Facility: Kewaunee Power Station Scenario No.: 1 Op-Test No.: 1

Examiners: _____ Operators: SRO: _____.
_____ ATC: _____.
_____ BOP: _____.

Initial Conditions: 100% power EOL Equilibrium Xenon. RCS boron concentration is 77 ppm. RCS Tave is 572ºF. Generator load is 602 MWe gross, AS-31/AS-35 R-11 & R-12 Sample Return Aligned to Containment, PR-1A PRZR PORV Block Valve is closed with power maintained due to PR-2A seat leakage, TD AFW pump is OOS for corrective maintenance on its Aux Lube Oil Pump, 2 inch containment vent is in progress per NOP-RBV-002 section 5.6

Turnover: Notified by DEMI that MISO has escalated a previous Minimum Generation Alert to a Minimum Generation Warning with an actual event, KPS has agreed to Lower Power to 95%.

TS 3.7.5 (AFW system) Condition B with one AFW Train inoperable. Required Action B.1 is to restore train(s) to OPERABLE status with a Completion Time of 72 Hours. Start Time 4 hours before scenario start time.

TS 3.4.11 (Reactor Coolant System Pressurizer Power Operated Relief Valves) Condition A One or more PORVs inoperable and capable of being manually cycled. Required Action A.1 is to close and maintain power to the associated PORV Block Valve with a completion time of one hour (Completed).

Event No.	Malf. No.	Event Type*	Event Description
Pre-Load			PR-2A CAUTION tagged CLOSED due to seat leakage. PR-1A closed TS LCO3.4.11, ACTION A.1.
Pre-Load	DO-46113-G OFF DO-46114-G OFF	N/A	T/D AFW Pump OOS. MS-102 in PULLOUT. MS-100A/B in CLOSE and lights OFF
Pre-Load	FW16A	BOP – C	AFW Pump A fails to auto start. Manual start remains available.
1	N/A	ATC – R BOP – N	Power reduction required due to Minimum Generation Warning.
2	RX203 – 2500 0:30	ATC – I	After approximately 5% load decrease, controlling PRZR pressure blue channel (III), PT-431 fails high. Heaters de-energize and sprays open to lower PRZR pressure.
3	RX02B 75 15:00	BOP - C	FW-7B controller output signal fluctuates resulting in unstable operation of FW-7B, SG B Feed Reg Valve. Value for fluctuation increases to 75% over 15 minutes.
4	NI05A – 1.2	ATC - I	NI Red Channel, N41, fails low.
5	SG01B – 5.6 ramp over 5 minutes	ATC, BOP – M	SGTR occurs in SG B ramping to maximum value over a 5-minute period. Crew responds to radiation alarms and rising SG level. When the reactor trips, the SGTR goes to its maximum value,
6	*FW16A*	*BOP – C*	AFW Pump A fails to auto start on low SG level or SI signal. BOP establishes flow to SG A.

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

Facility: Kewaunee Power Station Scenario No.: 2 Op-Test No.: 1

Examiners: _____ Operators: SRO: _____.
_____ ATC: _____.
_____ BOP: _____.

Initial Conditions: IC-17: 51% power EOL Equilibrium Xenon. RCS boron concentration is 256 ppm. RCS Tave is 558ºF. Generator load is 282 MWe gross. AS-31/AS-35 R-11 & R-12 Sample Return Aligned to Containment, PR-1A PRZR PORV Block Valve is closed with power maintained due to PR-2A seat leakage, 2 inch containment vent is in progress, N41 is OOS (failed low previous shift)

Turnover: Power initially lowered due to problems associated with Main Feed Pump 1A. Problems have been corrected and the pump is ready for retest..Plant Management has directed starting Main Feed Pump 1A and raising power to 56% at 1/2% per minute. OP-KW-GOP-106 has been completed up-to and including 5.1.12. NOP-FW-001 has been completed up-to and including step 5.1.5 Reactor Engineering has provided a reactivity plan and the plan has been reviewed and approved.

The following Tech Specs are in force: TS 3.4.11 (Reactor Coolant System Pressurizer Power Operated Relief Valves) Condition A; TS 3.3.1(Reactor Protection System (RPS) Instrumentation) Condition A; TS 3.3.1 Reactor Protection System (RPS) Instrumentation) Condition D; TS 3.3.1 Reactor Protection System (RPS) Instrumentation) Condition E

Event No.	Malf. No.	Event Type*	Event Description
Pre-Load			PR-2A CAUTION tagged CLOSED due to seat leakage. PR-1A closed TS LCO3.4.11, ACTION A.1.
Pre-Load	NI05A – 1.2	N/A	N41 Power Range NI Red Channel is OOS failed low. OTΔT Trip bistable and Rod Stop bistable are tripped. [also pre-load: RF: RP133 – Trip and RP134 – Trip]
Pre-Load	DI-46355-CLOSE ON	ATC – C	Containment Sump B Supply to RHR Pumps, SI-350A and SI-350B, fail to open [also pre-load: DI-46355-OPEN OFF DI-46356-CLOSE ON and DI-46356-OPEN OFF
1	N/A	ATC – R BOP – N	Turbine load is increased and Main Feedwater Pump B is started prior to exceeding 285 psig impulse pressure (56% turbine power)
2	RX213 – 1400 0:30	BOP - C	SG A red pressure channel (PT-468) fails high to 1400 psig over 30 seconds resulting in increase in indicated steam flow to SG A, increase in feed flow to SG A and opening of SG A PORV, SD-3A
3	RC08 – 1.4 5:00	ATC – C	An unisolable RCS leak to containment atmosphere of approximately 20 gpm develops over a 5-minute period.
4	RC03A – 10%, 0:30	ATC, BOP – M	RCS leak propagates into a large-break LOCA.
5	MCB DI-46211-OPEN	ATC -C	CVC-211 and CVC-212 fail to close on Containment Isolation [also pre-load: CVC-211 OPEN andMCB DI-46214-OPEN CVC-212]
6	*DI-46355-CLOSE ON*	*ATC – C*	SI-350A and SI-350B, CNTMT Sump B Supply To RHR Pump A/B, fail to open in ES-1.3, Transfer To Containment Sump Recirculation, requiring transition to ECA-1.1, Loss of Emergency Coolant Recirculation [also pre-load: *DI-46355-OPEN OFF DI-46356-CLOSE ON and DI-46356-OPEN OFF]*

