

Facility: WNP-2	Scenario No. 1	Op-Test No.: 1
Examiners: _____ Operators: _____ _____ _____		
Initial conditions: IC-85. The reactor is critical, heating up, and at 400 psig on a Beginning-of-life core.		
Turnover: A reactor startup is in progress following a 3-day maintenance outage. The reactor is critical and in the heating range. Control rod sequence is at step 22-1, rod 30-03 at notch 12. One hour ago, RC-1 HALF TRIP (P601-A12-4-3) annunciated. Initial investigation shows that relay 3AY and 8AY on RC-1 are de-energized. The work team is investigating the cause. All pre-job briefs are complete.		

Event No.	Malf. No.	Event Type*	Event Description
1.		R(RO)	RO pulls control rods to maintain heat-up rate
2.		I(RO)	IRM B fails erratically causing rod block and half scram
3.		C(BOP)	Power supply for Channel A of the Rx. Bldg. Exhaust Vent Rad Monitor fails, resulting in RC-1 relay 3AX to pick-up and start WMA-FN-54A (control room emergency filtration train fan).
4.		I(ALL)	A minimum seismic earthquake results in an RPV instrument line break causing a loss of instrumentation due to excess flow check valve, EFC-X114, closure.
5.		M(ALL)	An operating basis earthquake causes a large LOCA (recirc pump suction) and feedwater leak (feed pump suction).
6.		C(RO/BOP)	RHR-P-2A experiences an overcurrent lockout and faults SM-7
7.		C(BOP)	RHR-P-2C shaft shears

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

Facility: WNP-2	Scenario No.: 2	Op-Test No.: 1
Examiners: _____ Operators: _____ _____ _____		
Initial conditions: IC-81. The reactor is at 14% power on a beginning-of-life core. The feedwater system is in the Startup Level Control mode. TRB is under clearance.		
Turnover: The plant is starting up. The reactor is currently at 14% reactor power on its way to 100%. The control rod sequence is at step _____, control rod _____ at notch _____. PPM 3.1.2 is complete through section 5.6. TRB failed 1 hour ago and is under clearance so that BPA can work on it.		

Event	Malf. No.	Event Type*	Event Description
1.		R(RO)	Increase Reactor Power with control rods
2.		C(RO)	RWM failure results in loss of ability to move control rods
3.		C(BOP)	Outboard MSIV on 'A' steam line fast closes due to failure of its 4-way air control valve. (WNP-2 PER 200-0803)
4.		I(RO)	CRD flow controller auto mode fails requiring transfer to manual and manual adjustment of CRD flow.
5.		N(BOP)	Transfer Feedwater lineup from Startup level control valves, RFW-FCV-10A/B, to RFPT speed control.
6.		I(BOP)	Automatic operation of reactor feed pump min-flow controller becomes erratic resulting in reactor water level swings and requiring manual control of minimum flow.
7.		C(BOP)	Failure of REA-FN-1B causing entry into EOP 5.3.1 on high secondary containment pressure.
8.		M(ALL)	Loss of offsite power
9.		C(BOP)	Failure of DG-2 output breaker to close automatically. Requires BOP manual action to close.
10.		C(RO/BOP)	HPCS SW pump shaft seizure (LER 12-20-94) requiring trip of HPCS DG.

