

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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FACILITY: QUAD CITIES		SCENARIO NO: 1	OP-TEST NO: 1
EXAMINERS: _____		OPERATORS: _____	
_____		_____	
_____		_____	
<p>INITIAL CONDITIONS: ~ 41% power, 1B Service Water Pump, 1B EHC pump, 1D RHR pump and 1B Instrument Air Compressor OOS, IRM #12 bypassed. Power ascension in progress.</p> <p>TURNOVER: ~ 365 MWe and 41% power on the 50% FCL. Rod step 53 is partially withdrawn. The following equipment is out of service: 1B Service Water Pump, 1B EHC pump, 1D RHR pump and 1B Instrument Air Compressor OOS, IRM #12 bypassed. Plant startup in progress IAW QCGP 1-1, step F.9.t. transitioning to QCGP 3-1 step F.3.g. Place the A FWRV in service. QNE directions are to increase power with recircs to ~ 65 MLBM/hr core flow. Inerting in progress per QCOP 1600-20 step F.16.</p>			
Event No.	Malfunction Number	Event Type*	Event Description
1	FW08b	I – R, S	B FWRV lockup
2	N/A	N – B, S	Place A FWRV in service and transfer to 3-element control
3	N/A	R – R, S	Increase power using recirc pumps
4	SW11b	C – B, S	TBCCW pump trip
5	RP04b	C – B, S	Trip of RPS-B
6	RD04r	C – R, S	Rod drift out
7	TU12/RD13	M – All	Turbine Trip with Hydraulic ATWS (PSA identified event)
8	TC05a	C – All	Trip of 1A EHC Pump

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor
(S)– SRO/US
(R) – RO
(B) – BOP/ANSO

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Facility: Quad Cities

Scenario No: 1

Op-Test No: 1

Summary:

- The crew will take the shift at ~ 41% power. The B FWRV will lockup, requiring reset. (Instrument – RO, SRO) When Feedwater flow is approximately 4.5 MLBM/hr the BOP will place the 2nd FWRV in service. (Normal Evolution – BOP, SRO) The RO will increase reactor power using Recirc pumps. (Reactivity Manipulation – RO, SRO) The A TBCCW pump will trip, requiring manual start of the B TBCCW pump. (Component – BOP, SRO) Next a loss of “B” RPS will occur, requiring restoration of power and resetting of isolations and equipment. (Instrument, TS – BOP, SRO) A rod will drift out of the core, requiring it to be manually inserted, scrambled and isolated. (Component, TS – RO, SRO) The turbine will trip, rods will not insert – Hydraulic ATWS, requiring entry into QGA 101. (Major – All) Approximately 2 minutes after the Turbine trips, the 1A EHC pump will trip, requiring pressure control to be transferred to the ADS valves. The scenario is complete when the crew has inserted control rods IAW QCOP 0300-28 and are controlling RPV water level and pressure IAW QGA 100.

CT #1 - 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- 6.3 PWR/LVL TERM/PREVENT)

CT #2 - When conditions are met to re-establish injection, use available injection systems to MAINTAIN RPV water level above the Minimum Steam Cooling RPV Water Level (-166"). (BWROG RPV-6.4 ATWS PWR/LVL RESTORE RPV LVL)

CT #3 (Contingent on water level) - With a reactor scram required, reactor not shutdown, and conditions for ADS blowdown are met, INHIBIT ADS to prevent an uncontrolled RPV depressurization, to prevent causing a significant power excursion. (BWROG RPV-6.2 ATWS PWR/LVL INHIBIT ADS)

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Simulator setup:

1. Load IC-91 from the zip disk and reset the simulator to IC-91: **rst 91**
2. Take the following equipment OOS:
 - 1B Service Water Pump in PTL**
 - 1B Instrument Air Compressor in PTL**
 - 1D RHR Pump in PTL**
 - 1B EHC Pump in PTL**
3. **Bypass IRM 12 and place Eq. Status tag on IRM joystick.**
4. Verify hydraulic block (rd13a and b) of the Scram Discharge Volume at 99% ramped to 100% in 3 seconds via trigger.
5. Verify control rods at **step 53 – 1st 4 rods (C-11, C-5, N-11, N-5) at position 24, the others at target in.**
6. **Adjust recircs to ~ 51 MLBM/hr core flow.** (This is ~ 30% speed demand).
7. **Verify the 2nd RFP started IAW QCOP 3200-03 and verify condensate pump amps in band. If necessary, adjust 3401.**
8. **Verify CAMS started for Drywell sampling on the 901-56 panel.**
9. **Verify the 1A FWRV in Sequence Manual at the left computer screen and ensure 1B FWRV is the primary. (D-1).**
10. Verify Drywell inerting in progress in accordance with QCOP 1600-20 step F.16. **Hang equipment status tag on 1A DW/Torus purge fan.**
11. Verify the RWM is setup correctly.
12. Verify all procedures, QGAs, and meter faces, are erased.
13. Clear old SER and alarm screens.
14. Run new OD-20.
15. Write on white board the following:
Tech Spec 3.5.1 Condition A 1D RHR Pump OOS Day 1 of 30
Tech Spec 3.6.2.5 Condition A, Drywell Oxygen Concentration High, Hour 8 of 24
Tech Spec 3.6.3.1 Condition A, Drywell Torus Delta P Low, Hour 8 of 24
16. **Place placard for RBCCW ½ lined up to U1 by the RBCCW pumps.**
17. Verify trigger 4 set to delete malfunction fw08b when reset pushbutton is depressed.

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LIST OF POTENTIAL PROCEDURES

QCGP 1-1, QCGP 3-1 QCGP 4-1

QCOP 0202-03 0250-02 0300-28 0600-02 0600-18
5750-19 7000-01

QCOA/QOA 0300-04, 0300-11, 0600-01, 3800-03, 7000-01

QOA 912-1, C-2, D-2

QCAN 901-5, A-3, A-12, H-8

QGAs

HARD CARDS

METER FACES

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Crew Turnover:

Unit 1 is at approximately 365 MWe and 41% power on the 50% FCL. Rod step 53 is partially withdrawn.

Unit 2 is operating at 97% power on the 97% Flow Control Line.

The following equipment is out of service:

1B Service Water Pump due to a ground in the motor windings.

1B EHC pump due to a failure of the autostart feature.

1D RHR pump due to a failure of the trip coil. Tech Spec 3.5.1, condition A.1 entered, Day 1 of 30.

Drywell inerting in progress IAW QCOP 1600-20 step F.16., Tech Spec 3.6.2.5 and 3.6.3.1 Condition A, Hour 8 of 24.

1B Instrument Air Compressor due to a seal water failure.

IRM #12 bypassed due to erratic operation and is INOP.

Alarm 901-5 B-3, Rod Worth Minimizer, Block alarms sporadically and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip, alarms sporadically and is being investigated.

Plant startup in progress IAW QCGP 1-1, step F.9.t. transitioning to QCGP 3-1 step F.3.g.(4). Your directions for the shift are to place 1A Feedwater Reg Valve in service and continue power ascension. QNE directions are to increase power with recircs to ~ 65 MLBM/hr core flow.

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EVENT/POSITION EVALUATION

Event No.(s): 1		
Description: 1B FWRV lockup		
Initiation: Shortly after the crew takes the shift and when directed by the lead examiner, lockup the 1B FWRV using malfunction FW08b (imf fw08b).		
Time	Position	Applicant's Actions or Behavior
	RO	Reports annunciator 901-5 H-8, 1B FW ACTUATOR TROUBLE, is alarming and addresses the annunciator procedure and enters QCOA 0600-01, Feedwater Regulator Lockup.
		Monitors Rx Water level.
		Depresses 1B VLV RESET pushbutton and holds for at least 5 seconds.
SIM OP		Verify malfunction fw08b automatically clears when the 1B FWRV reset pushbutton is depressed (trigger 4). While the RESET pushbutton is depressed, delete the locked FWRV malfunction. (dmf fw08b)
		Reports 1B FWRV reset.
		Verifies Rx Water level is approximately the same as the Master Controller setting and places FWRV in auto by selecting AUTO at the FWRV controller or the Operator workstation (OWS).
		Monitors Rx Water Level.
		Directs Instrument Maintenance investigate FWRV lockup.
SIM OP		As the IM sent to investigate, wait approximately 5 minutes and report that you found a loose lead on 1B FWRV and have tightened it.
	BOP	Monitors Balance of Plant parameters.
		Assist RO as requested by SRO/RO
	SRO	Directs the RO to investigate the annunciator and enters QCOA 0600-01, Feedwater Regulator Lockup.
		Sets scram criteria of 11 and 44 inches.
		If asked, authorizes placing FWRV in Auto.
		Ensures Instrument Maintenance is contacted.
Termination: The 1B FWRV lockup has been investigated and reset.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST**Page 7 of 3****EVENT/POSITION EVALUATION**

Event No.(s): 2		
Description: Place the A FWRV in service.		
Initiation: Feedwater flow is approximately 4.5 MLBM/hr.		
Time	Position	Applicant's Actions or Behavior
	SRO	Directs A FWRV placed in service IAW QCOP 0600-02, Placing Main Feedwater Regulator On-Line or Off-Line and/or QCOP 0600-18, Main Feedwater Regulator Operation.
	BOP	Refers to QCOP 0600-02 and/or QCOP 0600-18.
		Verifies A FWRV is in sequence manual on the OWS screen.
		Verifies B FWRV is on-line in AUTO.
		Verifies A FWRV is in "remote-manual" and is closed.
		If desired, balances positions of FWRVs.
		Place A FWRV in "Auto".
		Verifies A and B FWRVs are balanced.
		Verifies Reactor Water level being maintained.
		Places FWLC in 3-element control IAW QCOP 0600-12, Feedwater Level 3-Element Control Operation by depressing the 3-element control pushbutton on the master controller.
	RO	Monitors Rx Water level and 901-5 panel parameters.
Termination: The A FWRV is in service.		

NOTES:

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EVENT/POSITION EVALUATION

Event No.(s): 3		
Description: Power ascension.		
Initiation: The crew is turned over to raise reactor power with recirc pumps.		
Time	Position	Applicant's Actions or Behavior
	US	Authorizes power increase. Gives pre-job brief. (Brief may have been done prior to the crew assuming the shift.)
		Supervises and monitors the power ascension.
	RO	Monitors 901-5 panel parameters.
		Increases recirc pump speed using individual controllers.
	BOP	Monitors Balance of Plant parameters.
		Provides peer-check for the RO when performing reactivity manipulations.
		Increases load set IAW QCGP 3-1, Reactor Power Operations, maintaining 10% above generator output.
Termination: As determined by Lead Evaluator or core flow reaches ~ 65 MLBM/hr.		

NOTES:

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EVENT/POSITION EVALUATION

Event No.(s):	4	
Description: 1A TBCCW Pump Trip		
Initiation: Sim Op trips 1A TBCCW pump by inserting malfunction SW11a (imf sw11a) when the power ascension is started or when directed by the lead examiner.		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports annunciators 912-1 C-2, TURB BLDG CLG WATER PUMP TRIP and D-2, TURB BLDG COOLING WATER LOW PRESS, are alarming and addresses the annunciator procedures.
		Determines that 1A TBCCW pump has tripped.
		Starts 1B TBCCW pump.
		Dispatches an operator to MCC 15-1 to check for breaker trip or thermal overload condition and sends an operator to the pump to check for an abnormal condition.
SIM OP		As the operator sent to 15-1, wait ~ 3 minutes and report 1A TBCCW pump thermal overloads are tripped. As the operator sent to investigate the pump, report 1B TBCCW pump is running normal and 1A TBCCW pump feels hot.
	SRO	Directs the BOP to investigate the annunciators.
		If asked, authorizes the start of 1B TBCCW pump.
		Ensures Mechanical Maintenance is contacted.
		May refer to QCOA 3800-03, Total Failure of the TBCCW System.
	RO	Monitors plant parameters.
Termination: 1B TBCCW pump is running and the failure of 1A TBCCW pump is being investigated.		

NOTES:

[illegible]

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EVENT/POSITION EVALUATION

Event No.(s): 5		
Description: Trip of RPS B		
Initiation: When the load increase is complete or when directed by the lead examiner, trip RPS B using malfunction RP04b (imf rp04b).		
Time	Position	Applicant's Actions or Behavior
	RO	Reports "B" RPS ½ scram and an apparent loss of RPS "B"
		Monitors plant parameters.
	SRO	Directs BOP to perform QOA 7000-01, RPS Bus Failure.
		Directs RPS "B" placed on alternate power.
		Contacts Electrical Maintenance to investigate.
		Refers to TS 3.3.8.2 and determines that he has 72 hours to remove EPAs from service.
	BOP	If the RO does not report a loss of RPS "B", the BOP does.
		Refers to QOA 7000-01, RPS Bus Failure.
		Dispatches an operator to the Aux Electric Room to investigate.
		Verifies Rx Bldg Vents auto-isolate and SBGT auto-starts.
		Verifies Group 2 and 3 valve closures.
SIM OP		After ~ 3 minutes, report that RPS "B" EPAs are tripped and will not reset. 1B RPS MG Set tripped.

NOTES:

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EVENT/POSITION EVALUATION

Event No.(s):	5	
Description: Trip of RPS B (Continued)		
Initiation: When the load increase is complete or when directed by the lead examiner, trip RPS B using malfunction RP04b (imf rp04b).		
Time	Position	Applicant's Actions or Behavior
	BOP	Directs the NLO to place RPS "B" on alternate power.
		Ensures Electrical Maintenance is contacted.
SIM OP		After ~ 1 minute, places RPS "B" on alternate power using remote function RP03r (mrf rp03r alt).
	BOP/RO	Resets the Group 2 and 3 isolations.
		Resets the Group 1 isolation.
		Resets the ½ scram.
	BOP	Restores Primary Containment vent system to normal.
		Opens AO 4720 or AO 4721.
		Reset Rx Building Floor Drain and Equipment Drain Tank Pumps.
		Resets ARMs, APRMs and RBM.
		Resets Rx Bldg Vents and Shutdowns SBT.
		Resets CR Vents.
		Opens RWCU isolation valves and restarts RWCU.
		Resets Gp 2 ISOL RESET VLV 1001-29 pushbuttons on both loops of RHR
		Gives outboard MSIVs an open signal.
		Resets HPCI Logic.
SIM OP		If asked, as the EM, report to the CR and report DC solenoid cable currents are between 45 and 65 ma in the 901-3 panel.
Termination: At a minimum, the cause has been investigated, RPS B is on alternate power and the ½ scram and ½ isolations have been reset.		

