WOLF CREEK
NUCLEAR OPERATING CORPORATION

INITIAL LICENSE EXAM

OPERATING TEST #1

SCENARIO #1

Revision 1

Week of March 6, 2006

Facility: Wolf Creek **NRC Scenario No.: 1** **Op-Test No.: 1**

Source:
New _X_ Bank - Significantly Modified _____. Bank - Initial Condition Change _____.

See page 3 for Examiner/student assignments

Initial Conditions: 55% power, "B" Main Feed Pump (MFP) rolling at 1100 rpm

Turnover: _Place 2nd MFP on line, maintain current power for flux map

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N-BOP	Place 2nd MFP on line
2	mPCS02A	R-ATC	Turbine Impulse Pressure AC PT-505 fails low causing control rod insertion.
3	mMSS01C2	I-BOP	"C" SG Pressure Instrument fails low, affecting Steam Flow indication and MFP Speed Control.
4	mCCW18B	C-ATC C-BOP	Component Cooling Water System (CCW) Leak in the "B" Train Safety Loop. Requires removing "B" Train CCW and ECCS pumps from service.
5	mRCS07B	M	Small Break LOCA, Safety Injection
6	mCCW06A r19064B	C-ATC	"A" Train CCW pump A trips on SI and the C pump fails to auto start.
7	mPSC10C	C-ATC	Containment Isolation Phase A fails to automatically actuate

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

SCENARIO MISCELLANEOUS INFORMATION

SCENARIO SUMMARY: The objective of this scenario is to mitigate a small break Loss Of Coolant Accident, complicated by the loss of one train of Emergency Core Cooling System (ECCS). The scenario begins at 55% power with the crew placing the second Main Feed Pump in service. Two instrument failures occur requiring operator action to stabilize the plant and evaluation of Technical Specifications.

A leak in the operating Component Cooling Water (CCW) train requires swapping to the standby train and subsequent shutdown of the CCW train. Procedural requirements place all ECCS pumps served by the affected train out of service. This will also require the SRO to evaluate Technical Specifications.

Following the small break LOCA, operator actions are required. The running CCW pump in the only available train, trips and the standby pump does not autostart. Containment Isolation Signal Phase A also fails to actuate automatically challenging containment integrity. Both failures can be corrected by manual actions.

CRITICAL PARAMETERS:

The following parameters may be of value in evaluating crew performance when the scenario is completed:

- SG Levels
- RCP Temperatures
- RCS and PZR Pressures
- PZR Level
- Containment Pressure
- RCS Tavg

OPERATOR ACTIONS TABLE NOTES:

1. Critical Tasks are indicated by **"C"** in the position column and indicated in bold type.

2. Actions required throughout the event are indicated as continuous (‘cont’) in the position column.

3. Shaded cells indicate procedural entry points.

OPERATOR ACTIONS

Op-Test No.: # 1 **Scenario No.:** 1 **Event No.:** 1

Event Description: Place second Main Feed Pump "B" in service. SYS AE-121 TURBINE DRIVEN MAIN FEED WATER PUMP STARTUP procedure in progress at step 6.2.23.

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Provide RO a band to maintain for Tavg and Power during pump startup. Direct BOP to place "B" MFP on line using the procedure.	
	RO 'cont'	Maintain Rx power and Tavg within band provided by SRO	
	BOP	Verifies oil temperature > 110 degrees by contacting local operator.	
	BOP 'cont'	Monitor SG levels and running "A" MFP to ensure secondary remains stable.	
	BOP	Increase MFP speed to 3600 rpm and transfer control to auto. Perform actions to "null" the signal match between the GE and Westinghouse controllers.	
	BOP	Contact local operator and verify seal dP.	
	BOP	Increase "B" MFP speed till it indicates 0-100 rpm above "A" and place control on the Master Speed Controller.	
	BOP	Inform SRO that the procedure is complete.	

Termination Criteria: The Master Speed Controller is controlling both MFP's. All SG levels are stable at or trending to program level (50%).

OPERATOR ACTIONS

Op-Test No.: # 1 **Scenario No.:** 1 **Event No.:** 2

Event Description: Turbine Impulse Pressure AC PT-505 fails low causing control rod insertion.

Time	Position	Applicant's Actions or Behavior	Notes
	RO	Note and Communicate that control rods are stepping in. Place rod control in manual after confirmation that a loss of load is not in progress.	*Rods should be taken to manual in time to prevent a Rx Trip.*
	BOP	Confirm that a turbine loss of load is not occurring.	
	SRO	Monitor/acknowledge communications. Direct above actions be performed if not already done.	
	RO/BOP	Note and communicate that AC PT-505 has failed low.	*Monitor for entry into DNB T.S. Two hours to restore.*
	SRO	Enter and direct OFN SB-008, INSTRUMENT MALFUNCTIONS, Attachment D.	
	RO/BOP	Identifies failed channel as AC PT-505. Ensure rods in manual.	
	BOP	Select out failed channel	
	SRO/RO	Conduct reactivity brief with RO to return rods to the pre-event position and restore Tavg. Return rods to Automatic.	
	BOP	Place Steam Dump Interlocks to OFF Set AB PK-507 pot to 7.28 Place Steam Dumps in Steam Pressure Mode. Place Steam Dump Interlocks to ON	
	SRO	Contact Work Week Manager (WWM) for INC assistance in tripping bi-stables and troubleshooting.	
	BOP	Check C-16 Lo Tavg NOT LIT Check HOLD light NOT LIT	

	BOP	Place AMSAC in proper state	*AMSAC is not modeled. Booth Operator will meet BOP at door with cue.*
	SRO	Review and comply with T.S. 3.3.1, Function 18.f, Condition T.	*Verify P-13 within 1 hour.*
Termination Criteria:		Control Rods in Auto. Tavg within 1 degree of Tref. T.S. Identified	

OPERATOR ACTIONS

Op-Test No.: # 1 **Scenario No.:** 1 **Event No.:** 3

Event Description: "C" SG Pressure Instrument fails low, affecting Steam Flow indication and MFP Speed Control.

Time	Position	Applicant's Actions or Behavior	Notes
	BOP	Note and communicate alarm 110C, "C" SG Level is decreasing or "C" MFRV is closing.	
	BOP	Place "C" MFRV in manual and restore feed flow.	*This action should be taken in time to prevent a Rx Trip.*
	SRO	Monitor/acknowledge communications. Direct above actions be performed if not already done.	
	SRO	Enter and direct Alarm Response ALR 00-110C	SRO may enter the OFN directly
	RO	Check SG "C" instrumentation. Note and communicate that Steam Pressure Channel AB PT-535 has failed low.	
			Note: Steam Flow is an input to the MFP Speed Control and will force the MFPs to continue slowing down till the affected channel is selected out.
	SRO	Perform RNO column. Direct BOP to select out failed channel.	
	SRO	Direct BOP to return MFRV to Automatic when SG level is restored.	*Should provide a band or value.*
	BOP 'cont'	Restore SG level to program and place MFRV in Auto per SRO directive.	
	SRO	Enter and direct OFN SB-008, INSTRUMENT MALFUNCTIONS, Attachment C	*If SRO entered the OFN directly based on Steam Flow, Attach. A will direct them to Attach. C.*
	SRO/RO	Identify failed channel	

	SRO/BOP	Check if channel selected for control. Place MFRV in manual Select Alternate Channel	*May have already been completed.*
	SRO	Contact Work Week Manager (WWM) for INC assistance in tripping bi-stables and troubleshooting.	
	SRO	Monitor and comply with T.S.'s 3.3.2 Function 1.e., 3.a.(3), 4.d.(1) and (2), 5.c, 6.e, and 7. 72 hours to trip Bi-stables. 3.3.3 and 3.3.4 – No Action Required 3.3.6, Table 3.3.6-1, Function 4 3.3.7, Table 3.3.7-1, Function 4	*T.S 3.3.2 contains the only required actions.* *3.3.6 and 3.3.7 should be referenced, however no actions are required.*
	SRO/BOP	Ensure "C" MFRV back in auto and controlling SG level.	

Termination Criteria:	"C" SG level stable at or trending to program (50%). "C" MFRV back in Auto. T.S.'s identified.

OPERATOR ACTIONS

Op-Test No.: # 1 **Scenario No.:** 1 **Event No.:** 4

Event Description: Component Cooling Water System (CCW) Leak in the "B" Train Safety Loop. Requires removing "B" Train CCW and ECCS pumps from service.

Time	Position	Applicant's Actions or Behavior	Notes
	ALL	Various CCW Alarms annunciate and clear. Crew should investigate alarms.	*At any point, the SRO may enter the OFN directly and the following diagnostics may not be performed.*
	RO/BOP	Recognize Auto make-up has initiated from Demin Water system (AN).	*No audible alarm. Crew may not recognize make-up in progress.*
	RO/BOP	Recognize CCW 'B' surge tank level is decreasing.	
	ALL	Annunciator 104D for RHR Pump Room Sump Level high alarms.	
	SRO	Direct Local Operator to be dispatched to investigate sump level alarm.	*At some point, the Building Watch will report a leak on CCW Train 'B' Safety Loop.*
	SRO	Enter and Direct OFN EG-004, "CCW MALFUNCTIONS".	
	SRO	Direct starting an "A" Train CCW pump.	
	RO/BOP	Make Announcement and start an "A" Train CCW pump.	
	RO/BOP 'cont'	Check CCW inventory. Isolate CCW to Radwaste. Ensure DI water Make-up. Start second AN pump. Cycle "B" ESW make-up valves to "B" CCW as required to maintain level between 40 and 60%.	*SRO should assign continuous action to one of the board operators.*
	SRO	Identify CCW leak. (RHR sumps increasing) Check Location of Leak. ("B" Safety Loop)	*Building Watch will report leak is on the "B" Safety Loop and cannot be isolated.*

	SRO	Determine Leak not on Service Loop in Containment and go to step 12. Determine Leak not on Service Loop outside Containment and go to step 19	
	SRO	Direct Service Loop be swapped to "A" Train CCW and Shutdown "B" CCW Train.	
	RO/BOP	Swap Service Loop to "A" Train CCW. Place both "B" Train CCW pumps in Pull to Lock (PTL). Recognize leak cannot be isolated and direct building watch to close EG-V148 for DI water make-up. Place ECCS pumps in PTL. CCP SI RHR	
	SRO	Stop the B SFP Cooling pump. Direct board operator to co-ordinate with the Bldg Watch and place SFP Cooling on "A" CCW Train.	
	RO/BOP	May attempt to re-establish Thermal Barriers to RCPs and restore Radwaste back to service.	
	SRO	Identify Tech Specs. 3.7.7 CCW One Train inoperable, 72 Hours to restore. 3.5.2 ECCS Operating Determine Safety function is not lost and it would be 72 hours to restore. May apply or request an evaluation to apply 3.0.6 and not enter 3.5.2.	

Termination Criteria:	CCW Service Loop aligned to "A" Train. All "B" Train ECCS pumps and CCW pumps are in PTL. Tech Specs Identified.

OPERATOR ACTIONS

Op-Test No.: # 1 **Scenario No.:** 1 **Event No.:** 5

Event Description: Small Break LOCA, Safety Injection

Time	Position	Applicant's Actions or Behavior	Notes
	SRO/RO BOP	Note and communicate RCS pressure is decreasing.	
	SRO/RO BOP	Monitor RCS pressure for entry into DNB Tech. Spec. at < 2220 psig. T.S. 3.4.1, two hours to restore.	
	RO	As RCS pressure decreases, may energize PZR B/U heaters.	*Monitor for DNB T.S.*
	RO	Note and communicate that PZR level is decreasing.	
	SRO	Enter and direct OFN BB-007 "RCS Leakage".	
	RO	Checks PZR Level – decreasing. Increase charging flow. Isolate Letdown.	
	SRO/RO	Check Charging Pump Suction. Check PZR pressure – stable.	
	SRO/BOP	Check S/G Tubes – intact. • Dispatch HP • Contact Chemistry.	
	SRO/RO	Fold Out Page criteria are met when charging is maximized, letdown isolated and PZR level continues to decrease OR SRO determines they cannot maintain PZR Pressure.	
	SRO	Direct a Reactor Trip and Initiate Safety Injection. Transition to EMG E-0.	*Auto Actuation may occur before the SRO can order manual actuation.*

Termination Criteria: Reactor is tripped and Safety Injection Actuated.

OPERATOR ACTIONS

Op-Test No.: # 1 **Scenario No.:** 1 **Event No.:** 6 and 7

Event Description: Upon Reactor trip and Safety Injection, the running CCW pump trips and the standby pump fails to auto start. Containment Isolation Phase A (CIS-A) fails to auto actuate.

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Enter and Direct actions of EMG E-0, "Reactor Trip or Safety Injection."	
	RO/BOP	Perform Immediate Actions of EMG E-0.	
	RO	Verify Rx Trip • Rod Bottom Lights Lit. • Rx Trip and Bypass Bkrs open. • Neutron Flux decreasing (Intermediate Range & Gamma metrics) • Transfer NR-45 recorder to Intermediate Range Verify Vital AC Power • Both NB buses - normal voltage / aligned to off site power. Verify SI actuated Determine SI is actuated. Annunciators 30A and 31A are lit.	
	BOP	Verify Turbine trip. • Main Stop valves all closed. • Generator and exciter bkrs open.	
	SRO	At completion of Immediate Actions determine if there are any immediate concerns.	
	RO	Notes that no CCW pump is running in the only available Train and informs SRO.	
	ALL	One person from the crew should recognize adverse containment values have been exceeded and communicate this to the rest of the crew.	*Adverse Containment may not occur at this break size.*

	SRO/RO **"C"**	**Start the standby "A" Train CCW pump.**	**CRITICAL TASK:** *The standby pump must be started prior to the end of Attach. F.*
	SRO/RO	Notes that CIS-A, CRVIS and CPIS has failed to actuate on Status Panels SB066X and 66Y.	
	SRO/RO **"C"**	**Manually Actuate CIS-A.** CRVIS and CPIS will actuate on the manual CIS-A, operator may actuate CRIVS or CPIS separately prior to the CIS-A.	**CRITICAL TASK:** *The CIS-A signal must be actuated prior to the end of Attach. F.* *Only one train is required to be actuated to meet the critical task.*
	SRO	Read steps and confirm Immediate Actions Complete.	
	SRO /RO	Check if SI is required - YES	
	SRO /RO	Perform EMG E-0 Attach. F for Automatic Signal verification.	
	RO **"C"**	If not previously started then during performance of Attach. F., start the standby CCW pump	
	RO **"C"**	If not previously actuated, then during the performance of Attach. F., actuate CIS-A.	
	SRO/BOP	Verify AFW > 270 Klbm/hr. Close AC HIS-134 Reduce AFW to 270 Klbm/hr Establish S/G Pressure Control	
	SRO /BOP	Check PORV/Block Valves. Check PZR Spray Valves. Check PZR Safety Valves. Check if RCPs should be stopped.	
	SRO	Direct Monitoring Critical Safety Function Status Trees using EMG F-0.	
	SRO /RO	Check if S/G's are not faulted. Check if S/G Tubes are intact. • Dispatch HP Check S/G levels – controlled increase	
	SRO/RO	Check if RCS Intact in Containment	

		NO Ensure BIT inlet and outlets open. Transition to EMG E-1	
	SRO	Enter and Direct EMG E-1," LOSS OF REACTOR OR SECONDARY COOLANT" .	
	SRO	Conduct Transition Brief for EMG E-1.	
	SRO/RO	Check if RCPs should be stopped. .	*Depending on the timeline of the crew response, RCP trip criteria may exist. If RCS pressure decreases to < 1400 psig it would require the crew to trip all RCPs.*
	SRO/BOP	Check SG Pressures. Check SG Levels.	
	SRO/RO	Reset SI. Reset CIS-A and CIS-B.	
Termination Criteria:		The Scenario may be terminated after transition to EMG E-1 and SI is reset.	

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
RO	Start the Standby CCW pump	Prior to the end of EMG E-0, Attach. F.	
RO	Manually actuate CIS-A	Prior to the end of EMG E-0, Attach. F. *Only one train is required to be actuated to meet the critical task However if only one train of CRVIS is actuated the other train has to be isolated within 90 minutes..*	

WOLF CREEK
NUCLEAR OPERATING CORPORATION

INITIAL LICENSE EXAM

OPERATING TEST #1

SCENARIO # 2

Revision 1

Week of March 6, 2006

Facility: Wolf Creek Generating Station **Scenario No.: 2 (Mod) Op-Test No.: 1**

Examiners: _____ **Operators:** _____
_____ _____
_____ _____

Initial Conditions: 100% power, Normal Operations
_____
_____

Turnover: , "A" Emergency Diesel Generator (EDG) is Out of Service. .
_____ _____ .
_____ .
Block Valve BB HV-8000A closed and power removed. .
due to PORV blowing fuses . .

Event No.	Malf. No.	Event Type*	Event Description
1	mWAT06 A	R-ATC C-BOP	Circ Water Pump "A" trips causing a Main Turbine Setback to 80%.
2	mFWM02 C4	I-BOP	"C" SG Level Channel fails high.
3	P24100C P24100D	C-ATC	Instrument Air to Containment, KA HV-29, fails closed causing a loss of normal charging and letdown.
4	mRCS02A	M	330 gpm Steam Generator Tube Rupture on "A"
5	P19019B P19028B	C-ATC	Both Essential Service Water Pumps fail to automatically start on Safety Injection
6	mMSS07D	C-BOP	"D" SG Atmospheric Relief Valve fails open on Rx Trip.
7	rPRS07	C-ATC	Block Valve BB HV-8000B fails to open, affecting RCS depressurization. Requires entry into contingency procedure EMG C-33 for SGTR with Loss of Pressure Control.

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

SCENARIO MISCELLANEOUS INFORMATION

SCENARIO OBJECTIVE:

The objective of this scenario is to mitigate a Steam Generator Tube Rupture (SGTR) with a loss of Pressure control requiring the use of a Contingency Procedure..

The SRO will evaluate Technical Specifications for the SG Level channel and the Rod Insertion Limit resulting from the Main Generator Setback. The setback also caused a greater than 15% power change in one hour. This requires T.S. surveillance 3.4.16.2 to be run 2 to 6 hours following the power change.

