Facility: Waterford III Scenario No.: 1 Op-Test No.: 1

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions: IC-17, 50%, MOC one Main Feedwater Pump in service

Turnover: EFW pump AB has been OOS for 74 hours to rebuild MS-416, EFW Pump AB Stop Valve. The LCO action time limit of 3.7.1.2 expired and a power reduction was commenced. The on-coming shift will complete the power reduction to Mode 3.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R-RO N-BOP/SRO	Perform power reduction to Mode 3 in accordance with OP-010-005, Plant Shutdown, to satisfy LCO actions of EFW T.S.
2	RC19G	I-BOP/SRO	Safety related T_{cold} instrument fails low affecting CPC C. Requires evaluation of Technical Specification 3.3.1 and bypassing LPD and DNBR trips w/in 1 hr.
3	ED02D	C-BOP/SRO	SUT B failure requiring evaluation of operability of AC offsite circuits, Technical Specification 3.8.1.1. Requires performance of OP-903-066 w/in 1 hr.
4	CV12A	I-RO/SRO	CVC-ILT-0227 fails low causing the suction of the charging pump to swap to the RWSP. The crew should enter OP-901-113 which directs securing charging and letdown.
5	RD1168 RD1179 RD1188 RD0223 RD0247 EG08B	C-RO/SRO	Seismic event causes two CEAs to drop without a reactor trip. This requires a manual reactor trip. Loss of offsite power source to B safety busses and failure of EDG B to automatically start. Three CEAs fail to insert on the reactor trip. This requires initiating emergency boration. Event requires implementation of OP-902-000, Standard Post Trip Actions. OP-901-522, Seismic Event may be performed concurrently.
6	FW07A RP05A1-D1 MS13B	C-BOP I-RO M (All)	After emergency boration is initiated, a Main Steam Line Break on S/G 2 outside Containment occurs, causing an uncontrolled cooldown and MSIS. Safety Injection fails to actuate automatically. EFW Pump A fails to start automatically.
7	SG01B	M (All)	After the crew has diagnosed to OP-902-004 and S/G 2 has blown dry a Steam Generator Tube Rupture occurs, also on S/G 2. The crew should diagnose to OP-902-008. The scenario may be terminated after the crew has prioritized safety functions and selected the first subprocedure to be implemented or at the lead examiner's discretion.

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

Facility: Waterford III Scenario No.: 2 Op-Test No.: 1

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions: IC-20, 100%, MOC

Turnover: EFW pump AB has been OOS for 48 hours to rebuild MS-416, EFW Pump AB Stop Valve. Maintenance estimates 2 hours to complete the required work. After relieving the shift, the crew is to perform a power reduction to 60% to remove FWPT A from service due to higher than normal vibrations.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R-RO N-BOP/SRO	Perform power reduction in accordance with OP-010-005, Plant Shutdown.
2	RC21A	I-RO/SRO	After the reactivity manipulation is satisfied, T_{hot} instrument fails low affecting pressurizer level setpoint. This event requires implementation of OP-901-010, Pressurizer Level Malfunction offnormal procedure.
3	FW03A CV05B1	C-BOP/SRO C-RO/SRO	After the pressurizer level setpoint has been returned to normal, FWPT A trips on overspeed. The in-service letdown backpressure regulating valve fails closed. Event requires implementation of OP-901-101, Reactor Power Cutback and OP-901-112, Charging and Letdown Malfunction offnormal procedures.
4	PC01	I-ALL	After the alternate back pressure valve is aligned, the Plant Monitoring Computer fails, requiring implementation of OP-901-501, Loss of PMC/COLSS offnormal procedure. Requires evaluation of DNBR, LPD, and ASI Technical Specifications.
5	SG06A	M-All	S/G 1 Wide Range level instrument fails high causing Main Feedwater Isolation Valve to close. Loss of feed to the Steam Generator results in a reactor trip. This requires implementation of OP-902-000, Standard Post Trip Actions and OP-902-006, Loss of Main Feedwater Recovery procedure.
6	SG01B	M-ALL	After implementation of OP-902-006 the reactor trip transient results in a SGTR in S/G 2. SRO must transition to OP-902-007, Steam Generator Tube Rupture Recovery. The scenario may be terminated when the affected S/G has been isolated or at the lead examiner's discretion.