NOTES:

[illegible]

UNIT 1 SUPERVISOR TURNOVER CHECKLIST**Page 12 of 3****EVENT/POSITION EVALUATION**

Event No.(s): 6		
Description: Control rod drifts out		
Initiation: When the minimum actions for restoring RPS B are complete and directed by the lead examiner, cause control rod 34-27 to drift out using malfunction RD04r. (imf rd04r3427) .		
Time	Position	Applicant's Actions or Behavior
	RO	Reports alarm 901-5 A-3, Rod Drift and control rod 34-27 (J-7) drifting out of the core.
		Refers to the annunciator procedure and QCOA 0300-11, Control Rod Drift.
		Selects control rod 34-27 (J-7) and drives to position 00.
		Reports control rod 34-27 (J-7) will not latch and drives to position 00.
	BOP	Refers to the annunciator procedure and QCOA 0300-11, Control Rod Drift.
		Places individual control rod Scram Test Switch for control rod 34-27 (J-7) to the scram position at panel 901-16.
		Contacts a QNE
		Contacts NLO to close 1-305-105, CRD EXH VLV for control rod 34-27 (J-7).
SIM OP		When directed to close 1-305-105 for control rod 34-27 (J-7), wait ~ 3 minutes and modify remote function RD06r (mrf rd06r3427r inop) and delete malfunction RD04r (dmf rd04r3427).
	SRO	Directs RO/BOP to address annunciator 901-5 A-3, Rod Drift and QCOA 0300-11, Control Rod Drift.
		Refers to Tech Spec 3.1.3.C and declares control rod 34-27 (J-7) inop. Fully inserts control rod within 3 hours and disarms within 4 hours.
		Directs control rod 34-27 (J-7) taken OOS.
Termination: When the drifting control rod has been inserted, scrammed and directed to be taken OOS.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST**Page 13 of 3****EVENT/POSITION EVALUATION****Event No.(s):** 7**Description:** Trip of the Main Turbine with ATWS**Initiation:** When the actions for the drifting control rod have been completed or when directed by the lead examiner, trip the main turbine on high bearing vibration using malfunction TU02L ramped to to 50 % over 5 minutes. **(imf tu02L 50 5:).**

Time	Position	Applicant's Actions or Behavior
	RO	Notes by annunciator 901-5 A-12, CHANNEL A/B STOP VLVS CLOSE TRIP, that the Main Turbine has tripped and the Rx failed to scram.
		Inserts a manual scram and places the Mode Switch to SHUTDOWN.
		Reports rods did not insert.
		Initiates ARI
		Runs recirc pumps to minimum speed.
		Bypasses the RWM or selects power reduction mode, selects the cram rods and drives them to position 00.
		Directs the 1-301-25 valve closed, if necessary.
SIM OP		If requested, wait ~ 3 minutes and close the unit 1-301-25 valve using remote function RD04r (mrf rd04r close) and report valve closed to the RO.
	SRO	Directs Rx scrammed on rising bearing vibration.
		Enters QGA 100, RPV Control due to failure to scram.
		Transitions from QGA 100, RPV Control to QGA 101, RPV Control ATWS) due to rods being out.
		Directs ADS inhibited.
		Directs Core Spray Pumps placed in PTL.
	BOP	Reports annunciator 901-7 D-2, TURB GEN BRG HI VIBRATION, and refers to the annunciator procedure.
		Reports bearing #12 vibration is rising.
		Inhibits ADS.
		Places Core Spray Pumps in PTL.

Termination: Taking actions for the ATWS**NOTES:**

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EVENT/POSITION EVALUATION

Event No.(s): 8		
Description: Hydraulic ATWS with subsequent trip of 1A EHC pump.		
Initiation: Turbine Trip		
Time	Position	Applicant's Actions or Behavior
	SRO	Determines Main Steam Lines are open and directs the ANSO to perform QCOP 0250-02, Bypassing MSIV Group 1 Isolation Signal From Low Low Reactor Water Level.
SIM OP		If requested, wait ~ 2 minutes, perform QCOP 0250-02, Bypassing MSIV Group 1 Isolation Signal From Low Low Reactor Water Level using remote function QG09r (mrf qg09r activate) and report completion to the ANSO.
		Determines Rx power > 3% and RPV water level > -35 inches.
		Directs termination and prevention of injection with exception of Boron, CRD and RCIC.
		Directs RO to report when RPV water level reaches -35 inches.
		Directs a level band of -35 to -166 inches.
		Directs Mode Switch placed in SHUTDOWN.
		Directs ARI initiated.
		Directs recirc pumps run to minimum.
		Directs recirc pumps tripped once minimum speed is reached.
		Directs the RO to perform QCOP 0300-28, Alternate Control Rod Insertion.
		Directs pressure controlled on the bypass valves.
SIM OP		When plant conditions are stable or when directed by the Lead Examiner, trip the A EHC pump using malfunction TC05A (imf tc05a).
		When bypass valves close, directs reactor pressure maintained 800-1000 psig.
		When all rods are inserted, exit QGA 101, RPV Control (ATWS) and enters QGA 100, RPV Control. Enters QGA 200, Primary Containment Control if condition is reached.

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EVENT/POSITION EVALUATION

Event No.(s): 8		
Description: Hydraulic ATWS with subsequent trip of 1A EHC pump.		
Initiation: Turbine Trip		
Time	Position	Applicant's Actions or Behavior
	RO	Drives control rods to position 00, spiraling out from the center of the core.
		Terminates and prevents feedwater injection by placing FWRVs in manual, closing and closing the FWRV isolation valves. Directs the ANSO to trip HPCI and shutdown the SSMP if running.
		Bypass SDV high level scram and attempts scram reset.
		Directs jumpers installed to bypass reactor scram.
SIM OP		If requested, wait ~ 2 minutes and bypass reactor scrams using remote function QG08r (mrf qg08r activate) and report completion to the RO.
		Resets Rx Scram.
		Directs ARI fuses removed if level < -59 inches.
SIM OP		Delete malfunction rd13a and b when scram is reset and ARI fuses are removed, if necessary.
SIM OP		If requested, wait ~2 minutes and remove ARI fuses using remote function QG14r (mrf qg14r activate) and report completion to the RO.
		Inserts a reactor scram and reports all rods inserted.
	RO/BOP	Maintains Rx water level -35 to -166 inches using feedwater.
	BOP	Performs/directs performed QCOP 0250-02, Bypassing MSIV Group 1 Isolation Signal From Low Low Reactor Water Level.
		Trips recirc pumps.
		Reports Bypass valves controlling pressure.
		Trip latches HPCI.
		Starts Torus Cooling
		Reports closure of Bypass Valves and cycles ADS valves to maintain reactor pressure 800-1000 psig.
Termination: The scenario is complete when all control rods are inserted and the crew is controlling RPV water level and pressure IAW QGA 100, RPV Control or at the discretion of the lead examiner.		

NOTES:

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FACILITY: QUAD CITIES		SCENARIO NO: 2	OP-TEST NO: 1
EXAMINERS: _____		OPERATORS: _____	
_____		_____	
<p>INITIAL CONDITIONS: IC-21, 97% Power, The following equipment is out of service: 1B Service Water Pump, 1B EHC pump, 1D RHR pump, 1B Stator Cooling Pump and 1B Instrument Air Compressor OOS, IRM #12 bypassed. Currently Holding Power Constant.</p> <p>TURNOVER: 912 MWe. The following equipment is out of service: 1B Service Water Pump, 1B EHC pump, 1D RHR pump, 1B Stator Cooling Pump and 1B Instrument Air Compressor OOS, IRM #12 bypassed. Currently Holding Power Constant. TS 3.5.1.A.1 Day 2 of 30</p>			
Event No.	Malfunction Number	Event Type*	Event Description
1	N/A	N – B, S	SSMP Valve Timing (QCOS 2900-03) (Note: for crew A due to intermittent simulator fidelity problem on channel A reactor water level, received low low level causing a ½ scram signal. Problem cleared, allowed to reset ½ scram and continued with scenario.)
2	NM08/RP02	I – R, S	APRM failure with failure of automatic ½ scram. (Note: for all crews, due to the level instrument fidelity problem, changed APRM failure from channel B to channel A, just in case level instrument problem occurred.)
3	SW01	C – B, S	Service Water Pump Trip.
4	RD03	C – R, S	Rod drift in 1 notch.
5	ior dihs110021c close	I – B, S	RHR Pump inadvertent start
6	MC08	R – R, S	Main Condenser air in leakage that requires a power reduction. (PSA identified event)
7	RR10A	M - All	Recirc suction line rupture.
8	imf fw17abcd HP01	M – All	Loss of all cond pumps and failure of HPCI leads to RPV Blowdown at TAF and low pressure system injection. (PSA identified event)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor
 (S)– SRO/US
 (R) – RO
 (B) – BOP/ANSO

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Facility: Quad Cities

Scenario No: 2

Op-Test No: 1

- Summary: The crew will take the shift at 100% power and perform QCOS 2900-03 - SSMP Valve Timing Surveillance. (Normal – BOP, SRO) An APRM will fail upscale with a failure of the automatic ½ scram, requiring a manual ½ scram and bypassing of the failed APRM. (Instrument, TS – RO, SRO) A Service Water pump will trip, requiring a standby pump to be manually started. (Component – BOP, SRO) A control rod will drift in from 48 to 46, requiring it to be withdrawn back to 48. (Component – RO, SRO) An RHR pump will inadvertently start, requiring it to be manually tripped and Tech Specs to be addressed. (Instrument, TS - ANSO, SRO) Air in-leakage will develop in the Main Condenser Boot due to a rupture, requiring power reduction and a reactor scram. (Component, Reactivity – NSO, SRO) A Recirc Suction line will rupture along with a loss of all cond pumps and a failure of HPCI, which will result in level reaching TAF and RPV blowdown. (Major – ALL) The scenario ends when the crew has performed an RPV Blowdown and reestablished core cooling with low pressure systems.

CT #1 - When Torus pressure exceeds 5 psig, INITIATE drywell sprays, while in the safe region of the drywell spray initiation limit (DSIL). (BWROG PC-5.1 INIT DW SPRAY)

CT #2 - With Reactor pressure greater than shutoff head of the Low pressure system(s) before RPV water level drops to -166", INITIATE emergency depressurization. (BWROG RPV-1.1 LOSS HP INJ E/D TAF)

CT #3 - Action is taken to restore RPV water level above TAF, by OPERATING available low pressure system(s) when RPV pressure decreases below the shut off head of the low pressure system(s). (BWROG RPV-1.2 LOSS HP IND RESTORE RPV LVL).

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Simulator setup:

18. Load IC-93 from the zip drive and reset the simulator to IC-93: **rst 93**
19. Take the following equipment OOS:
 - 1B Service Water Pump in PTL**
 - 1B Instrument Air Compressor in PTL**
 - 1D RHR Pump in PTL**
 - 1B Stator Water Cooling pump in PTL**
 - 1B EHC Pump in PTL**

20. Bypass IRM 12

21. Insert the following malfunctions:
 - a. Fail HPCI to autostart using malfunction HP11. **(imf HP11)**
 - b. Trip 1A Core Spray pump using malfunction CS01A. **(imf CS01a)**
 - c. Fail 1B Core Spray pump injection valve closed using malfunction CS07B. **(imf cs07b)**
 - d. Assign event rdsdrposrwm(151).eq.45 to trigger #1. **(trg 1 rdsdrposrwm(151).eq.45)**
(dmf rd03r5015 (1))
22. Assign event hpciturbinespeed>0.5 to trigger #3 and inset malfunction HP01 to trip the HPCI turbine one minute after it starts.
(trg 3 hpciturbinespeed>0.5)
(imf hp01 (3) 60)
6. Verify the RWM is setup correctly.
7. Verify all procedures, QGAs, and meter faces, are erased.
8. Clear old SER and alarm screens.
9. Run new OD-20.
10. Write on white board the following:

Tech Spec 3.5.1 Condition A 1D RHR Pump OOS Day 2 of 30

11. **Place placard for RBCCW ½ lined up to U1 by the RBCCW pumps.**

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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LIST OF POTENTIAL PROCEDURES

QCGP 4-1

QCOP 0300-16, 0500-03, 0700-03, 0700-04, 3300-05,
4100-03

QCOS 2900-03

QCOA/QOA 0201-01 0300-04, 0300-11, 0700-03, 1000-04,
3300-02, 3800-03, 3900-01

QCAN 901-3 A-5, A-6, A-15

QCAN 901-5, A-3, A-6, A-15, B-11, C-3, D-13, H-1

QCAN 901-6, F-11

QCAN 901-7 H-3

QCAN 901-54 B-6, C-7

QCAN 912-1 A-3

T.S 3.3.1.1

TRM 3.3.a, 3.6.a

QCAP 200-10 ATT. Q and others

HARD CARDS

QGAs

METER FACES

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Crew Turnover:

Unit 1 is at approximately 912 MWe and 97% power on the 97% FCL.

Unit 2 is at approximately 912 MWe and 97% power on the 97% FCL.

The following equipment is out of service:

1B Service Water Pump due to a ground in the motor windings.

1B EHC pump due to a failure of the autostart feature.

1B Stator Water Cooling pump due to overheating.

1D RHR pump due to a failure of the trip coil. Tech Spec 3.5.1, condition A.1 entered, Day 2 of 30.

1B Instrument Air Compressor due to a seal water failure.

IRM #12 bypassed due to erratic operation.

Alarm 901-5 B-3, Rod Worth Minimizer, Block alarms sporadically and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip, alarms sporadically and is being investigated.

Instructions for the shift are to hold load and perform QCOS 2900-03, Safe Shutdown Makeup System Power Operated Valve Test, as soon as you take the shift.

