

Facility:	San Onofre	Scenario No.:	1	Op Test No.:	NRC
Examiners:	_____	Operators:	_____		
	_____		_____		
	_____		_____		
Initial Conditions:	<ul style="list-style-type: none"> • 100% power – RCS Boron is 891 ppm • Train A Component Cooling Water Pump (P-025) in service • Train A Saltwater Cooling Pump (P-307) OOS • Train A Low Pressure Safety Injection Pump (P-015) OOS • Condenser Air Ejector Low Range Radiation Monitor (RM-7818) OOS 				
Turnover:	Maintain steady-state power conditions.				
Critical Tasks:	Transfer the Non-Critical Loop (SWC failure)				
	Isolate affected Steam Generator				
	Reduce Thot to < 530°F				
Event No.	Malf. No.	Event Type*	Event Description		
1 +15 min	SC01A	C (ACO, CRS) TS (CRS)	SWC Pump trip P-112 (seized shaft).		
2 +30 min	RC24A	C (CO, CRS) TS (CRS)	Spray valve fails open (PV-0100A @ 40%).		
3 +45 min	RX11A	I (ACO, CRS)	MFWP speed signal fails low (P-062 speed control).		
4 +60 min	SG06A	C (CO, CRS) TS (CRS)	SG tube leak on E-088 (~50 gpm).		
5 +70 min		R (CO) N (ACO, CRS)	Rapid down power due to SG tube leak on E-088.		
6 +80 min	SG06A	M (ALL)	SGTR on E-088.		
7 +80 min	PG21		Unit output breaker fails to open.		
8 +80 min	K403B	I (CO)	SIAS relay failure.		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS) Technical Specifications					

SCENARIO SUMMARY #1

The crew will assume the shift at 100% power and maintain steady-state conditions per SO23-5-1.7, Power Operations.

When turnover is complete a Saltwater Cooling Pump will trip due to a seized shaft. The crew will respond per SO23-2-17, Component Cooling System Operation and/or AOI SO23-13-7, Loss of Component Cooling Water (CCW) / Saltwater Cooling (SWC). The crew will align SWC & CCW Train B per pump configuration requirements. The SRO will be required to evaluate Technical Specifications.

When the CCW and SWC systems are properly aligned the Pressurizer Spray Valve will fail 40% open. Crew will respond and stabilize primary plant using Annunciator Response Procedures (ARP) and Abnormal Operating Instruction (AOI) SO23-13-27, Pressurizer Pressure and Level Malfunction. The SRO will be required to evaluate Technical Specifications.

When plant is stable and the instrument card for the Pressurizer Spray Valve is pulled (valve closes) a Main Feed Water Pump speed signal will fail high. Crew will regain control of feedwater pump per Annunciator Response Procedures and AOI SO23-13-24, Feedwater Malfunctions.

Once stable, a small tube leak will occur. The SRO will be required to evaluate Technical Specifications and enter AOI SO23-13-14, Reactor Coolant System Leak. The SRO will determine that a rapid downpower per SO23-5-1.7, Power Operations is required. Once the power change is underway and the crew has demonstrated plant control during the power reduction, the leak will become a rupture and cause a plant trip. The crew performs SO23-12-1, Standard Post Trip Actions and diagnoses a SGTR and enters SO23-12-4, Steam Generator Tube Rupture (SGTR). The crew will be required to isolate the affected SG and reduce T_{hot} to $< 530^{\circ}\text{F}$. A Generator Output Breaker will fail to open on Turbine trip and actuate the Breaker Failure Local Backup (BFLBU). A SIAS relay failure will require the operator to position three (3) Train B SIAS valves to their SIAS position.

Scenario is terminated when the affected SG is isolated, T_{hot} is $< 530^{\circ}\text{F}$, and plant conditions are stable.