The scenario begins with a trip of a running Circulating Water Pump causing a Turbine Setback. Following the setback is a failure of a SG level instrument. Both require operator actions to stabilize the plant and the use of Off Normal procedures. Prior to the trip there is a Loss of Instrument Air to Containment, also requiring use of an Off Normal Procedure. The crew will have to mitigate the effects on charging and Pressurizer pressure for the loss of air to Containment.

Post trip failures include both Essential Service Water pumps fail to auto start on the Safety Injection. The operator must start at least one pump prior to the end of the scenario. When the crew prepares to de-pressurize the RCS as part of the SGTR mitigation, the PZR Block valve for the only available PORV fails while in the closed position. With Instrument Air already lost to containment and no available means to de-pressurize the RCS, the crew must transition to EMG C-33, “SGTR WITHOUT PRESSURIZER PRESSURE CONTROL”, contingency procedure. Success path in EMG C-33 is to secure ECCS pumps.

The following is the expected major procedure flow path:

- OFN MA-001, LOAD REJECTION OR TURBINE TRIP
- OFN SB-008, INSTRUMENT MALFUNCTIONS
- OFN KA-019, LOSS OF INSTRUMENT AIR
- OFN BB-07A, STEAM GENERATOR TUBE LEAK
- EMG E-0, REACTOR TRIP OR SAFETY INJECTION
- EMG E-3, STEAM GENERATOR TUBE RUPTURE
- EMG C-33, SGTR WITHOUT PRESSURIZER PRESSURE CONTROL

CRITICAL PARAMETERS:

The following parameters may be of value in evaluating crew performance when the scenario is completed:

- RCS Pressure and Temperatures
- SG Levels and Pressures
- PZR Level and Pressure
- Control Rod Positions

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 2 Event No.: 1

Event Description: Circ Water Pump trip, Main Turbine Setback.

Time	Position	Applicant's Actions or Behavior	Notes
	RO	Notes and Communicates annunciator 08A, Circ Water Pump Trip is in Alarm. Verifies CWP A has tripped.	
	SRO	Direct placing CWP A handswitch in "STOP" position to start closing discharge valve.	*This action should be performed in time to prevent a Unit trip on low vacuum.*
	SRO	Direct dispatching Site Watch to locally close CWP A discharge valve remaining 25%.	
	ALL	Confirm Setback has occurred. Generator MW load decreasing. Control rods inserting in Auto.	
	SRO	Enter and Direct OFN MA-001. LOAD REJECTION OOOR TURBINE TRIP	
	BOP	Check Turbine Not Tripped. Checks Stator Cooling - Normal	
	RO	Verify Control Rods inserting in Auto in response to Temperature mis-match.	
	BOP	Checks CWPs – all Running Use RNO Ensure Handswitch in stop and Site Watch dispatched. Reference plant procedures for Circ Water System Operation.	*Should already be performed.*
	RO	Check PZR Pressure and Level stable or trending to program. Make adjustments as required.	
	BOP	Check SG Levels stable or trending to program. Make adjustments as required.	
	BOP	Confirm Load Rejection has stopped.	
	SRO	Recognize that at current core life MTC would be negative.	

	BOP	Verify SG Atmospherics are closed. Reset C-7 signal to steam dumps by placing Steam Dump Selector switch in reset and return to Tavg mode.	
	RO/BOP	Close FW HTR Bypass Valve AE HV-038.	*Use Open Procedure.*
	SRO	Direct crew to maintain stable plant conditions.	
	SRO	If power decreased to <70%, Contact Work Week Manager (WWM) to request INC assistance.	
	SRO	Refer to Tech Specs. 3.1.6 Control Rod Insertion Limits RIL LO and LO-LO annunciators may alarm. Direct boration of the RCS to restore rods within two hours. 3.2.3 Axial Flux Difference	*The SRO may direct the RO to borate per the 10% down power pre-shift brief.*
	SRO/BOP	Determine SG Safeties remained closed during load rejection.	
	SRO	Determine Thermal Power change was >15% in one hour and notify Chemistry for sampling.	*T.S. requirement to sample 2 to 6 hours following the transient. The SRO needs to contact chemistry.*
	SRO/BOP	Reset Load Limiter by slowly reducing Load Potentiometer till the Load Limit light extinguishes.	
	SRO	Contact System Operations for Load Requirements.	
Termination Criteria:		**Unit Stable at approximately 80%, Tech Specs identified.**	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 2 Event No.: 2

Event Description: "C" S/G Controlling Level Channel fails high.

Time	Position	Applicant's Actions or Behavior	Notes
	BOP	Notes and communicates annunciator 00-110B, and that "C" MFRV is going closed. Takes manual control of "C" MFRV and stabilizes level at program level (50%)**.**	*Stabilize S/G level to prevent a Rx Trip.*
	SRO	Acknowledges communications, enters and directs Alarm Response (ALR 00-110B)	*CRS may enter OFN SB-008 directly.*
	RO	Notes and communicates that level indicator AE LI-553 is failing high.	
	BOP	Manually controls MFRV to establish S/G level at program. Select out failed channel. Returns MFRV controller to auto.	
	SRO	Enter and direct actions of OFN SB-008, "Instrument Malfunctions", Attach. F.	
	BOP	Confirms failed channel, channel has been selected out, monitors S/G level to ensure proper control.	
	SRO	Contact Work Week Manager (WWM) to have I&C troubleshoot and trip bi-stables. Recognize channel does affect AMSAC.	

OPERATOR ACTIONS
Event 2 Continued

	SRO	Refer to and comply with T.S. Actions. Table 3.3.1-1 Function 14 T.S. 3.3.1, Condition E Table 3.3.2-1, Functions 5b and 6d. T.S. 3.3.2, Conditions I and D	*All are 6 hours to trip bi-stables.*
	SRO	Review Attach. S, determine instrument does not affect T.S. 3.3.3 or 3.3.4 for Post Accident or Shutdown Monitoring.	
Termination Criteria:		**S/G level stable or trending to 50%. MFRV back in auto and Tech Specs identified.**	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 2 Event No.: 3

Event Description: KA-HV-029, Instrument Air to Containment Isolation valve fails closed.

Time	Position	Applicant's Actions or Behavior	Notes
	RO/BOP	Plant response is approximately 60 seconds after KA HV-029 fails. • PZR Spray valves fail closed. • Letdown Isolates • Charging flow to the RCS isolates. • CCW alarms occur due to flow imbalance. • Letdown HX temperature alarms	
	RO/BOP	Identify plant response is indicative of a loss of instrument air. Identify KA HV-029 has closed. Dispatch Building Watch to investigate.	
	SRO/RO	Place PZR B/U Heaters in Auto to minimize pressure rise.	
	SRO	Enter and Direct OFN KA-019, LOSS OF INSTRUMENT AIR.	
	SRO	Make Plant Announcement. Check Instrument Air Pressures. Ensure can still maintain plant control.	
	SRO/RO	Check PZR Level – stable. • Start "A" CCP • Establish Alternate Seal Injection. • Stop the NCP • Establish Excess Letdown to the PRT.	*Should recognize the need to start an "A" Train CCW pump prior to starting the CCP.*
	SRO/BOP	Continue procedure steps to check for proper operation of Instrument Air system.	
	SRO	Contact WWM for assistance with KA HV-029.	
Termination Criteria:		**Charging aligned to Alternate Seal Injection, Excess Letdown in Service.**	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 2 Event No.: 4

Event Description: Steam Generator Tube Rupture

Time	Position	Applicant's Actions or Behavior	Notes
	SRO/RO BOP	Note and communicate RCS pressure is decreasing.	
	SRO/RO BOP	Monitor RCS pressure for entry into DNB Tech. Spec. at < 2220 psig. T.S. 3.4.1, two hours to restore.	*Monitor for DNB T.S.*
	RO	As RCS pressure decreases, may energize PZR B/U heaters.	
	BOP	Note and Communicates that "A" SG level is increasing.	
	RO	Note and communicate that PZR level is decreasing.	
	RO/BOP	Note and communicate Annunciator 061A and B, Process Rad Hi and Hi-Hi.	
	SRO	Determine from RM-11 panel that GE RE-92, Condenser Off-gas is in alarm.	
	SRO	Enter and direct OFN BB-07A "Steam Generator Tube Leakage".	
	RO	Checks PZR Level – decreasing. Increase charging flow. May Re-Start the NCP Isolate Letdown.	*RO should increase charging flow and isolate letdown.*
	SRO/RO	Check Charging Pump Suction. Check PZR pressure – stable.	
	SRO/BOP	Check S/G Tubes – intact. • Dispatch HP • Contact Chemistry.	
	SRO/RO	Fold Out Page criteria is met when charging is maximized and PZR level continues to decrease OR SRO determines they cannot maintain PZR Pressure.	*The crew may not perform all steps listed for OFN BB-07A.*

	SRO	Direct Reactor Trip and Safety Injection. Transition to EMG E-0	
Termination Criteria:		Reactor Tripped and Safety Injection Actuated.	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 2 Event No.: 5 and 6

Event Description: Reactor Trip Safety Injection due to SGTR, ESW pumps fail to start and "D" SG ARV fails open.

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Enter and Direct actions of EMG E-0, "Reactor Trip or Safety Injection."	
	RO/BOP	Perform Immediate Actions of EMG E-0.	
	RO	Verify Rx Trip • Rod Bottom Lights Lit. • Rx Trip and Bypass Bkrs open. • Neutron Flux decreasing (Intermediate Range & Gamma metrics) • Transfer NR-45 recorder to Intermediate Range Verify Vital AC Power • Both NB buses - normal voltage / aligned to off site power. Verify SI actuated • Determine SI is actuated. Annunciators 30A and 31A are lit.	
	BOP	Verify Turbine trip. • Main Stop valves all closed. • Generator and exciter bkrs open.	
	SRO	At completion of Immediate Actions determine if there are any immediate concerns.	
	RO	Notes that no ESW pump is running in either Train and informs SRO.	
	SRO/RO **"C"**	Start at least one ESW pump.	***CRITICAL TASK:*** *Start at least one ESW pump prior to the end of Attach. F.*

	BOP	Determine Cooldown is continuing, Note and communicate "D" SG ARV is indicating Open.	
	SRO / BOP **"C"**	Take Manual control and close "D" ARV.	***CRITICAL TASK:*** *"D" ARV must be manually closed or locally isolated prior to a needless orange path occurring or SG pressures less than 275 psi.*
	SRO	Read steps and confirm Immediate Actions Complete.	
	SRO / RO	Check if SI is required - YES	
	SRO / RO	Perform EMG E-0 Attach. F for Automatic Signal verification.	
	RO **"C"**	If not previously started then during performance of Attach. F., start at least one ESW pump.	
	SRO / BOP	Verify AFW > 270 klbm/hr. Close AC HIS-134 Reduce AFW to 270 klbm/hr Establish S/G Pressure Control	*May discover "D" ARV open here.*
	SRO / BOP <u>'cont'</u>	Monitor Fold Out Page. When "A" SG level exceeds 6% Narrow Range, Isolate all AFW flow to "A" SG.	
	SRO / BOP	Check PORV/Block Valves. Check PZR Spray Valves. Check PZR Safety Valves. Check Id RCPs should be stopped.	
	SRO	Direct Monitoring Critical Safety Function Status Trees using EMG F-0.	
	SRO / BOP	Check if S/G's are not faulted. Check if S/G Tubes are intact. • Dispatch HP Check S/G levels – controlled increase.	
	SRO / RO	Check BIT Inlet and Outlet valves open. Transition to EMG E-3	
TERMINATION:		Transition to EM E-3,"STEAM GENERATOR TUBE RUPTURE".	

Op-Test No.: # 1 Scenario No.: 2 Event No.: 7

Event Description: "EMG C-33", SGTR WITHOUT PRESSURIZER PRESSURE CONTROL

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Enter and Direct EMG E-3, Steam Generator Tube Rupture.	*A Transition Brief is not desired nor required when in SGTR procedures.*
	SRO/RO	Check if RCPs should be stopped. Verify RCS pressure >1400.	
	SRO/BOP **"C"**	Identify "A" SG is ruptured. Isolate "A" SG. • ARV set at 1125 • Steamline drain isolated • Blowdown and Sampling isolated • Close MSIV • Ensure Steam Bypass closed • Isolate AFW when Level is >6%.	***Critical Task:*** Isolate steam flow from the ruptured SG in time to prevent a transition to EMG C-31, SUBCOOLED RECOVERY.
	SRO/RO	Establish SG Pressure Control. Place Steam Dumps in Steam Pressure Mode.	
	All	Verify Ruptured SG isolated.	*Hold Point till MSIV is closed.*
	SRO/BOP	Check Ruptured SG >275 psi	
	RO 'cont'	Block Low Steam Line Pressure SI when RCS pressure <1970 psi	
	SRO/BOP	Determine Target Conditions Initiate RCS Cooldown • Slowly lower setpoint to open Group 1 Steam Dump Valves • When Tavg <P-12, place Steam Dumps in Bypass interlock • Set Steam Dump Potentiometer to Target Value. • Increase AFW flow to intact SGs	
	BOP 'cont'	Monitor cooldown; ensure steam dumps begin closing as target temperature is approached.	

	SRO/RO	Check PZR PORVs and Block Valves Check PZR Safeties. Reset SI Reset CIS-A and CIS-B	
	SRO/RO	Establish Instrument Air to Containment	*Recognize can not be performed.*
	SRO/RO 'cont'	Stop both RHR pumps. RO monitor RCS pressure for restart.	
	SRO/BOP	Check if Cooldown should be stopped. Ensure steam dumps close when target is reached. Adjust controller to maintain below target. Check Ruptured SG Pressure stable or increasing.	
	SRO/RO	Check Subcooling >50 degrees	
	SRO/RO	Depressurize RCS using spray • Normal Spray not available – RNO	
	SRO/RO	Depressurize RCS using PORVs When Attempt is made to open the block valve the breaker will trip. SRO use RNO	
	SRO/RO	Depressurize RCS using Aux Spray in Attach D of EMG E-3.	
	SRO	Attach D, step 1, if KA HV-029 is closed then use RNO. Transition to EMG C-33, SGTR WITHOUT PRESSURIZER PRESSURE CONTROL>	
Termination Criteria:		**EMG E-3 completed to Attach D. Transition to EMG C-33**	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 2 Event No.: 7

Event Description: "EMG C-33", SGTR WITHOUT PRESSURIZER PRESSURE CONTROL

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Enter and Direct EMG C-33	*A Transition Brief is not desired nor required when in SGTR procedures.*
	SRO/BOP	Check Ruptured SG Level <78% RNO go to step 13	*If level has not reached 78% at this time the crew will work through the RNO's of the procedure and eventually end up at step 13.*
	SRO/RO/ BOP	Check if SI can be Terminated. • Subcooling >30 degrees • SG levels or AFW Flow • RVLIS level • Ruptured SG level	
	SRO/RO **'C'**	Stop ECCS pumps. • All but one CCP • Stop both SI pumps • Stop both RHR pumps	***Critical Task:*** *ECCS pumps must be secured prior to the SG Safety on the Ruptured SG lifting due to water solid conditions.*
Termination Criteria:		The Scenario may be terminated when all ECCS pumps are secured except for one CCP.	

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
RO	Start Both ESW pumps.	At Least one ESW pump must be started to supply cooling to an ECCS train prior to the end of EMG E-0 Attach. F.	
BOP	Close or Isolate “D” SG ARV	Manually close or locally isolate prior to a needless orange path occurring or SG pressures less than 275 psi.	
BOP	Isolate Ruptured SG	Isolate steam flow from the ruptured SG in time to prevent a transition to EMG C-31	
RO	Secure ECCS pumps.	ECCS pumps must be secured prior to the SG Safety on the Ruptured SG lifting due to water solid conditions.	

WOLF CREEK
NUCLEAR OPERATING CORPORATION

INITIAL LICENSE EXAM

OPERATING TEST # 1

SCENARIO # B/U

Revision 0

Week of March 06, 2006

Facility: Wolf Creek **NRC Scenario No.:** **B/U** **Op-Test No.:** **1** **Revision 0**

Source:
New ___ _ Bank - Significantly Modified __X__Bank - Initial Condition Change____

Initial Conditions: 100% Power, MOL,
"A" MDAFWP is OOS for bearing replacement.
"A" Safety Injection Pump is OOS for oil change.

Turnover: Maintain current plant conditions. Severe Thunderstorms western Kansas.

Event No.	Malf. No.	Event Type*	Event Description
1	mPRS03A	C-ATC	Pzr Spray Valve fails full open in Automatic.
2	mEPS03F	R-ATC N-BOP	Rapid Down power due to loss of one 345 Kv line.
3	mMSS13	I-BOP	Steam Header Pressure Channel fails low. (Affects both MFP's)
4	mFWM20	M-ALL	Main Feed Line break in Turbine Building
5	mAFW02B	C BOP	TDAFW pump fails to autostart.
6	IOR P01055 B	C-ATC	"A" CCP fails to Auto Start on Safety Injection.

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

SCENARIO MISCELLANEOUS INFORMATION

SCENARIO OBJECTIVE:

The objective for this scenario is to mitigate a Loss of Heat Sink event by initiating feed and bleed using plant procedures. Initial conditions have one Aux Feedwater (AFW) pump and one Safety Injection (SI) pump out of service for maintenance. The scenario contains a steam header pressure instrument failure and failure of the controller for one PZR spray valve. All will require operator action to prevent a reactor trip.

The SRO will evaluate technical specifications associated with DNB during the Spray Valve Failure and the Projected Degraded Grid Voltage.

The major event is a feed line break in the turbine building and a subsequent loss of the Turbine Driven AFW pump. This places the crew in a red path, ”Loss of Heat Sink”, functional recovery procedure. The crew will meet requirements to initiate bleed and feed to the reactor coolant system (RCS). The crew must realize that the only available high head injection pump did not autostart and manually start it to establish a feed path to the RCS. The scenario terminates when the crew has completed the bleed and feed portion of the functional recovery procedure.

The following is the expected major procedure flow path:

- OFN SB-008, INSTRUMENT MALFUNCTIONS
- OFN AF-025, UNIT LIMITATIONS
- OFN MA-038, RAPID PLANT SHUTDOWN
- OFN SB-008, INSTRUMENT MALFUNCTIONS
- EMG E-0, REACTOR TRIP OR SAFETY INJECTION
- EMG ES-02, REACTOR TRIP RESPONSE
- EMG FR-H1, LOSS OF HEAT SINK

CRITICAL PARAMETERS:

The following parameters may be of value in evaluating crew performance when the scenario is completed:

- S/G Wide Range Levels
- RCS and PZR pressure
- Hot Leg/Incore Temperatures
- High head injection flow (BIT)
- PZR PORV and block valve status.
- RCS Tavg and Turbine Tref
- SG NR levels

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: B/U Event No.: 1

Event Description: PZR Spray Valve "A" fails full open in Automatic. BB PCV-455B.

