

Facility: Byron Scenario No.: 10-1 Op-Test No.: ILT 2010 NRC

Examiners: \_\_\_\_\_ Operators: Crews a, b, c  
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Initial Conditions: IC-152, 95.5% power, steady state, equilibrium xenon, BOL

Turnover: Unit 1 is at 95% power per Load Dispatcher orders, steady state, equilibrium xenon, BOL. CB D is at 221 steps and boron concentration is 819 ppm. Online risk is green. Crew is to start the 1D CD/CB pump and secure the 1B CD/CB pump for maintenance work on the 1B CD/CB pump. Leave the pump in standby while the C/O is being prepared. Alarm 1-1-B7 came in 30 minutes ago and Chemistry is taking samples.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP, SRO)	Swap running CD/CB pumps for maintenance
2	MF CV07A 80 60	C (RO, SRO)	RCP Seal Injection Filter Clogged
3	IOR ZDI0CW03P A TRIP	C (BOP, SRO)	CW Makeup Pump Trip
4	MF RX13A 100	I (RO, SRO) TS (SRO)	Pzr LT-459A Fail High (controlling channel)
5	IMF FW02A	C (BOP, SRO)	1B TDFP Trip with 1A MFP available for manual start
6	Cue from Chemistry	R (RO, SRO) TS (SRO)	High Secondary Chemistry requiring unit ramp offline
7	MF MS07D 4 240	M (ALL)	1D Steam Line Break inside CNMT
8	(Preloaded) MF CS01A RF CS04 OVER RF CS05 OVER	C (SRO/ BOP)	CS Pumps Auto Start Failure, Manual Start required; 1A CS pump fail to start.

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

Facility: Byron Scenario No.: 10-2 Op-Test No.: ILT 2010 NRC

Examiners: \_\_\_\_\_ Operators: Crews d, e, f  
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Initial Conditions: IC 151: 14% power, BOL, ready to synchronize Main Generator, CBD @ 154 steps, and boron concentration is 1300 ppm

Turnover: Unit 1 is at 14% power, BOL, ready to synchronize Main Generator. Online risk is green. CBD @ 154 steps, and boron concentration is 1300 ppm. 1BGP 100-3, step F.27 is the next step to perform. Steam dump demand must be raised to 25% to 35% as directed by step 23.o.

Event No.	Malf. No.	Event Type*	Event Description
1		R (RO, SRO)	Power ascension
2		N (BOP, SRO)	Synchronize Main Generator to grid
3	IOR ZDI1CV 8149B CLS	C (RO, SRO)	75 GPM LD Isolation Valve 1CV8149B Fail Closed
4	MF RX06D 0	I (BOP, SRO) TS (SRO)	1A SG LT-556 Fail Low (controlling channel)
5	MF RX13A 100	I (RO, SRO) TS (SRO)	Pzr 1LT-459A Fail High (controlling channel)
6	MF FW22C	C (BOP, SRO)	1C CD/CB Pump Trip with manual start required
7	MF TH03A 400	M (ALL)	1A SGTR (normal cooldown and depressurization)
8	MF RP04A, RP04B	C (SRO/ BOP)	Automatic Phase A Isolation Actuation Failure (manual required)

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

Facility: Byron Scenario No.: 10-3 Op-Test No.: ILT 2010 NRC

Examiners: \_\_\_\_\_ Operators: Crews a, b, c  
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Initial Conditions: IC-16, 55% power, steady state, MOL  
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Turnover: Unit 1 is at 55% power, steady state, MOL, CB D is @ 141 steps and boron concentration is 998 ppm.. Online risk is green. Crew is to switch Bus 156 from SAT to UAT following ACB 1561 maintenance. 1A MDFP is OOS for maintenance.  
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Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP,S RO)	Switch Bus 156 Electrical Lineup
2	MF TU01D	C (BOP,S RO) R (RO)	Turbine High Vibration requiring ramp down
3	MF RX18A 630	I (RO, SRO) TS (SRO)	1A TCOLD RTD Fail High
4	MF CC05 100	C (BOP, SRO)	CC system leak with auto makeup failure
5	MF CV16 0	I (RO, SRO)	VCT Level Channel LT-112 Fail Low
6	MF CH08 60 120	TS (SRO)	CNMT Pressure 1PT-936 Fail High
7	MF RP02A RP02B TH16C	M (ALL)	ATWS 1C RCP Trip with Rx Trip Breakers Fail To Open

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

Facility: Byron Scenario No.: 10-4 Op-Test No.: ILT 2010 NRC

Examiners: \_\_\_\_\_ Operators: Crews d,e,f  
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Initial Conditions: Unit 1 is at 95% power per Load Dispatcher orders, steady state, equilibrium xenon, BOL CB D is at 221 steps and boron concentration is 819 ppm.