Risk Significance:

- | | |
|---|--|
| • Risk important components out of service: | LPSI P-015, SWC P-307 |
| • Failure of risk important system prior to trip: | SWC Pump seizure |
| • Risk significant core damage sequence: | SGTR with SIAS failure |
| • Risk significant operator actions: | Manually initiate SIAS
Transfer the Non-Critical Loop |

Facility:	San Onofre	Scenario No.:	2	Op Test No.:	NRC
Examiners:	_____	Operators:	_____		
	_____		_____		
	_____		_____		
Initial Conditions:	<ul style="list-style-type: none"> 50% power – RCS Boron is 1043 ppm by Chemistry sample Train A Component Cooling Water Pump (P-025) in service Train A Saltwater Cooling Pump (P-307) OOS Train A Low Pressure Safety Injection Pump (P-015) OOS Condenser Air Ejector Low Range Radiation Monitor (RM-7818) OOS 				
Turnover:	Boration and down power required for taking the Turbine off-line for planned maintenance.				
Critical Tasks:	<ul style="list-style-type: none"> Respond to ATWS by de-energize B15 & B16 Start Component Cooling Water Pump following SDVS 				
Event No.	Malf. No.	Event Type*	Event Description		
1 +15 min		R (CO) N (ACO, CRS)	Commence boration and down power following turnover at 15%/hour.		
2 +30 min	TU10A	C (ACO, CRS)	Turbine Governor Valve fails closed (UV2200B).		
3 +40 min	RC11A	I, (CO, CRS)	RCS Th Loop 1 TT-0111X1 fails HIGH to 625°F.		
4 +50 min	PG22 PG23	C (ACO, CRS) TS (CRS)	Degraded grid to SDVS setpoint.		
5 +55 min	SEISMIC OBE w/o FWPT		Seismic event without Feedwater Pump trip.		
6 +65 min	RC03	C (CO, CRS) TS (CRS)	RCS leak requiring a plant shutdown (~30 gpm).		
7 +75 min	RC03	M (ALL)	LOCA @ 500 gpm.		
8 +75 min	RP03	C (ACO)	Auto and manual Reactor trip failure (ATWS).		
9 +75 min	MS03B	M (ALL)	ESDE on E-089 inside Containment.		
10 +75 min	EC08DA	C (CO)	HPSI Pump (P-018) trip.		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS) Technical Specifications					

SCENARIO SUMMARY #2

The crew will assume the shift with a boration required to remove the Turbine from service for pre-planned maintenance per SO23-5-1.7, Power Operations.

After the crew has demonstrated control of the power change an HP Turbine Governor Valve will fail closed. The crew will respond per the Annunciator Response Procedures (ARP) and SO23-10-3, Operation of the Turbine Control and Protection System.

With the plant in a stable condition a Thot instrument fails high and will require crew actions per the ARPs and Abnormal Operating Instruction (AOI) SO23-13-27, Pressurizer Pressure and Level Malfunction. This is followed by a frequency drop and grid voltage decrease to the Sustained Degraded Voltage Signal (SDVS) for 110 seconds that will require crew response and entry into AOI SO23-13-4, Operation during Major System Disturbances. The ACO will be required to maximize Generator MVARs and restart a CCW Pump. The CRS will evaluate Technical Specifications.

With plant conditions stable a seismic event will occur. The crew will perform actions in AOI SO23-13-3, Earthquake. Initially an RCS leak of about 30 gpm will require the crew to determine that a plant shutdown is required. After Technical Specifications have been evaluated, an aftershock will result in a loss of Coolant Accident and Steam Line Break along with an ATWS. The crew will respond to the ATWS by opening breakers to B15 and B16. The crew performs SO23-12-1, Standard Post Trip Actions and diagnoses a LOCA and an ESDE and transition to SO23-12-9, Functional Recovery.

During the Functional Recovery a HPSI Pump P-018 will trip. The CO will be required to manually start HPSI Pump P-017. The scenario is terminated when RCS temperature and pressure are stabilized while in the Functional Recovery procedure and associated Floating Steps.