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

Facility: WNP-2	Scenario No. 3	Op-Test No: 1	
Examiners: _____ _____ _____	Operators: _____ _____ _____		
<p>Initial conditions: IC-84. The reactor is at 100% power with APRM B in bypass for maintenance. The core is near end-of-life.</p> <p>Turnover: The plant is at 100% rated thermal power. The plant is scheduled to shut down in 63 days for a refueling outage. BPA has scheduled an economic dispatch to 80% to commence at the beginning on your shift. The previous shift has completed PPM 3.2.5 to step 5.1.5. The “B” APRM is in bypass while the work team troubleshoots a problem in the COUNT circuit. BPA has also requested that PCB 4888 be opened at the beginning of your shift to allow for ASHE substation maintenance. All pre-job briefs are complete</p>			
Event No.	Malf. No.	Event Type*	Event Description
1.		R(RO)	Reduce power to 80% for economic dispatch
2.		I(RO)	APRM C fails upscale during power reduction
3.		N(BOP)	BPA requests that WNP-2 open PCB 4888 for switchyard maintenance.
4.		C(BOP)	Running DEH pump trips, standby DEH pump fails to auto start. BOP manually starts the standby pump.
5.		I(BOP)	DEH analog amplifier for BPVs output fails high causing all BPVs to go full open requiring BOP to take manual control of BPVs to shut them.
6.		C(ALL)	Loss of SM-1 due to overcurrent lockout. Results in loss of feedwater
7.		M(ALL)	Low RPV level reactor SCRAM with a 3 rod ATWS.
8.		I(RO/BOP)	RCIC flow controller output fails with no signal output rendering RCIC unusable.
9.		C(BOP)	PCB 4885 fails to open when the turbine trips resulting in motoring of main turbine generator.
10.		C(RO/BOP)	RFW-V-10A&B fail open resulting in RPV overfeed.

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

Facility: WNP-2	Scenario No.: 1	Op-Test No.: 2
Examiners: _____ Operators: _____ _____ _____		
Initial conditions: IC-86. Reactor power is at 17%. The main generator is ready for synch with the grid.		
Turnover: A plant startup is in progress. The reactor is at 17% power. PPM 3.1.2 is at step 5.7.20. Rod pull is at step 32-12, control rod 02-19 at notch 08. The main generator is at 1800 RPM and ready to synch to the grid. All pre-job briefs are complete.		

Event No.	Malf. No.	Event Type*	Event Description
1.		N(BOP)	Complete synchronization of the Main Generator with the Grid.
2.		C(BOP)	Main Generator auto synchronization circuit fails requiring manual synchronization of the main generator with the grid.
3.		R(RO)	Continue power increase by pulling control rods.
4.		I(RO)	Control Rod 02-19 position 10 reed switch fails requiring substitute rod position entry.
5.		I(BOP)	TSW-TE-8 instrument output fails low causing a loss of main turbine lube oil temperature indication and causing TSW-TCV-8 to go closed (due to sensed low temperature input) causing an increase in Main Turbine Bearing Oil temperature with a resultant requirement to decrease generator load and trip the main turbine.
6.		C(RO)	Stuck control rod (58-19). The RO will be able to withdraw the control rod by increasing control rod drive pressure. <i>(Columbia PER 299-2360)</i>
7.		M(ALL)	Rupture in DEH causes loss of pressure in DEH resulting in the closure of all bypass valves and a high RPV pressure condition.
8.		M(ALL)	Reactor fails to scram on high RPV pressure due to Hydraulic ATWS.
9.		M(ALL)	MS-RV-1B tailpipe failure above suppression pool level.
10.		C(RO)	Operating CRD pump trips on low suction pressure following the scram <i>(Columbia PER 299-1342)</i>
11.		C(RO/BOP)	RHR-P-2A shaft shears requiring all containment spray functions off RHR B loop.