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION

Event No.(s): 1		
Description: SSMP Valve Timing (QCOS 2900-03)		
Initiation: Crew is directed to perform during shift turnover.		
Time	Position	Applicant's Actions or Behavior
	SRO	Directs QCOS 2900-03, Safe Shutdown Makeup System Power Operated Valve Test performed and performs pre-job brief.
	RO	Monitors plant parameters.
	BOP	Opens and times open MO 1/2-2901-7.
		Records time.
		Verifies MO 1/2-2901-7 opening time meets IST Criteria.
		Closes and times close MO 1/2-2901-7.
		Records time.
		Verifies MO 1/2-2901-7 closing time meets IST Criteria.
		Opens and times open MO 1-2901-8.
		Records time.
		Verifies MO 1-2901-8 opening time meets IST Criteria.
		Closes MO 1-2901-8.
		Opens and times open MO 2-2901-8.
		Records time.
		Verifies MO 2-2901-8 opening time meets IST Criteria.
		Closes MO 2-2901-8.
		Directs NLO to perform step H.3 of QCOS 2900-03.
SIM OP		As the NLO, report that step H.3 is complete.
		Verifies all Acceptance Criteria verification steps are complete.
		Signs for completing the surveillance.
	SRO	Approves the surveillance.
Termination: QCOS 2900-03 is complete.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION

Event No.(s): 2		
Description: APRM failure with failure of automatic ½ scram. When QCOS 2900-03 is complete or when directed by the lead examiner, fail the "A" channel of RPS to scram using malfunction RP02 A and C (imf rp02a; imf rp02c) and then fail APRM #1 upscale using malfunction NM08a at 100% severity (imf nm08a 100). [Note: changed from APRM #5 to #1]		
Time	Position	Applicant's Actions or Behavior
	RO	Reports annunciators 901-5 A-6, APRM UPSCALE/HIGH, B-11 CHANNEL A/B NEUTRON MONITOR, and C-12 CHANNEL 1-3 APRM HI-HI OR INOP, and refers to the procedures.
		Reports APRM #1 indicates upscale.
		Verifies rod block occurred.
		Reports failure of ½ scram on RPS "A".
		Inserts ½ scram on RPS "A".
	BOP/RO	Refers to QCOA 0700-03, Loss of neutron Flux Indication.
	RO	Stops all reactivity changes and holds power constant.
	BOP/RO	Refers to QCOP 0700-04, Average Power Range Monitoring System Operation (APRM).
	RO	Bypasses APRM #1 and verifies the white bypass light comes on.
		If desired, bypasses the associated OPRM per QCOP 0700-10, Oscillation Power Range Monitoring (OPRM) Operation.
	SRO	Directs ½ scram inserted on RPS "A".
		Refers to QCOA 0700-03, Loss of neutron Flux Indication.
		Directs reactivity changes stopped and power held constant.
		Refers to QCOP 0700-04, Average Power Range Monitoring System Operation (APRM) and Tech specs 3.3.1.1 and TRM 3.3.a.
		Determines minimum number of APRM channels still available.
		Directs APRM #1 bypassed.
NOTE		The crew may or may not choose to reset the ½ scram since this is not a required channel.
	BOP	Checks for abnormally high LPRM indication.
		Monitors plant parameters.
		Contacts QNE and Instrument Maintenance.
SIM OP		If asked, as the QNE, it is not desired to bypass OPRMs 1 and 3.
Termination: APRM 1 has been bypassed.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

Page 23 of 3

EVENT/POSITION EVALUATION

Event No.(s): 3		
Description: Service Water Pump Trip.		
Initiation: When APRM 1 has been bypassed and the ½ scram is reset or when directed by the lead examiner, trip the 2B Service Water pump using malfunction SW01e. (imf sw01e)		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports 2B Service Water Pump tripped.
		Refers to annunciator procedures QOA 912-1 A-3 SERVICE WATER PUMP TRIP, B-3 SERVICE WATER LOW PRESSURE, and C-3 FIRE PROTECT SERVICE WATER LOW PRESSURE.
		Reports fire trouble alarm is alarming and ask U2 what is causing the alarm.
SIM OP		Acknowledges fire trouble alarm using bat fire (bat fire).
		Starts 2A Service Water Pump. Verifies adequate Service Water System pressure.
		Dispatches an operator to investigate 2B Service Water Pump and breaker.
SIM OP		As the NLO sent to investigate 2B Service Water pump trip, wait ~ 5 minutes and report 2B Service Water tripped due to overcurrent. If asked, report fire trouble alarm is due to fire diesel auto-start on low service water pressure.
		Reports Fire Pumps auto-started.
		Directs NLO to secure the Fire Diesels per QCOP 4100-03, Diesel Fire Pump Operation.
	RO	Monitors plant parameters.
	SRO	Directs start of 2A Service Water Pump.
		Refers to QCOA 3900-01, Service Water System Failure.
Termination: A standby Service Water pump has been started and the tripped pump is being investigated.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

Page 24 of 3

EVENT/POSITION EVALUATION

Event No.(s): 4		
Description: Control Rod drift in 1 notch.		
Initiation: When a standby Service Water pump has been started and the tripped pump is being investigated or when directed by the lead examiner, cause control rod 50-15 (N-4) to drift in 1 notch by inserting malfunction RD03 (imf rd03r5015) and deleting malfunction RD03 when control rod 50-15 (N-4) reaches position 45. (dmf rd03r5015)		
Time	Position	Applicant's Actions or Behavior
	RO	Reports alarm 901-5 A-3, Rod Drift and control rod 50-15 (N-4) drifted in one notch to position 46.
		Refers to the annunciator procedure and QCOA 0300-04, Mispositioned Control Rod and QCOA 0300-11, Control Rod Drift.
		Stops all control rod movements and reactor recirculation flow changes.
		Verifies blue scram light is not lit.
		Verifies alarm 901-5 A-1 is not up.
		Verifies Drive water pressure is 260-350 psid and cooling water pressure is ~ 15 psid.
		Selects control rod 50-15 (N-4) and moves to position 48.
	BOP	Refers to the annunciator procedure and QCOA 0300-04, Mispositioned Control Rod and QCOA 0300-11, Control Rod Drift.
		Verifies instrument air pressure at 912-1, PI 1-340-20 is > 60 psig.
		Dispatches an NLO to verify AO 1-305-127 (Scram Outlet Valve) discharge line is not hot.
SIM OP		As the NLO/Field Supervisor sent to check the scram outlet valve discharge line, wait ~3 minutes and report the discharge line is cool to the touch. Also report that you found the instrument air supply line to the scram inlet valve leaking at a fitting and you were able to tighten the fitting.
		Contacts a QNE
	SRO	Directs RO/BOP to address annunciator 901-5 A-3, Rod Drift and QCOA 0300-04, Mispositioned Control Rod and QCOA 0300-11, Control Rod Drift.
		Refers to Tech Spec 3.1.6 and determines 8 hours to return control rod 50-15 (N-4) to 48 or insert and declare inop.
		Directs control rod 50-15 (N-4) returned to position 48.
Termination: Control rod 50-15 (N-4) has been returned to position 48.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION

Event No.(s): 5		
Description: RHR Pump inadvertent start.		
Initiation: When control rod 50-15 (N-4) has been returned to position 48 or when directed by the lead examiner, cause an inadvertent start of the 1C RHR pump using override dihs110021c close. (ior dihs110021c close) When 1C RHR pump is taken to PTL, delete the override. (dor dihs110021c)		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports 1C RHR pump auto start and refers to annunciators 901-3 A-5, CNMT SPRAY A or B Low Flow, A-6, RHR Pump Running and C-15, Auto Blowdown Interlock Core spray/RHR.
		Verifies MO 1-1001-18B (RHR Min Flow Valve) is open.
		Determines a spurious pump start.
		Places 1C RHR pump in PTL.
		Directs NLO to 1C RHR Pump breaker.
		Notify IMs, EMs, Engineering, and SOS.
SIM OP		As the NLO sent to investigate 1C RHR pump breaker, wait ~ 3 minutes and report no apparent reason for the inadvertent start.
	SRO	Directs 1C RHR pump placed in PTL.
		Refers to Tech Spec 3.5.1.B and determines Unit 1 has entered a 7 day time clock. Also in Tech Spec 3.6.2.3 and 3.6.2.4 and TRM 3.6.a, cond A.
	RO	Monitors plant parameters.
Termination: 1C RHR pump is taken to PTL and is being investigated.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION

Event No.(s): 6		
Description: Main Condenser air in leakage that requires a power reduction.		
Initiation: When 1C RHR pump is taken to PTL and is being investigated or when directed by the lead examiner, insert an air leak in the Main Condenser using malfunction MC08. (imf mc08 50 20:)		
Time	Position	Applicant's Actions or Behavior
	BOP/RO	Reports annunciator 900-54 C-7, Normal Process Flow Hi/Lo.
		Checks charcoal adsorber DP and bypasses if > alarm setpoint (900-54 B-6).
		Reports alarm 901-7 H-3 up, notes decreasing condenser vacuum on the 901-7 panel and refers to QCOA 3300-02, Loss of Condenser Vacuum.
		Checks for closure of off-gas or SJAE suction valves.
		Verifies Steam seal pressure normal.
		Verifies Circ Water system operating normal.
		Verifies condenser hotwell level normal.
		Verifies condenser vacuum breaker is closed and has a water seal.
		Dispatches operators to look for vacuum leaks.
SIM OP		As the NLO dispatched to look for vacuum leaks, wait ~ 10 minutes and report that the main condenser boot has an irreparable rupture in it.
		Verifies Rx pressure maintained < 1060 psig, commences a cooldown with ADS valves.
		Verifies main Turbine tripped.
		Verifies Group 2 and 3 isolations.
	RO	Reduces recirc flow as necessary to maintain condenser vacuum $\leq 5''$, maintaining core flow ≥ 49 MLBM/hr.
		Bypasses the RWM and inserts CRAM rods to position 00.
		Inserts a Rx scram when vacuum cannot be maintained above 23.5".
		Places Mode Switch in Shutdown.
		Verifies all rods in.
		Maintains RPV water level 0-48".

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Event No.(s):	6	
Description: Main Condenser air in leakage that requires a power reduction. (continued)		
Initiation: When 1C RHR pump is taken to PTL and is being investigated or when directed by the lead examiner, insert an air leak in the Main Condenser using malfunction MC08. (imf mc08 50 20:)		
	SRO	Refers to QCOA 3300-02, Loss of Condenser Vacuum.
		Sets scram criteria of 23.5" vacuum. (6.5" Backpressure)
		Directs RO to perform QCGP 2-3, Reactor scram.
		If RPV water level reaches 0", enters QGA 100, RPV Control.
		Directs BOP to verify 0" isolations.
		Directs RO to maintain RPV water level 0-48".
		Directs BOP to maintain RPV pressure < 1060 and commence a cooldown with ADS valves, not to exceed 100 degrees F/hr.
Termination: The reactor is scrammed due to an inability to maintain main condenser vacuum.		

NOTES:

[illegible]

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION

Event No.(s):	7	
Description: Recirc suction line rupture.		
Initiation: When the reactor has been scrammed due to low Main Condenser vacuum or when directed by the lead examiner, rupture the "A" Recirc loop suction line using malfunction RR10a at a severity of 0.5% ramped over 20 minutes. (imf rr10a 0.5 20:)		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports annunciator 901-3 A-16, PRIMARY CONTAINMENT HIGH PRESSURE and refers to the annunciator procedure.
	BOP/RO	Reports Dywell pressure is 1.55 and rising.
	BOP/RO	Refers to QCOA 0201-01, INCREASING DRYWELL PRESSURE.
	BOP/RO	Investigates cause of rising Drywell pressure.
	BOP/RO	Announces evacuation of Rx Building.
	BOP	Starts 7 th Drywell Cooler.
	BOP/RO	Reports 2.5 psig in Drywell.
	SRO	Refers to QCOA 0201-01, INCREASING DRYWELL PRESSURE.
		Directs BOP/RO to investigate cause of rising Drywell pressure.
		Directs evacuation of Rx Building.
		Enters QGA 100, RPV Control and QGA 200, Primary Containment Control when Drywell pressure reaches 2.5 psig.
Termination: The scenario ends when the crew has performed an RPV Blowdown and reestablished core cooling with low pressure systems.		

NOTES:

[illegible]

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION

Event No.(s): 8		
Description: Loss of all RFPs and failure of HPCI leads to RPV Blowdown at TAF and low pressure system injection.		
Initiation: When Drywell pressure reaches 2.5 psig, cause a loss of condensate pumps by inserting a loss of all condensate pumps using malfunction imf fw17 abcd. (imf fw17a) (imf fw17b) (imf fw17c) (imf fw17d)		
Time	Position	Applicant's Actions or Behavior
	RO	Reports all Feedwater pumps tripped.
		Reports level every 20 inch drop.
		Starts 2nd CRD pump.
		Injects SBLC.
		Reports level at -142".
	BOP	Verifies EGDs and Low Pressure ECCS auto start, Group 2 and 3 isolations.
		Reports HPCI failed to start, starts manually. After ~ 1 minute, HPCI trips.
		Trip latches HPCI and sends an NLO to investigate.
SIM OP		~ 1 minute after HPCI is started, trip HPCI using malfunction HP01. (imf HP01) Verify trigger 3 goes true 1 minute after HPCI reaches 3000 rpm.
SIM OP		As the NLO sent to investigate HPCI, wait ~ 5 minutes and report that the HPCI Overspeed Linkage is broken. Mech Maint is investigating.
	BOP/RO	Reports containment parameters.
		Starts Torus sprays.
		Reports 5 psig in Torus and reports Drywell pressure and temperature.
		Starts Drywell sprays
	BOP/RO	Starts/verifies RCIC starts for injection.
	BOP/RO	Starts SSMP for injection to Unit 1.
	BOP	Inhibits ADS.
		Reports Torus level above 5 feet.
		Diverts all ECCS flow to the core. Secures all containment sprays/cooling flow.
		Opens all 5 ADS valves and leaves switches in MAN.
		Verifies and reports all 5 ADS valves open.
		When Rx pressure < 325 psig, verifies all LP ECCS systems inject.
	BOP/RO	Maintains RPV water level 0-48 inches.
SIM OP		When all injection has been attempted and with concurrence from the Lead Examiner, increase the leak size to .6 modifying malfunction rr10a (mmf rr10a .6 1:).
Termination: The scenario ends when the crew has performed an RPV Blowdown and reestablished core cooling with low pressure systems.		

