by using the "Plant Transient Response" process.
- b) The OATC should place both FDW Masters and the Diamond Panel to manual to mitigate *the* transient and *stabilize* the plant.
- c) This failure will not be repaired and the ICS will remain in manual.
- d) The SRO should refer to AP/28 (ICS Instrument Failures).

TIME = 5 minutes, TOTAL 20 min

4) 1A CC Pump trips: (C, OATC)

- a) The crew should refer to ARG and to AP/020 (Loss of Component Cooling). The OATC should manually start the standby CC pump.
- b) The crew should initiate investigation and repair of 1A CC pump and 1B CC auto start failure.

TIME = 5 minutes, TOTAL 25 min.

★ 5) 1HP-5 Fails closed: (C, OATC) *check actual TRO adv In value*

- a) Recognize that 1HP-5 closed due to high letdown temperature, and refer to the ARG for stat alarm 1SA-2/C-1, Letdown Temperature High.
- b) When the crew recognizes that 1HP-5 has failed closed, the SRO should refer to AP/032, Loss of Letdown.
- c) An operator should be dispatched to manually open 1HP-5.

TIME = 10 minutes, TOTAL 35 min.

Possible Norm.

Scenario Spare Overview RO

6) 1D1 Heater Drain Pump oil leak: (C, All)

- a) The basement NEO will notify the control room that the 1D1 HDP has a severe oil leak. Crew should refer to OP/1//1106/002D (Shutdown of the 1D1 HDP). The SWO should direct the crew to reduce CTP to < 87% and secure the 1D1 HDP.

TIME = 10 minutes, TOTAL 45 min.

7) Manual reactor power decrease: (R, OATC)

- a) The OATC should reduce power with the control rods and the FDW Masters in manual.

TIME = 15 minutes, TOTAL 60 min.

8) Loss of Main Feedwater with 1FDW-316 Failed CLOSED: (M, ALL)

- a) After reactor power has been reduced both main FDW pumps will trip and 1FDW-316 will fail closed. The SRO will refer to the EOP. Rule 3 (Loss of Main or Emergency Feedwater) should be implemented after the completion of IMAs and symptoms check because of the loss of Main FDW. The failure of 1FDW-316 should be diagnosed and EFW aligned through the startup header. Until flow is aligned through the "B" startup header no Main or EFW flow will reach the SGs due to the 1A MDEFDWP not operating and 1FDW-316 failed closed. If the alignment through the startup header is delayed HPI Forced cooling must be initiated.

TIME = 10 minutes, TOTAL 70 min.

9) Loss of Main and Emergency Feedwater, 1B MDEFDWP trips (CBP Feed): (M, ALL)

- a) After flow has been established through the startup header the 1B MDEFDWP will trip. This results in a total loss of Main and Emergency Feedwater. The SRO should transfer to the Loss of Heat Transfer (LOHT) tab of the EOP. The OATC should feed the OTSGs using the CBPs per the guidance in Rule 3 (Loss of Main or Emergency Feedwater).

TIME = 10 minutes, TOTAL 80 min. 7

10) TDEFDWP returned (CBP feed recovery)

- a) After the plant is stable, the crew will be notified that the TDEFDWP has repaired and is now available. The SRO will direct the crew to recover from CBP feed by using the TDEFDWP to feed the SGs per EOP guidance. When the TDEFDWP is feeding the SGs and the unit is stable the scenario may be stopped.

TIME = 10 minutes, TOTAL 90 min.