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Facility: WNP-2	Scenario No.: 2	Op-Test No.: 2	
Examiners: _____ Operators: _____ _____ _____			
Initial conditions: IC-82. Reactor power is at 91% on an end-of-life core.			
Turnover: The plant is at 91% rated thermal power and is in the process of being returned to 100% following an economic dispatch. You are currently at step 5.2.20 of PPM 3.2.5. The plant will be shutting down in 48 days for a refueling outage. The DG-2 Monthly Operability Surveillance, OSP-ELEC-M702, is in progress and has been completed through step 7.5.36 (DG has been running in idle for 10 minutes). SW-P-1B is running to support the DG surveillance. All pre-job briefs are complete.			
Event No.	Malf. No.	Event Type*	Event Description
1.		N(BOP)	Parallel DG-2 to the bus.
2.		C(BOP)	DG-2 voltage regulator failure causes MVARs to go upscale requiring the DG to be tripped. (WNP-2 LER 98-014-00)
3.		C(BOP)	Hotwell level controller (LIC-2) power supply fails while hotwell level is on an upward trend requiring BOP to transfer control to LIC-1 and manually restore level in hotwell.
4.		R(RO)	Continue power increase with reactor recirc flow.
5.		I(RO)	APRM INOP trip during power increase
6.		I(BOP)	Reactor Building DP controller, REA-DPIC-1A, auto feature fails causing high positive pressure in secondary containment and requiring BOP to take manual control of DP to restore negative pressure.
7.		C(RO)	Small earthquake causes a small LOCA and shaft seizure of RWCU-P-1B
8.		M(ALL)	Large earthquake causes a large LOCA and scram
9.		C(RO/BOP)	Loss of condensate and feedwater system
10.		C(ALL)	SM-3 startup breaker closure fails resulting in temporary loss of SM-3 and requiring manual realignment of power to SL-31.
11.		C(BOP)	HPCS-V-4, HPCS injection valve, fails closed rendering HPCS unusable.

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

Facility: WNP-2	Scenario No.: spare #1	Op-Test No.: na	
Examiners: _____ Operators: _____ _____ _____			
Initial conditions: IC-14 modified. The reactor is at 50% power on a beginning of life core.			
Turnover: The plant is in the process of a startup following a refueling. The reactor is currently at 50% rated thermal power. Your shift will be continuing the power increase. PPM 3.1.2. is complete through step 5.9.14.			
Event No.	Malf. No.	Event Type*	Event Description
1.		R(RO)	Increase power from 50%
2.		I(RO)	Recirc Flow Unit 'C' fails downscale resulting in a half scram.
3.		N(BOP)	Place second feed pump in service
4.		C(BOP)	The running TSW pump trips with a failure of the standby pump to auto-start. The standby pump is manually started.
5.		C(BOP)	Inadvertent actuation of MS-RV-1A requiring fuse removal to close the SRV.
6.		M(ALL)	Spurious fire alarm causes a fire pump start and a rupture in the reactor building fire header. Flooding occurs in RHR C and LPCS rooms. (WNP-2 LER 98-011-00)
7.		M(ALL)	Reactor manually scrammed per PPM 5.3.1
8.		I(RO/BOP)	RCIC high steam flow instrument fails upscale resulting in a RCIC isolation signal and RCIC turbine trip. (WNP-2 LER 84-082-02) RCIC will fail to automatically isolate.

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Facility: WNP-2		Scenario No.: spare #2		Op-Test No.: na
Examiners: _____		Operators: _____		
_____		_____		
_____		_____		
Initial conditions: IC-14. The plant is at 100% power on a beginning-of-life core.				
Turnover: The plant is operating at 100% power. OSP-ELEC-M703, HPCS DG Monthly Operability Surveillance, is in progress and completed through step 7.5.24.				

Event No.	Malf. No.	Event Type*	Event Description
1.		N(BOP)	Start HPCS DG for surveillance testing.
2.		C(BOP)	HPCS SW pump trips. (<i>LaSalle LER 12-20-94</i>)
3.		I(RO)	Rod Block Monitor Channel 'B' fails upscale resulting in a half scram and rod block.
4.		C(ALL)	Traversing In-core Probe will not withdraw resulting in the inability of a PCIV to function normally. (<i>WNP-2 LER 98-10-00</i>)
5.		C(RO/BOP)	TSW to RFPT "B" oil cooler isolates resulting in high oil temperatures, vibration problems, and eventual RFPT trip.
6.		M(ALL)	Recirc runback resulting in Region A entry and resultant manual scram (<i>WNP-2 97-004</i>)
7.		C(ALL)	RFPT "A" governor fails low requiring FWLC with Condensate by lowering RPV pressure.

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