Time	Position	Applicant's Actions or Behavior	Notes
	RO/BOP/ SRO	Note and Communicate that RCS pressure is decreasing.	
	RO/BOP/ SRO	Monitor RCS pressure for entry into DNB Tech. Spec. at < 2220 psig.	*T.S. 3.4.1, two hours to restore.*
	SRO/RO	As RCS pressure decreases to < 2220, the crew may energize 2nd set of PZR back-up heaters.	
	RO	Note and communicate 'A' Spray valve is failing open. Place 'A' spray controller in Manual and close 'A' spray valve.	*'A' spray controller must be placed in Manual and closed in time to prevent a Rx Trip.*
	SRO	Enter and direct OFN SB-008, Instrument Malfunctions, Attachment 'V'.	
	RO	Verify "A" Spray Valve controller failed open in auto and is now in manual/closed.	
	SRO	Contact WWM to request I&C repair failed channel.	

Termination Criteria: 'A' Spray Valve Controller in manual/closed. RCS pressure stable at or trending to program (2235).

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: B/U Event No.: 2

Event Description: Rapid Power Reduction due to Loss of 345 Kv Line and Predicted Degraded Grid Voltage

(Cue may be provided from Shift Manager to reduce power at 1% per minute.)

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Receive call from WESTAR Transmission Services that the Benton Line has failed. Determine this is an entry condition for OFN AF-025.	
	SRO	Enter OFN AF-025, UNIT LIMITATIONS	
	SRO	Determine from OFN, Attach. A, page 3 that maximum generator load is 950 MWE net, (995 MWE gross)	
	SRO	Enter and direct actions of OFN MA-038. Conduct Reactivity Brief with board operators. Pre-Shift brief for reduction to 90%.	*Crew should commence 10% downpower from pre-shift brief then determine remaining actions.*
	RO	Calculate Boration required.	*155 gallons at 15.4 gpm.*
	SRO/BOP	Check AE HV-038 - Closed	
	BOP (Continuous)	Establish 1% per minute power decrease on the Load Set potentiometer. • Press Decrease Load till Load Limit light is out. • Select 1%/Minute ON. • Decrease Loading Rate – ON. • Decrease Load Set, maintain within 200 MW of actual load.	
	RO (Continuous)	• Use rods to maintain Tavg/Tref error between 0 and +5 • Energize both PZR B/U heaters. • Borate and adjust rods as necessary to maintain rods above RIL.	
	RO/BOP	• Check PZR PORV / Block Valves • Check PZR Pressure • Check PZR Level	

OPERATOR ACTIONS

EVENT 2 Continued.

	BOP (Continuous) SRO	Control S/G levels to maintain 45-55%. Check Reactor Power < 60%. Recognize hold point in procedure	
	SRO	Receive call from WESTAR Transmission Services that predicted grid voltage from the model is 98%.	
	SRO	Recognize entry condition to OFN AF-025.	
	SRO	Determine from step 8 to refer to Attach. E of the OFN. Per the note on the Attach. Declare both Off Site sources in-operable and refer to T.S 3.8.1	
	SRO	Determine T.S. 3.8.1 Condition C applies. Will have to return A AFW and A SI pumps to service within 12 hours or declare the B AFW and B SI in-operable requiring entry into T.S. 3.0.3. AND Restore at least one offsite source within 24 hours.	
Termination Criteria:		**Power Reduction in Progress. Rods have automatically stepped in. T.S. 3.8.1 Condition C identified.**	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 1 Event No.: 3

Event Description: Steam Header Pressure Channel fails low. (Affects both MFP's)

Time	Position	Applicant's Actions or Behavior	Notes
	BOP	Notes and communicates that level is decreasing in all four S/G's.	
	SRO/BOP	Communicate and takes manual control of the Master MFP Speed controller.	*Master Speed Controller must be placed in manual and SG levels stabilized in time to prevent a Rx Trip.*
	RO/BOP	Identify Steam Header Pressure channel 507 has failed low.	
	SRO	Enter and direct OFN SB-008, Instrument Malfunctions, Attachment B.	
	RO/BOP	Verify Steam Header Pressure channel malfunction. Check Steam Dump select switch NOT in Steam Pressure Mode.	
	BOP (Continuous)	Manually control MFP speed. Establish dP IAW Figure 1. (Operator may match steam and feed flows, then adjust MFP speed to maintain FRVs positioned at ~ 80%.)	*At 100% power Main Feed header pressure should read ~165 psi higher than S/G pressure.*
	BOP	Place Steam Header Pressure Controller in manual.	
	SRO	Contact WWM to request I&C repair failed channel.	
Termination Criteria:		**MFP speed controller in manual, all S/G levels stable or trending to program level (50%).**	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: 1 Event No.: 4

Event Description: Main Feed Line break in Turbine Building.

Time	Position	Applicant's Actions or Behavior	Notes
	BOP	Note and communicate level decreasing in all four S/G's.	
	BOP	Acknowledge and communicate alarms	
	RO/BOP SRO	Note S/G Levels are approaching Rx Trip setpoint.	
	SRO	Direct a Rx Trip or respond to a Rx Trip and enter EMG E-0.	
	RO	Verify Rx Trip • Rod Bottom Lights Lit. • Rx Trip and Bypass Bkrs open. • Neutron Flux decreasing (Intermediate Range & Gamma metrics) • Transfer NR-45 recorder to Intermediate Range Verify Vital AC Power • NB01 normal voltage / off site power. • Determine SI is NOT actuated.	
	BOP	Verify Turbine Trip • Main Stop valves all closed. • Generator and exciter bkrs open.	
	RO	Verify SI NOT required • RCS Press> 1830 PSIG • All S/G Press > 615 psig • Ctmt Press < 3.5 psig • RCS Subcooling > 30 degrees • PZR Level > 6%	

OPERATOR ACTIONS
Event 4 (Continued)

	SRO	Ensure Immediate Actions complete. Identify any immediate concerns.	
	BOP	Note and Communicate that "B" AFW pump has tripped and the TDAFW pump has failed to auto start.	
	SRO/BOP **"C"**	Manually start the TDAFW pump.	***CRITICAL TASK:*** *The TDAFW pump must be started prior to tripping all RCP in EMG FR-H1, LOSS OF HEAT SINK. Crew may use ALR 00-128B.*
	SRO/BOP	Secure all Condensate Pumps and Heater Drain Pumps after Immediate actions are complete.	*Management Expectation is to NOT perform any other actions till the immediate actions are complete. With a feed break in the Turbine Building it is expected to secure running secondary pumps.*
	SRO/RO BOP	Using procedure verify Immediate Actions of EMG E-0 complete	
	SRO	Direct Operator to Monitor CSFST's and Transition to EMG ES-02 from Step 4 RNO.	
Termination Criteria:		**EMG E-0 Immediate Actions completed, transition is made to EMG ES-02.**	

OPERATOR ACTIONS

Op-Test No.: # 1 Scenario No.: B/U Event No.: 5 and 6

Event Description: Loss of Heat Sink, failure of high head Injection.

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Conduct Transition Brief for entry to EMG ES-02.	*Crew may enter EMG FR-H1 directly based on timing of report of red path.*
	RO	Perform EMG F-0 for CSFST	
	SRO/RO BOP (Continuous)	Monitor CSFST on NPIS computer screen after 1st verification with the procedure.	
	BOP	Note that AFW flow is zero to all S/G's. • May attempt to open all AFW valves. • Note and report that zero flow is indicated to all S/G's.	*TDAFW pump trips.*
	SRO	Recognize that entry conditions are met for RED path on EMG FR-H1, Loss of Heat Sink. Transition to EMG FR-H1.	*After transition to FR-H1 the crew will be watching for Fold Out Page Criteria to go to the steps for Feed and Bleed.*
	SRO	Try to establish AFW Flow. Determine from Building reports that No AFW pump is available.	*If Fold Out page is met the crew will go directly to step 27 and initiate bleed and feed.*
	BOP	Close all AFW valves	
	RO/BOP	Reduce heat input to RCS. Stop all RCP's Turn off all PZR heaters (3)	
	BOP	IF MSIVs are open, align Steam Dumps. Place PK-507 in Manual, setpoint at 7.28, select Steam Pressure Mode, return PK-507 to auto. IF MSIVs are closed, then use ARV's. Ensure ARV setpoints at 1125 psig.	

OPERATOR ACTIONS
Events 5 and 6 (Continued)

	SRO	Verify Condensate/Feedwater systems available. Based on Building reports, determine the Main Feedwater header is unavailable. Recognize to use the RNO and this places the crew in a loop from step 1 to step 9.	
	SRO	Conduct Quick Brief with crew. In a procedure loop till the Fold Out Page is met or meet a step criterion.	
	Crew	Monitor S/G WR levels. As level reaches 26% proceed to step 29 and initiate bleed and feed.	*Perform Step for Bleed and Feed.*
	RO/BOP	Stop all RCP's Turn off all PZR heaters	*May have already performed.*
	RO	Actuate Safety Injection Recognize that "B" CCP and "B" SI have tripped and "A" CCP failed to auto start.	
	RO **(C)**	**Manually start "A" CCP.** **Checks BIT flow indicated on EM FI-917A.**	*Ensures Feed Path Established*
	RO/BOP **(C)**	**ARM both Cold Overpressure Protection circuits.** **Ensure Both Block Valves open.** **Open both PZR PORV's.**	*Ensures Bleed Path Established*
	RO/BOP	Verifies BOTH Block valves and BOTH PORVs are open.	
Termination Criteria:		**Bleed and Feed established per steps 29-33 of EMG FR-H1.**	**Scenario may be terminated anytime after bleed and feed has been established.**

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
BOP	Manually start the TDAFW pump	The TDAFW pump must be started prior to tripping all RCP in EMG FR-H1, LOSS OF HEAT SINK.	
RO/BOP	Initiate SI and manually start “A” Centrifugal Charging Pump to ensure a Feed path,	Bleed and Feed must be established prior to S/G dry out. (3 S/G’s < 8% WR)	
RO/BOP	Ensure PORVs/Block valves open for a Bleed path.	Bleed and Feed must be established prior to S/G dry out. (3 S/G’s < 8% WR)	

Administrative RO A1.a

JOB PERFORMANCE MEASURE

JPM NO: RO A1.a	K/A NO: 2.1.20
COMPLETION TIME: 20 Minutes	K/A RATING: 4.3
JOB TITLE: RO	REVISION: 0
TASK TITLE: Perform STS BG-001, Born Injection Flowpath Verification.	Ability to execute procedure steps.
DUTY: Conduct of Operations	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES:

TOOLS/EQUIPMENT: NONE

PREPARER: R. Hare DATE: 01/03/2006

Administrative SRO.A.1.a

JOB PERFORMANCE MEASURE

JPM NO: SRO-A.1.a	K/A NO: 2.1.5
COMPLETION TIME: 10 Minutes	K/A RATING: 3.4
JOB TITLE: SRO	REVISION: 0
TASK TITLE: Shift Staffing, Work Hour Limitations	Ability to locate and use procedures and directives related to shift staffing and activities.
DUTY: Conduct of Operations	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM **X**

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: AP 13-001, Guidelines for WCGS Staff Working Hours

TOOLS/EQUIPMENT: NONE

PREPARER:  DATE: 01/03/2006

SRO A.1.a

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1.

Initiating Cues: You are the Control Room Supervisor and one of the assigned ROs called in sick. You need to find a replacement RO. Assuming today is March 7th (0600), based on their work hour history evaluate whether any of the following 5 ROs could perform safety-related functions until 1900 without advanced approval. Assume the work hours will start at 0630 and ½ hour will be considered turnover time. For each candidate indicate whether the answer is yes or no.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide cue sheet.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have determined the correct status for at least 4 of the 5 RO and not select an RO that could not work.

START TIME: _____

STOP TIME: _____

SRO A.1.a

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Provide candidate with completed copy of the initiating cue		Candidate should locate procedure AP 13-001, Guidelines for WCGS Staff Working Hours and review JPM initiating cue	
2. *Review work hour history and determine that only 2 of the 5 ROs could work without advanced approval.	**THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Pass criteria is 4 of the 5 ROs work hour status being correctly determined and not select an RO that could not work RO1 - no, would work 16.5 hrs straight RO2 - Yes, would work 24 hrs in 48 hrs RO3 - No, would be 17.5 hrs in 24 and less than 8 hours between work periods RO4 - Yes, would work 70 hrs in 7 days RO5 - No, would work 24.5 hrs in 48 hrs	**S U** Comments:

SRO A.1.a

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1.

Initiating Cues: You are the Control Room Supervisor and one of the assigned ROs called in sick. You need to find a replacement RO. Assuming today is March 7th (0600), based on their work hour history evaluate whether any of the following 5 ROs could perform safety-related functions until 1900 without advanced approval. Assume the work hours will start at 0630 and ½ hour will be considered turnover time. For each candidate indicate whether the answer is yes or no.

Operator	Feb 28	March 1st	March 2nd	March 3rd	March 4th	March 5th	March 6th	March 7th
RO1	0630 - 1900	0630 - 1900	OFF	OFF	OFF	0700 - 1530	0700 - 1530	On at 0000
RO2	OFF	OFF	OFF	0630 - 1900	0630 - 1900	0630 - 1900	0630 - 1900	
RO3	OFF	0630 - 1900	0630 - 1900	0630 - 1900	OFF	OFF	1300- 2400	
RO4	Off	0630 – 1900	0630 – 2230	0630 – 2230	0630 - 2030	OFF	OFF	
RO5	0630 - 1900	OFF	OFF	OFF	0630 - 1900	0630 - 1900	0630 - 1930	

1. RO1 _____
2. RO2 _____
3. RO3 _____
4. RO4 _____
5. RO5 _____

JOB PERFORMANCE MEASURE

JPM NO: SRO-A1B	K/A NO: 2.1.25
COMPLETION TIME: 20 Minutes	K/A RATING: 3.1
JOB TITLE: SRO	REVISION: 0
TASK TITLE: Determine Time to Boil and Core Uncovery based on a loss of Shutdown Cooling.	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.
DUTY: Conduct of Operations	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM ____ SIMULATOR/LAB ____ PLANT ____ CLASSROOM **X**

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: OFN EJ-015

TOOLS/EQUIPMENT: NONE

PREPARER: _____ DATE: 01/03/2006

SRO A.1.b

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Today is March 17th. You are a spare licensed operator in the Control Room for Outage Support. The plant is in Mode 5 with water level in the reactor vessel at 3.5 feet below the vessel flange. Train "A" Residual Heat Removal (RHR) is in operation cooling the reactor core. Train "B" RHR System is in Standby. Reactor Coolant System temperature is 180°F. The reactor was shutdown on March 8th after operating at 100% power for the last 100 days.

Initiating Cues: Train "A" Residual Heat Removal pump tripped. Attempts to start "B" RHR pump are unsuccessful. The Control Room staff has entered procedures to mitigate the event. The Control Room Supervisor directs you to determine the following using the appropriate procedure:

1. the time to boiling
2. the time to start of core uncovery.
3. the time to complete core uncovery.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes:

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have determined from OFN EJ-015, LOSS OF SHUTDOWN COOLING, the answers for the above questions.

START TIME: _____

STOP TIME: _____

SRO A.1.b

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
3. Locate Copy of OFN EJ-015, and step 30.		Must determine that the crew would be in OFN EJ-015 and step 30 refers to the graphs.	
4. Check plant - IN REDUCED INVENTORY CONDITION.		Recognize the initiating cues stated the water level in the reactor vessel is 3.5 feet below the vessel flange. *Answer: YES*	
5. *Estimate time to boiling using FIGURE 5		Locate Figure 5 of OFN EJ-015. Recognize it has been 9 days since shutdown and that the vessel is not pressurized. *Answer: 14 minutes ± 1.*	
6. *Estimate time to onset of core uncovery using FIGURE 6.		Locate Figure 6 of OFN EJ-015. Recognize it has been 9 days since shutdown. Utilize the ONSET OF CORE UNCOVERY graph line. *Answer: 127 minutes ± 5.*	
7. *Estimate time to complete core uncovery using FIGURE 6.	**THE JPM IS COMPLETE** RECORD STOP TIME ON PAGE 1	Locate Figure 6 of OFN EJ-015. Recognize it has been 9 days since shutdown. Utilize the COMPLETE CORE UNCOVERY graph line. *Answer: 268 minutes ± 5.*	**S U** Comments:

*Indicates Critical Task

SRO A.1.b

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Today is March 17th. You are a spare licensed operator in the Control Room for Outage Support. The plant is in Mode 5 with water level in the reactor vessel at 3.5 feet below the vessel flange. Train "A" Residual Heat Removal (RHR) is in operation cooling the reactor core. Train "B" RHR System is in Standby. Reactor Coolant System temperature is 180°F. The reactor was shutdown on March 8th after operating at 100% power for the last 100 days.

Initiating Cues: Train "A" Residual Heat Removal pump tripped. Attempts to start "B" RHR pump are unsuccessful. The Control Room staff has entered procedures to mitigate the event. The Control Room Supervisor directs you to determine the following using the appropriate procedure:

1. the time to boiling
2. the time to start of core uncovery.
3. the time to complete core uncovery.

JOB PERFORMANCE MEASURE

JPM NO: SRO-A2	K/A NO: 2.2.13
COMPLETION TIME: 15 Minutes	K/A RATING: 3.8
JOB TITLE: SRO	REVISION: 0
TASK TITLE: Review a Clearance Order for approval and identify the critical errors.	Knowledge of tagging and clearance procedures.
DUTY: Equipment Control	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM **X**

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: Drawings: M-12EN01, M-12BN01, E-13EN01, E-13EN02, E-13EN03, E-13BN04
Procedure: AP 21E-001 “CLEARANCE ORDERS”

TOOLS/EQUIPMENT: NONE

PREPARER: _____ DATE: 01/03/2006

SRO A2

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is Mode 1. You are the Work Controls SRO. Containment Spray Pump B has a developed a serious leak on its discharge flow element EN FE-011. The on shift crew has prepared a Clearance Order and the Shift Manager requests you perform the tagging authority review.

