Facility: PRAIRIE ISLAND Scenario No.: 1 Op-Test No.: 2016301

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions:

Reactor Power at 100%, Boron Concentration at 825 ppm, RCS temperature at 560°F, RCS pressure at 2235 psig, Xenon at equilibrium, Bank D rods at 218 steps, Generator Power at 580 MW.

D1 Diesel Generator is out of service. TS LCO 3.8.1 Condition B was entered with 10 days remaining. D2 Diesel Generator has been evaluated for common cause failure and has been determined to be OPERABLE. D2, 12 MD AFW Pump, 12 RHR Pump, 12 SI Pump, 12 CC Pump, 22 CLW Pump, 122 CR Air Supply Fan, 122 CR Chiller & Pump, and 122 CR Clean Up Fan are PROTECTED. SP 1118 (SR 3.8.1.1) was completed 1 hour ago and is due in 5 hours.

Turnover:

None.

| Event No. | Malf. No. | Event Type* | Event Description |
|---|---|---|---|
| 1 | | I (ATC, BOP, SRO)<br>TS (SRO) | N44 POWER RANGE NUCLEAR INSTRUMENT FAILS LOW (LCO 3.3.1) |
| 2 | | TS (SRO) | RWST LEVEL TRANSMITTER FAILS LOW (LCO 3.3.3) |
| 3 | | C (BOP, SRO) | LOSS OF GAP COOLING |
| 4 | | R (ATC)<br>N (SRO) | TURBINE MALFUNCTION REQUIRING RAPID DOWNPOWER |
| 5 | | C (ATC, SRO) | DROPPED ROD WITH REACTOR FAILING TO AUTOMATICALLY TRIP |
| 6 | | M (ALL) | SMALL BREAK LOCA (RCP TRIP CRITERIA MET) |
| 7 | | C (BOP, SRO) | CONTAINMENT ISOLATION FAILS TO AUTO ACTUATE |

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

**Appendix D** **Scenario Outline** **Form ES-D-1**

Facility: PRAIRIE ISLAND Scenario No.: 2 Op-Test No.: 2016301

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions:

Reactor Power at 90%, Boron Concentration at 856 ppm, RCS temperature at 559°F, RCS pressure at 2235 psig, Xenon at equilibrium, Bank D rods at 208 steps, Generator Power at 522 MW. Backup pressurizer heaters are ON. Two 40 GPM letdown orifices are in service.

13 Charging Pump is out of service. Unit 1 is at reduced power due to 15 Feedwater Heater being out of service for several days. 15 Feedwater Heater is currently in service. 12 Safety Injection Accumulator pressure is approximately 715 psig.

Turnover:

Raise 12 Safety Injection Accumulator pressure per 1C18.

When directed by the Shift Manager, perform a load increase from 90% to 95%.

| Event No. | Malf. No. | Event Type* | Event Description |
|---|---|---|---|
| 1 | | N (BOP) | RAISE SI ACCUMULATOR PRESSURE |
| 2 | | R (ATC)<br>N (SRO) | RAISE POWER TO 95% |
| 3 | | I (ATC, SRO)<br>TS (SRO) | FIRST STAGE PRESSURE INSTRUMENT FAILS LOW (LCO 3.3.1) |
| 4 | | C (ATC, SRO) | LOSS OF CHARGING FLOW TO REGENERATIVE HX |
| 5 | | C (BOP, SRO) | FIRE PROTECTION LINE BREAK |
| 6 | | M (ALL) | 11 STEAM GENERATOR FAULTS TO CONTAINMENT |
| 7 | | C (BOP, SRO) | LOSS OF CONTAINMENT COOLING |

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

Facility: PRAIRIE ISLAND Scenario No.: 3 Op-Test No.: 2016301

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions:

Reactor Power at 30%, Boron Concentration at 1130 ppm, RCS temperature at 550°F, RCS pressure at 2235 psig, Xenon at equilibrium, Bank D rods at 162 steps, Generator Power at 137 MW. Backup pressurizer heaters are ON. Two 40 GPM letdown orifices are in service.

11 RHR Pump is out of service. TS LCO 3.5.2 Condition A was entered with 48 hours remaining. D2, 12 MD AFW Pump, 12 RHR Pump, 12 SI Pump, 12 CC Pump, and 22 CLW Pump are PROTECTED. 121 Instrument Air Compressor is out of service.

Turnover:

Start 12 CC Pump and place 11 CC Pump in Standby per 1C14.

When directed by the Shift Manager, perform a load increase from 30% to 40%.

| Event No. | Malf. No. | Event Type* | Event Description |
|---|---|---|---|
| 1 | | N (BOP) | SWAP COMPONENT COOLING WATER PUMPS |
| 2 | | I (ATC, SRO)<br>TS (SRO) | CONTROLLING PRZR PRESSURE CHANNEL FAILS LOW (LCO 3.3.1 AND LCO 3.3.2) |
| 3 | | R (ATC)<br>N (SRO) | RAISE POWER FROM 30% TO 40% |
| 4 | | C (BOP, SRO)<br>TS (SRO) | FAILURE OF BUS 15 LOAD SEQUENCER (LCO 3.8.9) |
| 5 | | C (ATC, SRO) | REACTOR FAILS TO AUTOMATICALLY TRIP ON A LOSS OF FEEDWATER |
| 6 | | M (ALL) | LARGE BREAK LOCA (B LOOP HOT LEG) |
| 7 | | C (BOP, SRO) | LOSS OF COMPONENT COOLING |

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

**Appendix D** **Scenario Outline** **Form ES-D-1**

Facility: PRAIRIE ISLAND Scenario No.: 4 Op-Test No.: 2016301

Examiners: _____ Operators: _____
_____ _____
_____ _____

Initial Conditions:

Reactor Power at $1x10^{-8}$ amps, Boron Concentration at 1332 ppm, RCS temperature at 549°F, RCS pressure at 2235 psig, Xenon free prior to startup, Bank D rods at 140 steps, Generator Power at 0 MW. Backup pressurizer heaters are ON. Two 40 GPM letdown orifices are in service.

No equipment is out of service.

Turnover:

Raise reactor power to the point of adding heat.

Secure 12 MD AFW Pump.

| Event No. | Malf. No. | Event Type* | Event Description |
|---|---|---|---|
| 1 | | R (ATC)<br>N (SRO) | RAISE POWER TO THE POAH |
| 2 | | N (BOP) | SECURE 12 MD AUXILIARY FEEDWATER PUMP |
| 3 | | C (BOP, SRO)<br>TS (SRO) | LOSS OF 11 CONTAINMENT FAN COIL UNIT |
| 4 | | I (ATC, SRO)<br>TS (SRO) | CONTROLLING PRZR PRESSURE CHANNEL FAILS HIGH (LCO 3.3.1 AND LCO 3.3.2) |
| 5 | | M (ALL) | LARGE BREAK LOCA (A LOOP COLD LEG) |
| 6 | | C (ATC, SRO) | SI FAILS TO AUTOMATICALLY ACTUATE |
| 7 | | C(BOP, SRO) | FEEDWATER COMPONENTS FAIL TO AUTOMATICALLY ALIGN AFTER SI SIGNAL |
| 8 | | M (ALL) | TRANSFER ECCS TO RECIRCULATION MODE |

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