UNIT 1 SUPERVISOR TURNOVER CHECKLIST**Page 30 of 3****EVENT/POSITION EVALUATION**

Event No.(s): 8		
Description: Loss of all RFPs and failure of HPCI leads to RPV Blowdown at TAF and low pressure system injection. (Continued)		
Initiation: When Drywell pressure reaches 2.5 psig, cause a loss of condensate pumps by inserting a loss of all condensate pumps using malfunction imf fw17 abcd. (imf fw17a) (imf fw17b) (imf fw17c) (imf fw17d)		
Time	Position	Applicant's Actions or Behavior
	SRO	Directs actions of QGA 100, RPV Control and QGA 200, Primary Containment Control.
		Verifies rx scrammed and all rods in.
		Directs BOP to verify isolations and auto starts for 2.5 psig in Drywell.
		Directs level maintained with RCIC, HPCI, SSMP, CRD.
		Directs Torus sprays started and directs Torus pressure reported when 5 psig.
		Directs Drywell pressure and temperature reported.
		Verifies Recirc pumps and Drywell coolers off.
		Directs Drywell Sprays started.
		Directs use of Alternate injection systems, SBLC,
		Directs ADS inhibited.
		Determines 2 or more systems available per Detail F.
		When level reaches -142", determines a Detail F subsystem is lined up with a pump running.
		Determines any injection source is lined up with a pump running.
		Enters QGA 500-01, RPV Blowdown prior to -166".
		Determines Torus level above 5 feet.
		Directs all ECCS flow diverted to the Core.
		Directs all 5 ADS valves opened and the switches left in MAN.
		Directs RPV water level restored to 0-48 inches.
Termination: The scenario ends when the crew has performed an RPV Blowdown and reestablished core cooling with low pressure systems.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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FACILITY: QUAD CITIES	SCENARIO NO: 3	OP-TEST NO: 1	
EXAMINERS: _____ OPERATORS: _____			
<p><u>INITIAL CONDITIONS:</u> ~3% Power, Reactor Start-Up In Progress, Mode Switch In Startup/Hot-Standby. The following equipment is out of service: 1B Service Water Pump, 1B Stator Cooling Pump and 1B Instrument Air Compressor OOS, IRM #12 bypassed.</p> <p><u>TURNOVER:</u> Reactor Startup In Progress IAW QCGP 1-1 Step F.6. ad and ae. RWCU reject is ready to be secured and continue pulling rods for startup. The following equipment is out of service: 1B Service Water Pump, 1B Stator Cooling Pump and 1B Instrument Air Compressor OOS, IRM #12 bypassed.</p>			
Event No.	Malfunction Number	Event Type*	Event Description
1	N/A	N – B, S	Secure RWCU reject
2	N/A	R – R, S	Pull rods to increase power
3	RD07	C – R, S	CRD Pump trip
4	NM05	I – R, S	IRM failure
5	SW06/SW07	C – All	Loss of RBCCW/Trip of Recirc Pumps
6	RP05	M – All	Reactor Scram with inadvertent Group 1.
7	RD14/CR02	M – All	SDV Volume Rupture/Fuel Failure/QGA 300 RPV Blowdown
8	HV01	C – B, S	Failure of Reactor Building Vents to isolate on Reactor Building Ventilation high rads.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor
 (S)– SRO/US
 (R) – RO
 (B) – BOP/ANSO

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Facility: Quad Cities

Scenario No: 3

Op-Test No: 1

Summary:

- The crew will take the shift with the plant at ~ 3% power and secure RWCU reject blowdown. (Normal – BOP, SRO) The RO will then pull rods to increase power. (Reactivity – RO, SRO) A CRD pump will trip, requiring the standby CRD pump to be started. (Component – RO, SRO) An IRM will fail while the NSO is pulling rods, requiring a ½ scram to be inserted. (Instrument, TS – RO, SRO) A total loss of RBCCW will occur, requiring the Recirc pumps to be tripped (Component – All) and a Rx scram to be inserted. When the scram is inserted, an inadvertent Group 1 isolation will occur. (Major – All) A fuel failure and Scram Discharge Volume rupture that cannot be isolated will occur on the Rx Scram that leads to an RPV Blowdown on 2 areas above max safe rads. (Major – All) A Reactor Building Ventilation High High Rad alarm will come in with a failure of the RB Vents to isolate, requiring them to be manually isolated. (Instrument, TS – BOP, SRO) The scenario will be complete when the crew has completed the RPV blowdown and isolated Reactor Building Vents or at the discretion of the lead examiner.

CT #1 - The crew will recognize a failure of the Reactor Building Vents to isolate and manually isolate them using the control switch on the 912-1 Pnl.

CT #2 - The crew will recognize a trip of both recirc pumps and insert a manual reactor scram.

CT #3

- With a primary system discharging into the secondary containment and area radiation/temperature/water levels exceed maximum safe levels in more than one area of the same parameter, INITIATE an emergency depressurization. (BWROG SC-1.2 LOCA SC E/D)

Simulator setup:

23. Load IC-81 from the zip drive and reset the simulator to IC-81: **rst 81**

24. **Insert control rods until rod step 17 is at target in.**

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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25. Take the following equipment OOS:
- 1B Service Water Pump in PTL**
1B Instrument Air Compressor in PTL
1B Stator Water Cooling pump in PTL
26. **Bypass IRM 12**
27. Insert the following malfunctions:
- Fail the Reactor Building Vents to isolate using malfunction HV01.
(imf hv01)
 - Verify, BUT DO NOT INSERT, batch file loct0102a contains the following:
imf rd14a 100 10:
ior dihs10590303 norm
imf cr02 10 8:
imf rm0106 (none 4:) 40 10:
imf rm0108 (none 4:) 40 10:
imf rm0109 (none 4:) 40 10:
imf rm0111 40 10:
imf rm0112 40 10:
imf rm0113 40 10:
 - Assign trigger 2 to its default: **trg 2 E2** and then assign a Group 1 isolation to occur when RPS B is deenergized using malfunction RP05.
(imf rp05a(2); imf rp05b(2); imf rp05c(2); imf rp05d(2))
 - Bypass IRM 12.
28. Ensure RWM is setup correctly.
- Verify the Rod Sequence Sheets are clean or replace if necessary.
 - Verify all procedures, QGAs, and meter faces, are erased.
 - Clear old SER and alarm screens.
 - Run new OD-20.
 - Place placard for RBCCW ½ lined up to U1 by the RBCCW pumps.**
 - Establish RWCU reject flow at 80% open (Open the RWCU 78 valve and open the FCV to 80%).**

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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LIST OF POTENTIAL PROCEDURES

QCGP 4-1

QCOP 0500-03, 0700-02, 0700-04, 1200-07, 1800-01

QCOS 1700-05

QCOA/QOA 0202-05, 0300-01, 0700-03, 5750-07, 7500-01

QCAN 901-3, A-1, A-3, G-3

QCAN 901-4, C-18, D-12, F-12, G-3, G-7, H-12

QCAN 901-5, A-2, A-4, A-5, B-2, B-11, C-10, E-2, F-2

T.S 3.1.5

T.S 3.3.1.1

T.S 3.3.6.2

T.S 3.3.7.1

QGAs

HARD CARDS

METER FACES

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Crew Turnover:

Unit 1 is at approximately 3% power with a Rx startup in progress. The reactor is critical, 1 Bypass valve open, Containment is deinerted. Ready to pull rod step 17. Currently in QCGP 1-1, step F.6, ad and ae

Unit 2 is at approximately 912 MWe and 97% power on the 97% FCL.

The following equipment is out of service:

1B Service Water Pump due to a ground in the motor windings.

1B Stator Water Cooling pump due to overheating.

1B Instrument Air Compressor due to a seal water failure.

IRM #12 bypassed due to erratic operation. Maintenance and testing is complete. Shift Manager is reviewing paperwork for return to operation.

Alarm 901-5 B-3, Rod Worth Minimizer, Block alarms sporadically and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip, alarms sporadically and is being investigated.

Instructions for the shift are to secure RWCU reject and continue the startup by pulling control rods in preparation for placing the Mode Switch in RUN

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 1		
Description: Secure RWCU reject		
Initiation: The crew is directed to secure RWCU reject during shift turnover.		
Time	Position	Applicant's Actions or Behavior
	SRO	Directs RWCU reject secured.
	RO	Monitors plant parameters.
	BOP	Secures RWCU reject per QCOP 1200-07, RWCU System Coolant Rejection.
		Closes FCV 1-1239, CU REJECT FCV
		Closes MO 1-1201-78, REJECT TO CNDSR SHUTOFF VLV.
		Verifies reject flow indicates 0.
		Open MO 1-1201-80, RETURN ISOL VLV as necessary to maintain RWCU pump discharge pressure 100 to 200 psig greater than reactor pressure.
Termination: RWCU reject is secured.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 2		
Description: Increase power by pulling control rods.		
Initiation: RWCU reject is secured and the US orders power ascension.		
Time	Position	Applicant's Actions or Behavior
	SRO	Directs rod pulls to continue startup.
		Conducts pre-job brief. (May have been done prior to crew taking shift).
	BOP	Monitors Balance of plant parameters.
	RO	Refers to QCGP 4-1, Control Rod Movements and Control Rod Sequence.
		Verifies rods in step 16 are at target out.
		Selects the desired control rod.
		Verifies the selection of the proper control rod, its present position and bounds on the RWM.
		Communicates to QIV "Ready to move rod xx-yy from position __ to __.
	QIV	Rod xx-yy is selected, understanding moving xx-yy from position __ to __.
	RO	That's correct.
		Performs another self check.
		Moves control rod to desired position.
		When all rods in the step are at target out, verifies with the QIV that each control rod is at its desired position.
		Fills out the rod sequence sheet.
		Repeats for subsequent steps as necessary.
Termination: When a discernable increase has been noted or as directed by the lead examiner.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 3		
Description: CRD pump trip		
Initiation: When directed by the lead examiner, trip the "A" CRD pump using malfunction RD07a. (imf rd07a)		
Time	Position	Applicant's Actions or Behavior
	RO	Reports annunciators 901-5 A-2, CRD PUMP TRIP and F-2, CRD CHARGING WATER LOW PRESSURE and refers to procedures.
		Verifies closed MO 1-301-2B, 1B PMP DISCH VLV for 1B CRD pump.
		Starts 1B CRD pump.
		Verifies Steady-state current < 34 amps on 1-302-1B.
		Throttles MO 1-301-2B discharge valve to maintain 1400-1500 psig.
		Closes MO 1-301-2A, discharge valve on the tripped pump.
		Dispatches an NLO to check operation of the running pump and investigate the tripped pump.
		Directs an NLO to close 1-301-254A (Min flow valve) for the tripped pump and open 1-301-254B (Min flow valve) for the running pump.
SIM OP		As the NLO sent to the CRD pumps, report 1B CRD pump post start checks are sat, 1-301-254B is open, 1-301-254A is closed and 1A CRD pump tripped on overcurrent.
	BOP/RO	Refers to QCOA 0300-01, Control Rod Drive Pump Failure.
	BOP	Monitors plant parameters.
	SRO	Refers to QCOA 0300-01, Control Rod Drive Pump Failure.
		Directs start of standby CRD pump.
		Refers to TS 3.1.5 – If more than 1 accumulator alarm is received with Rx pressure > 900 psig, directs charging header pressure restored within 20 minutes.
Termination: "B" CRD pump has been started and CRD system parameters are returned to normal.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 4		
Description: IRM failure		
Initiation: When rod pulls are complete or directed by the Lead Examiner, fail irm 11 downscale using malfunction NM05a at 0% severity. (imf nm05a 0)		
Time	Position	Applicant's Actions or Behavior
	RO	Reports annunciator 901-5 C-5, IRM DOWNSCALE and refers to the annunciator procedure.
		Reports IRM #11 indicates downscale.
		Verifies rod block occurred.
		May insert ½ scram on RPS channel "A".
SIM OP		As the Shift Manager, if asked about the status of IRM 12 or notified that the start-up was stopped, report that IRM 12 has been cleared for operation.
		Returns IRM 12 to operation. Bypasses IRM 11 and resets ½ scram, if inserted.
	BOP/RO	Refers to QCOA 0700-03, Loss of neutron flux Indication.
	RO	Stops all reactivity changes and holds power constant.
	BOP/RO	Refers to QCOP 0700-02, Intermediate Range Monitor Operation (IRM).
	SRO	Refers to QCOA 0700-03, Loss of neutron flux Indication.
		Directs reactivity changes stopped and power held constant.
		Refers to QCOP 0700-02, Intermediate Range Monitor Operation (IRM) and Tech specs 3.3.1.1.
		Determines minimum number of IRM channels NOT available.
		May direct a ½ scram inserted on RPS channel "A"
		Directs IRM 12 return to operation. IRM 11 bypassed and ½ scram reset, if inserted.
	BOP	Monitors plant parameters.
		Contacts QNE and Instrument Maintenance.
Termination: IRM 11 is bypassed and the ½ scram is reset if it was inserted.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 5		
Description: Loss of RBCCW		
<p>Initiation: When "B" CRD pump has been started and CRD system parameters are returned/being returned to normal or when directed by the lead examiner, simulate a leak in the RBCCW system by reducing the capacity of the 1B and ½ C RBCCW pumps using malfunction SW07 to 85% reduced capacity over 5 minutes. (imf sw07b 85 5:) (imf sw07c 85 5:). When directed by Lead Examiner, override annunciator 912-1, F-1 on to simulate RBCCW expansion tank low level. (imf ano9121f1 on) After 2 minutes, override annunciator 9014c18 on to simulate Rx Building Floor Drain Sump High Level. (imf ano9014c18 on)</p> <p>After 3 minutes, trip the "A" RBCCW pump using malfunction SW06a. (imf sw06a)</p>		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports annunciator 912-1 D-1 RBCCW Low Pressure and refers to the proc.
		Checks PI 1-3740-4, DISCH HDR PRESS and determines Unit 1 RBCCW discharge press is 40 psig and dropping.
		Directs an NLO to line up the ½ RBCCW pump to Unit 1 and investigate RBCCW low pressure on unit 1.
SIM OP		As the NLO sent to RBCCW, wait ~ 4-6 minutes and report an RBCCW leak on the suction piping for the RBCCW pumps. If asked, you cannot isolate it.
		Refers to QCOA 3700-01, RBCCW Low Pressure.
	BOP/RO	Monitors Recirc pump seal cooling temp and flow.
SIM OP		When the crew is monitoring recirc seal temps, trip the "A" RBCCW pump using malfunction SW06. (imf sw06a)
		Reports annunciators 901-4 G-3 and G-7, Recirc pump A and B Seal Cooling Water low flow and refers to the procedure.
		Directs NLO to remove RWCU Filter Demins from service and stops the RWCU pumps.
	BOP	Closes MO 1-3701, U-1 RBCCW HDR ISOL.
		Reports annunciator 912-1 C-1, RBCCW pump trip and reports a trip of 1A RBCCW pump trip and RBCCW discharge pressure ~ 20 psig and dropping.
	RO	Monitors plant parameters.
		Inserts a Rx Scram.
	RO/BOP	Trips the recirc pumps and refers to QCOA 0202-05, Reactor Recirc Pump Trip – Both pumps.
SIM OP		When actions for low RBCCW flow are completed, trip 1B RBCCW pump using malfunction sw06b (imf sw06b).