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

Facility: Kewaunee Power Station Scenario No.: 3 Op-Test No.: 1

Examiners: _____ Operators: SRO: _____.
_____ ATC: _____.
_____ BOP: _____.

Initial Conditions: 75% power EOL Equilibrium Xenon. RCS boron concentration is 162 ppm. RCS Tave is 557ºF. Generator load is 423 MWe gross. AS-31/AS-35 R-11 & R-12 Sample Return Aligned to Containment, PR-1A PRZR PORV Block Valve is closed with power maintained due to PR-2A seat leakage, 2 inch containment vent is in progress per NOP-RBV-002 section 5.6,

Turnover: Maintain 75% Power,

TS 3.4.11 (Reactor Coolant System Pressurizer Power Operated Relief Valves) Condition A One or more PORVs inoperable and capable of being manually cycled. Required Action A.1 is to close and maintain power to the associated PORV Block Valve with a completion time of one hour (Completed).

Event No.	Malf. No.	Event Type*	Event Description
Pre-Load			PR-2A CAUTION tagged CLOSED due to seat leakage. PR-1A closed TS LCO3.4.11, ACTION A.1.
Pre-Load	DI-46230-CLOSE ON DI-46230-OPEN OFF	ATC – C	CVC-440, Emergency Boration to Charging Pumps, fails closed
Pre-Load	SI05B & SI05A	ATC-C	Failure of SI pumps to Auto Start
1	SG03B 30 5:00	ATC – R BOP – N	SG tube leak of approximately 15 gpm in SG B entered over 5 minutes Crew initiates a power reduction to 45% power
2	DI-46230-CLOSE ON DI-46230-OPEN OFF	ATC – C	CVC-440, Emergency Boration to Charging Pumps, fails closed
3	MS03B 1.0 3:00	ATC, BOP – M	B steam line leak outside Containment. EO calls in. – ATC the Controls Trip the Reactor and BOP Initiate Main Steam Isolation
4	MS04B	BOP-C	Steam Generator 'B' Safety Opens when the crew closes the MS-1B – Operator Isolate Feed Flow to Steam Generator B
5	SI05A, SI05B	ATC-C	Failure of Safety Injection Pumps to Auto Start

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

Facility: Kewaunee Power Station Scenario No.: 4 Op-Test No.: 1

Examiners: _____ Operators: SRO: _____.
_____ ATC: _____.
_____ BOP: _____.

Initial Conditions: 100% power EOL Equilibrium Xenon. RCS boron concentration is 77 ppm. RCS Tave is 572ºF. Generator load is 602 MWe gross, AS-31/AS-35 R-11 & R-12 Sample Return Aligned to Containment, PR-1A PRZR PORV Block Valve is closed with power maintained due to PR-2A seat leakage, 2 inch containment vent is in progress per NOP-RBV-002 section 5.6, N41 is OOS (failed low previous shift)

Turnover: Maintain 100% power

The following Tech Specs are in effect: TS 3.4.11 (Reactor Coolant System Pressurizer Power Operated Relief Valves) Condition A; TS 3.3.1(Reactor Protection System (RPS) Instrumentation) Condition A; TS 3.3.1 Reactor Protection System (RPS) Instrumentation) Condition D; TS 3.3.1 Reactor Protection System (RPS) Instrumentation) Condition E

Event No.	Malf. No.	Event Type*	Event Description
Pre-Load			PR-2A CAUTION tagged CLOSED due to seat leakage. PR-1A closed TS LCO3.4.11, ACTION A.1.
Pre-Load	NI05A – 1.2	N/A	N41 Power Range NI Red Channel is OOS failed low. OTΔT Trip bistable and Rod Stop bistable are tripped. [also pre-load: RF: RP133 – Trip RP134 – Trip]
Pre-Load	CC04B RT – OFF	ATC – C	CC Pump B will not start (Auto or Manual) [also pre-load: DI-46302-STOP – ON DI-46302-START – OFF DI-46302-NA-STA]
1	FW19B	ATC – R BOP – N	Heater Drain Pump B trip. Turbine load is decrease required to ≤ 520 psig on first stage impulse pressure.
2	SW02A – 30%, 1:30	BOP - C	Piping leak on Containment Fan Coil Unit A Service Water supply line.
3	RC10B 10%	ATC – C	Pressurizer PORV PR-2B fails partially open resulting in PRZR pressure decreasing.
4	CC05A	ATC - C	Component Cooling Water Pump A trip on overcurrent. The ATC Operator will stop both RXCPs after reactor trip. [also pre-load: *CC04B* *DI-46302-STOP – ON* *DI-46302-START – OFF* *DI-46302-NA-START – OFF]* *CC Pump B will not start (Auto or Manual)*
5	ED01 ED08E EG06B	ATC, BOP – M	Loss of all AC power – LOOP and lockout of Bus 5 and EDG B fail to start.

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