

Appendix D

Scenario Outline

Form ES-D-1

Facility: Quad Cities Scenario: **2020 NRC Scenario 1** Op-Test No.: ILT 18-1
 Examiners: _____ Operators: _____

Initial Conditions:

The plant is operating at 100% power, holding load.

Turnover: Reverse Main Condenser flow per QCOP 4400-09.

Critical Tasks:

1. With a primary system discharging into Secondary Containment, isolate Reactor Building ventilation. Time of manual isolation not to exceed 30 minutes from discovery of unisolable HPCI steam leak (EAL entry condition).
2. Perform an RPV Blowdown when two areas are above max safe radiation levels. QGA 500-1 entry not to exceed 15 minutes after two or more areas of the same parameter are above max safe.

Event No.	Malf. No.	Event Type*	Event Description
1	None	BOP N	Reverse Main Condenser flow
2	AOP11514012 AOAI1564025 SER0783 LOIL15650PANP	BOP C	1A EHC pump degrades and standby pump fails to auto-start.
3	RR01A	ATC R / TS	1A Recirc pump trip / Emergency Power Reduction
4	NM08A	ATC C	APRM 1 fails to track (stuck at 100%)
5	DIFC1064018I2	ATC C	DFWLC Master Controller failure
6	HP10	BOP C / TS	HPCI spurious initiation
7	HP13 CR01	CREW M	HPCI Steam Line break & Fuel failure RPV Blowdown (2 areas above max safe rad levels)
8	HV01	CREW C	Reactor Building Vents fail to isolate

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Facility: Quad Cities Scenario: **2020 NRC Scenario 2** Op-Test No.: ILT 18-1
 Examiners: _____ Operators: _____

Initial Conditions:

The plant is at 40% power with a startup in progress per QCGP 1-1.

Turnover: Start the second Reactor Feed Pump per QCGP 1-1, step F.9.zz.

Critical Tasks:

1. With a reactor scram and the reactor not shutdown, TAKE ACTION TO REDUCE POWER by injecting boron (prior to exceeding 110°F torus temperature) and/or inserting rods, to prevent exceeding primary containment design limits. (BWROG RPV-6.1 ATWS PWR/LVL S/D REACTOR)
2. During an ATWS with conditions met to perform power/level control, TERMINATE AND PREVENT INJECTION, with the exception of boron, CRD, and RCIC into the RPV until conditions are met to re-establish injection. (BWROG RPV/LVL TERM/PREVENT)

Event No.	Malf. No.	Event Type*	Event Description
1	None	BOP N	Start the 2 nd Reactor Feed Pump
2	None	ATC R	Raise Reactor Power per QCGP 1-1
3	RD01R4631	ATC C / TS	Uncoupled Control Rod with full insertion
4	SER1123 LOAM102034B4C05 LOAM102034B4C03 LOAM102034B4C01	SRO TS	3D ERV Acoustic Monitor failure
5	SER1487 DIHS15707A	ATC C	RFP Vent Fan trip
6	MC01C	BOP C	1C Circulation Water Pump trip
7	SW07A	BOP C	RBCCW pump degradation / swap RBCCW pumps
8	MC08	CREW M	Loss of Main Condenser vacuum / SCRAM
9	RD13A RD13B	CREW C	Full Core Hydraulic ATWS

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Facility: Quad Cities Scenario: **2020 NRC Scenario 3** Op-Test No.: ILT 18-1
 Examiners: _____ Operators: _____

Initial Conditions: 90% Reactor power, 1B RHR pump out of service

Turnover: Complete QCOS 5600-08, Turbine Generator Quarterly Testing for the Bypass Valves, then continue load increase to full power.

Critical Tasks:

1. When Torus pressure exceeds 5 psig, INITIATE drywell sprays while in the safe region of the drywell spray initiation limit (DSIL) prior to Drywell temperature exceeding 281°F. (BWROG PC-5.1 INIT DW SPRAY)
2. Given an inability to maintain RPV water level above -59 inches, INHIBIT ADS, to prevent an uncontrolled depressurization IAW QGA 100.
3. Given an inability to maintain RPV water level above -142 inches with an injection source lined-up and running, initiate an emergency depressurization before RPV water level drops to MSCRWL in accordance with QGA 100 and QGA 500-1. (BWROG RPV-1.1 LOSS HP INJ E/D TAF)

Event No.	Malf. No.	Event Type*	Event Description
1	None	BOP N	QCOS 5600-08, Turbine Generator Quarterly Testing for BPVs 7-9.
2	RR09A	SRO TS	1A Recirc ASD cell failure/bypass.
3	DIFC10262221 DIFC10262222	ATC C	Recirc System MASTER SPEED DEMAND Failure
4	None	ATC R	Raise Reactor power with Recirculation pumps
5	NM10B	ATC I/TS	RBM Channel 8 fails high
6	IA01C	BOP C	1/2 Instrument Air Compressor trip per QOA 912-1 C-7.
7	MC05	CREW M	Condensate Pit Flooding / Loss of Condensate/Feed System / Reactor SCRAM
8	DG04B	BOP C	1/2 Emergency Diesel Generator to auto-start failure.
9	RR11A	CREW M	LOCA / RPV Blowdown

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Facility: Quad Cities Scenario: **2020 NRC Scenario 4** Op-Test No.: ILT 18-1
 Examiners: _____ Operators: _____

Initial Conditions:

The plant is operating at 100% power.

Turnover: Swap Bus Duct Coolers for Preventive Maintenance.

Critical Tasks:

1. With a reactor scram required and the reactor not shutdown, TAKE ACTION TO REDUCE POWER by injecting boron (prior to exceeding 110°F torus temperature) and/or inserting control rods, to prevent exceeding primary containment design limits. (BWROG RPV-6.1 ATWS PWR/LVL S/D REACTOR)
2. When Torus pressure cannot be maintained below the Pressure Suppression Pressure Limit initiate an Emergency Depressurization prior to exceeding primary containment design limits.

Event No.	Malf. No.	Event Type*	Event Description
1	NONE	BOP N	Swap Bus Duct Coolers IAW QCOP 5370-02.
2	RM05A	SRO TS	"A" Drywell Rad Monitor Upscale Failure
3	FW06B	ATC I	1B RFP Flow Transmitter Downscale Failure
4	NONE	ATC R	Power Reduction to Secure 1B RFP
5	PC11B	BOP C/TS	SBGTS Low Flow after Autostart on Refuel Floor High Radiation.
6	EG07B	BOP C	Degraded Stator Cooling Water Pump
7	MS04C	CREW M	"C" Main Steam Line Break Inside the Drywell
8	RP02B/D RP03B RD29	ATC C	Electric ATWS – Failure of RPS Channel B to Process Scram Signals
9	DIHS11001S17A RH20BR	BOP C	Drywell Spray Valves Fail to Operate / Blowdown