Risk Significance:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Risk important components out of service: • Risk significant core damage sequence: • Risk significant operator actions:
ATWS | <p>LPSI P-015, SWC P-307</p> <p>LOCA with HPSI failure</p> <p>Manually trip Reactor on</p> |
| SDVS | Start a CCW Pump on |

Facility:	San Onofre	Scenario No.:	3	Op Test No.:	NRC
Examiners:	_____	Operators:	_____		
	_____		_____		
	_____		_____		
Initial Conditions:	<ul style="list-style-type: none"> • ~25% power - RCS Boron is 1123 ppm • Train A Component Cooling Water Pump (P-025) in service • Train A Saltwater Cooling Pump (P-307) OOS • Train A Low Pressure Safety Injection Pump (P-015) OOS • Condenser Air Ejector Low Range Radiation Monitor (RM-7818) OOS 				
Turnover:	Dilution and power increase in progress at 10% per hour.				
Critical Tasks:	<ul style="list-style-type: none"> • Transfer Component Cooling Water for Non-Critical Loop. • Energize Vital AC Buses A06 & B06 with G003. 				
Event No.	Malf. No.	Event Type*	Event Description		
1 +15 min		R (CO) N (ACO, CRS)	Dilution and power increase in progress.		
2 +25 min	CV14	C (CO, CRS)	Loss of Primary Water Makeup Pumps.		
3 +30 min	RC22C	TS (CRS)	RCS Cold Leg Temperature Transmitter Failure to the Core Protection Calculators.		
4 +40 min	CV19	I (CO, CRS)	Letdown Temperature instrument fails low.		
5 +50 min	ED07C	C (ALL) TS (CRS)	Loss of Inverter Y003.		
6 +65 min			Severe weather (tornado watch).		
7 +65 min	TU08 PG24	M (ALL)	Turbine trip due to electric governor failure. Loss of Off-site Power (+ 5 seconds).		
8 +65 min	EG08A	C (ACO)	Mechanical failure of EDG G002.		
9 +70 min	EG07B	C (ACO)	EDG G003 AVR failure requires manual adjustment for breaker closure.		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS) Technical Specifications					

SCENARIO SUMMARY #3

The crew will assume the shift at approximately 25% power with a dilution in progress. The crew will raise power per SO23-5-1.7, Power Operations.

After the crew has demonstrated control of the power change, the Primary Water Makeup Pumps trip and are addressed per the Annunciator Response Procedures (ARP). A Tcold Protection Channel failure will occur on Plant Protection System Channel C. The crew will respond per the Annunciator Response Procedures, Abnormal Operating Instruction (AOI) SO23-13-18, Reactor Protection System Failure and the CRS will evaluate Technical Specifications.

With the plant stable the crew will respond to a Letdown Temperature Instrument Failure. This will require action per the Annunciator Response Procedures. A vital bus failure will cause the crew to enter AOI SO23-13-18, Loss of Vital Bus. The CRS will evaluate Technical Specifications and the bus will be re-energized from the alternate supply per SO23-6-17, 120 VAC Vital Bus Power Supply System Operation.

When the Vital Bus is restored, the crew will receive a tornado watch from the National Weather Service and will enter AOI SO23-13-8, Severe Weather. The crew will be required to prepare for the tornado watch by performing actions inside and outside the Control Room.

A Loss of Off-Site power will occur and the crew will respond to a plant trip per SO23-12-1, Standard Post Trip Actions and will transition to SO23-12-7, Loss of Forced Circulation / Loss of Off-Site Power. A mechanical failure of an emergency diesel generator coupled with an EDG breaker that fails to close due to the setting of the automatic voltage regulator will require the operator to adjust and manually close the output breaker.

Event termination will occur once an off-site line is restored, the crew has re-energized 2A03 or 2A07, and plant temperature and pressure are stable.

Risk Significance:

- Risk important components out of service: LPSI P-015, SWC P-307
- Failure of risk important system prior to trip: Loss of Vital Inverter
- Risk significant core damage sequence: Failure to recover from LOOP
- Risk significant operator actions: EDG failure

JPM INFORMATION SHEET**JPM NUMBER****SO-05 NRC RO JPM A.1.a****INITIAL PLANT CONDITIONS**

Unit 2 is currently in Mode 3 at 545°F.