Initiating Cues: The Control Room Supervisor has sent the clearance over for you to release for hanging. Review the clearance order and identify three critical errors.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Have copies of the following drawings to replace any marked up by the examinee. M-12EN01, M-12BN01, E-13EN01, E-13EN02, E-13EN03, E-13BN04.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have rejected the clearance order based on the three critical errors.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
8. Locates the proper drawings.		May locate in any sequence. M-12EN01 M-12BN01, E-13EN01, E-13EN02, E-13EN03, E-13BN04	**S U** Comments:
9. *Identifies the 3 critical errors on the clearance order.	**THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Can be identified in any sequence. 1. Breaker listed for BN HV-03 is for BN HV-04. 2. Breaker listed for EN HV-07 is actually the cubicle for a relay and not the breaker. 3. EN V-024, RWST Test line valve is for wrong train. Should be EN V-025.	**S U** Comments:

*Indicates Critical Task

SRO A2

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is Mode 1. You are the Work Controls SRO. Containment Spray Pump B has a developed a serious leak on its discharge flow element EN FE-011. The on shift crew has prepared a Clearance Order and the Shift Manager requests you perform the tagging authority review.

Initiating Cues: The Control Room Supervisor has sent the clearance over for you to release for hanging. Review the clearance order and identify three critical errors.

APF 21E-001-01, Rev. 02

WOLF CREEK GENERATING STATION

CLEARANCE ORDER

Clearance Number: S-EN-9000 Date/Time:Today
Component Desired: EN FE-011
Work To Be Done: Shift Manager request

Reason For Clearance	Requestor	Date/Time Tags to be Hung by	Estimated Date/Time of completion	Fire System(s) Effected
Excessive leakage	SM	Today		N/A

Shift Manager's Approval To Remove Equipment From Service And Hang Tags

Prepared By:
Tagging Authority Review:
Shift Manager:

Date/Time:_____/_____ Effective Date/Time:_____/_____

Clearance Order Acceptance	Work Order and Step	Phone Ext	ACAD	Date/Time	Ground Tag Issued	Clearance Order Release	Date/Time	Ground Tag Retrnd.	Date/Time Ground Removed

Shift Manager's Approval To Remove Tags

Restoration Section Prepared By:
Restoration Review (SR Only):
Shift Manager:

Date/Time:_____/_____ EOL REVIEWED FOR RETEST: ☐

Special Instructions/Reference Documents/Clearance Order Summary

Change To Clearance Form Made?
Yes / No

SELF STOP THINK ACT REVIEW

FORM APF 21E-001-02 REV 01

CLEARANCE ORDER CONTINUATION SHEET

Clearance Number: S-EN-9000

Page: 1 of 1

Components Required to Clear Equipment		Placement Section				Restoration			
Component Tagged	Component Description	Position	Seq.	Tagged By	Verefied By	Position	Seq.	Removed By	Verified By
EN HIS-09	CTMT SPRAY PUMP B	PULL TO LOCK	1						
BN HIS-03	RWST to CTMT SPRAY PUMP B	CLOSED	2						
EN HIS-12	CTMT SPRAY PUMP B DISCHARGE	CLOSED	2						
EN HIS-07	CTMT SUMP TO CTMT SPRAY PUMP B	CLOSED	2						
NB0203	STMT SPRAY PUMP B SUPPLY BKR	OPEN/ RACKED DOWN	3						
NG01AEF2	BN HV-03 SUPPLY BKR	Verified OFF	3						
NG02BBR1	EN HV-12 SUPPLY BKR	Verified OFF	3						
NG02BFR1	EN HV-07 SUPPLY BKR	Verified OFF	3						
BN HV-03	RWST to CTMT SPRAY PUMP B HANDWHEEL	CLOSED	4						
EN HV-12	CTMT SPRAY PUMP B DISCHARGE HANDWHEEL	CLOSED	4						
EN V-100	EDUCTOR TO SPRAY PUMP	CLOSED	4						
EN V-024	RWST TEST LINE ISOLATION	CLOSED	4						
EN V-068	CTMT SPRAY PUMP B DRAIN	OPEN	5						
EN V-115	CTMT SPRAY PUMP B VENT	OPEN	5						

JOB PERFORMANCE MEASURE

JPM NO: SRO-A3	K/A NO: 2.3.1
COMPLETION TIME: 10 Minutes	K/A RATING: 3.0
JOB TITLE: SRO	REVISION: 0
TASK TITLE: Given a Radiological Survey Map and Radiation Work Permit determine the Radiological conditions and controls required.	Knowledge of 10 CFR: 20 and related facility radiation control requirements
DUTY: Radiation Control	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM **X**

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES:

TOOLS/EQUIPMENT: NONE

PREPARER:  DATE: 01/03/2006

SRO A3

Staging: Begin this JPM in the hall outside Access Control at the RWP desk.

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. You are a spare licensed operator on shift.

Initiating Cues: The Control Room Supervisor states they have received a sump alarm on the "B" RHR Pump room sump and asks you to investigate. Given the survey map, determine the RWP that you would use. Evaluate the radiological conditions in the area and provide the requested information to the following questions.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide survey map.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have correctly answered the three questions.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
10. *Reviews survey map and determines RWP.		RWP 06-005 should be selected	**S U** Comments:
11. *Identify the classification for the room the sump is located in.		High Radiation Area. Based on the 2 at the doorway to the RHR pump room.	**S U** Comments:
12. *Determine time till dosimeter will alarm in 300 mr/hour field.		Immediately. RWP rate setting is 125 mr/hour.	**S U** Comments:
13. *Identify the areas on the Survey Map that require any special HP controls prior to accessing.	**THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Based on Special Instruction 3# on the RWP. 1. The room itself due to High Radiation Area. 2. The RHR pump seal housing due to Highly Contaminated Area. 3. The RHR pump room sump due to Highly Contaminated Area. Identify at least two of the three areas.	**S U** Comments:

*Indicates Critical Task

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. You are a spare licensed operator on shift.

Initiating Cues: The Control Room Supervisor states they have received a sump alarm on the "B" RHR Pump room sump and asks you to investigate. Given the survey map, determine the RWP that you would use. Evaluate the radiological conditions in the area and provide the requested information to the following questions.

NOTE: Circle the correct answers or write them down for the following questions and provide the evaluator with your completed paperwork.

1. The area where the sump is located is a:

A) Potential Hot Particle Area
B) Contaminated Area
C) High Radiation Area
D) Radiation Area

2. If you had to access the pump discharge piping immediately in front of the RHR Pump, how long before your dosimeter would alarm.

A) Immediately
B) 4 minutes
C) 15minutes
D) 25 minutes

3. Identify the areas on the Survey Map that require HP notification prior to accessing.

WOLF CREEK JOB PERFORMANCE MEASURE

JPM NO: SRO A.4	K/A NO: 2.4.41
COMPLETION TIME: 15 Minutes	K/A RATING: 4.1
JOB TITLE: SRO	REVISION: 0
TASK TITLE: After observing an event on the simulator, make the E-plan Classification and Protective Action Recommendation.	Knowledge of the emergency action level thresholds and classifications.
DUTY: Emergency Plan	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: AP 06-002, Radiological Emergency Response Plan
EPP 06-001, Control Room Operations
EPP 06-005, Emergency Classification
EPP 06-006, Protective Action Recommendations
APF 06-002-01, Emergency Action Levels
EPF 06-007-01, WCGS Emergency Notification

TOOLS/EQUIPMENT: NONE

PREPARER: _____ DATE: 01/03/2006

SRO A-4.1 Scenario #1

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the acting Shift Manager.

Initiating Cues: Analyze the events you have just experienced on the simulator, complete an EPF 06-007-01, WCGS Emergency Notification form. Use current plant status.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: After the Candidate indicates they would obtain the Emergency Notification form from the Shift Managers desk drawer, present the blank form attached to this JPM.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. . **(PIR 2003-2930)**

Task Standard: Upon completion of this JPM, the Candidate will have made the correct classification and the correct protective action recommendation per the performance page for the scenarion just completed.

START TIME: _____

STOP TIME: _____

			S U
1. * This classification is for Scenario #1		EAL 3-LRCB1 – Yes 3-LRCB2 – Yes 3-LRCB3 – No 3-LRCB5 – Yes 3-LRCB6 – No 3-LRCB7 – No Alert	Comments:
2. * Perform Attachment A of EPP 06-006		PAR Perform Attachment A of EPP 06-006 Complete EMERGENCY ACTION NOTIFICATION as indicated on attached "Key". • **Sections 3, 4, 5, 7, and 8 are critical**	
	THE JPM IS COMPLETE <u>RECORD STOP TIME ON PAGE 1</u>		

SRO A-4.1 Scenario #1

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the acting Shift Manager.

Initiating Cues: Analyze the events you have just experienced on the simulator, complete an EPF 06-007-01, WCGS Emergency Notification form. Use current plant status.

Administrative (Simulator Scenario #2) SRO A.4.2

WOLF CREEK JOB PERFORMANCE MEASURE

JPM NO: SRO A.4	K/A NO: 2.4.41
COMPLETION TIME: 15 Minutes	K/A RATING: 4.1
JOB TITLE: SRO	REVISION: 0
TASK TITLE: After observing an event on the simulator, make the E-plan Classification and Protective Action Recommendation.	Knowledge of the emergency action level thresholds and classifications.
DUTY: Emergency Plan	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: AP 06-002, Radiological Emergency Response Plan
EPP 06-001, Control Room Operations
EPP 06-005, Emergency Classification
EPP 06-006, Protective Action Recommendations
APF 06-002-01, Emergency Action Levels
EPF 06-007-01, WCGS Emergency Notification

TOOLS/EQUIPMENT: NONE

PREPARER:  DATE: 01/03/2006

SRO A-4 Scenario #2

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the acting Shift Manager.

Initiating Cues: Analyze the events you have just experienced on the simulator, complete an EPF 06-007-01, WCGS Emergency Notification form. Use current plant status.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: After the Candidate indicates they would obtain the Emergency Notification form from the Shift Managers desk drawer, present the blank form attached to this JPM.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. . **(PIR 2003-2930)**

Task Standard: Upon completion of this JPM, the Candidate will have made the correct classification and the correct protective action recommendation per the performance page for the scenarion just completed.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
2. * This classification is for Scenario #2		EAL 2-SGTF1 – Yes 2-SGTF2 – No 2-SGTF9 – Yes 2-SGTF10 – No 2-SGTF12 – No ALERT	**S U** Comments:
2. * Perform Attachment A of EPP 06-006	**THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	PAR Perform Attachment A of EPP 06-006 Complete EMERGENCY ACTION NOTIFICATION as indicated on attached "Key". • **Sections 4, 5, 7, and 8 are critical**	

* CRITICAL STEP

SRO A-4 Scenario #2

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the acting Shift Manager.

Initiating Cues: Analyze the events you have just experienced on the simulator, complete an EPF 06-007-01, WCGS Emergency Notification form. Use current plant status.

Simulator Set Up: **IC 30**
Use the Fuse/Breaker Remote function and remove power from "B" BATP (PBG02B)
Use the Fuse/Breaker Remote function and remove power from Excess Letdown Valve BG HV8154A.
Hang DNO Tags on BG HIS-8154A and "B" BATP Handswitch.

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. Boric Acid Transfer Pump B is tagged for out for seal replacement. The pump breaker is off and its inlet and outlet isolations are tagged closed. Excess Letdown Valve BG HV-8154A has it's breaker tagged open due to electrical faults.

Initiating Cues: The Control Room Supervisor directs you to perform STS BG-001, BORON INJECTION FLOW PATH VERIFICATION.

Except for manual valves listed above, **ALL** other manual valves are in their normal CKL or Locked Component Log positions.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide STS BG-001 with Cover Sheet completed for Authorization to begin.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have identified the Boration and Letdown Flowpaths for the STS.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Review Procedure. *Determine Section 8.1 must be performed for current Mode.		Initial Conditions State Mode 1.	**S U** Comments:
2. *Perform Step 8.1.1.1 and 8.1.1.2 to verify RWST to RCS flowpath.	If candidate asks for local verification of valve positions can restate Initial Conditions or provide the following positions as required. **OPEN valves** BG 8471A BG 8471B BG 8485A BG 8485B BG 8483A BG 8483C BG 8483B BG 8402A BG 8402B EM V-107 EM V-108 EM V-109 EM V-110	Completes Figure 1. On Panel RL001/2. Notes that the Blue Placard is on the "A" Train CCP and should use the "B" CCP for the line up. Circles PBG05B in Step 8.1.1.2 See key.	**S U** Comments:
3. *Perform Step 8.1.1.3 to verify PORVs available.		Completes Figure 4. At Panel RL021/22 Verifies that both PORV and Block valves are available See key.	**S U** Comments:

*Indicates Critical Task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
4. *Perform Step 8.1.1.4 to verify Excess Letdown Flow Path		Completes Figure 4. On Panel RL001/2 Recognize BG HV-8154A is Tagged out. See Key	**S U** Comments:
5. *Perform Step 8.1.2 to verify BAST to RCS flowpath.	If candidate asks for local verification of valve positions, restate Initial Conditions or provide the following positions: **CLOSED Valves:** BG V-8465A BG V-8465B BG V-8475 BG V-166 BG V-173 BG V-172 **OPEN Valves:** BG V-8461A BG V-8463 BG V-148 BG V-149 BG V-152 BG V-8471A BG V-8485A BG V-8471B BG V-8485B	Completes Figure 2. Must use “A” CCP (PBG05A) to complete flow path. Recognizes “B” Transfer Pump is not available Recognize same Excess Flow Path can be used. See Key	:
6. Complete Procedure	**THE JPM IS Complete** Record Stop Time.	N/A remaining steps in Procedure. Sign Cover Sheet and return to the SRO.	**S U** Comments

*Indicates Critical Task

RO A1.a

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. Boric Acid Transfer Pump B is tagged for out for seal replacement. The pump breaker is off and its inlet and outlet isolations are tagged closed. Excess Letdown Valve BG HV-8154A has it's breaker tagged open due to electrical faults.

Initiating Cues: The Control Room Supervisor directs you to perform STS BG-001, BORON INJECTION FLOW PATH VERIFICATION.

Except for manual valves listed above, **ALL** other manual valves are in their normal CKL or Locked Component Log positions.

JOB PERFORMANCE MEASURE

JPM NO: RO-A1B	K/A NO: 2.1.25
COMPLETION TIME: 20 Minutes	K/A RATING: 2.8
JOB TITLE: RO	REVISION: 0
TASK TITLE: Determine Time to Boil and Core Uncovery based on a loss of Shutdown Cooling.	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.
DUTY: Conduct of Operations	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM **X**

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: OFN EJ-015

TOOLS/EQUIPMENT: NONE

PREPARER: _____ DATE: 01/03/2006

RO A.1.b

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Today is March 17th. You are a spare licensed operator in the Control Room for Outage Support. The plant is in Mode 5 with water level in the reactor vessel at 3.5 feet below the vessel flange. Train "A" Residual Heat Removal (RHR) is in operation cooling the reactor core. Train "B" RHR System is in Standby. Reactor Coolant System temperature is 180°F. The reactor was shutdown on March 8th after operating at 100% power for the last 100 days.

Initiating Cues: Train "A" Residual Heat Removal pump tripped. Attempts to start "B" RHR pump are unsuccessful. The Control Room staff has entered procedures to mitigate the event. The Control Room Supervisor directs you to determine the following using the appropriate procedure:

1. the time to boiling
2. the time to start of core uncovery.
3. the time to complete core uncovery.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes:

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have determined from OFN EJ-015, LOSS OF SHUTDOWN COOLING, the answers for the above questions.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
7. Locate Copy of OFN EJ-015, and step 30.		Must determine that the crew would be in OFN EJ-015 and step 30 refers to the graphs.	
8. Check plant - IN REDUCED INVENTORY CONDITION.		Recognize the initiating cues stated the water level in the reactor vessel is 3.5 feet below the vessel flange. *Answer: YES*	
9. *Estimate time to boiling using FIGURE 5		Locate Figure 5 of OFN EJ-015. Recognize it has been 9 days since shutdown and that the vessel is not pressurized. *Answer: 14 minutes ± 1.*	
10. *Estimate time to onset of core uncovery using FIGURE 6.		Locate Figure 6 of OFN EJ-015. Recognize it has been 9 days since shutdown. Utilize the ONSET OF CORE UNCOVERY graph line. *Answer: 127 minutes ± 5.*	
11. *Estimate time to complete core uncovery using FIGURE 6.	**THE JPM IS COMPLETE** RECORD STOP TIME ON PAGE 1	Locate Figure 6 of OFN EJ-015. Recognize it has been 9 days since shutdown. Utilize the COMPLETE CORE UNCOVERY graph line. *Answer: 268 minutes ± 5.*	**S U** Comments:

*Indicates Critical Task

RO A.1.b

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Today is March 17th. You are a spare licensed operator in the Control Room for Outage Support. The plant is in Mode 5 with water level in the reactor vessel at 3.5 feet below the vessel flange. Train "A" Residual Heat Removal (RHR) is in operation cooling the reactor core. Train "B" RHR System is in Standby. Reactor Coolant System temperature is 180°F. The reactor was shutdown on March 8th after operating at 100% power for the last 100 days.

Initiating Cues: Train "A" Residual Heat Removal pump tripped. Attempts to start "B" RHR pump are unsuccessful. The Control Room staff has entered procedures to mitigate the event. The Control Room Supervisor directs you to determine the following using the appropriate procedure:

1. the time to boiling
2. the time to start of core uncovery.
3. the time to complete core uncovery.

JOB PERFORMANCE MEASURE

JPM NO: RO-A2	K/A NO: 2.2.13
COMPLETION TIME: 20 Minutes	K/A RATING: 3.6
JOB TITLE: RO	REVISION: 0
TASK TITLE: Prepare a Clearance Order to remove a leaking pump from service.	Knowledge of tagging and clearance procedures.
DUTY: Equipment Control	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM **X**

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: Drawings: M-12EN01, M-12BN01, E-13EN01, E-13EN02, E-13EN03, E-13BN04
Procedure: AP 21E-001 “CLEARANCE ORDERS”

TOOLS/EQUIPMENT: NONE

PREPARER: _____ DATE: 01/03/2006

RO A2

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is Mode 1. Containment Spray Pump B has a developed a serious leak on its discharge flow element EN FE-011.