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s):	5	
Description: Loss of RBCCW (continued)		
<p>Initiation: When “B” CRD pump has been started and CRD system parameters are returned/being returned to normal or when directed by the lead examiner, simulate a leak in the RBCCW system by reducing the capacity of the 1B and ½ C RBCCW pumps using malfunction SW07 to 85% reduced capacity over 5 minutes. (imf sw07b 85 5:) (imf sw07c 85 5:). When directed by Lead Examiner, override annunciator 912-1, F-1 on to simulate RBCCW expansion tank low level. (imf ano9121f1 on) After 2 minutes, override annunciator 9014c18 on to simulate Rx Building Floor Drain Sump High Level. (imf ano9014c18 on) After 3 minutes, trip the “A” RBCCW pump using malfunction SW06a. (imf sw06a)</p>		
	SRO	Refers to QCOA 3700-01, RBCCW Low Pressure.
		Directs seal temps and flow monitored.
		Directs RWCU stopped and MO 1-3701 closed.
		Directs Rx scrambled.
		Directs Recirc pumps tripped and refers to QCOA 0202-05, Reactor Recirc Pump Trip – Both pumps.
Termination: Reactor Recirc pumps are tripped.		

NOTES:

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UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 7		
Description: SDV Rupture/Fuel Failure/QGA 300 RPV Blowdown		
Initiation: When the reactor scram is inserted, insert batch file loct0102a to simulate a SDV rupture, a fuel failure and a failure of the scram reset switch. (bat loct0102a) (imf rm02k 100 5:) (imf rm02l 100 5:)		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports annunciator 901-3 A-1 Rx BDG Hi Rad and refers to the ann. Proc.
		Reports alarming area in the Rx BLDG to the SRO.
		Evacuates affected areas.
		Dispatches an operator and Rad Protection to investigate.
		Directs RP to set up access control.
SIM OP		As the operator sent to investigate hi rads, wait ~ 3 minutes and report a lot of steam and water in the vicinity of the North SDV.
		Refers to QCOA 0201-05, Primary System Leaks (Slow Leaks) Outside Primary Containment and QCOA 1800-01, Area High Radiation.
		Monitors and reports rad levels.
		Reports torus level > 5 feet.
		Opens all 5 ADS valves and leaves switches in MAN.
		Verifies and reports all 5 ADS valves open.
	RO	Attempts to isolate the leak by resetting the Rx scram IAW QCOP 0500-03, Resetting Scrams.
		Reports the scram will not reset.
	SRO	Enters QGA 300, Secondary Containment Control.
		Directs Unit 1 DGCWP started.
SIM OP		As the NLO directed to start the U-1 DGCWP, wait ~ 3 minutes and start the pump using remote function SW 10. (mrf sw10r RUN)
		Directs Rx BLDG Basement water levels checked.
SIM OP		As the NLO sent to check Rx Bldg water levels, wait ~ 5 minutes and report that access is not allowed to the Rx Bldg Basement.
		Directs scram reset if not attempted.
		When it has been determined that a system is discharging into the RX BLDG, cannot be isolated and one area > Max Safe, enters QGA 100, RPV Control.
		When 2 areas > Max Safe, enters QGA 500-1, RPV Blowdown.
		Determines Torus level above 5 feet.
		Directs all ECCS flow diverted to the Core.
		Directs all 5 ADS valves opened and the switches left in MAN.
Termination: The scenario will be complete when the crew has completed the RPV blowdown.		

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UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 8		
Description: Reactor Building Vents fail to isolate when Reactor Building Ventilation High - High Radiation alarms.		
Initiation: Reactor Building Ventilation High-High Radiation alarms..		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports annunciators 901-3 G-3 and H-3, RX BLDG VENT CHANNEL A/B HI HI RADIATION and refers to the annunciator procedure.
		Verifies Reactor Building Vents and Control Room Vents isolate and Standby Gas Treatment Starts.
		Notes failure of Unit 1 Reactor Building Vents to isolate and manually isolates.
		Reports failure of Reactor Building Vent isolation to the US.
		Contacts maintenance to investigate the failure of Reactor Building Vents to isolate.
	US	Directs Unit 1 Reactor Building Vents isolated.
	RO	Monitors plant parameters.
Termination: Reactor Building Vents are isolated.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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<u>Facility:</u> Quad Cities	<u>Scenario No:</u> 4	<u>Op-Test No:</u> 1	
<u>Examiners:</u> _____		<u>Operators:</u> _____	
_____		_____	
_____		_____	
<p><u>Initial Conditions:</u> ~ 700 MWe, 75% power, 1A RHR Loop and 1B Service Water Pump OOS. B SBGT running for monthly surveillance.</p> <p><u>Turnover:</u> The following equipment is out of service: 1A RHR loop and 1B Service Water Pump. B SBGT is running for the monthly surveillance per QCOS 7500-05 and is ready to be shutdown per step H.2.p.</p>			
Event No.	Malfunction Number	Event Type*	Event Description
1	N/A	N – B, S	Shutdown SBGT
2	RR01	R – R, S	Insert Control Rods to exit the instability region due to recirc drive motor breaker trip.
3	RD02	C – R, S	Stuck control rod.
4	EG05	C – B, S	Stator Cooling Pump Trip with failure of the Standby to auto start.
5	AD01	I – B, S	ADS valve fails open due to setpoint drift – Rx scram
6	RP02/RP03	I – R, S	Control rods fail to insert on manual scram – initiate ARI. (PSA identified event)
7	MS05/RP05	M – All	Steamline break in Drywell with a Group I.
8	lor zdish11001S 17(B)1 Bat DWCLRTRIP	M – All	Failure of Drywell Sprays and Cooling leads to RPV blowdown and flooding. (PSA identified event)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor
 (S)– SRO/US
 (R) – RO
 (B) – BOP/ANSO

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Facility: Quad Cities

Scenario No: 4

Op-Test No: 1

Summary:

- The crew will take the shift with SBTG running. The surveillance is complete and needs to be shutdown. (Normal – BOP, SRO) After this, a Recirc Pump drive motor breaker will trip, requiring the RO to insert scram rods. (Reactivity manipulation, TS – RO, SRO) While inserting scram rods, one of the rods will stick, requiring drive water pressure to be raised in order to drive it. (Component, – RO, SRO) When they have inserted scram rods/exited the instability region, the running Stator Water Cooling Pump will trip and the standby will fail to auto start, requiring it to be manually started. (Component – BOP, SRO). An ADS valve will fail open and will not close when attempted manually, (Instrument, TS – BOP, SRO) requiring a manual scram to be inserted. When the manual scram pushbuttons are depressed, no rod movement will occur, requiring initiation of ARI to insert the rods. (Instrument – RO, SRO) After the rods are inserted, a steamline break will occur in the Drywell with an inadvertent Group 1 isolation. Coupled with a failure of Drywell Sprays and Cooling, this will lead to an RPV Blowdown and RPV Flooding. (Major – All) The scenario will be completed when the crew has identified the requirements to determine the Main Steam Lines are flooded.

CT #1 - Crew will recognize instabilities region has been entered and insert control rods to exit instabilities.

CT #2 - When Torus Pressure cannot be maintained below PSP curve and/or drywell temperature cannot be restored or held below 280°F, INITIATE emergency depressurization. below 280°F, INITIATE emergency depressurization.

CT #3 - When RPV level cannot be determined, INJECT into the RPV to maintain RPV flooded to the Main Steam Lines. (BWROG RPV-2.2 LOSS LVL INST MRPVFP)

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Simulator setup:

29. Load IC-82 from the zip drive and reset the simulator to IC-82: **rst 82**

30. Take the following equipment OOS: **1B Service Water Pump in PTL**

1A RHR Loop 1A RHR Pump in PTL

1B RHR Pump in PTL

31. Insert batch file bat Arhroos_1.

Verify the following valves CLOSED, leave the hand switches in NEUTRAL and THEN open the valve breakers:

MO-1-1001-18A (mrf rh17ar open)

MO-1-1001-19A (mrf rh18ar open)

MO-1-1001-23A (mrf rh19ar open)

MO-1-1001-26A (mrf rh20ar open)

MO-1-1001-28A (mrf rh21ar open)

MO-1-1001-29A (mrf rh22ar open)

MO-1-1001-34A (mrf rh23ar open)

Verify the following valves CLOSED and THEN override their lights off

MO-1-1001-43A (ior lohs1100143a1 off)

MO-1-1001-43B (ior lohs1100143b1 off)

MO-1-1001-7A (ior lohs110017a1 off)

MO-1-1001-7B (ior lohs110017b1 off)

MO-1-1001-19A (ior lohs1100119a1 off)

Verify the "A" RHR Pump discharge pressure gauge downscale.

(ior aopi110402a 0)

Verify the RHR DISCH HDR PRESS HI/LO alarm on the 901-3 panel ON.

(imf ano9013c8 on)

32. Insert the following malfunctions:

e. Fail B channel of RPS and ATWS to scram using malfunction RP02 B & D and RP03 A,B.

(imf rp02b; imf rp02d; imf rp03a; imf rp03b)

b. Fail the "B" Stator Water Cooling pump to autostart by overriding it off.

(ior dihs15300scpb trip)

c. Fail the "B" RHR Loop S-17 switch by overriding it off. **(ior dihs11001s17b off)**

d. Assign trigger 15 to DWCLRATRP. **(trg 15 DWCLRATRP)**

e. Cause the DW Coolers to trip when trigger 15 goes true by inserting batch file DWCLRTRP. **(bat DWCLRTRP)**

f. Stick Control Rod 4211 fully out using malfunction rd02r at 100%.

(imf rd02r4211 100)

g. Assign trigger 1 to event **rdpdrivedelta.gt.350** and assign command **dmf rd02r4211** to trigger 1.

h. Assign trigger 3 to event **zdihs10287303a(1).and.zdihs10287303d(1).and.zdihs10287303e(1)** and assign command **mmf ms04c 12 1:** to trigger 3.

5. Start the "B" train of SBTG IAW QCOS 7500-05 step H.2.c – e.

6. Verify the RWM is setup correctly.

7. Verify the Rod Sequence sheets are clean or replace as necessary.

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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8. Verify all procedures, QGAs, and meter faces, are erased.

9. Clear old SER and alarm screens.

10. Run new OD-20.

11. Write on white board the following:

Tech Spec 3.5.1 Condition A, 1A and 1B RHR Pump OOS Day 1 of 30

Tech Spec 3.5.1 Condition B, LPCI Subsystem A Inop Day 1 of 7

Tech Spec 3.5.1 Condition D, Both LPCI Subsystems Inop Day 1 of 3

Tech Spec 3.6.2.3. Condition A, A Loop RHR Suppression Pool Cooling Inop Day 1 of 7

Tech Spec 3.6.2.4. Condition A, A Loop RHR Suppression Pool Spray Inop Day 1 of 7

TRM 3.6.a. Condition A, A Loop RHR Drywell Spray Inop Day 1 of 7

12. Place placard for RBCCW ½ lined up to U1 by the RBCCW pumps.

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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LIST OF POTENTIAL PROCEDURES

QCGP 1-1, 4-1

QCOP 0202-07, 0202-13, 0600-02, 1000-30, 1200-07,
1600-13, 3500-05

QCOS 0202-09, 7500-05

QCOA 0201-01, 0202-04, 0203-01, 0300-02, 0400-02,
1700-04, 5300-01

QCAN 912-5 B-6

QCAN 901-3 A-16, E-13, E-14, E-16

QCAN 901-4 A-3, A-9, H-3

QOA 901-7 A-7, B-10, C-10

POWER/FLOW MAP

T.S 3.1.3, T.S 3.4.1, T.S 3.5.1, T.S 3.0.3

QCAP 0200-10

QGAs

HARD CARDS

METER FACES

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Crew Turnover:

Unit 1 is at approximately 700 MWe and 76% power on the 92% FCL.

Unit 2 is at approximately 912 MWe and 97% power on the 97% FCL.

The following equipment is OOS:

1B Service Water Pump due to a ground in the motor windings. Electrical Maintenance is investigating.

1A RHR Loop is OOS for packing replacement on the 1-1001-66A valve.

Day 1 of 7, TS 3.5.1, Condition B, LPCI Subsystem A Inop.

Day 1 of 3, TS 3.5.1, Condition D, Both LPCI Subsystems Inop.

Day 1 of 30, TS 3.5.1, Condition A, RHR Pump Inop.

Day 1 of 7, TS 3.6.2.3, Condition A, A Loop RHR Suppression Pool Cooling Inop.

Day 1 of 7, TS 3.6.2.4, Condition A, A Loop RHR Suppression Pool Sprays Inop.

Day 1 of 7, TRM 3.6.a, Condition A, A Loop RHR Drywell Sprays Inop.

Alarm 901-5 B-3, Rod Worth Minimizer, Block alarms sporadically and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip, alarms sporadically and is being investigated.

Instructions for the shift are to hold load.

QCOS 7500-05, SBGTS MONTHLY OPERABILITY TEST is complete through step H.2.o, has been running for 10 hours and is to be shutdown when you take the shift.