The plant was shutdown due to a fully stuck out and immovable CEA (#40).

Current core burnup is 250 EFPD. A cooldown to Mode 5 is required to evaluate the stuck CEA.

Current RCS boron concentration is 1500 ppm.

The BAMU Tanks are at a boron concentration of three (3) weight percent Boric Acid.

The Plant Monitoring System is unavailable for use.

TASK TO BE PERFORMED

Determine the Target boron concentration for RCS Cooldown to Mode 5 per SO23-5-1.5, Plant Shutdown from Hot Standby to Cold Shutdown, Step 6.3.4 **and** determine the amount of Boric Acid required to raise RCS boron concentration to the Target boron concentration.

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM A.1.a

SUGGESTED TESTING ENVIRONMENT:	PLANT	<u> X </u>	SIMULATOR	<u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT	<u> </u>	SIMULATOR	<u> </u>
ACTUAL TESTING METHOD:	PERFORMED	<u> </u>	SIMULATED	<u> </u>

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

SO-05 NRC RO JPM A.1.a

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: ACO

VISION ID: 185181

TASK DESCRIPTION

Perform a plant shutdown from hot standby to cold shutdown.

KA NUMBER: 2.1.20

KA VALUES: **RO** 4.3 **SRO** 4.2

10CFR55.45 APPLICABILITY: 1

REFERENCES:

SO23-5-1.5, Plant Shutdown From Hot Standby to Cold Shutdown, Rev. 24

SO23-3-2.2, Makeup Operations, Rev. 18

M-38100, Operations Figure 2.3-1, Songs Unit 2 Cycle 13 (MOC) Minimum Boron Concentration for 5.15% Shutdown Margin, Rev. 49

Operations Web Page/References/Miscellaneous/Boration/Dilution Table

AUTHOR: L. Zilli _____

DATE: 02/24/05 _____

OPERATIONS REVIEW: M. Jones _____

DATE: 03/08/05 _____

APPROVED BY: A. Hagemeyer _____

DATE: 03/08/05 _____

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New	-	-	-
1	Compared with SO23-5-1.5, Rev. 24 and modified to include a stuck rod in the initial conditions. Also changed calculated value to reflect Cycle 13 MOC graph. Added requirement to calculate amount of boron required.	LRZ	02/24/05	REV

SET-UP

Use any of the following as required throughout the JPM.

NOTE: Provide the Examinee with a copy of SO23-5-1.5, Plant Shutdown from Hot Standby to Cold Shutdown, SO23-3-2.2, Makeup Operations and the Boration/Dilution Tables from the OPS Web page.

Provide the examinee with a copy of Operations Figure 2.3-1, SONGS Unit 2 Cycle 13 (MOC) Minimum Boron concentration for 5.15% Shutdown Margin.

CAUTION: Ensure that the curve is readable due to the six (6) different conditions addressed by the curve. Consider making copies directly from the Nuclear Database Management System to avoid this problem.

JPM: SO-05 NRC RO A.1.a

TITLE: Determine the Required Boron Concentration for Cooldown to Mode 5

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: Provide the examinee with a copy of SO23-5-1.5, Plant Shutdown from Hot Standby to Cold Shutdown, SO23-3-2.2, Makeup Operations and the Boration/Dilution Tables from the OPS Web page. Provide the examinee with a copy of Operations Figure 2.3-1, Songs Unit 2 Cycle 13 Minimum Boron Concentration for 5.15% Shutdown Margin.</p>				
1	Determine target boron concentration.	Determines target boron concentration requires OPS Figure 2.3-1, SONGS Unit 2 Cycle 13 Minimum Boron Concentration for 5.15% Shutdown Margin.		Start Time: _____
2*	Read OPS Figure 2.3-1, SONGS Unit 2 Cycle 13 Minimum Boron Concentration for 5.15% Shutdown Margin.	Selects correct curve and locates boron concentration using OPS Figure 2.3-1, SDM 5.15% @ 200°F and Worst Rod Stuck Out (WRSO). Calculates a value between 1650 ppm & 1750 ppm.		
3*	Calculate the amount of boron required to raise RCS boron concentration from 1500 ppm to 1700 ppm using SO23-3-2.2 and the Boration/Dilution Table.	Calculates the amount of boron required to raise RCS boron concentration from 1500 ppm to 1700 ppm using SO23-3-2.2, Attachment 10 and the Boration/Dilution Table from the Operations Web Page. Calculates a value of 3368 ± 870 gallons.		
<p>TERMINATING CUE:</p> <p>This JPM is complete.</p>				<p>Stop Time: _____</p>