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

Facility: Waterford III Scenario No.: 3 Op-Test No.: 1

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions: IC-10, 100%, BOC

Turnover: EFW pump AB has been OOS for 48 hours to rebuild MS-416, EFW Pump AB Stop Valve. Maintenance estimates 2 hours to complete the required work. The crew will be instructed to maintain 100% power unless events dictate otherwise.

Event No.	Malf. No.	Event Type*	Event Description
1	RD0278	C-RO/SRO	After the crew takes the shift, CEA 78 drops into the core. This requires implementation of OP-901-102, CEDMCS Malfunction and OP-901-501, PMC or COLSS Inoperable.
2	N/A	R-RO/SRO N-BOP	As a result of the dropped CEA the crew will start a down power within 15 minutes of dropping the CEA. The target power will be 70%. This requires implementation of OP-901-212.
3	CC01A	C-BOP/SRO	After the crew satisfies the reactivity manipulation requirements, CCW Pump A trips on overcurrent. This requires implementation of OP-901-510, CCW Malfunction. The crew will also have to address Tech Spec 3.7.3 and cascading Tech Specs, which requires performing OP-903-066 within 1 hour.
4	FW26A	I-BOP/SRO	The Feed Flow input to FWCS 1 fails low, requiring manual control of S/G Level. The event requires implementation of OP-901-201, Steam Generator Level Control Malfunction.
5	RP01A-D RP02A-D RC04A	I-RO M-ALL	RCP 1A sheared shaft occurs with a failure of the reactor to trip automatically. Manual Reactor Trip fails requiring the use of DRTS pushbuttons. This event requires implementation of OP-902-000, Standard Post Trip Actions.
6	Override Emerg. OFF switch for SBCS to OFF MS03A	M-ALL	On the trip Steam Bypass Control System malfunctions and the secondary safeties lift to control S/G pressure. When S/G pressure returns to the reset pressure for the safeties, one safety on S/G 1 remains open, resulting in an uncontrolled cooldown. This requires implementation of OP-902-004, Excess Steam Demand. The scenario can be terminated after the crew takes action to stabilize RCS temperature/pressure following S/G dryout or at the lead examiners discretion.

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

Facility: Waterford III Scenario No.: 1 Op-Test No.: 2

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions: IC-20, 100%, MOC

Turnover: Charging Pump A has been OOS for 24 hours to rebuild the crosshead and repack the pump. The plant is in T.S. 3.1.2.4 because the AB safety busses are energized from the B safety busses. Maintenance estimates another 24 hours to return Charging Pump A to service. EFW pump AB has been OOS for 48 hours to rebuild MS-416, EFW Pump AB Stop Valve. Maintenance estimates 2 hours to complete the required work. HPSI Pump A has been OOS for 1 hour due to a breaker failure, which occurred while on recirculation to fill SIT 2A. A power reduction to 90% must be performed to allow for turbine valve testing.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R-RO/SRO N-BOP/SRO	Perform a power reduction to 90% power for turbine valve testing, in accordance with OP-010-005, Plant Shutdown.
2	CH01A	C-BOP/SRO	After reactivity manipulation is satisfied, Containment Fan Cooler A trips on overload. The crew should determine the need to start the idle Containment Fan Cooler and evaluate TS 3.6.2.2 and determine that LCO is still met.
3	CV01B	C-RO/SRO	Charging pump B trips on overcurrent. Requires implementation of OP-901-112, Charging and Letdown Malfunction procedure and evaluation of T.S. 3.0.3, 3.1.2.4 and TRM 3.1.2.4.
4	SG04A	I-BOP/SRO	S/G 2 Safety Pressure instrument fails low. Requires evaluation of T.S. 3.3.1 and 3.3.2. and bypass of PPS Channel A S/G 2 Pressure Low and Steam Generator 1 and 2 DP bistables within 1 hour.
5	RX14A	I-RO/SRO	In-service PZR pressure control channel fails high. This requires implementation of OP-901-120, PZR Pressure Control Malfunction, Subsection E1.
6	RC14A1	C-RO/SRO	After transferring to the non-faulted PPCS Channel. PZR Spray Valve A fails open requiring implementation of OP-901-120, Subsection E3. This requires a manual reactor trip and securing RCP 1A. Tripping the reactor requires implementation of OP-902-000, Standard Post Trip Actions. The crew will diagnose entry to OP-902-001, Reactor Trip Recovery.
7	MS11A, FW07B	C-BOP M-ALL	After the crew commences implementation of OP-902-001, a Main Steam Line Break occurs inside containment on Main Steam Line 1. This requires the SRO to re-diagnose and enter OP-902-004, Excess Steam Demand Recovery. EFW Pump B fails to automatically start on EFAS actuation