Initiating Cues: The Control Room Supervisor directs you to identify the isolation boundaries that will be required to remove Containment Spray Pump B from service and isolate EN FE-011. List the components on the clearance order sheet provided in the proper sequence.

Component Names are **NOT** required.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Have copies of the following drawings to replace any marked up by the examinee. M-12EN01, M-12BN01, E-13EN01, E-13EN02, E-13EN03, E-13BN04.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have designated the correct isolation boundaries.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
12. Locates the proper drawings.		May locate in any sequence. M-12EN01 M-12BN01, E-13EN01, E-13EN02, E-13EN03, E-13BN04	**S U** Comments:
13. Identifies the Main Control Board Handswitches		See key for proper position. May list in any sequence. EN HIS-09, BN HIS-03, EN HIS-12, EN HIS-07	
14. *Identifies electrical power supplies.		See key for proper position and breaker number. Ctmt Spray Pump B BN HV-03 EN HV-12 EN HV-07	**S U** Comments:
15. *Identifies isolation valves.		See key for proper position. BN HV-03 EN HV-12 EN V-100 EN V-025	**S U** Comments: *EN HV-07 is an encapsulated valve and may or may not be listed.*

*Indicates Critical Task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
16. *Identifies vent and drain valves.		See key for proper position. At least one of the valves from each group must be selected. Drains: 1. EN V-032 2. EN V-068 3. EN V-107 Vents: • EN V-089 • EN V-115 • EV V-095	**S U** Comments:
17. *Identifies preferred sequence.	**THE JPM IS COMPLETE** RECORD STOP TIME ON PAGE 1	Two critical tasks are associated with the sequence: 1. Spay pump handswitch must be placed in Pull to Lock or the Pump breaker racked out prior to closing suction valves. 2. Vents and drains must be last.	**S U** Comments:

*Indicates Critical Task

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is Mode 1. Containment Spray Pump B has a developed a serious leak on its discharge flow element EN FE-011.

Initiating Cues: The Control Room Supervisor directs you to identify the isolation boundaries that will be required to remove Containment Spray Pump B from service and isolate EN FE-011. List the components on the clearance order sheet provided in the proper sequence.

Component Names are **NOT** required.

KEY

SELF STOP THINK ACT REVIEW

FORM APF 21E-001-02 REV 01

CLEARANCE ORDER CONTINUATION SHEET

Components Required to Clear Equipment		Placement Section				Restoration			
Component Tagged	Component Description	Position	Seq.	Tagged By	Verified By	Position	Seq.	Removed By	Verified By
EN HIS-09	CTMT SPRAY PUMP B	PULL TO LOCK	1						
BN HIS-03	RWST to CTMT SPRAY PUMP B	CLOSED	2						
EN HIS-12	CTMT SPRAY PUMP B DISCHARGE	CLOSED	2						
EN HIS-07	CTMT SUMP TO CTMT SPRAY PUMP B	CLOSED	2						
NB0203	STMT SPRAY PUMP B SUPPLY BKR	OPEN/ RACKED DOWN	3						
NG02ABF1	BN HV-03 SUPPLY BKR	Verified OFF	3						
NG02BBR1	EN HV-12 SUPPLY BKR	Verified OFF	3						
NG02BEF3	EN HV-07 SUPPLY BKR	Verified OFF	3						
BN HV-03	RWST to CTMT SPRAY PUMP B HANDWHEEL	CLOSED	4						
EN HV-12	CTMT SPRAY PUMP B DISCHARGE HANDWHEEL	CLOSED	4						
EN V-100	EDUCTOR TO SPRAY PUMP B	CLOSED	4						
EN V-025	RWST TEST LINE ISOLATION	CLOSED	4						
EN V-032	PP & TEST CONNECTION	OPEN	5						
EN V-068	CTMT SPRAY PUMP B DRAIN	OPEN	5						
EN V-095	CTMT SPRAY PUMP B SUCTION HEADER VENT	OPEN							
EN V-115	CTMT SPRAY PUMP B VENT	OPEN	5						
EN V-107	TEST CONNECTION	OPEN	5						
EN V-089	TEST CONNECTION	OPEN	5						

JOB PERFORMANCE MEASURE

JPM NO: RO-A3	K/A NO: 2.3.1
COMPLETION TIME: 10 Minutes	K/A RATING: 2.6
JOB TITLE: RO	REVISION: 0
TASK TITLE: Given a Radiological Survey Map and Radiation Work Permit determine the Radiological conditions and controls required.	Knowledge of 10 CFR: 20 and related facility radiation control requirements
DUTY: Radiation Control	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM **X**

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES:

TOOLS/EQUIPMENT: NONE

PREPARER:  DATE: 01/03/2006

RO A3

Staging: Begin this JPM in the hall outside Access Control at the RWP desk.

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. You are a spare licensed operator on shift.

Initiating Cues: The Control Room Supervisor states they have received a sump alarm on the "B" RHR Pump room sump and asks you to investigate. Given the survey map, determine the RWP that you would use. Evaluate the radiological conditions in the area and provide the requested information to the following questions.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide survey map.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have correctly answered the three questions.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
18. *Reviews survey map and determines RWP.		RWP 06-005 should be selected	**S U** Comments:
19. *Identify the classification for the room the sump is located in.		High Radiation Area. Based on the 2 at the doorway to the RHR pump room.	**S U** Comments:
20. *Determine time till dosimeter will alarm in 300 mr/hour field.		Immediately. RWP rate setting is 125 mr/hour.	**S U** Comments:
21. *Identify the areas on the Survey Map that require any special HP controls prior to accessing.	**THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Based on Special Instruction 3# on the RWP. 1. The room itself due to High Radiation Area. 2. The RHR pump seal housing due to Highly Contaminated Area. 3. The RHR pump room sump due to Highly Contaminated Area. Identify at least two of the three areas.	**S U** Comments:

*Indicates Critical Task

RO A3

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. You are on a tour in the Auxiliary Building.

Initiating Cues: The Control Room Supervisor states they have received a sump alarm on the "B" RHR Pump room sump and asks you to investigate. Given the survey map, determine the RWP that you would use. Evaluate the radiological conditions in the area and provide the requested information to the following questions.

NOTE: Circle the correct answers or write them down for the following questions and provide the evaluator with your completed paperwork.

1. The area where the sump is located is a:

A) Potential Hot Particle Area
B) Contaminated Area
C) High Radiation Area
D) Radiation Area

2. If you had to access the pump discharge piping immediately in front of the RHR Pump, how long before your dosimeter would alarm.

A) Immediately
B) 4 minutes
C) 15minutes
D) 25 minutes

3. Identify the areas on the Survey Map that require HP notification prior to accessing.

Simulator S-1

JOB PERFORMANCE MEASURE

JPM NO: S -1	K/A NO: 4.5E06EA2.2
COMPLETION TIME: 20 Minutes	K/A RATING: 3.5/4.1
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Align Alternate High Head Injection.	Ability to determine and interpret the following as they apply to the (Degraded Core Cooling): Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.
DUTY: Operate the Emergency Core Cooling System.	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM ____ SIMULATOR/LAB **X** PLANT ____ CLASSROOM ____

METHOD OF PERFORMANCE: SIMULATED ____ PERFORMED **X**

REFERENCES: EMG FR-C2

TOOLS/EQUIPMENT: NONE

PREPARER: Ralph L. Ewy DATE: 12/13/05

Init IC 174 IC 174 was developed with power removed from "B" CCP and BG HV8105. JPM S-2, NB02 de-energized, will be in progress and may affect power indications for some of the "B" Train components. Only one train is required to satisfy this JPM.

DNO tag the "B" CCP and put the handswitch in pull-to-lock.
Ensure Blue placard is on "B" CCP handswitch.

RUN when the evaluators are ready.

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

For the evolution required for you to perform, your area of the main control boards will reflect the proper plant conditions. Recognize due to other evaluations in progress, some main control board indications may differ from what you expect.

Initial Conditions: The Plant has experienced a LOCA. The crew is currently performing EMG FR-C2. CCP "A" has tripped and locked out. CCP "B" is DNO tagged.

Initiating Cues: The Control Room Supervisor directs you to perform Attachment A of EMG FR-C2.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide a current copy of EMG FR-C2, Attachment A.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**

Task Standard: Upon completion of this JPM, the Candidate will have established alternate high head injection per Attachment A of EMG FR-C2.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Verify charging pump suction: • At least one charging pump suction from RWST valve is open. Or • Both VCT outlet valves are open. Step A1		Locate BN HIS-112D on MCB panel RL001/2. Realize that the switch indicates RED. Locate BG HIS-112B on MCB panel RL001/2. Note the GREEN light is illuminated.	**S U** Comments:
2. Check any CCP's running. STEP A2		Locate BG HIS-1A and 2A on MCB panel RL001/2. Realize that "A" CCP has tripped by the AMBER light lit. Note that the "B" CCP is DNO tagged. Go to the RNO.	**S U** Comments:
3. Perform the following: • Manually start the CCP's. • * Start the Normal Charging Pump (NCP) on recirculation, if neither CCP can be started. STEP A2 RNO	The Operator may ask permission to reset the handswitch and attempt to start "A" CCP. CUE: **May perform one attempt to re-start "A" CCP.**	Realize neither CCP can be started. Locate BG HIS-3 on MCB panel RL001/2. Rotate the handswitch to the right. Note the RED light is illuminated.	**S U** Comments:

*Indicates Critical Task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
4. Reset safety injection. STEP A3		Operator may recognize this step has already been performed. Locate and depress SB HS-42A and SB HS-43A on MCB panel RL001/2. Operator may use the NPIS screen “NORM” to check if SI is reset.	**S U** Comments:
5. Reset CISA and CISB. STEP A4		Locate and depress on MCB panel RL017/18: • SB HS-56 • SB HS-53 • SB HS-55 • SB HS-52	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
6. Establish instrument air to Containment: • Ensure ESW to Air Compressor Valves are open. • Reset and close air compressor breaker reset switches. • Check that instrument air pressure is greater than 105 psig. • Check that the Pressurizer master controller is reading less than a 50% output signal. • Open the Instrument Air Supply Containment Isolation Valve. STEP A5		Operator may recognize this step has already been performed and only verify actions. Locate EF HIS-43 and 44 on MCB panel RL019/20. Note that EF HIS-43 indicates RED. Locate KA HIS-2C and 3C on MCB panel RL023/24. Note both handswitches are reset. Locate KA PI-40 on MCB panel RL023/24. Note pressure is greater than 105 psig. Locate BB PK-455A on MCB panel RL001/002. Ensure output signal is less than 50%. Locate KA HIS-29 on MCB panel RL023/24 and note the RED light is illuminated.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
7. Establish the normal charging header flow path: • Open the Charging Header Back Pressure Control Valve. • Open the Charging Pumps To Regenerative HX Containment Isolation Valves. STEP A6	The candidate may dispatch the Auxiliary Building watch to manually open BG HV-8105.If this occurs then **- Cue as Auxiliary Building watch that HP is not available and your dosimeter is alarming on rate.**	Locate BG HC-182 on MCB panel RL001/2 and rotate the potentiometer to the full open position. Note the meter reads 100%. Locate BG HIS-8105 and 8106 on MCB panel RL001/2. Depress the OPEN pushbutton for BG HIS-8106 and note RED light is illuminated. No power is available to BG HIS-8105. Go to the RNO.	**S U** Comments:
8. Go to Step A11, if flow path through normal charging header cannot be established. STEP A6 RNO		Proceed to Step A11.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
9. Open the Bit inlet valves. STEP A11	If candidate dispatches the Auxiliary Building watch to check open EM HV-8803B **– Cue: HP is not available and your dosimeter is alarming on rate.**	Locate EM HIS-8803A and B on MCB panel RL017/18. Note the RED light is illuminated for EM HIS-8803A. Examinee may use the NPIS computer to verify EM HV-8803B is open, if power is not available.	**S U** Comments:
10. Open the BIT outlet valves. STEP A12	If candidate dispatches the Auxiliary Building watch to check open EM HV-8801B **– Cue: HP is not available and your dosimeter is alarming on rate.**	Locate EM HIS-8801A and B on MCB panel RL017/18. Note the RED light is lit on 8801A handswitch. Examinee may use the NPIS computer to verify EM HV-8801B is open, if power is not available.	**S U** Comments:
11. Check if CCP flow through the BIT has been established by checking any CCP's running. STEP A13		Locate BG HIS-1A and B on MCB panel RL001/2. Note BG HIS-1A indicates tripped and BG HIS-1B is DNO tagged. Go to the RNO. Proceed to Step A15.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
12. Check that the NCP is running. STEP A15		Locate BG HIS-3 on MCB panel RL001/2. Note the RED light is illuminated.	**S U** Comments:
13. Establish NCP flow path to the BIT: • Ensure one train of valves from the charging header to the BIT is open. • * Open the NCP discharge flow control valve. • * Open the CCP discharge flow control valve. STEP A16	If candidate dispatches the Auxiliary Building watch to check valve status **– Cue: BG V-8483A is open and 8483C is closed.**	Recognize the blue placard is on BG HIS-2A, which means BG-V8483A is open. Locate EM HIS-8803A on MCB panel RL018. Note the RED light is lit. Locate BG FK-462 on MCB panel RL001. Press the MAN pushbutton and then the upper OUTPUT pushbutton to increase until the meter reads > 0%. Locate BG FK-121 on MCB panel RL001. Press the MAN pushbutton and then the upper OUTPUT pushbutton to increase until the meter reads > 0%.	**S U** Comments: Annunciators for Charging Line Flow Hi/Low will alarm as 462 and 121 are opened.

*Indicates Critical Task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
14. *Check that flow is indicated on the CCP's to BIT flow meters. STEP A17		Locate EM FI-917A and B on MCB panel RL017/18. Realize flow is indicated on EM FI-917A. If little or no flow is indicated the candidate should return to previous step and further increase the controller outputs on BG FK-121 and BG FK-462.	**S U** Comments:
15. Return to Procedure and Step In Effect. STEP A18	Acknowledge report. **THE JPM IS COMPLETE.** <u>RECORD STOP TIME ON PAGE 1.</u>	Report task complete.	**S U** Comments:

*Indicates Critical Task

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

For the evolution required for you to perform, your area of the main control boards will reflect the proper plant conditions. Recognize due to other evaluations in progress, some main control board indications may differ from what you expect.

Initial Conditions: The Plant has experienced a LOCA. The crew is currently performing EMG FR-C2. CCP "A" has tripped and locked out. CCP "B" is DNO tagged.

Initiating Cues: The Control Room Supervisor directs you to perform Attachment A of EMG FR-C2.

JOB PERFORMANCE MEASURE

JPM NO: S-2	K/A NO: 4.1.055 EA1.07
COMPLETION TIME: 15 Minutes	K/A RATING: 4.3/4.5
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Re-energize the affected NB bus from the normal offsite power supply IAW OFN NB-030.	Ability to operate and monitor the following as they apply to a Station Blackout: Restoration of power from offsite
DUTY: Station Blackout	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: OFN NB-030

TOOLS/EQUIPMENT: NONE

PREPARER: Ralph L. Ewy DATE: 12/13/05

*Indicates Critical Task

Init IC 174 IC 174 was developed with power removed from NB02
JPM S-1, Alternate High Head Injection, will be in progress.
Hang DNO tags on KJ HS-108A, B EDG start button, and NE HIS-26, D/G output breaker and put handswitch NE HIS-26 in pull-to-lock.

RUN when the evaluators are ready.

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

For the evolution required for you to perform, your area of the main control boards will reflect the proper plant conditions. Recognize due to other evaluations in progress, some main control board indications may differ from what you expect.

Initial Conditions: The Plant has experienced a lockout of bus NB02 and control room personnel are performing steps in OFN NB-030, Loss of AC Emergency Bus NB01 (NB02). Electrical Maintenance has repaired the bus lockout and has reset the bus lockout. "B" EDG was locally secured and DNO tagged during maintenance activities.

Initiating Cues: The Control Room Supervisor directs you to continue in OFN NB-030, Attachment B, Step B12, RNO b.3, to perform steps required to energize bus NB02 from its normal source of power.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide an information only copy of Attachment B of OFN NB-030, with place keeping marked, to the examinee.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**

When Evaluators are ready, go to RUN

Task Standard: Upon completion of this JPM, the Operator will have performed the steps of the procedure necessary to energize NB02 thru XNB02 from its normal offsite source.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. When the NB02 bus lockout has been reset, continue with Step B13. STEP B12, RNO b.3)		Realize the initiating condition stated the bus lockout has been reset. Proceed to Step B13. Operator may observe annunciator 21A is not illuminated.	**S U** Comments:
2. Check if the "B" emergency diesel generator is running. STEP B13		Realize the initial conditions stated the "B" EDG was secured. Proceed to the RNO.	**S U** Comments:
3. Go to Step B16 for normal offsite power, if the CRS directs that NB02 be energized from a source other than the emergency diesel generator. STEP B13, RNO		Realize the CRS directed to energize bus NB02 from its normal source of power. Proceed to Step B16.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
4. Verify the normal offsite power supply is available: • Annunciator 00-022A • ESF transformer XNB02 STEP B16		Locate annunciator window 22A. Note the window is clear. Locate NB HIS-1 on MCB panel RL015/16. Note that the GREEN light is lit for open breaker. Proceed to RNO b.	**S U** Comments:
5. Perform the following: • * Close 13.8 kV XMR01 to XNB02 breaker PA0201, if the PA02 lockout relay is reset. • Go to Step B17, if ESF transformer XNB02 can be energized. STEP B16, RNO b.		Locate NB HIS-1 on MCB panel RL015/16. Rotate the handle to the right to close. **Note ESF transformer XNB02 is energized.** Proceed to Step B17.	**S U** Comments:

*Indicates Critical Task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
			S U
6. Re-energize bus NB02 from its normal offsite power supply:			Comments:
• * Place NB02 normal supply sync. Transfer switch to the ON position.		Locate NB HS-8 on MCB panel RL015/16. Rotate the handle to the right to the ON position.	
• * Close NB02 normal supply breaker.		Locate NB HIS-4 on MCB panel RL015/16. Rotate the handle to the right to close the breaker.	
• Place NB02 normal supply sync. Transfer switch to OFF.		Locate NB HS-8 on MCB panel RL015/16. Rotate the handle to the left to the OFF position.	
• Check that bus NB02 is energized.		Locate NB EI-2 on MCB panel RL015/16. Note voltage is displayed on the meter or that NB ZL-6 white light is illuminated for NB02.	
	Acknowledge report.	Report that NB02 is energized.	
	THE JPM IS COMPLETE.		
	RECORD STOP TIME ON PAGE 1.		
STEP B17			

*Indicates Critical Task

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

For the evolution required for you to perform, your area of the main control boards will reflect the proper plant conditions. Recognize due to other evaluations in progress, some main control board indications may differ from what you expect.