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 1		
Description: Shutdown SBGT		
Initiation: The crew is directed during the shift turnover to shutdown SBGT.		
Time	Position	Applicant's Actions or Behavior
	SRO	Directs "B" SBGT Train secured.
		Approves the surveillance.
	RO	
		Monitors plant parameters.
	BOP	Refers to QCOS 7500-05, SBGTS Monthly Operability Test.
		Places the "B" train ½ SBGTS TRAIN MODE SELECTOR SWITCH in B OFF.
		Announces alarm 912-5 B-6 SBGT trouble.
		Places ½ B SBGTS TRAIN MODE SELECTOR SWITCH to B PRIM.
		Records SBGT B run time and verifies > 10 hours.
		Verifies ½ - 7505B INLET DAMPER closed.
		Verifies ½ - 7504B TURB BLDG CLG AIR DMPR open.
		Verifies ½ - 7503B SBGTS AIR HTR off.
		Verifies ½ - 7506B ½ SBGTS FAN off.
		Verifies ½ - 7507B SBGTS FAN DISCH DMPR closed.
		Verifies all applicable SBGTS annunciators are cleared.
		Verifies ½ B SBGTS TRAIN MODE SELECTOR SWITCH in B PRIM.
	Verifies ½ A SBGTS TRAIN MODE SELECTOR SWITCH is in A STBY.	
		Signs off surveillance performance.
Termination: SBGT shutdown per QCOS 7500-05.		

NOTES:

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UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 2		
Description: Insert Control Rods to exit the instability region due to recirc drive motor breaker trip.		
Initiation: When SGBT shutdown is complete per QCOS 7500-05 or when directed by the lead examiner, trip the "A" Recirc Pump Motor breaker using malfunction RR01a. (imf rr01a)		
Time	Position	Applicant's Actions or Behavior
	BOP/RO	Reports annunciator 901-4 A-9, RECIRC SETS DRIVE MOTOR AUTO TRIP
	BOP	Refers to the annunciator procedure.
		Reports 1A Recirc MG tripped.
		Verifies "B" Recirc pump speed < 78% and motor current < 724 amps.
	BOP/RO	Refers to QCOA 0202-04, Reactor Recirc Pump Trip – Single Pump.
		Refers to QCOA 0400-02, Core Instabilities.
		Closes MO 1-202-5A and reopens after at least 5 minutes.
		Monitors loop delta-T and RPV bottom head temperature.
		Contacts QNE.
		Monitors Off-Gas rad levels and refers to QCOA 1700-04, Abnormal Off Gas Radiation.
		Performs QCOS 0202-09, Recirculation Single Loop Operation Outage Report.
	RO	Monitors for power oscillations.
		Bypasses the RWM.
		Continuously inserts all CRAM rods to position 00.
		Continues to insert control rods to target in until power has stopped increasing and FCL < 59.4%.
		Continues to monitor for power oscillations.
		Completes QCOP 0207-02, RWM Bypass Control to document bypassing the RWM if necessary.
	SRO	Directs the RO to monitor for power oscillations.
		Refers to QCOA 0202-04, Reactor Recirc Pump Trip – Single Pump..
		Directs CRAM rods driven to position 00.
		Directs control rods inserted to target in until power has stopped increasing and FCL < 59.4%.
		Refers to QCOA 0400-02, Core Instabilities.
		Directs QCOS 0202-09, Recirculation Single Loop Operation Outage Report. performed.
		Refer to TS 3.4.1. and declares A Recirc Loop not in operation within 2 hours.
Termination: Instability region is exited.		
NOTES:		

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 3		
Description: Stuck Control Rod		
Initiation: Control rod 4211 will not insert when selected due to being stuck fully out. (imf rd02r4211 100)		
Time	Position	Applicant's Actions or Behavior
	RO	Reports that rod 4211 is stuck at position 48
		Refers to QCOA 0300-02, Control Rod Stuck.
		Verifies no Control Rod Block or RWM Select Block exist and Control Rod 4211 is selected.
		Throttles MO 1-302-8, U-1 CRD DRIVE WTR PCV to increase drive water pressure in 50 psid increments to a maximum of 400 psid.
		Drives the Control Rod to position 00 after Drive Water pressure is > 350 psid.
		Returns Drive Water pressure to 260 – 350 psid.
SIM OP		Verify trigger 1 goes true when drive water pressure greater than 350 to delete malfunction rd02r4211.
	BOP	Monitors plant parameters and continues actions for a tripped Recirc pump.
		Contacts QNE.
	SRO	Refers to QCOA 0300-02, Control Rod Stuck.
		Directs RO to investigate cause of stuck Control Rod.
		May refer to TS 3.1.3. – Control Rod is not considered stuck for Bases 3.1.3-3.
SIM OP		If asked as Ops Management, direct 1B RFP secured.
Termination: The stuck control rod is driven to 00.		

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UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 4		
Description: Stator Cooling Pump Trip with failure of the Standby to auto start.		
Initiation: When the stuck control rod is driven to 00 or when directed by the lead examiner, trip the "A" Stator Cooling Water Pump using malfunction EG05a. (imf eg05a)		
Time	Position	Applicant's Actions or Behavior
	BOP/RO	Reports annunciator 901-7 B-10, STATOR COOLING PUMPS AUTO TRIP.
		Starts the 1B Stator Cooling Water pump.
SIM OP		When the 1B Stator Cooling Water Pump is given a start signal, delete override DIHS15300scpb. (dor dihs15300scpb)
		Refers to annunciator procedure.
		Dispatches an operator to check Stator Cooling Water parameters and the tripped Stator Cooling Water pump.
		Directs Electrical Maintenance to investigate failure of 1B Stator Cooling Water pump to auto start.
	RO	Monitors plant parameters.
	SRO	Refers to QCOA 5300-01, Loss of Stator Cooling.
		Directs 1B Stator Cooling Water pump started.
Termination: The "B" Stator Water Cooling pump has been manually started and the trip of the "A" Stator Water Cooling pump is being investigated.		

NOTES:

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UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 5		
Description: ADS valve fails open due to setpoint drift – Rx scram		
Initiation: Fail the A side or RPS to scram using malfunction rp02. (imf rp02a; imf rp02c) When the “B” Stator Cooling Water pump has been manually started and the trip of the “A” Stator Water Cooling pump is being investigated or when directed by the lead examiner, cause the “E” relief valve to spuriously open using malfunction AD01e at 0% severity and stick open using malfunction ad07e at 100% severity. (imf ad01e 0) (imf ad07e 100)		
Time	Position	Applicant's Actions or Behavior
	BOP/RO	Reports annunciators 901-3 E-13, ELEC RELIEF VALVE 3C/3D/3E OPEN, E-14, ACOUSTIC MON SAFETY RLF VALVES OPEN, and E-16, VALVE LEAK DET SYS HIGH TEMP, and refers to the annunciator procedures.
		Determines “E” Relief Valve open by use of the Acoustic monitor.
		Places the Key Switch for “E” Relief Valve in OFF.
		Reports “E” Relief Valve did not close, attempts to close by cycling the Key Switch between MAN and AUTO.
		Scrams the reactor and enters QCOA 0203-01, Failure of a Relief Valve to Close or Reseat properly at SUBSEQUENT OPERATOR ACTIONS.
		Determines “E” Relief Valve solenoid can be deenergized with the keylock switch.
		Starts Torus cooling.
		Monitors torus temperature.
		Monitors Recirc loop temps, Reactor shell and flange temps and continues to attempt to close “E” Relief Valve.
	RO	Monitors plant parameters.
	SRO	Refers to QCOA 0203-01, Failure of a Relief Valve to Close or Reseat properly.
		Directs the BOP to attempt to close “E” Relief Valve.
		Directs the RO to insert a Manual Reactor Scram.
		Refers to TS 3.5.1 and directs plant shutdown.
Termination: The crew has attempted to close “E” relief valve.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST**Page 56 of 3**

EVENT/POSITION EVALUATION		
Event No.(s): 6		
Description: Control rods fail to insert on manual scram – initiate ARI.		
Initiation: RO attempts manual Rx scram due to “E” relief valve sticking open.		
Time	Position	Applicant's Actions or Behavior
	RO	Inserts a manual reactor scram.
		Places the Mode Switch in SHUTDOWN.
		Reports no rod motion.
		Manually initiates ARI.
		Runs Recirc pumps to minimum.
		Reports control rods are inserting.
		Reports all Control Rods are inserted.
	BOP	Monitors plant parameters.
		Inhibits ADS.
		Places Core Spray Pumps in PTL.
	SRO	Enters QGA 100, RPV Control on failure to scram.
		Determines rods are > 04 and the reactor will not stay shutdown per QNE.
		Enters QGA 101, RPV Control (ATWS).
		Directs ADS inhibited.
		Directs Core Spray pumps placed in PTL.
		Returns to QGA 100, RPV Control when all control rods are inserted.
Termination: The RO has manually initiated ARI and all control rods are inserted.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 7		
Description: Steamline break in Drywell with a Group I. (Continued)		
<p>Initiation: When the control rods are inserted, insert a steam line break in the Drywell using malfunction MS04c at 2% severity over 20 minutes (imf ms04c 2 20:) and insert an inadvertent Group 1 isolation using malfunction RP05. (imf rp05a; imf rp05b; imf rp05c; imf rp05d)</p>		
Time	Position	Applicant's Actions or Behavior
	SRO	Refers to QCOA 0201-01, INCREASING DRYWELL PRESSURE.
		Directs BOP/RO to investigate cause of rising Drywell pressure.
		Directs evacuation of Rx Building.
		Enters QGA 200, Primary Containment Control and re-enters QGA 100, RPV Control when Drywell pressure reaches 2.5 psig.
		Directs BOP to verify isolations and auto starts for 2.5 psig in Drywell.
		Directs level maintained 0-48 inches.
		Directs Torus sprays started and directs Torus pressure reported when 5 psig.
		Directs Torus sprays started locally.
		Directs Drywell pressure and temperature reported.
		Verifies Recirc pumps and Drywell coolers off.
		Directs Drywell Sprays started.
		Directs Drywell sprays started locally.
		Establishes blowdown criteria for torus pressure and drywell temperature.
		Directs containment vented per QCOP 1600-13, Post – Accident Venting of the Primary Containment if necessary.
<p>Termination: The crew is taking actions in QGA 200 to address rising containment pressure and temperature.</p>		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 8		
Description: Failure of Drywell Sprays and Cooling leads to RPV blowdown and flooding.		
Initiation: Verify that trg 15 goes active when the crew trips the "A" DW Cooler and that batch file DWCLRTRP has gone active, preventing the DW Coolers from being restarted.		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports 5 psig in Torus and reports Drywell pressure and temperature.
		Attempts to start Drywell sprays, reports Drywell Sprays will not start and directs NLO to manually open the MO 1-1001-23B valve.
SIM OP		As the NLO sent to open the MO 1-1001-23B valve, wait 5 minutes and deenergize the MO 1-1001-23B valve breaker using remote function RH20br. (mrf rh20br open) Wait 3 more minutes and report back that you cannot get the MO 1-1001-23b valve open due to the limitorque operator failing to engage.
		Attempts to restart Drywell coolers, reports that Drywell coolers will not start.
		Reports Torus pressure rise and drywell temp every 20 degree F rise.
		Reports when blowdown criteria is met.
		Reports Torus level above 5 feet.
		Opens all 5 ADS valves and leaves switches in MAN.
SIM OP		Verify trigger 3 goes true when all 5 ADS valves are open to modify malfunction ms04c to a 12% steam leak over 1 minute. (mmf ms04c 12 1:)
		Verifies and reports all 5 ADS valves open.
		When Rx pressure < 325 psig, verifies RHR and CS injection valves open.
	BOP/RO	Diverts ECCS flow as necessary to maintain RPV water level 0-48 inches.
		Vents containment per QCOP 1600-13, Post – Accident Venting of the Primary Containment if necessary.
		Verify AO 1-1601-23/24/60/61/62/63 closed.
		If drywell or torus pressure is less than 25 psig, place the vent isolation signal bypass switch to torus, open the AO 1-1601-63 valve, and cycle the AO 1-1601-61 valve to control primary containment pressure.
		If drywell or torus pressure is greater than 25 psig, place AO 1-1601-24 CIS OVERRIDE in the OVERRIDE position and hold for 1 second. Simultaneously place AO 1-1501-23 CIS OVERRIDE and AO 1-1601-60 CIS OVERRIDE in the OVERRIDE position and hold for 1 second.
		Opens AO 1-1601-24, AO 1-1601-60, and cycles AO 1-1699-6 to control primary containment pressure.
Termination: The crew has identified the requirements to determine the Main Steam Lines are flooded.		
NOTES:		

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 8		
Description: Failure of Drywell Sprays and Cooling leads to RPV blowdown and flooding. (Continued)		
Initiation: Verify that trg 15 goes active when the crew trips the "A" DW Cooler and that batch file DWCLRTRP has gone active, preventing the DW Coolers from being restarted.		
Time	Position	Applicant's Actions or Behavior
	SRO	Enters QGA 500-01, RPV Blowdown.
		Determines Torus level above 5 feet.
		Directs all ECCS flow diverted to the Core.
		Directs all 5 ADS valves opened and the switches left in MAN.
		Directs RPV water level restored to 0-48 inches.
		Directs RO to monitor for saturation conditions.
		Declares RPV water level unknown.
		Enters QGA 500-4, RPV Flooding.
		Determines all rods in.
		Directs all 5 ADS valves opened.
		Determines 0 ADS valves open.
		Determines Feed Pump is available.
		Directs MSIVs, Main Steam Line Drains, RCIC and HPCI isolated.
		Directs injection to flood the RPV.
		Directs conditions monitored to meet flooding conditions.
Termination: The crew has identified the requirements to determine the Main Steam Lines are flooded.		