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

Facility: Waterford III Scenario No.: 2 Op-Test No.: 2

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions: IC-10, 100%, BOC

Turnover: Charging Pump A has been OOS for 24 hours to rebuild the crosshead and repack the pump. The plant is in T.S. 3.1.2.4 due to the AB safety busses being energized from the B safety busses. Maintenance estimates another 24 hours to return Charging Pump A to service. EFW pump AB has been OOS for 48 hours to rebuild MS-416, EFW Pump AB Stop Valve. Maintenance estimates 2 hours to complete the required work. HPSI Pump A has been OOS for 1 hour due to a breaker failure, which occurred while on recirculation to fill SIT 2A. The crew will perform a power reduction to 90% to remove Heater Drain Pump B from service to repair a steam/water leak on the discharge line.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R-RO/SRO N-BOP	After the crew takes the shift, a power reduction will be performed to remove Heater Drain Pump B from service.
1	NI01E	I-BOP/SRO	ENI Safety Channel A Middle Detector Fails Low, energizing a source range channel NI. The Startup channel must be deenergized. Evaluate and implement actions of T.S. 3.3.1. This requires bypassing PPS Channel A High Linear Power, Low DNBR, and High LPD bistables within 1 hour.
2	CC03B	C-BOP/SRO	CC Pump B Bearing Seizure. This causes CCW pump B to trip on overcurrent. Requires implementation of OP-901-510, CCW Malfunction and evaluation and implementation of T.S.3.7.3, TRM and OP-100-014 requirements.
3	RC09D	C-RO/SRO	RCP 2B middle seal fails, as a result of CC malfunction. This event requires implementation of OP-901-130, RCP Malfunction.
4	MS09B	I-BOP/SRO	The Steam Flow input to FWCS 2 fails low, requiring manual control of S/G Level. The event requires implementation of OP-901-201, Steam Generator Level Control Malfunction.
5	RP01A-D RP02A-D RC03D	I-RO M-ALL	RCP 2B shaft seizure occurs with a failure of the reactor to trip automatically. Manual Reactor Trip fails requiring the use of DRTS pushbuttons. This event requires implementation of OP-902-000, Standard Post Trip Actions and OP-902-001, Reactor Trip Recovery Procedure.
6	RC23D, SI02B	C-BOP M-ALL	After entry into OP-902-001 a large break LOCA occurs inside containment. This requires the SRO to transition to OP-902-002, LOCA Recovery procedure. HPSI B fails to start on a SIAS signal; however, the pump can be started manually from CP-8.

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

Facility: Waterford III Scenario No.: 3 Op-Test No.: 2

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions: IC-30, 100%, EOC

Turnover: Charging Pump A has been OOS for 24 hours to rebuild the crosshead and repack the pump. The plant is in T.S. 3.1.2.4 due to the AB safety busses being energized from the B safety busses. Maintenance estimates another 24 hours to return Charging Pump A to service. EFW pump AB has been OOS for 48 hours to rebuild MS-416, EFW Pump AB Stop Valve. Maintenance estimates 2 hours to complete the required work. HPSI Pump A has been OOS for 1 hour due to a breaker failure, which occurred while on recirculation to fill SIT 2A. The crew will be instructed to maintain 100% power unless events dictate otherwise.