Initial Conditions: The Plant has experienced a lockout of bus NB02 and control room personnel are performing steps in OFN NB-030, Loss of AC Emergency Bus NB01 (NB02). Electrical Maintenance has repaired the bus lockout and has reset the bus lockout. "B" EDG was locally secured and DNO tagged during maintenance activities.

Initiating Cues: The Control Room Supervisor directs you to continue in OFN NB-030, Attachment B, Step B12, RNO b.3, to perform steps required to energize bus NB02 from its normal source of power.

JOB PERFORMANCE MEASURE

JPM No. S-3 (SRO)	K/A NO: 4.2068 AK3.09
COMPLETION TIME: 15 Minutes	K/A RATING: 3.7/4.4 and 3.9/4.4
JOB TITLE: SRO	REVISION: 0
TASK TITLE: Establish Plant Control From The ASP	Knowledge of the reasons for the following responses as they apply to the Control Room Evacuation: Transfer of the following to local control: charging pumps, charging header flow control valve, PZR heaters, and boric acid transfer pumps
DUTY: Control Room Evacuation	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: OFN RP-013, Control Room Not Habitable

TOOLS/EQUIPMENT: None

PREPARER: Ralph L. Ewy DATE: 12/2/2005

*Indicates Critical Task

JPM NO: S-3 (SRO)

INIT IC 175

Read to Performer:

Initial Conditions: You are the Control Room Supervisor. The Control Room has been evacuated due to toxic fumes in accordance with OFN RP-013. You have completed step 6 and are arriving at the Auxiliary Shutdown Panel.

Initiating Cues: In accordance with OFN RP-013, step 7, take control of the Plant and supervise Plant shutdown. The NCP is in service.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide the Candidate with an information only copy of OFN RP-013, Control Room Not Habitable.
THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

When evaluators are ready:

Task Standard: Upon completion of this JPM, the Candidate will have taken control of the Plant from the Auxiliary Shutdown Panel, established AFW control, taken action to control the Plant cooldown, and taken action to restore pressurizer level.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
16. *At the ASP, Transfer Controls For Aux Feedwater System And Atmospheric Relief's To Local STEP 7		On RP118A, locate and select to local: • AL HS-9 • AL HS-6 • AL HS-1 • AL HS-3 • AL HS-8 • AL HS-11 On RP118B, locate and select to local: • AL HS-10 • AL HS-5 • AL HS-2 • AL HS-4 • AL HS-7 • AL HS-12 • FC HS-313	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
17. Operate Available Equipment From the ASP, As Necessary, To establish Stable Plant Conditions STEP 8		Monitor Plant parameters.	**S U** Comments:
18. On Shift Personnel Establish Communications With ASP From Designated Areas STEP 9	CUE: **All On Shift Personnel Have Established Communications**		**S U** Comments:
19. Check Neutron Flux – DECREASING • SE NI-61X • SE NI-61Y STEP 10		On RP118A, locate SE NI-61X and Y. Note flux decreasing	**S U** Comments:

* Indicates critical task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
20. Turbine Building Operator, Check Site Power – AVAILABLE STEP 11	When called, CUE: **Breakers PA0110 and PA0202 are closed. PA01 and PA02 Voltage Is Normal.**	Contact the Turbine Building Operator at PA01/PA02	**S U** Comments:
21. *Check RCS Cold Leg Temperatures – • STABLE AT 561°F OR • TRENDING TO 561°F STEP 12	NOTE: It is not necessary to check all indicators	On RP118A, locate • BB TI-433X • BB TI-443X • BB TI-423X On RP118B, locate • BB TI-413X Note temperature is less than 561°F and trending lower. Perform the RNO.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
22. IF temperature less than 561°F AND decreasing, THEN • Stop dumping steam • *IF cooldown continues, THEN control total feed flow to limit RCS cooldown. Maintain greater than 270,000 lbm/hr until NR level greater than 6% on at least one SG STEP 12 RNO		Locate AB ZL-1B and 3B on RP118A and AB ZL-2B and 4B on RP118B. Note green lights only illuminated. Candidate may use TDAFW or MDAFW valves. On RP118A, locate AL HK-6B, 8B, 9B, 11B and on RP118B, locate AL HK-10B, 5B, 7B, and 12B. Take each out of "lock detent open" and actuate to the left while monitoring total AFW flow on AL FI-1B, 2B, 3B, and 4B for a total of between 270K and 300K LBM/HR.	**S U** Comments:
23. Check SG Levels: • Narrow range level in at least one SG – GREATER THAN 6% STEP 13		Locate AE LI-528X and AE LI-548X on RP118A, and AE LI-517X and AE LI537X on RP118B.	**S U** Comments:

* Indicates critical task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
24. Check PZR level control • Dispatch an operator to control charging flow locally. • Check PZR level >17% STEP 14	If SRO contacts building watch to determine which charging pump is running, CUE: **The NCP is running.** When directed, CUE: **I am standing by at BG FCV-462**	Contact spare operator and dispatch to BG FCV-462. On RP118A, locate BB LI-459B. On RP 118B, locate BB LI-460B. Note level is <17% on both meters. Perform the RNO.	**S U** Comments:
25. Perform the following: • *Check letdown isolation. IF letdown is NOT isolated, THEN isolate letdown. • *Check PZR Heaters Are –OFF STEP 14.b. RNO		*On RP118A, locate BB HIS-8149CB and BB HIS-8149BB. Note red light only on HIS-8149BB. Depress the close PB and note green light only illuminated. On RP118B, locate BB HIS-8149AB. Note green light only illuminated. *On RP118A, locate BB HIS-52A. Note red light and white light illuminated and actuate switch to the OFF position. Note green light only illuminated. *On RP118B, locate BB HIS-52B. Note red light and white light illuminated and actuate switch to the OFF position. Note green light only illuminated.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
26. Control Charging To Restore PZR Level STEP 14.b. RNO (cont)	When contacted to increase charging locally, CUE: **Opening BG FK-462.**	Contact Operator at Charging Flow Control Valve to increase charging.	**S U** Comments:
27. Check PZR Level Control and PZR Pressure Steps 15 and 16	**THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Candidate will continue through remaining steps to ensure plant is stable. The JPM may be terminated at any time.	**S U** Comments:

Simulator S3

Initial Conditions: You are the Control Room Supervisor. The Control Room has been evacuated due to toxic fumes in accordance with OFN RP-013. You have completed step 6 and are arriving at the Auxiliary Shutdown Panel.

Initiating Cues: In accordance with OFN RP-013, take control of the Plant and supervise Plant shutdown. The NCP is in service.

WOLF CREEK JOB PERFORMANCE MEASURE

JPM NO: 302-S	K/A NO: 3.3 006 A1.13
COMPLETION TIME: 25 Minutes	K/A RATING: 3.5/3.7
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Fill an SI Accumulator - Mode 3	Ability to predict and/or monitor changes in parameters: Accumulator pressure (level, boron concentration)
DUTY: Emergency Core Cooling System (ECCS)	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES:

TOOLS/EQUIPMENT: NONE

PREPARER: _____ DATE: 02/06/2006

***** Indicates critical task

JPM N0. S-3

IC 175
Set asisal(3)=51100
Set asisag(3)=1000

Read to Performer:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator with the plant stable in Mode 3. Accumulator "C" level is approximately 40% and annunciator 45C is lit. There is no known leakage past the Accumulator check valves. RWST was sampled yesterday and boron concentration is 2423 ppm. No evolutions have occurred that would have diluted the RWST since the sample.

Initiating Cues: The Control Room Supervisor directs you to raise SI Accumulator "C" level to between 55% - 58% using “B” SI Pump. RHR Header depressurization is desired during pump run. Safety Injection Pump discharge relief valves are expected to lift upon pump start.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide an information only copy of SYS EP-200 to the Candidate.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**

Task Standard: At the completion of this JPM, the Examinee will have increased SI Accumulator "C" level to 55% - 58% using “B” Safety Injection Pump.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Perform Prerequisites. 5.1 – 5.3 5.4 Ensure cooling to desired SI pump. 5.5 Check both SI Train A and B are operable	Cue from CRS: **BOTH Trains are operable.**	Steps 5.1 – 5.3 should be N/A Verifies “B” CCW Train has a running pump. Initial step. Initial step.	**S U** Comments:
2. Procedure 6.1.1 Check accumulator pressure 6.1.2 Record RCS Pressure 6.1.3 Depressurize RHR header if desired. • Open EJ HIS-8890A or 8890B • Ensure EM HIS-8964 Open • Ensure EM HIS-8871 open. 6.1.4 Using SI Pump “A”		Locate EP PI-964 and EP PI-965 on RL017/18. Determine pressure is less than 619 psig. N/A the step. Locate RCS or PRZR pressure indication on RL001/2. Record the pressure. Locate EJ HIS 8890A or B and open one valve. N/A the other valve. Check open. Check open. Recognize the Initiating Cue stated “B” SIP is to be used. N/A the step.	**S U** Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
3. Procedure 6.1.5 Using SI Pump "B"			**S U** Comments:
1. Ensure EM HIS 8814B - OPEN		Ensures Red Lite lit on EM HIS-8814B.	
2. Ensure BN HIS 8813 – OPEN		Ensures Red Lite lit on BNIS-8813	
3. *Close EM HIS-8821B		Recognizes initial cue was that relief's are expected to lift. *The critical step is to inform the CRS that T.S. 3.5.2 must be entered prior to closing the valve. Press close button and observe Green Lite lit and Red Lite out.	
4. *Start SI Pump "B"		*Rotate EM HIS-5 to Start; observe Red Lite lit and Green Lite out. While not critical Mgmt expectations are to make a plant announcement prior to start and to have a NPIS screen displaying pump parameters for the B SI pump.	
5. *Open EM HIS 8821B		*Presses open on EM HIS 8821B. Observe Red Lite lit and Green Lite out. Informs CRS that T.S. 3.5.2 can be exited.	

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
4. Fill Accumulator *6.1.6 Open EM HIS-8888		*Presses open on EM HIS 8888. Observe Red Lite lit and Green Lite out.	S U Comments:
6.1.7 for Accumulator A and 6.1.8 for Accumulator B.		Steps 6.1.7 and 6.1.8 were marked N/A by the CRS prior to starting.	
6.1.9 Fill Accumulator C 1. Record highest level		Locate EP LI-954 or EP LI-955 on RL017/18. Record level.	
2. *Open EP HIS-8878C		*Presses open on EM HIS 8888. Observe Red Lite lit and Green Lite out.	
3. *Fill to 55 – 58% and close EP HIS-8878C.		Monitor level and close EP HIS-8878C when between 55 – 58%. *The critical step is not to exceed 77.8% which would make the Accumulator inoperable.	
4. Record level change.		Record level change for accumulator "C". Final – initial. Should be from 15 to 18%.	

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
5. Continue Procedure 6.1.11 Close EM HIS-8888		Press close button on EM HIS-8888 and observe Green Lite lit and Red Lite out.	**S U** Comments:
6.1.12 Run SI pump for 5-10 minutes.	If asked cue: **Leakage is not present.**	Initial Conditions stated leakage was not present.	
*6.1.13 Stop SI Pump B.		*Rotate EM HIS-5 to Stop; observe Red Lite out and Green Lite lit. While not critical, Mgmt expectations are to make a plant announcement when securing B SI pump.	
6.1.14 Ensure valves closed. EJ HIS-8890A EJ HIS-8890B	As CRS cue: **SYS EJ-323 is in effect. Leave valves open.**	Press Close on valve opened in step 6.1.3. Ensures Green Lite lit and Red Lite out.	
6.1.15 Ensure valves open. EM HIS-8964 EM HIS-8871		Ensures Red Lite lit and Green Lite out. N/A the step.	
6.1.16 Check for Chemistry need to sample.	Acknowledge request. Respond as Turbine Watch: **B SI Pump Room Cooler is secured.**	Contacts Turbine Building Operator to stop fan at breaker for "B" room. (NG02ACF3)	
6.1.17 Secure Pump Room Cooler.	**THE JPM IS COMPLETE**	Initial and Date step.	
6.1.18 Section 6.1 complete.	<u>RECORD STOP TIME ON PAGE 1</u>		

* CRITICAL STEP

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator with the plant stable in Mode 3. Accumulator "C" level is approximately 40% and annunciator 45C is lit. There is no known leakage past the Accumulator check valves. RWST was sampled yesterday and boron concentration is 2423 ppm. No evolutions have occurred that would have diluted the RWST since the sample.

Initiating Cues: The Control Room Supervisor directs you to raise SI Accumulator "C" level to between 55% - 58% using “B” SI Pump. RHR Header depressurization is desired during pump run.. Safety Injection Pump discharge relief valves are expected to lift upon pump start.

* CRITICAL STEP

JOB PERFORMANCE MEASURE

JPM NO: S-4	K/A NO: 4.2.060AA1.02
COMPLETION TIME: 20 Minutes	K/A RATING: 2.9/3.1
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Manually Actuate CRVIS and FBIS.	Ability to operate and / or monitor the following as they apply to the Accidental Gaseous Radwaste: Ventilation system
DUTY: Monitor the ESFAS System.	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM ____ SIMULATOR/LAB **X** PLANT ____ CLASSROOM ____

METHOD OF PERFORMANCE: SIMULATED ____ PERFORMED **X**

REFERENCES: OFN SP-010, Accidental Radioactive Release

TOOLS/EQUIPMENT: NONE

PREPARER: Ralph L. Ewy DATE: 12/12/05

* CRITICAL STEP

Init IC 175
Key 1 to actuate Rad Monitors
RUN

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. Annunciator 61A and 61B are in alarm. Fuel Handling is not in progress.

Initiating Cues: The Control Room Supervisor directs you to perform OFN SP-010, Accidental Radioactive Release.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide a current copy of OFN SP-010.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Operator will have manually actuated CRVIS and FBIS and manually aligned two FBIS components that failed to automatically align.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
28. Check Listed Gaseous Monitors – ANY HI-HI ALARM ACTUATED. • GG RE-27(3) • GG RE-28(3) STEP 1		Go to the RM11 Panel. (SP056A) Note GG RE-27 and GG RE-28 are indicating HI-HI (Red).	**S U** Comments:
29. Check If Control Room Ventilation Isolation is required: a. HI-HI alarm on any of the following monitors – ACTUATED. • GG RE-27 • GG RE-28 STEP 2		Note that GG RE-27 and GG RE-28 are both in HI-HI (Red).	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
30. *Verify Control Room Ventilation Isolation: a. Check ESFAS status panel CRVIS section – ALL WHITE LIGHTS LIT. • Red Train • Yellow Train STEP 3.a		Go to SA066X and Y panels on RL017/18. Note no status lights for CRVIS are lit and go to RNO.	**S U** Comments:
31. Perform the following: • * If CRVIS has not actuated, then manually actuate CRVIS. • If any CRVIS component is not properly aligned, then manually align the component. • If neither train of CRVIS is in service, then establish one in service. • If only one train of CRVIS can be placed in service, then within 90 minutes isolate out of service train. STEP 3.a. RNO		*Critical step is to actuate at least one train. Per procedure the candidate should actuate both trains. Locate and depress SA HS-9 and SA HS-13 on MCB panel RL017/18. Locate SA066X and SA066Y on RL017/18. Note upper status lights for CRVIS – All WHITE Note that both trains are in service. If only one train is actuated then the candidate needs to state that the other train has to be isolated within 90 minutes.	**S U** Comments:

*Indicates Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
32. Ensure the Control Room outer door is closed. STEP 3.b	When Candidate moves to check outer door, CUE: **Outer door is closed.**	Check outer door.	**S U** Comments:
33. Check if Containment Purge should be isolated: a. HI-HI alarm on any of the following monitors – ACTUATED • GT RE-22 • GT-RE-31 • ST RE-32 • GT RE-33 STEP 4		Go to the RM11 panel (SP056A) and note that none of the designated monitors is in alarm and go to Step 5.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
34. *Check if Fuel Building should be isolated: a. HI-HI alarm on any of the following monitors has ACTUATED. • GG RE-27 • GG RE-28 b. Check ESFAS status panel FBIS section – ALL WHITE LIGHTS LIT. STEP 5		Realize that GG RE-27 and GG RE-28 are both in HI-HI (Red). Locate SA066X and SA066Y on MCB panel RL017/18. Note no white lights lit for FBIS section and perform the RNO.	**S U** Comments:
8. Perform the following: • *If FBIS has not actuated, then manually actuate FBIS. • *If any FBIS component is not properly aligned, then manually align component. Refer to ATTACHMENT B. STEP 5.b. RNO		*Critical step is to actuate at least one train. Per procedure the candidate should actuate both trains. Locate and depress SA HS-10 and SA HS-14 on MCB panel RL017/18. Locate SA066X and SA066Y on MCB panel RL017 and note all white lights not actuated on SA066X and Y for FBIS. Go to ATTACHMENT B.	**S U** Comments:

*Indicates Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
			S U
		Critical step is to ensure at least one train is completely aligned. Must start the non-running fan OR open the closed valve. Per procedure the candidate should actuate both trains.	Comments:
9. *Ensure Emergency Exhaust Fans are running. • CGG02A • CGG02B		Locate GG HIS-15A and 21A on MCB panel RL020. *Note that GG HIS-21A indicates red light lit. Note that GG HIS-15A indicates green light only. Actuate GG HIS-15A to the run position and note red light only illuminated.	
10. *Ensure the Fuel Building To Emergency Filter Units dampers are open. • GG HZ-40 dampers GG-D025 • GG HZ-43 dampers GG-D018		*Locate GG HIS-40 and 43 on MCB panel RL020. Note green light only illuminated for GG HZ-43. Depress the OPEN pushbutton for GG HZ-43 and note red light only illuminated.	
Step B1 and Step B2.	Candidate may stop when they note that upper tier white lights are lit for FBIS on SA066X and Y. If so, the rest of the steps may be marked N/A **THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>.	May note the upper level white lights lit on panel SA066X and Y for FBIS.	