NOTES:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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EVENT/POSITION EVALUATION		
Event No.(s): 8		
Description: Failure of Drywell Sprays and Cooling leads to RPV blowdown and flooding. (Continued)		
Initiation: Verify that trg 15 goes active when the crew trips the "A" DW Cooler and that batch file DWCLRTRP has gone active, preventing the DW Coolers from being restarted.		
Time	Position	Applicant's Actions or Behavior
	RO	Monitors for saturation conditions.
		Reports saturation conditions met.
SIM OP		When saturation conditions are met, insert batch file seqflash (batseqflash5then6) to cause level instruments to fail upscale.
		Reports all level instruments read upscale.
		Reports Torus level >5 feet.
		Reports 0 ADS valves open.
		Reports Feed Pump is available.
		Verifies MSIVs, Main Steam Line Drains, RCIC and HPCI isolated.
		Injects to flood the RPV.
		Monitors for flooding conditions met.
Termination: The crew has identified the requirements to determine the Main Steam Lines are flooded.		

NOTES:

[] Plant Status:

MWe: 365

HWCS: on

Zinc Inj: on

SBLC: 14.563% 12/09/02

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Mode Switch: RUN Mode: 1 System: Green OLR: Not Available

☐ TS LCO's:

Tech Spec 3.5.1, Condition A, Day 1 of 30 for 1D RHR Pump OOS

Tech Spec 3.6.2.5, Condition A, Hour 8 of 24 Drywell to Suppression Chamber Differential Pressure due to Containment inerting in progress.

Tech Spec 3.6.3.1, Condition A, Hour 8 of 24 Primary Containment Oxygen Concentration due to Containment inerting in progress.

☐ ATR's:

None

☐ Significant Alarms and the reason: At a minimum, this is to include alarms that are not expected:

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

☐ Major Equipment OOS/Reason: At a minimum, include equipment OOS that causes an LCO:

1B Service Water Pump due to a ground in the motor windings.

1B EHC pump due to a failure of the autostart feature.

1D RHR pump due to a failure of the trip coil.

1B Instrument Air Compressor due to a seal water failure.

☐ Operations / Evolutions in Progress:

Plant startup in progress IAW QCGP 1-1, step F.9.t. transitioning to QCGP 3-1 step F.3.g (4) Your directions for the shift are to place 1A Feedwater Reg Valve in service and continue power ascension. QNE directions are to increase power with recircs to ~ 65 MLBM/hr core flow IAW QCGP 3-2, Attachment A. (REMA).

Drywell inerting in progress IAW QCOP 1600-20 step F.16.

☐ Special Instructions:

None

☐ Off Normal:

IRM #12 bypassed due to erratic operation and is INOP.

☐ Material Condition:
WO#

Problem:
Status (12/02/02)

WR#

Alarm 901-5 B-3, Rod Worth Minimizer, Block Intermittent alarms SWR# 3483

Working

UNIT 1 SUPERVISOR TURNOVER CHECKLIST**Page 63 of 3****Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms
SWR# 3759 Working**

Operational Status							
Rx. Mode: Mode 1					System Status: Green		
Holding @		Mwe					
Increasing to	920	Mwe @	150	MwE/hr	HWCS: ON		ZINC: ON
Decreasing to		Mwe @		MwE/hr			
Common Panels controlled by UNIT ONE							
LCOs and Outage Reports							
<p>Tech Spec 3.5.1, Condition A, Day 1 of 30 for 1D RHR Pump OOS</p> <p>Tech Spec 3.6.2.5, Condition A, Hour 8 of 24 Drywell to Suppression Chamber Differential Pressure due to Containment inerting in progress.</p> <p>Tech Spec 3.6.3.1, Condition A, Hour 8 of 24 Primary Containment Oxygen Concentration due to Containment inerting in progress.</p>							

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Significant Alarms / Reasons

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

Major Equipment OOS / Reasons

1B Service Water Pump due to a ground in the motor windings.

1B EHC pump due to a failure of the autostart feature.

1D RHR pump due to a failure of the trip coil.

1B Instrument Air Compressor due to a seal water failure.

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Surveillances in Progress			
<ul style="list-style-type: none">• None			
Evolutions Upcoming or in Progress			
<p>Plant startup in progress IAW QCGP 1-1, step F.9.t. transitioning to QCGP 3-1 step F.3.g. (4). Your directions for the shift are to place 1A Feedwater Reg Valve in service and continue power ascension. QNE directions are to increase power with recircs to ~ 65 MLBM/hr core flow IAW QCGP 3-2, Attachment A. (REMA).</p> <p>.</p> <ul style="list-style-type: none">• Drywell inerting in progress IAW QCOP 1600-20 step F.16.			
Upcoming Production Risk Activities			
None			

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Special Instructions

None.

Comments			
<p>IRM #12 bypassed due to erratic operation and is INOP.</p> <ul style="list-style-type: none">Unit 2 is operating at 97% power on the 97% Flow Control Line.			

[] Plant Status:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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MWe: 912
Mode Switch: RUN

HWCS: on
Mode: 1

Zinc Inj: on
System: Green

SBLC: 14.563% 12/09/02
OLR: Not Available

[] TS LCO's:

Tech Spec 3.5.1, Condition A, Day 2 of 30 for 1D RHR Pump OOS.

[] ATR's:

None

[] Significant Alarms and the reason: At a minimum, this is to include alarms that are not expected:

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

[] Major Equipment OOS/Reason: At a minimum, include equipment OOS that causes an LCO:

1B Service Water Pump due to a ground in the motor windings.

1B EHC pump due to a failure of the autostart feature.

1D RHR pump due to a failure of the trip coil.

1B Instrument Air Compressor due to a seal water failure.

1B Stator Water Cooling Pump due to overheating.

[] Operations / Evolutions in Progress:

Perform QCOS 2900-03, Safe Shutdown Makeup System Power Operated Valve Test as soon as you take the shift.

Hold load constant IAW QCGP 3-2, Attachment A. (REMA).

.

[] Special Instructions:

None

[] Off Normal:

IRM #12 bypassed due to erratic operation and is INOP.

[] Material Condition:
WO#

Problem:
Status (12/02/02)

WR#

Alarm 901-5 B-3, Rod Worth Minimizer, Block Intermittent alarms SWR# 3483

Working

**Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms
SWR# 3759**

Working

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Place a check √ to indicate that checklist item meets specified criteria, unless otherwise indicated, OR include remarks explaining equip. status

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Panel 901-3	√
DW/Torus DP > 1.2 psid	
Torus Level in Normal Operating Band	
DW Air Temperature < 180°F	
B Core Spray Pump in Auto	
MO 1402-3B and 24B Open	
MO 1402-25B Closed	
C and D RHR Pumps in Auto	
C and D RHRSW Pumps in Auto	
MO 1001-7C,7D,16B,19B and 28B Open	
MO 1001-43C,43D and 29B Closed	
HPCI Controller in Auto @ 5600 gpm	
MGU @ HSS	
MSC @ LSS	
MO 2301-4,5,6 and 9 Open	
MO 2301-3,8,14,35 and 36 Closed	
A and B RHR Pumps in Auto	
A and B RHRSW Pumps in Auto	
MO 1001-7A,7B,16A,19A and 28A Open	
MO 1001-43A,43B and 29A Closed	
A Core Spray Pump in Auto	
MO 1402-3A and 24A Open	
MO 1402-25A Closed	
Auto Blowdown Inhibit in Normal	
Drywell Pressure Reset in Normal	
Relief Valves 3A,3B,3C,3D,3E in Auto	
TEST Panel Annunciators	
Panel 901-4	√
RCIC Controller in Auto @ 400 gpm	
MO 1301-16,17,22 and 48 Open	
MO 1301-61,25,26 and 49 Closed	
Torus Temperature < 90°F	
Recirc Loop Flow Mismatch within TS limits.	
MO 202-6A and 6B closed	
MO 202-9A or 9B closed	
TEST Panel Annunciators	
Panel 901-5	√
List Bypassed Nuclear Instrumentation	
Check Rod Step and compare to RWM	
RX Water Level steady @ 30"	
MSL Flow indicators approximately equal	
TEST Panel Annunciators	
Panel 901-6	√
RX Feed Pumps ON (Circle)	A B C
RX Feed Pump Aux Oil pps in AUTO	A B C
RX Feed Pump Aux Oil pps auto trip	A B C
Condensate Pumps ON (Circle)	A B C D
CCST Level ≥ 10.5 feet	
TEST Panel Annunciators	
Comments:	

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Panel 901-7	√
Condenser Backpressure < 5" Hg	
Circulating Water Pumps ON (Circle)	A B C
Pressure Regulator in Control	A B
PMG Power Malfunction light Extinguished	
Electrical Malfunction light Extinguished	
TEST Panel Annunciators	
Panel 901-8	√
Unit 1 Diesel Generator C/S in AUTO	
½ Diesel Generator C/S in AUTO	
TEST Panel Annunciators	
Panel 901-74	√
SBO DG 1 Mode switch in NORMAL	
Check alarm status (Touch Screen)	
TEST Panel Annunciator	
Panels 901-53 and 901-54	√
HWCS Flow Rate	
% O2 on 1-2740-26 (QCOP 2700-6) 15%-24%	
TEST 901-53 Panel Annunciators	
AO—1-5408-A&B open	
TEST 901-54 Panel Annunciators	
Sequence of Events Recorder	√
Demand an Alarm Summary	
Disable report matches QCOP 0900-02	
Panels 901-55	
H ₂ & O ₂ Monitor Inlet vlv Select	
TEST Annunciators	
Panels 901-56	
H ₂ & O ₂ Monitor Inlet vlv Select	
Opposite of 901-55 panel	
TEST Annunciators	
Back Panels	
One light on off-gas timer lit	
Status of Common Panels	
Unit in charge of Common Panels (circle) IF Unit 1, THEN Perform Common Panel Checklist and attach to this turnover.	1 2
Miscellaneous after turnover	
Review Daily Orders	
Review New Standing Orders	
Review Interim Procedures	
Review Temporary Alterations Log	
Review BRIO Outline	
Shift Training Notebook (NSO/Assist)	/
OD 56 Options 1 and 2 alarms are valid	
OD 58 inserted values are correct	
U-1 and ½ Breathing Air > 1500 psig	
Verify A Model printer operating properly	
Verify recorders printing & inking properly	

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Performed By (UnitNSO)_____

Reviewed By (AssistNSO)_____

Reviewed By (Temp Relief)_____

[] Plant Status:

MWe:	912	HWCS:	on	Zinc Inj:	on	SBLC:	14.563% 12/09/02
Mode Switch:	RUN	Mode:	1	System:	Green	OLR:	Not Available

[] TS LCO's:

Tech Spec 3.5.1, Condition A, Day 2 of 30 for 1D RHR Pump OOS.

[] ATR's:

None

[] Significant Alarms and the reason: At a minimum, this is to include alarms that are not expected:

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

[] Major Equipment OOS/Reason: At a minimum, include equipment OOS that causes an LCO:

1B Service Water Pump due to a ground in the motor windings.

1B EHC pump due to a failure of the autostart feature.

1D RHR pump due to a failure of the trip coil.

1B Instrument Air Compressor due to a seal water failure.

1B Stator Water Cooling Pump due to overheating.

[] Operations / Evolutions in Progress:

Perform QCOS 2900-03, Safe Shutdown Makeup System Power Operated Valve Test as soon as you take the shift.

Hold load constant IAW QCGP 3-2, Attachment A. (REMA).

.

[] Special Instructions:

None

[] Off Normal:

IRM #12 bypassed due to erratic operation and is INOP.

[] Material Condition:
WO#

Problem:
Status (12/02/02)

WR#

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Alarm 901-5 B-3, Rod Worth Minimizer, Block Intermittent alarms SWR# 3483

Working

**Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms
SWR# 3759**

Working

Place a check ☒ to indicate that checklist item meets specified criteria, unless otherwise indicated, OR include remarks explaining equip. status

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Panel 901-3	√
DW/Torus DP > 1.2 psid	
Torus Level in Normal Operating Band	
DW Air Temperature < 180°F	
B Core Spray Pump in Auto	
MO 1402-3B and 24B Open	
MO 1402-25B Closed	
C and D RHR Pumps in Auto	
C and D RHRSW Pumps in Auto	
MO 1001-7C,7D,16B,19B and 28B Open	
MO 1001-43C,43D and 29B Closed	
HPCI Controller in Auto @ 5600 gpm	
MGU @ HSS	
MSC @ LSS	
MO 2301-4,5,6 and 9 Open	
MO 2301-3,8,14,35 and 36 Closed	
A and B RHR Pumps in Auto	
A and B RHRSW Pumps in Auto	
MO 1001-7A,7B,16A,19A and 28A Open	
MO 1001-43A,43B and 29A Closed	
A Core Spray Pump in Auto	
MO 1402-3A and 24A Open	
MO 1402-25A Closed	
Auto Blowdown Inhibit in Normal	
Drywell Pressure Reset in Normal	
Relief Valves 3A,3B,3C,3D,3E in Auto	
TEST Panel Annunciators	
Panel 901-4	√
RCIC Controller in Auto @ 400 gpm	
MO 1301-16,17,22 and 48 Open	
MO 1301-61,25,26 and 49 Closed	
Torus Temperature < 90°F	
Recirc Loop Flow Mismatch within TS limits.	
MO 202-6A and 6B closed	
MO 202-9A or 9B closed	
TEST Panel Annunciators	
Panel 901-5	√
List Bypassed Nuclear Instrumentation	
Check Rod Step and compare to RWM	
RX Water Level steady @ 30"	
MSL Flow indicators approximately equal	
TEST Panel Annunciators	
Panel 901-6	√
RX Feed Pumps ON (Circle)	A B C
RX Feed Pump Aux Oil pps in AUTO	A B C
RX Feed Pump Aux Oil pps auto trip	A B C
Condensate Pumps ON (Circle)	A B C D
CCST Level ≥ 10.5 feet	
TEST Panel Annunciators	
Comments:	

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Panel 901-7	√
Condenser Backpressure < 5" Hg	
Circulating Water Pumps ON (Circle)	A B C
Pressure Regulator in Control	A B
PMG Power Malfunction light Extinguished	
Electrical Malfunction light Extinguished	
TEST Panel Annunciators	
Panel 901-8	√
Unit 1 Diesel Generator C/S in AUTO	
½ Diesel Generator C/S in AUTO	
TEST Panel Annunciators	
Panel 901-74	√
SBO DG 1 Mode switch in NORMAL	
Check alarm status (Touch Screen)	
TEST Panel Annunciator	
Panels 901-53 and 901-54	√
HWCS Flow Rate	
% O2 on 1-2740-26 (QCOP 2700-6) 15%-24%	
TEST 901-53 Panel Annunciators	
AO—1-5408-A&B open	
TEST 901-54 Panel Annunciators	
Sequence of Events Recorder	√
Demand an Alarm Summary	
Disable report matches QCOP 0900-02	
Panels 901-55	
H ₂ & O ₂ Monitor Inlet vlv Select	
TEST Annunciators	
Panels 901-56	
H ₂ & O ₂ Monitor Inlet vlv Select	
Opposite of 901-55 panel	
TEST Annunciators	
Back Panels	
One light on off-gas timer lit	
Status of Common Panels	
Unit in charge of Common Panels (circle) IF Unit 1, THEN Perform Common Panel Checklist and attach to this turnover.	1 2
Miscellaneous after turnover	
Review Daily Orders	
Review New Standing Orders	
Review Interim Procedures	
Review Temporary Alterations Log	
Review BRIO Outline	
Shift Training Notebook (NSO/Assist)	/
OD 56 Options 1 and 2 alarms are valid	
OD 58 inserted values are correct	
U-1 and ½ Breathing Air > 1500 psig	
Verify A Model printer operating properly	
Verify recorders printing & inking properly	

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Performed By (UnitNSO)_____

Reviewed By (AssistNSO)_____

Reviewed By (Temp Relief)_____

Operational Status							
Rx. Mode: Mode 1					System Status: Green		
Holding @	912	Mwe					
Increasing to		Mwe @		MwE/hr	HWCS: ON		ZINC: ON
Decreasing to		Mwe @		MwE/hr			
Common Panels controlled by UNIT ONE							
LCOs and Outage Reports							
Tech Spec 3.5.1, Condition A, Day 2 of 30 for 1D RHR Pump OOS							

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Significant Alarms / Reasons

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

Major Equipment OOS / Reasons

1B Service Water Pump due to a ground in the motor windings.