Turnover: Unit 1 is at 95% power per Load Dispatcher orders, steady state, equilibrium xenon, BOL CB D is at 221 steps and boron concentration is 819 ppm. Online risk is green. 1A MFP is OOS for maintenance. Perform stroke time test on 1AF013E per 1BOSR 0.5.AF.2-1.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP,S RO)	1AF013E Stroke Time test
2	MF RX18N 650	I (RO, SRO) TS (SRO)	1B THOT RTD Fail High
3	IOR ZAI1SK5 09C 20 120	C (BOP, SRO)	1C Main Feed Pump Speed Controller Fail Low
4	MF CV01A	C (RO, SRO) TS (SRO)	Centrifugal Charging Pump Trip
5	MF FW02B	C (BOP, SRO) R (RO)	1C MFP Trip with turbine runback required
6	MF RX24C	M (ALL)	1D OTDT Channel Fail Low resulting in Reactor Trip
7	MF FW03, FW43, FW44	M (SRO/ BOP)	AF Pumps Start Failure in Auto and Manual Result in Loss of Heat Sink; Start-Up Feedwater Pump Failure to start

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

Facility: Byron Scenario No.: 10-5 Op-Test No.: ILT 2010 NRC

Examiners: \_\_\_\_\_ Operators: Crews a, b, c  
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Initial Conditions: IC 20: 100%, steady state, equilibrium xenon, EOL, CBD @ 221 steps, and boron concentration is 124 ppm

Turnover: Unit 1 is at 100% power, steady state, equilibrium xenon, EOL. Online risk is green. Crew is to switch from the 1B Letdown Heat Exchanger to the 1A Letdown Heat Exchanger. No flush of the 1A LD HX is needed since the 1B LD HX was swapped last shift to allow an inspection of the 1A LD HX. 1A MDFP is OOS for maintenance.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP, SRO)	Swap Inservice Letdown Heat Exchangers
2	MF RX21A 1700	I (RO, SRO) TS (SRO)	1PT-455 Pzr Pressure Channel Fail Low
3	MF TH08A 100	R (RO, SRO) TS (SRO)	High RCS Activity requiring ramp down
4	MF PA0154 ON IOR zao0iisx032 95	C (BOP, SRO) TS (SRO)	0B SX MDCT Fan High Vibration requiring a Fan Trip
5	MF RX06P 100	I (BOP, SRO) TS (SRO)	1D SG LT-559 Fail High
6	MF TH06A 50	C (RO, SRO) TS (SRO)	Primary Leak @ 50 GPM
7	MF TH06A 1000 MF TH06A 540000	M (ALL)	LB LOCA leading to BEP ES 1.3
8	IOR SI24, SI25 OVER	C (SRO/RO)	Both 1SI8801 Fail to Auto Open, Manual Open required
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

Facility: Byron Scenario No.: 10-6 Op-Test No.: ILT 2010 NRC

Examiners: \_\_\_\_\_ Operators: Spare  
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Initial Conditions: IC 21: 100%, steady state, equilibrium xenon, BOL, CBD @ 221 steps, and boron concentration is 800 ppm. 1A RCFC is OOS for breaker maintenance.

Turnover: Unit 1 is at 100% power, steady state, equilibrium xenon, BOL. Online risk is green. Crew is to swap from the 1A SX pump to the 1B SX pump to prepare for ASME pump run. 1A RCFC is OOS for breaker maintenance. 1A MDFP is OOS for maintenance.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP,SRO)	Swap running SX pumps
2	MF RX10A 0	I (RO, SRO) TS (SRO)	1PT-505 Fail Low
3	MF CW01A CW03A-E 70	C (BOP, SRO) R (RO)	1A CW Pump trip with power reduction required
4	RF TP14 OPEN MF TP01B	C (BOP, SRO)	1B GC Pump trip with 1A GC Pump autostart failure
5	IOR ZDI1RY456 OPEN	C (RO, SRO) TS (SRO)	Pzr PORV Fail Open and won't reclose - Manually close block valve
6	MF TH06C 100000	M (ALL)	LOCA with no CS resulting in 1BFR Z.1 implementation
7	MF CS01A CS01B CH01B&C	C (SRO/ BOP)	CS pumps fail to start in Auto or Manual 1B & 1C RCFC fail to start in Low Speed

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