**JPM: SO-05 NRC RO
A.1.a**

**TITLE: Determine the Required Boron Concentration for
Cooldown to Mode 5**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. N/A Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/24/05

**JPM: SO-05 NRC RO
A.1.a**

**TITLE: Determine the Required Boron Concentration for
Cooldown to Mode 5**

* Denotes a CRITICAL STEP

JPM INFORMATION SHEET

JPM NUMBER

SO-05 NRC RO JPM A.1.b

INITIAL PLANT CONDITIONS

Unit 2 is at 100% power. RCS Flow Rate must be determined to comply with Technical Specification Surveillance Requirement 3.4.1.3. The PMS computer is not available.

TASK TO BE PERFORMED

The Control Room Supervisor directs you to perform SO23-3-3.3, RCS Flow Rate Determination, Attachment 2, RCP ΔP Flow Calculation for SONGS Unit 2 and determine if Acceptance Criteria is met.

**JPM: SO-05 NRC RO
A.1.a**

**TITLE: Determine the Required Boron Concentration for
Cooldown to Mode 5**

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM A.1.b

SUGGESTED TESTING ENVIRONMENT:	PLANT	X	SIMULATOR	X
ACTUAL TESTING ENVIRONMENT:	PLANT	_____	SIMULATOR	_____
ACTUAL TESTING METHOD:	PERFORMED	_____	SIMULATED	_____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO
A.1.a

TITLE: Determine the Required Boron Concentration for
Cooldown to Mode 5

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM A.1.b

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: CO

TASK SYS ID: 179879

TASK DESCRIPTION

Perform an RCS Flow Rate Determination.

KA NUMBER: 2.1.19

KA VALUES: **RO** 3.0 **SRO** 3.0

10CFR55.45 APPLICABILITY: 12

REFERENCES:

SO23-3-3.3, RCS Flow Rate Determination, Rev. 6, Attachment 2, RCP ΔP Flow Calculation
Technical Specification 3.4.1

AUTHOR: L. Zilli _____

DATE: 04/05/05 _____

OPERATIONS REVIEW: M. Jones _____

DATE: 04/08/05 _____

APPROVED BY: A. Hagemeyer _____

DATE: 04/08/05 _____

**JPM: SO-05 NRC RO
A.1.a**

**TITLE: Determine the Required Boron Concentration for
Cooldown to Mode 5**

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
2	Compared against SO23-3-3.3, Rev. 6 and modified calculations to conform with new RCP Curves and procedure changes.	LRZ	04/05/05	REV

**JPM: SO-05 NRC RO
A.1.a**

**TITLE: Determine the Required Boron Concentration for
Cooldown to Mode 5**

* Denotes a CRITICAL STEP

SET-UP

Obtain a copy of SO23-3-3.3 and markup Attachment 2, complete up to Step 3.1.2 with the following data:

Step 3.1.1:

Ch. A	TC1 RAW Avg. – 542°F TC2 RAW Avg. – 541°F
Ch. B	TC1 RAW Avg. – 540°F TC2 RAW Avg. – 539°F
Ch. C	TC1 RAW Avg. – 539°F TC2 RAW Avg. – 538°F
Ch. D	TC1 RAW Avg. – 538°F TC2 RAW Avg. – 539°F

Step 3.1.2:

P001	ΔP AVG – 102 psid
P002	ΔP AVG – 105 psid
P003	ΔP AVG – 103 psid
P004	ΔP AVG – 104 psid