1B EHC pump due to a failure of the autostart feature.

1D RHR pump due to a failure of the trip coil.

1B Instrument Air Compressor due to a seal water failure.

1B Stator Water Cooling pump due to overheating.

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Surveillances in Progress			
<ul style="list-style-type: none">None			
Evolutions Upcoming or in Progress			
<ul style="list-style-type: none">Instructions for the shift are to perform QCOS 2900-03, Safe Shutdown Makeup System Power Operated Valve Test, as soon as you take the shift. <p>Hold load constant IAW QCGP 3-2, Attachment A (REMA).</p> <ul style="list-style-type: none">.			
Upcoming Production Risk Activities			
None			

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Special Instructions

None.

Comments			
<p>IRM #12 bypassed due to erratic operation and is INOP.</p> <ul style="list-style-type: none">Unit 2 is operating at 97% power on the 97% Flow Control Line.			

[] Plant Status:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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MWe: 0 HWCS: off Zinc Inj: on SBLC: 14.563% 12/09/02
Mode Switch: STATUP/HOT STANDBY Mode: 2 System: Green OLR: Not Available

☐ TS LCO's:

Tech Spec 3.3.1.1, Function 1, Condition A, for tracking only, for IRM 12 being bypassed.

☐ ATR's:

None

☐ Significant Alarms and the reason: At a minimum, this is to include alarms that are not expected:

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

☐ Major Equipment OOS/Reason: At a minimum, include equipment OOS that causes an LCO:

1B Service Water Pump due to a ground in the motor windings.

1B Stator Water Cooling Pump due to overheating.

1B Instrument Air Compressor due to a seal water failure.

☐ Operations / Evolutions in Progress:

Plant startup in progress IAW QCGP 1-1, step F.6.ad and ae. The unit is approximately 3% power with a reactor startup in progress. The reactor is critical, one Bypass Valve open, Containment is deinerted, ready to pull rod step 17. Your directions for the shift are to secure RWCU reject flow and continue the startup by pulling control rods in preparation for placing the Mode Switch in RUN IAW QCGP 3-2, Attachment A. (REMA).

☐ Special Instructions:

None

☐ Off Normal:

IRM #12 bypassed due to erratic operation and is INOP. Maintenance and testing is complete. Shift Manager is

reviewing paperwork for return to operation.

☐ Material Condition:
WO#

Problem:
Status (12/02/02)

WR#

Alarm 901-5 B-3, Rod Worth Minimizer, Block Intermittent alarms SWR# 3483

Working

**Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms
SWR# 3759 Working**

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Place a check √ to indicate that checklist item meets specified criteria, unless otherwise indicated, OR include remarks explaining equip. status

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Panel 901-3	√
DW/Torus DP > 1.2 psid	
Torus Level in Normal Operating Band	
DW Air Temperature < 180°F	
B Core Spray Pump in Auto	
MO 1402-3B and 24B Open	
MO 1402-25B Closed	
C and D RHR Pumps in Auto	
C and D RHRSW Pumps in Auto	
MO 1001-7C,7D,16B,19B and 28B Open	
MO 1001-43C,43D and 29B Closed	
HPCI Controller in Auto @ 5600 gpm	
MGU @ HSS	
MSC @ LSS	
MO 2301-4,5,6 and 9 Open	
MO 2301-3,8,14,35 and 36 Closed	
A and B RHR Pumps in Auto	
A and B RHRSW Pumps in Auto	
MO 1001-7A,7B,16A,19A and 28A Open	
MO 1001-43A,43B and 29A Closed	
A Core Spray Pump in Auto	
MO 1402-3A and 24A Open	
MO 1402-25A Closed	
Auto Blowdown Inhibit in Normal	
Drywell Pressure Reset in Normal	
Relief Valves 3A,3B,3C,3D,3E in Auto	
TEST Panel Annunciators	
Panel 901-4	√
RCIC Controller in Auto @ 400 gpm	
MO 1301-16,17,22 and 48 Open	
MO 1301-61,25,26 and 49 Closed	
Torus Temperature < 90°F	
Recirc Loop Flow Mismatch within TS limits.	
MO 202-6A and 6B closed	
MO 202-9A or 9B closed	
TEST Panel Annunciators	
Panel 901-5	√
List Bypassed Nuclear Instrumentation	
Check Rod Step and compare to RWM	
RX Water Level steady @ 30"	
MSL Flow indicators approximately equal	
TEST Panel Annunciators	
Panel 901-6	√
RX Feed Pumps ON (Circle)	A B C
RX Feed Pump Aux Oil pps in AUTO	A B C
RX Feed Pump Aux Oil pps auto trip	A B C
Condensate Pumps ON (Circle)	A B C D
CCST Level ≥ 10.5 feet	
TEST Panel Annunciators	
Comments:	

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Panel 901-7	√
Condenser Backpressure < 5" Hg	
Circulating Water Pumps ON (Circle)	A B C
Pressure Regulator in Control	A B
PMG Power Malfunction light Extinguished	
Electrical Malfunction light Extinguished	
TEST Panel Annunciators	
Panel 901-8	√
Unit 1 Diesel Generator C/S in AUTO	
½ Diesel Generator C/S in AUTO	
TEST Panel Annunciators	
Panel 901-74	√
SBO DG 1 Mode switch in NORMAL	
Check alarm status (Touch Screen)	
TEST Panel Annunciator	
Panels 901-53 and 901-54	√
HWCS Flow Rate	
% O2 on 1-2740-26 (QCOP 2700-6) 15%-24%	
TEST 901-53 Panel Annunciators	
AO—1-5408-A&B open	
TEST 901-54 Panel Annunciators	
Sequence of Events Recorder	√
Demand an Alarm Summary	
Disable report matches QCOP 0900-02	
Panels 901-55	
H ₂ & O ₂ Monitor Inlet vlv Select	
TEST Annunciators	
Panels 901-56	
H ₂ & O ₂ Monitor Inlet vlv Select	
Opposite of 901-55 panel	
TEST Annunciators	
Back Panels	
One light on off-gas timer lit	
Status of Common Panels	
Unit in charge of Common Panels (circle) IF Unit 1, THEN Perform Common Panel Checklist and attach to this turnover.	1 2
Miscellaneous after turnover	
Review Daily Orders	
Review New Standing Orders	
Review Interim Procedures	
Review Temporary Alterations Log	
Review BRIO Outline	
Shift Training Notebook (NSO/Assist)	/
OD 56 Options 1 and 2 alarms are valid	
OD 58 inserted values are correct	
U-1 and ½ Breathing Air > 1500 psig	
Verify A Model printer operating properly	
Verify recorders printing & inking properly	

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Performed By (UnitNSO)_____

Reviewed By (AssistNSO)_____

Reviewed By (Temp Relief)_____

Operational Status							
Rx. Mode: Mode 2				System Status: Green			
Holding @		Mwe					
Increasing to	920	Mwe @		MwE/hr	HWCS: OFF		ZINC: ON
Decreasing to		Mwe @		MwE/hr			
Common Panels controlled by UNIT ONE							
LCOs and Outage Reports							
Tech Spec 3.3.1.1, Function 1, Condition A, for tracking only, for IRM 12 being bypassed.							

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Significant Alarms / Reasons

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

Major Equipment OOS / Reasons

1B Service Water Pump due to a ground in the motor windings.

1B Stator Water Cooling Pump due to overheating.

1B Instrument Air Compressor due to a seal water failure.

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Surveillances in Progress			
<ul style="list-style-type: none">None			
Evolutions Upcoming or in Progress			
<p>Plant startup in progress IAW QCGP 1-1, step F.6.ad and ae. The unit is approximately 3% power with a reator startup in progress. The reactor is critical, one Bypass Valve open, Containment is deinerted, ready to pull rod step 17. Your directions for the shift are to secure RWCU reject flow and continue the startup by pulling control rods in preparation for placing the Mode Switch in RUN IAW QCGP 3-2, Attachment A. (REMA).</p> <ul style="list-style-type: none">			
Upcoming Production Risk Activities			
None			

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Special Instructions

None.

Comments

IRM #12 bypassed due to erratic operation and is INOP. Maintenance and testing is complete. Shift Manager is reviewing paperwork for return to operation.

- Unit 2 is operating at 97% power on the 97% Flow Control Line.

[] Plant Status:

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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MWe: 700
Mode Switch: RUN

HWCS: on
Mode: 1

Zinc Inj: on
System: Green

SBLC: 14.563% 12/09/02
OLR: Not Available

☐ **TS LCO's:**

Tech Spec 3.5.1, Condition A, Day 1 of 30 for 1A and 1B RHR Pumps OOS.

Tech Spec 3.5.1, Condition B, Day 1 of 7 for LPCI A Subsystem INOP.

Tech Spec 3.5.1, Condition D, Day 1 of 3 for both LPCI Subsystems INOP.

Tech Spec 3.6.2.3. Condition A, Day 1 of 7, A Loop RHR Suppression Pool Cooling INOP.

Tech Spec 3.6.2.4. Condition A, Day 1 of 7, A Loop RHR Suppression Pool Spray INOP.

TRM 3.6.a. Condition A, Day 1 of 7, A Loop RHR Drywell Spray INOP.

☐ **ATR's:**

None

☐ **Significant Alarms and the reason: At a minimum, this is to include alarms that are not expected:**

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

☐ **Major Equipment OOS/Reason: At a minimum, include equipment OOS that causes an LCO:**

1B Service Water Pump due to a ground in the motor windings.

1A RHR Loop is OOS for packing replacement on the 1-1001-66A Valve, 1A RHR Pump Discharge Valve.

☐ **Operations / Evolutions in Progress:**

QCOS 7500-05, SBGTS MONTHLY OPERABILITY TEST is complete through step H.2.o, has been running for ten hours and is to be shutdown when you take the shift.

Hold load constant IAW QCGP 3-2, Attachment A. (REMA).

☐ **Special Instructions:**

None

☐ **Off Normal:**

None

☐ **Material Condition:**
WO#

Problem:
Status (12/02/02)

WR#

Alarm 901-5 B-3, Rod Worth Minimizer, Block Intermittent alarms SWR# 3483

Working

UNIT 1 SUPERVISOR TURNOVER CHECKLIST

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Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms
SWR# 3759 Working

Operational Status							
Rx. Mode: Mode 1				System Status: Green			
Holding @	700	Mwe					
Increasing to		Mwe @		MwE/hr	HWCS: ON		ZINC: ON
Decreasing to		Mwe @		MwE/hr			
Common Panels controlled by UNIT ONE							
LCOs and Outage Reports							
<p>Tech Spec 3.5.1, Condition A, Day 1 of 30 for 1A and 1B RHR Pumps OOS.</p> <p>Tech Spec 3.5.1, Condition B, Day 1 of 7 for LPCI A Subsystem INOP.</p> <p>Tech Spec 3.5.1, Condition D, Day 1 of 3 for both LPCI Subsystems INOP.</p> <p>Tech Spec 3.6.2.3. Condition A, Day 1 of 7, A</p> <p>Loop RHR Suppression Pool Cooling INOP.</p> <p>Tech Spec 3.6.2.4. Condition A, Day 1 of 7, A Loop RHR Suppression Pool Spray INOP.</p> <p>TRM 3.6.a. Condition A, Day 1 of 7, A Loop RHR Drywell Spray INOP.</p>							

Significant Alarms / Reasons

Alarm 901-5 B-3, Rod Worth Minimizer Block Intermittent alarms and is being investigated.

Alarm 901-6 F-11, Main Turbine/RFP High Level Trip Intermittent alarms and is being investigated.

Major Equipment OOS / Reasons

1B Service Water Pump due to a ground in the motor windings.

1A RHR Loop is OOS for packing replacement on the 1-1001-66A Valve, 1A RHR Pump Discharge Valve.

Surveillances in Progress

QCOS 7500-05, SBGTS MONTHLY OPERABILITY TEST is complete through step H.2.o, has been running for ten hours and is to be shutdown when you take the shift.

Evolutions Upcoming or in Progress

QCOS 7500-05, SBGTS MONTHLY OPERABILITY TEST is complete through step H.2.o, has been running for ten hours and is to be shutdown when you take the shift.

Hold load constant IAW QCGP 3-2, Attachment A. (REMA).

-

Upcoming Production Risk Activities

None

Special Instructions

None.

Comments			

- Unit 2 is operating at 97% power on the 97% Flow Control Line.