*Indicates Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
11. Ensure the Fuel Building Air Supply Fans are stopped. • SGG01A • SGG01B STEP B3.		Locate GG HIS-38A and 39A on MCB panel RL020 and note green lights only illuminated.	**S U** Comments:
12. Ensure the Fuel Building Air Supply Fan Discharge Dampers are closed. • GG HZ-38 dampers GG-D5 • GG HZ-39 dampers GG-D6 STEP B4.		Damper indication is integral to the fan handswitch. Locate GG HIS-38A and 39A and note the damper green lights only illuminated.	**S U** Comments:
13. Ensure the Fuel Building Air Inlet Dampers are closed. • GG RZ-36 dampers GG-D3 • GG RZ-37 dampers GG-D4 STEP B5.		Locate GG HIS-36A and 37A on MCB panel RL020 and note green lights only illuminated.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
14. Ensure the Spent Fuel Pool Discharge to Auxiliary Building damper is closed. • GG HZ-42 damper GG-D32 STEP B6.		Locate GG HIS-42 on MCB panel RL020 and note green light only illuminated.	**S U** Comments:
15. Ensure the Fuel Building Exhaust to Auxiliary Building Ventilation damper is closed. • GL HZ-62 damper GL-D58 STEP B7.		Locate GL HIS-62 on MCB panel RL020 and note green light only illuminated.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE

16. Align other ventilation systems discharging to the Unit Vent:
 	
• Ensure the Access Control Exhaust Fans are stopped.
  • GK HIS-47 for CGK02A
  • GK HIS-49 for CGK02B
		Locate GK HIS-47 and 49 on panel RP068. Note green lights only illuminated.	**S U**
			
			Comments:

• Ensure the Main Steam Enclosure Exhaust Fans are stopped.
  • GF HIS-17 for CGF03a
  • GF HIS-18 for CGF03B
		Locate GF HIS-17 and 18 on panel RP068. Note red light illuminated on GF HIS-17. Rotate the switch to the stop position and note green light only illuminated. Operator should note that this causes an AUTO start of GF HIS-18 and rotate that switch to the stop position and note green light only illuminated.	

• Ensure Aux/Fuel Normal Exhaust Fans are in slow speed.
  • GL HIS-30 for CGL03A
  • GL HIS-31 for CGL03B
	THE JPM IS COMPLETE
	
	<u>RECORD STOP TIME ON PAGE 1</u>.
		Locate GL HIS-30 and 31 on MCB panel RL020. Note both indicate fast speed. Select slow on each handswitch and note slow red light illuminated on each.	

STEP B8.			

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1. Annunciator 61A and 61B are in alarm. Fuel Handling is not in progress.

Initiating Cues: The Control Room Supervisor directs you to perform OFN SP-010, Accidental Radioactive Release.

JOB PERFORMANCE MEASURE

JPM NO: S-5	K/A NO: 3.8 029 A1.03
COMPLETION TIME: 10 Minutes	K/A RATING: 3.0/3.3
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Start Up the Containment Mini Purge.	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the Containment Purge System controls including: Containment pressure, temperature, and humidity
DUTY: Operate Plant Service Systems	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: SYS GT-120, CONTAINMENT MINI PURGE SYSTEM OPERATIONS

TOOLS/EQUIPMENT: NONE

PREPARER: Ralph L. Ewy DATE: 12/12/05

*Indicates Critical Step

INIT IC 176

RUN

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator, the plant is stable in Mode 2. Outside temperature is 70°F. A gaseous release permit has been issued and is complete to the point of starting the release.

Initiating Cues: The Control Room Supervisor directs you to place the Containment Mini Purge Exhaust System in operation using section 6.1 of SYS GT-120. The prerequisites of SYS GT-120 have been verified and signed off.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide an information only copy of SYS GT-120.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Operator will have started up the Containment Mini Purge Exhaust System.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Record the time and date the purge must be initiated from the permit. STEP 6.1.1	**Examiner provides a time that is two hours after the start of the JPM and today's date.**	Enter the time and date provided in the procedure.	**S U** Comments:

2. Align the Containment Purge dampers:
 	
• *Open CTMT PURGE EXH DAMPER.
  • GT HIS-29
 	
• *Open CTMT PURGE EXH DAMPER.
  • GT HIS-28
 	
• * Open CTMT MINI PURGE EXH OUTER CTMT ISO.
  • GT HIS-12
 	
• Record time and date dampers are opened.
 	
STEP 6.1.2
		Locate GT HIS-29 on RL019/20, depress the OPEN pushbutton, and note red light only illuminated.
		
		Locate GT HIS-28 on RL019/20, depress the OPEN pushbutton, and note red light only illuminated.
		
		Locate GT HIS-12 on RL019/20, depress the OPEN pushbutton, and note red light only illuminated.
		
		Record time and date.
			S U
			
			Comments:

*Indicates Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
3. *Start the Containment Mini Purge Exhaust fan and verify its discharge damper opens. • GT HIS-20 AND • GT HZ-20 STEP 6.1.3		**Locate GT HIS-20 and GT HZ-20 on MCB panel RL019/20. Rotate handswitch to the right. Note the RED light lit for the fan and the RED light lit for the damper.**	**S U** Comments:
4. Open the Containment Mini Purge Exhaust Inner Containment Iso and record the time and date opened. • *GT HIS-11 • Time and date STEP 6.1.4	**THE JPM IS COMPLETE** RECORD STOP TIME ON PAGE 1	Locate GT HIS-11 on MCB panel RL019/20. Depress the OPEN pushbutton. Note the RED light is illuminated. Record time and date opened.	**S U** Comments:

*Indicates Critical Step

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator, the plant is stable in Mode 2. Outside temperature is 70°F. A gaseous release permit has been issued and is complete to the point of starting the release.

Initiating Cues: The Control Room Supervisor directs you to place the Containment Mini Purge Exhaust System in operation using section 6.1 of SYS GT-120. The prerequisites of SYS GT-120 have been verified and signed off.

JOB PERFORMANCE MEASURE

JPM NO: S-6	K/A NO: 4.2.005 AA1.01
COMPLETION TIME: 30 Minutes	K/A RATING: 3.6/3.4
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Perform OFN SF-011 to realign a misaligned rod	Ability to operate and / or monitor the following as they apply to the Inoperable / Stuck Control Rod: CRDS
DUTY: Monitor Reactivity	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: OFN SF-011, Realignment Of Dropped, Misaligned Rod(s), And Control Group Malfunctions

TOOLS/EQUIPMENT: NONE

PREPARER: Ralph L. Ewy DATE: 12/13/05

*Indicates Critical Step

IC 176

Set rods per RBU, adjust rods two steps out then two steps in to ensure step counters are working.
Reset **IC 176**
From the Actions screen select Remote Function **rCRF01**. Use when candidate contacts INC.
Do not go to **RUN** until just before JPM begins so T_{avg} does not become an issue during the JPM.

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator. Control rod M12 has been misaligned for twenty minutes. The reactor is stable at 80% power. The problem causing the misaligned rod has been corrected.

Initiating Cues: The Control Room Supervisor directs you to realign rod M12 per step 20 of OFN SF-011. All notifications have been made in compliance with the note prior to step 20. INC and the Aux Building Watch are standing by in the Rod Drive MG Set Room.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide an information only copy of OFN SF-011.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM the Operator will have placed rod M12 in proper alignment in accordance with OFN SF-011.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
5. Check If Rod Can Be Moved At Normal Rate. • Misaligned less than 12 steps OR • Misaligned for less than one hour STEP 20		On RL021/22, Monitor DRPI and note the rod is misaligned by more than 12 steps Note the initiating cue stated the rod has been misaligned for 20 minutes Determine rod can be moved at normal rate.	**S U** Comments:
6. Prepare To Realign Rod • *Place rod bank AUTO/MANUAL selector switch to the bank with misaligned rod STEP 21.a		On RL003/4, rotate SE HS-9 to Bank D position CBD.	**S U** Comments:
7. Prepare To Realign Rod • Direct INC to locally verify rod bank selected by SE HS-9 is aligned properly by light indications on associated cabinets Step 21.b	When contacted as INC, CUE: **Light indication is that rod bank D is selected.**	Contact INC and request they locally verify that light indication denotes control bank D is selected	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
8. Prepare To Realign Rod • *At RL003, record position of group step counter for group containing misaligned rod STEP 21.c		At RL003/4, locate step counter for control group D, note and record the position is 175	**S U** Comments:
9. Prepare To Realign Rod • *IF rod is misaligned high with respect to other rod in group THEN insert rods in misaligned bank until next set of DRPI LEDS – LIT STEP 21.d		Determine from DRPI indication that rod is misaligned High. On RL003/4, locate SF HS-2 controller. Move controller to the IN position while monitoring DRPI on RL022. Release SF HS-2 when next set of LEDs lights.	**S U** Comments:
10. Prepare To Realign Rod • IF rods are misaligned low with respect to other rods in group, THEN perform the following: STEP 21.e		Realize step is NA	**S U** Comments:

*Indicates Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
11. Prepare To Realign Rod • *At lift coil disconnect panel, place all lift coil disconnect switches for other rods in affected bank to ROD DISCONNECTED position. STEP 21.f		Locate panel labeled Control Rod Disconnect Switch Box, on north wall behind Control Boards. Pull out on and move switch D4, D12, M4, and H8 to the ROD DISCONNECTED position (UP).	**S U** Comments:
12. Prepare To Realign Rod • *At RL003, record position of group step counter for group misaligned. STEP 21.g		At RL003/4, locate step counter for control group D, note and record the position is 170	**S U** Comments:
13. Adjust Turbine Load As Necessary To Maintain T_{avg} Within 3°F of T_{ref}. STEP 22	As CRS, CUE: **The rest of the crew will control T_{avg}.**	Booth Operator will control Turbine Load.	**S U** Comments:

*Indicates Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
14. Realign Misaligned Rod To Associated Group Position • Check misaligned rod – IN SHUTDOWN GROUP • At Pulse-to-Analog Converter cabinet, hold AUTO-MANUAL switch in MANUAL STEP 23.a and RNO	**NOTE: Booth Operator action:** *rCRF01, Manual*	Realize misaligned rod is in Control Group and perform the RNO. Contact INC personnel at the Pulse-to-Analog Converter Cabinet and instruct them to hold the switch in MANU AL	**S U** Comments:
15. *Realign misaligned rod to associated group position STEP 23.b		On RL003/4, locate SF HS-2 controller. Move controller to the IN position while monitoring DRPI and the rod demand step counter for Bank D. Release SF HS-2 when DRPI indicates all rods aligned.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
16. Check misaligned rod – IN SHUTDOWN GROUP At Pulse-to-Analog converter cabinet, release AUTO-MANUAL switch STEP 23.c and RNO	**NOTE: Booth Operator action:** *rCRF01, AUTO*	Realize the rod is in a Control Group and perform RNO. Contact INC personnel at cabinet and instruct them to release the switch	**S U** Comments:
17. Reset Misaligned Rod • *At lift coil disconnect panel, place all lift coil disconnect switches for affect bank to ROD CONNECTED position STEP 24.a		Locate panel on north wall. Pull out on and move switch D4, D12, M4, and H8 to the ROD CONNECTED position (DOWN).	**S U** Comments:
18. Reset Misaligned Rod • *At RL003, open window and reset affected group step counter by hand to position recorded in Step 21.g STEP 24.b		On RL003, open the window for CBDA and reset counter to 170	**S U** Comments:

*Indicates Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
19. Reset Misaligned Rod • *On RL003, reset rod control urgent failure alarm. STEP 24.c		On RL003/4, locate and depress SF HS-4. Acknowledge urgent failure alarm and note the annunciator goes out.	**S U** Comments:
20. Verify proper operation of affected rods by moving affected rods 6 steps in each direction. STEP 24.d		On RL003/4, locate SF HS-2 controller. Move controller to the OUT position while monitoring DRPI and the rod demand step counter for Bank D. Release SF HS-2 when step counter indicates 6 steps out. Verify proper response on DRPI. On RL003/4, locate SF HS-2 controller. Move controller to the IN position while monitoring DRPI and the rod demand step counter for Bank D. Release SF HS-2 when step counter indicates 6 steps in. Verify proper response on DRPI.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
21. Move affected group to position recorded in Step 21.c STEP 24.e		On RL003, locate SF HS-2 controller. Move controller to the OUT position while monitoring DRPI and the rod demand step counter for Bank D. Release SF HS-2 when step counter indicates 175. Verify proper response on DRPI.	**S U** Comments:
22. *Place ROD BANK AUTO/MAN SEL switch in MAN position • Determine group step counters are the same, have INC check master cycler on 4 or 5. • Perform STN RJ-001 STEP 24.f	When INC is contacted cue: **Bank D is selected.** After candidate selects manual on rod control **Cue: Master Cycler binary counter is on 4.** **THE JPM IS COMPLETE** RECORD STOP TIME ON PAGE 1	On RL003/4, locate SE HS-9. Rotate switch from bank D position to MAN position. When candidate reaches step to perform STN RJ-001 the JPM may be terminated.	**S U** Comments:

*Indicates Critical Step

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator. Control rod M12 has been misaligned for twenty minutes. The reactor is stable at 80% power. The problem causing the misaligned rod has been corrected.

Initiating Cues: The Control Room Supervisor directs you to realign rod M12 per step 20 of OFN SF-011. All notifications have been made in compliance with the note prior to step 20.

INC and the Aux Building Watch are standing by in the Rod Drive MG Set Room.

JOB PERFORMANCE MEASURE

JPM NO: S-7	K/A NO: 3.5.026 K4.01
COMPLETION TIME: 15 Minutes	K/A RATING: 4.2/4.3
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Align Containment Spray System for recirculation IAW EMG ES-12.	Knowledge of CSS design feature(s) and/or interlock(s) which provide for the following: Source of water for CSS, including recirculation phase after LOCA
DUTY: Monitor and Operate Containment Spray.	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB **X** PLANT _____ CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED **X**

REFERENCES: EMG ES-12

TOOLS/EQUIPMENT: NONE

PREPARER: Ralph S. Ewy DATE: 12/13/05

*Indicates Critical Step

INIT 177

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator. The Plant experienced a large break LOCA. The crew has progressed through EMG E-0, E-1, and have transitioned to EMG ES-12 where they are holding at step 12.

Initiating Cues: The Control Room Supervisor directs you to perform Step 12 and 13 of EMG ES-12, as necessary.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide an information only copy of EMG ES-12, Steps 12 and 13.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Operator will have aligned the Containment Spray System for recirculation.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
23. Check if the Containment Spray System should be aligned for recirculation: • Containment Spray Pumps – ANY RUNNING. • *****RWST level – LESS THAN 12%. STEP 12		Locate EN HIS-3 and 9 on MCB panel RL017/18. Note RED light only is illuminated. Locate BN LI-930, 931, 932, and 933 on MCB panel RL017/18. Note all indicators indicate less than 12%. Locate annunciator 47C and note it is illuminated.	**S U** Comments:
24. Align the Containment Spray System for recirculation: • *****Open both Containment Recirculation Sump to Containment Spray Pump valves. STEP 13		Locate EN HIS-1 and 7 on MCB panel RL017/18. Depress the OPEN pushbutton and note red light only is illuminated on EN HIS-1. Note no indication on EN HIS-7. Go to the RNO.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
25. *If either valve cannot be opened, then stop the associated Containment Spray pump. STEP 13.a. RNO		Locate EN HIS-9 on MCB panel RL017/18. Rotate the handswitch left to the OFF position. Note green light only illuminated. *The critical step is to secure the B pump prior to cavitation. At 6% RWST level the RWST Empty alarm is actuated and the fold out page requires securing all pumps taking suction from the RWST. Report Containment Spray pump "B" has been secured.	**S U** Comments:
26. *Close both RWST to Containment Spray pump valves. STEP 13.b.	**Acknowledge Report** **THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Locate EN HIS-3 and 4 on MCB panel RL017/18. Depress the CLOSE pushbutton on both handswitches. Note green light only illuminated. Report Steps 12 and 13 are complete.	**S U** Comments:

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Reactor Operator. The Plant experienced a large break LOCA. The crew has progressed through EMG E-0, E-1, and have transitioned to EMG ES-12 where they are holding at step 12.

Initiating Cues: The Control Room Supervisor directs you to perform Step 12 and 13 of EMG ES-12, as necessary.

JOB PERFORMANCE MEASURE

JPM NO: S-8	K/A NO: 4.5.005EK3.2
COMPLETION TIME: 15 Minutes	K/A RATING: 3.7/4.1
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Establish Feed Flow to SG	Knowledge of the reasons for the following responses as they apply to the (Loss of Secondary Heat Sink): Normal, abnormal and emergency operating procedures associated with (Loss of Secondary Heat Sink).
DUTY: Response To Loss Of Secondary Heat Sink	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM ____ SIMULATOR/LAB **X** PLANT ____ CLASSROOM ____

METHOD OF PERFORMANCE: SIMULATED ____ PERFORMED **X**

REFERENCES: EMG FR-H1, Response To Loss Of Secondary Heat Sink

TOOLS/EQUIPMENT:

PREPARER: Ralph L. Ewy DATE: 12/6/2005

*****Indicates Critical Task

INIT IC 177

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: You are the Balance of Plant Operator. The Plant is experiencing a post trip loss of heat sink. Attempts to establish feed flow to the SGs with any Aux Feedwater pump per EMG FR-H1 have been unsuccessful. The crew has just completed step 10 to establish Feedwater Control.