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: Provide the candidate with a copy of SO23-3-3.3 completed to Step 3.1.2 of Attachment 2.</p>				
<p>CUE: Steps 3.1.1 and 3.1.2 of Attachment 2 were completed last shift.</p>				
1	Calculate Average RCS Cold Leg Temperature TC ₁ .	Calculates TC ₁ using the data from Attachment 2, Step 3.1.1. $TC_1 = 539.75^{\circ}F$ $TC_1 = (\text{Sum all CPC Ch. } TRC_1 \text{ RAW}) / 4$		Start Time: _____
2	Calculate Average RCS Cold Leg Temperature TC ₂ .	Calculates TC ₂ using the data from Attachment 2, Step 3.1.1. $TC_2 = 539.25^{\circ}F$ $TC_2 = (\text{Sum all CPC Ch. } TRC_2 \text{ RAW}) / 4$		
3	Determine density ρTC ₁ for RCS Cold Leg Temp TC ₁ .	Determines ρTC ₁ , using TC ₁ and Attachment 12. $\rho TC_1 = 47.4947$		
4	Determine density ρTC ₂ for RCS Cold Leg Temp TC ₂ .	Determines ρTC ₂ , using TC ₂ and Attachment 12. $\rho TC_2 = 47.5545$		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: The Formula for the next step:</p> $\Delta P_c = \Delta P_{avg} \text{ (Step 3.1.2) } \times (46.654 \text{ lbm/ft}^3) / \rho_{TC_1} \text{ (Step 3.1.4)}$				
5	Calculate ΔP_c , the Compensated Pump Average ΔP for RCP P001.	Calculates ρP_c for RCP P001 using ρ_{TC_1} and the data from Steps 3.1.2 & 3.1.4. $\Delta P_c = 100.2 \pm 0.1 \text{ psid}$		
<p>NOTE: The Formula for this step:</p> $\Delta P_c = \Delta P_{avg} \text{ (Step 3.1.2) } \times (46.654 \text{ lbm/ft}^3) / \rho_{TC_2} \text{ (Step 3.1.5)}$				
6	Calculate ΔP_c , the Compensated Pump Average ΔP for RCP P002.	Calculates ΔP_c for RCP P002 using ρ_{TC_2} and the data from Steps 3.1.2 & 3.1.5. $\Delta P_c = 103.1 \pm 0.1 \text{ psid}$		
<p>NOTE: The Formula for this step:</p> $\Delta P_c = \Delta P_{avg} \text{ (Step 3.1.2) } \times (46.654 \text{ lbm/ft}^3) / \rho_{TC_1} \text{ (Step 3.1.4)}$				
7	Calculate ΔP_c , the Compensated Pump Average ΔP for RCP P003.	Calculates ΔP_c for RCP P003 using ρ_{TC_1} and the data from Steps 3.1.2 & 3.1.4. $\Delta P_c = 101.2 \pm 0.1 \text{ psid}$		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: The Formula for this step: $\Delta P_c = \Delta P_{avg} \text{ (Step 3.1.2) } \times (46.654 \text{ lbm/ft}^3) / \rho_{TC_2} \text{ (Step 3.1.5)}$</p>				
8	Calculate ΔP_c , the Compensated Pump Average ΔP for RCP P004.	Calculates ΔP_c for RCP P004 using ρ_{TC_2} and the data from Steps 3.1.2 & 3.1.5. $\Delta P_c = 102 \pm 0.1 \text{ psid}$		
9	Determine the flow for RCP P001.	Determines the flow for RCP P001 using ΔP_c and Attachment 3. $P001 \text{ flow} = 112,500 \pm 2500 \text{ gpm}$		
10	Determine the flow for RCP P002.	Determines the flow for RCP P002 using ΔP_c and Attachment 4. $P002 \text{ flow} = 108,750 \pm 2500 \text{ gpm}$		
11	Determine the flow for RCP P003.	Determines the flow for RCP P003 using ΔP_c and Attachment 5. $P003 \text{ flow} = 114,000 \pm 2500 \text{ gpm}$		
12	Determine the flow for RCP P004.	Determines the flow for RCP P004 using ΔP_c and Attachment 6.		