Event No.	Malf. No.	Event Type*	Event Description
1	SG01B	C-ALL	After the crew takes the shift, S/G 2 develops a small tube leak. This requires the crew to implement OP-901-202. The crew will evaluate TS 3.4.5.2.
2	SG01B	R-RO/SRO N-BOP	The tube leak rate continues to rise to the point that criteria for a Rapid power reduction will be met. This requires implementation of OP-901-212, Rapid Power Reduction.
3	N/A	I-BOP/SRO	After the crew satisfies the reactivity manipulation requirements, the main turbine controls fail to manual. This requires that the BOP manually lower turbine load to continue the shutdown.
4	CV07	C-RO/SRO	After turbine control in manual has been demonstrated, CVC-183, VCT Outlet Valve fails closed. This causes the running charging pumps to trip on low suction pressure. The crew will implement OP-901-112, Charging and Letdown Malfunction and evaluate TS 3.03, 3.1.2.4, and TRM 3.1.2.4. The crew can align the suction of the charging pumps to the RWSP to restore the operability of the Charging Pumps and meet the criteria for the Rapid Power Reduction procedure.
5	RD09	I-RO/SRO	The CEA group being used for ASI control starts continuous outward motion without a demand signal. This will require implementation of OP-901-102, CEA or CEDMCS Malfunction and a manual reactor trip.
6	SG01B	M-ALL	The Tube leak in S/G 2 worsens and requires the crew to manually initiate a SIAS and CIAS. The crew will perform the actions of OP-902-000, Standard Post Trip Actions and OP-902-007, Steam Generator Tube Rupture.
7	MS02B	C-BOP/SRO	After entry into OP-902-007 MSIV B will fail closed requiring the crew to steam the faulted S/G during the rapid cooldown to 520°F. The scenario may be terminated after S/G 2 is isolated or at the discretion of the lead examiner.

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

Facility: Waterford III Scenario No.: 4 Op-Test No.: 2

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions: IC-18, 65%, MOC

Turnover: Turnover: Charging Pump A has been OOS for 24 hours to rebuild the crosshead and repack the pump. The plant is in T.S. 3.1.2.4 due to the AB safety busses being energized from the B safety busses. Maintenance estimates another 24 hours to return Charging Pump A to service. EFW pump AB has been OOS for 48 hours to rebuild MS-416, EFW Pump AB Stop Valve. Maintenance estimates 2 hours to complete the required work. HPSI Pump A has been OOS for 1 hour due to a breaker failure, which occurred while on recirculation to fill SIT 2A. The crew will be instructed to perform a power ascension to 100%.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R-RO/SRO N-BOP	After the crew takes the shift, a power ascension to 100% will be performed
2	RC23A	C-RO/SRO	After the crew satisfies the reactivity manipulation requirements, An RCS Leak occurs in Containment requiring the crew to implement OP-901-111, RCS Leak and evaluate TS 3.4.5.2.
3	SG11A	I-BOP/SRO	During implementation of OP-901-111, S/G NR safety transmitter fails low. This will require that TS 3.3.1 and 3.3.2 be evaluated and Channel A Hi and Lo S/G level and S/G 2 S/G DP bistables be bypassed in PPS Channel A w/in 1 hour.
4	ED05D, EG09B	C-BOP/SRO	After the PPS bistables are bypassed, the 3B safety bus is deenergized due to an overcurrent condition. EDG B starts but fails to load automatically. This requires the BOP operator to close in EDG B output breaker manually. OP-901-311, Loss of 4160 V Safety Bus B should be implemented. TS 3.8.1.1 should be evaluated.
5	RC23A, RP05A3-D3	I-RO M-ALL	RCS leak increases to a Small Break LOCA. This requires manually initiating SIAS and CIAS. Containment Spray fails to initiate automatically requiring manual initiation of CSAS. The crew will implement OP-902-000, Standard Post Trip Actions and OP-902-002, LOCA. The scenario may be terminated after the crew takes action to cool the S/Gs to regain S/G cooling of the RCS or at the lead examiner's discretion.

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