Initiating Cues: The CRS assigns you to begin with step 11 of EMG FR-H1 and attempt to establish feed to Steam Generator B. The Turbine Building operator is standing by.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide the Candidate with an information only copy of EMG FR-H1.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

When evaluators are ready: Go to RUN

Task Standard: Upon completion of this JPM, the Candidate will have commenced feeding “B” SG from a condensate pump.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
35. Check Both Main Feedwater Pumps – Tripped		Checks Red Light illuminated on both handswitches or Both MCB Annunciators lit.	S U Comments:
36. Ensure Low Pressure Heater Condensate Iso Valves – AT LEAST ONE SET OPEN		Locate Heater Iso valves and Bypass Valve on RL023/24 and determine the heater Iso valves are open by noting red lights on 1. AD ZL-55 Or 2. AD ZL-43	
37. MSIVs – AT LEAST ONE OPEN AB HIS-14 AB HIS-17 AB HIS-11 AB HIS-20		Or 3. AD ZL-30 Recognize all four MSIVs are open on RL025/26.	
STEPS 11, 12 and 13			

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
38. Start one Turbine Driven Main Feedwater Pump. • Actuate both MFP FWIS Block Switches • Place Both MFP Speed Control in Manual. • Place Both MFP speed potentiometers at zero speed • Ensure SI Reset • *Reset BOTH MFP Trip Circuits. Step 14 and RNO		At RP068, place FC HIS-510 and FC HIS-1510 in Block Position. At RL005/6, Place FC HIS-88 and FC HIS-188 in Manual. At RL005/6, place both MFP speed pots to zero. Ensure SI reset by verifying alarms 30A and 31 A not lit, or reset using SB HIS-42A and 43A on RL001/2. Attempt to reset both MFPs. Recognize MFPs will not reset and perform RNO for step 14. Go to Step 17	**S U** Comments:

*Indicates Critical Task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
4. Start Motor Driven Main Feed Pump. • Ensure PB04 is energized.		Verifies power to pump by checking pump indication or verifying PB04 power.	
• *Open Suction/Discharge valves.		Press Open on push button AE HS-103. Verifies suction and discharge valves indicate open.	
• Local vent using AE-V344 and locally close BM-V185.	Acknowledge request and CUE: **Pump is vented and BM-V185 is closed.**	Dispatch local operator.	
• *Start the MD MFP.		Places AE HIS-104 to the START position. Verify red light lit and green light out. May see flow indicated.	
• Fill and vent seal cooler as resources permit.	Acknowledge request, CUE: **Will fill and vent seal cooler using SYS AE-122**.	Dispatch local operator.	
STEP 17			

*Indicates Critical Task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
39. Control Main Feedwater Flow To At Least One SG: • *Open main feedwater reg bypass valve OR • *Open main feedwater reg valve STEP 18	If the Candidate asks the CRS which valves and which SG to use, CUE: **Use the Bypass valve and feed SG B.**	Per the Caution flow should be established slowly. Locate AE LK-560 on RL005/6. Depress the Manual PB and depress the raise PB until dual indication is observed.	**S U** Comments:
40. Check SG Levels • Bleed and Feed – NOT ESTABLISHED • Check narrow range level in at least one SG – GREATER THAN 6% • Perform RNO STEP 19 and RNO	When candidate checks level increasing and feed flow established, CUE **THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Realize bleed and feed not in progress Locate level indicators on RL025/26 and check level in SG B. Performs RNO. Checks Core Exit TC's stable or decreasing. Checks Wide Range Level in "B" SG increasing. Maintains feed flow to "B" SG	**S U** Comments:

*Indicates Critical Task

Initial Conditions: You are the Balance of Plant Operator. The Plant is experiencing a post trip loss of heat sink. Attempts to establish feed flow to the SGs with any Aux Feedwater pump per EMG FR-H1 have been unsuccessful. The crew has just completed step 10 to establish Feedwater Control.

Initiating Cues: The Control Room Supervisor assigns you to begin with step 11 of EMG FR-H1 and attempt to establish feed to Steam Generator B. The Turbine Building operator is standing by.

In Plant **P-1**

WOLF CREEK JOB PERFORMANCE MEASURE

JPM NO: 202-P	K/A NO: 002 A2.01
COMPLETION TIME: 20 Minutes	K/A RATING: 4.3/4.4
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: EMG C-0, "Loss of All AC", Isolate RCP Seal Leak Off	Ability to (a) predict the impacts of the following malfunctions or operations on the RCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of coolant inventory
DUTY: Reactor Coolant System	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT **X** CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED **X** PERFORMED _____

REFERENCES: EMG C-0, Loss Of All AC Power

TOOLS/EQUIPMENT: NONE

PREPARER: R. Hare DATE: 02/06/2006

Read to Performer:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant has experienced a total loss of AC power. EMG C-0 is being performed.

Initiating Cues: The Control Room Supervisor has directed you to perform step 15 of EMG C-0 to isolate the RCP seals.

DO NOT OPERATE ANY EQUIPMENT IN THE PLANT

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide the operator with a copy of EMG C-0, Step 15.

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THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. . **(PIR 2003-2930)**

Task Standard: Upon completion of this JPM, the Candidate will have isolated the valves from the RCP seals.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Dispatch personnel to locally close valves to isolate RCP seals • *Seal Water Return Containment Isolation Valve BG HV-8100	As operator describes opening valve cue: **Clutch Lever is engaged** **Stem is insertting.** **Handwheel stops turning.**	Go to BG HV-8100 at Aux Building, 2000' level, South Penetration Room. Gently engage clutch lever while turning the handwheel in a clockwise direction. The declutch lever may be released once it engages. Continue turning the handwheel clockwise till the stem is fully inserted and the handwheel stops turning.	**S U** Comments:
• *Seal Water Injection Filters Inlet Isolations BG-V101	**Valve is turning in the clockwise direction. Valve will not turn any more. Stem is totally inserted.**	Go to BG V101 at Aux Building, 2000' level, RX Coolant Filter/Seal Injection Filter A Valve Room. Rotate the valve operator in the clockwise direction and note the position of the stem.	**S U** Comments:
BG-V105	**Valve is turning in the clockwise direction. Valve will not turn any more. Stem is totally inserted**	Go to BG V105 at Aux Building, 2000' level, RX Coolant Filter/Seal Injection Filter B Valve Room. Rotate the valve operator in the clockwise direction and note the position of the stem	**S U** Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
• *CCW Return From RCS Isolation Valve EG HV-61	As operator describes opening valve cue: **Clutch Lever is engaged** **Stem is inserting.** **Handwheel stops turning.**	Go to the EG HV-61 at the Aux Building, 2000', North Penetration Room. Gently engage clutch lever while turning the handwheel in a clockwise direction. The declutch lever may be released once it engages. Continue turning the handwheel clockwise till the stem is fully inserted and the handwheel stops turning..	**S U** Comments:
Contact Control Room and Report step complete	**Acknowledge report**	Call Control Room and report step 15 complete.	
STEP 15	**THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>		

* CRITICAL STEP

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant has experienced a total loss of AC power. EMG C-0 is being performed.

Initiating Cues: The Control Room Supervisor has directed you to perform step 15 of EMG C-0 to isolate the RCP seals.

DO NOT OPERATE ANY EQUIPMENT IN THE PLANT

JOB PERFORMANCE MEASURE

JPM NO: P-2	K/A NO: 4.2 068 AA2.05
COMPLETION TIME: 15 Minutes	K/A RATING: 4.2/4.3
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Turbine Building Operator OFN RP-017	Ability to determine and interpret the following as they apply to the Control Room Evacuation: Availability of heat sink
DUTY: Perform OFN RP-017, Control Room Evacuation	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT **X** CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED **X** PERFORMED _____

REFERENCES: OFN RP-017, Control Room Evacuation, Attachment B.

TOOLS/EQUIPMENT:

PREPARER: Ralph S. Ewy DATE: 11/30/2005

JPM NO: P-2

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

NO EQUIPMENT WILL BE OPERATED IN THE PLANT – SIMULATE ONLY

Staging:

Have the candidate go to the 2047' level of the Communications Corridor, outside the Control Room and then provide the initiating cue.

Read to Performer:

Initial Conditions: You are an extra licensed operator on shift. You are designated as the operator to perform the Turbine Building Actions for OFN RP-017, CONTROL ROOM EVACUATION.

Initiating Cues: You hear the following gaitronics announcement: "Reactor Trip, Evacuating the Control Room due to fire, entering OFN RP-017".

This is a timed JPM.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide the Candidate with a training only copy of OFN RP-017, Attachment B during the completion of element 2.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM, the Candidate will have simulated tripping the RCPs from their PA01 and PA02 breakers and simulated tripping the turbine at either PG Load Centers PG11 and PG12 or at the EHC skid.

START TIME: _____ Phase A Actions Complete Time:_____

JPM NO: P-2

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Obtain Arc Face Shield and Lab Coat.	After the candidate locates the locker and simulates opening the locker, CUE: **Face Shield and Lab Coat are in hand.**	Locate the Emergency Locker located on the 2033' level near columns TE and T-3. Key to the locker is on Turbine Bldg Operator Key Ring. Operations Expectations is to have a face shield and FR clothing (Lab Coat) prior to operating 13.8 Kv breakers.	
2. *Locally Trip RCPs. • PA0107 for RCP A – TRIPPED • PA0108 for RCP B – TRIPPED • PA0205 for RCP C – TRIPPED • PA0204 for RCP D - TRIPPED STEP B1	As each handswitch is rotated to the left, CUE; **Noise of breaker opening** **Green light only is illuminated.** Record this time. CUE : **This is the end of the Phase A time critical portion of this JPM, continue with the procedure actions.**	Locate Breaker PA0107, PA0108, PA0205, and PA0204 cubicles in turn and simulate rotating the trip handle to the left. Note sound of breaker opening and green light only illuminated. Phase A actions must be completed within 5 minutes. For the performance of the JPM the time limit is 10 minutes.	**S U** Comments:

* Indicates critical task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
3. Obtain A Copy Of This Procedure. STEP B2	After the candidate locates the locker and simulates opening the locker, CUE: **Procedure is in hand.** Provide the candidate with an information only copy of OFN RP-017, Attachment B.	Locate the Emergency Locker located on the 2033' level near columns TE and T-3. Key to the locker is on Turbine Bldg Operator Key Ring.	**S U** Comments:
4. Perform the following • Obtain radio and flashlight • Obtain pocket ion chambers and TLDs • Select Channel 1 on the radio STEP B3	CUE: **Equipment is in hand and the radio is selected to channel 1**	Simulated removing equipment from locker: • Radio and flashlight • Pocket ion chambers • Simulated selecting channel 1 on the radio	**S U** Comments:
5. Inform SRO that Phase A actions are complete STEP B4	**Acknowledge report**	Simulate calling Aux Shutdown Panel on channel 1 and report Phase A actions are complete	**S U** Comments:

* Indicates critical task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
6. On PK41 OPEN breaker for DC control power to PA01 STEP B5	Cue: **Simulate Entry** CUE: **PK4103 is OFF**	Candidate should state that Security be contacted prior to entry of cage area. Have Candidate discuss location of panels. Go to the security cage surrounding PK1 & PK2 on level 2033' Turbine Bldg NW. Indicate entry is required using the high security key to open PK4103.	**S U** Comments:
7. On PK62 OPEN breaker for DC control power to PA02 STEP B6	CUE: **PK6204 is OFF**	Go to the security cage surrounding PK1 & PK2 on level 2033' Turbine Bldg NW. Indicate entry is required using the high security key to open PK6204.	**S U** Comments:

* Indicates critical task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
8. Verify Turbine Trip STEP B7	When the candidate indicates they are checking the position of Main Turbine Stop Valves 1, 2, 3, or 4. <u>If the turbine is operating (stop valves open)</u>, CUE: **The valves are as you actually see them now.** <u>If the turbine should happen to be actually out of operation (stop valves closed)</u>, CUE **The transducer rod is extended upward toward the valve body**	Go to the Main Stop Valves on the 2033' level SE part of bldg just outside the Main Lube Oil Room and note the valves are not closed by noting the transducer rod is extended along the side of the valve stem. (The valve stem is not extended down out of the valve body) Realize the turbine is not tripped and perform the RNO	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
9. *Locally trip turbine by either: • Trip both EHC Pumps OR • Open Hyd Fluid Return Coolers Bypass Valve STEP B7 RNO	CUE: **Noise is heard, breaker indicates open** **Noise is heard, breaker indicates open** OR **Valve operator is turning to the left. Threads are retracting. Valve will no longer turn left.**	Critical step is to trip both pumps OR open the bypass valve. EITHER Locate PG1105 on 2016' level, south end of Turb Building. Depress trip PB and open the racking window for the breaker. AND Locate PG1205 on 2016' level, south end of Turb Building. Depress trip PB and open the racking window for the breaker. OR Locate CH FV-1 above head level on west side of EHC skid, 2000' level on SE side of Turb Building. Simulated rotating the valve operator to the left.	Comments:

* Indicates critical task

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
10. Ensure AL HV-36 CST to Turbine Driven AFP Suction Iso Valve is OPEN • Contact SRO to ensure breaker is off	CUE: **Breaker NG03CEF4 is <u>NOT</u> open yet** **THE JPM IS COMPLETE** <u>RECORD STOP TIME ON PAGE 1</u>	Use radio to contact ASP for the status of the breaker Perform the RNO and do not continue at this time When candidate states they cannot continue terminate the JPM.	**S U** Comments:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

NO EQUIPMENT WILL BE OPERATED IN THE PLANT – SIMULATE ONLY

Read to Performer:

Initial Conditions: You are an extra licensed operator on shift. You are designated as the operator to perform the Turbine Building Actions for OFN RP-017, CONTROL ROOM EVACUATION.

Initiating Cues: You hear the following gaitronics announcement: "Reactor Trip, Evacuating the Control Room due to fire, entering OFN RP-017".

This is a Time Critical JPM.

JOB PERFORMANCE MEASURE

JPM No. P-3	K/A NO: 4.1E055EK3.02
COMPLETION TIME: 15 Minutes	K/A RATING: 4.3/4.6
JOB TITLE: RO/SRO	REVISION: 0
TASK TITLE: Align the Fire Protection System to the CST	SAFETY FUNCTION: 4
DUTY: Operate Auxiliary Feedwater System	

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[ ] SATISFACTORY [ ] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT **X** CLASSROOM _____

METHOD OF PERFORMANCE: SIMULATED **X** PERFORMED _____

REFERENCES: EMG C-0

TOOLS/EQUIPMENT:

PREPARER: Ralph L. Ewy DATE: 12/2/2005

Read to Performer:
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

NO EQUIPMENT WILL BE OPERATED IN THE PLANT – SIMULATE ONLY

Initial Conditions: A loss of all AC power has occurred while in Mode 1. The Control Room Operators are at step 27 of C-0, "Loss of All AC Power and CST to AFP suction pressure is low.

Initiating Cues: The Control Room Supervisor directs you to manually align the Fire Protection System to the CST per EMG C-0, Step 27 RNO.

ASK IF THE OPERATOR UNDERSTANDS THE INITIATING CUES.

Notes: Provide an information only copy of C-0, Step 27.

THE EVALUATOR OR EXAM GROUP SHALL VERIFY THAT THE PROCEDURE REVISION FOR THIS JPM IS CURRENT AND THAT ANY CHANGE AGAINST THE REFERENCED PROCEDURE DOES NOT INVALIDATE THIS JPM. **(PIR 2003-2930)**.

Task Standard: Upon completion of this JPM the Operator will have installed a jumper hose between the Fire Protection System header and the condensate reject to CST header flush connection.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
11. *Locally close • AP-V006, Condensate Reject Iso	CUE: **Chain is removed. Stem is retracting. Valve will no longer turn in the clockwise direction.**	Locate valve in the CST Valve Room. Simulate removing the lock and chain. Rotate the handwheel in the clockwise direction. Monitor that the stem is retracted and the valve will not longer rotate in the clockwise direction.	Comments:
• AD-V121, Condensate Valve Outlet Iso.	**Stem is retracting. Valve will no longer turn in the clockwise direction.**	Locate valve in the Turbine Building SE of Condenser. Simulate rotating the handwheel in the clockwise direction. Monitor that the stem is retracted and the valve will no longer rotate in the clockwise direction.	
• BM-V153, SG Blowdown to CST Inlet Isolation	**Stem is retracting. Valve will no longer turn in the clockwise direction.**	Locate valve in the Turbine Building SE of Condenser. Simulate rotating the handwheel in the clockwise direction. Monitor that the stem is retracted and the valve will not longer rotate in the clockwise direction.	
STEP 27 RNO a.			

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
12. *Obtain flange from AFW Emergency Locker	Provide photo of locker contents.	Locate Emergency Locker outside the Aux Boiler room main door. Simulate removing the break away lock and removing the flange.	Comments:
STEP 27 RNO b.	CUE: **The flange is in hand.**	Have Candidate point out the flange.	

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
13. *Connect the fire hose between:	CUE: **Hose is in hand.**	Simulate obtaining a 2 ½" fire hose from a hose house or the Brigade Locker.	Comments:
• KC-V278	CUE: **The hose is threaded on the valve and the coupling is snug.**	Locate the valve in the SE stairwell of the Turbine Bldg. Simulate placing the female end on the FP valve and turning the coupling clockwise until tight.	
• Flush connection next to AP-V006	CUE**: The adapter is bolted to the flange.**	Locate the flush connection next to AP-V006, remove the blank, and install the adapter.	
	CUE: The fire hose is threaded to the adapter.	Attach the fire hose to the adapter.	
STEP 27 RNO c.		Candidate may state they would contact Security for the propped open door.	

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
14. Ensure diesel driven fire pump is running. STEP 27 RNO d.	CUE: **Diesel driven fire pump is running**	Simulate using a hand held radio and contact the Control Room and notify them to start the diesel driven fire pump.	**S U** Comments:
15. * Pressurize the fire hose. STEP 27 RNO e.	CUE: **Valve will no longer turn.** If asked, CUE: **The hose has become solid to the touch and shows indication of being charged.**	**Actuate KC-V278 in the counter clockwise direction.** May note hose distends because of system pressure.	**S U** Comments:

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
16. *Locally add water to CST.		Open AP-V006 by actuating the handwheel in the counter clockwise direction. Check for rising stem.	Comments:
a. Open AP-V006	CUE**: Handwheel is turning counter clockwise. Stem is rising. Handwheel will no longer turn.**		
		Should contact Control Room for further instructions.	
	If contacted, CUE: **Go on with other duties, we will monitor CST level.**		
STEP 27 RNO f.			
	THE JPM IS COMPLETE		
	RECORD STOP TIME ON PAGE 1		

* Indicates critical task

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NO EQUIPMENT WILL BE OPERATED IN THE PLANT – SIMULATE ONLY

Initial Conditions: A loss of all AC power has occurred while in Mode 1. The Control Room Operators are at step 27 of C-0, "Loss of All AC Power and CST to AFP suction pressure is low.

Initiating Cues: The Control Room Supervisor directs you to manually align the Fire Protection System to the CST per EMG C-0, Step 27 RNO.