JPM: SO-05 NRC RO JPM A.1.b

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
		P004 flow = 112,500 ± 2500 gpm		

JPM: SO-05 NRC RO JPM A.1.b

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: The Formula for next step: $Q_t = P001 \text{ gpm} + P002 \text{ gpm} + P003 \text{ gpm} + P004 \text{ gpm}$</p>				
13*	Calculate the total RCS volumetric flow rate (Q_t).	<p><i>Calculates the total RCS volumetric flow rate (Q_t) by summing the flow for each RCP.</i></p> <p>$Q_t = 447,750 \text{ gpm} \pm 10,000 \text{ gpm}$</p>		
<p>CUE: Another operator will independently verify the calculations.</p>				
14*	Verify Acceptance Criteria per Technical Specifications.	Verifies Acceptance Criteria of $\geq 396,000 \text{ gpm}$ is met per Technical Specifications.		
<p>TERMINATING CUE:</p> <p>This JPM is complete.</p>				<p>Stop Time: _____</p>

**JPM: SO-05 NRC RO
JPM A.1.b**

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.

 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.

 - f. X Statements describing important actions or observations that should be made by the Examinee.

 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/24/05

**JPM: SO-05 NRC RO
JPM A.1.b**

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

JPM INFORMATION SHEET

JPM NUMBER

SO-05 NRC RO JPM A.2

INITIAL PLANT CONDITIONS

Unit 2 is operating at 100% power, Annunciator 53A46, “2nd POINT HEATER LEVEL HI/LO”, has been coming in repeatedly for the last 2 hours. An investigation has revealed that 2LSHL-3157 and 2LSHL-3103 (2ME-038 and 2ME-039 Second Point Heater HI/LO Level Switches) are both defective.

TASK TO BE PERFORMED

The SRO Operations Supervisor has determined that this is a nuisance alarm. Perform appropriate actions to disable the annunciator using approved procedures.

**JPM: SO-05 NRC RO
JPM A.1.b**

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM A.2

SUGGESTED TESTING ENVIRONMENT:	PLANT	X	SIMULATOR
ACTUAL TESTING ENVIRONMENT:	PLANT		SIMULATOR
ACTUAL TESTING METHOD:	PERFORMED		SIMULATED

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO
JPM A.1.b

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM A.2

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: ACO

VISION ID: 141341

TASK DESCRIPTION

Disable a nuisance annunciator.

KA NUMBER: 2.2.13

KA VALUES: **RO** 3.6 **SRO** 3.8

10CFR55.45 APPLICABILITY: 3

REFERENCES:

SO23-6-29, Operation of Annunciators and Indicators, Rev. 14

SO-23-15-53.A, 53A46, "2nd POINT HEATER LEVEL HI/LO", Rev. 9-1

AUTHOR: L. Zilli

DATE: 02/24/05

OPERATIONS REVIEW: M. Jones

DATE: 03/09/05

APPROVED BY: A. Hagemeyer

DATE: 03/09/05

**JPM: SO-05 NRC RO
JPM A.1.b**

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New	-	-	-
1	Compared to SO23-6-29, Rev. 14 and revised due to adding the alarm link location and new Compensatory Actions.	LRZ	02/24/05	REV

**JPM: SO-05 NRC RO
JPM A.1.b**

TITLE: Perform an RCS Flow Rate Determination

* Denotes a CRITICAL STEP

SET-UP

NOTE: Provide the examinee with a copy of SO23-6-29, Operation of Annunciators and Indicators and SO23-15-53.A, 53A46 - 2nd POINT HEATER LEVEL HI/LO, when requested.

JPM: SO-05 NRC RO JPM A.2 TITLE: Disable a Nuisance Annunciator

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: When located, provide the examinee with a copy of SO23-6-29, Operation of Annunciators and Indicators and a copy of SO23-15-53.A, 53A46 2nd Point Heater Level HI/LO.</p>				
1	Locate the Step in SO23-6-29 that applies to this alarm.	Locates Step 6.3.4 in SO23-6-29.		Start Time: _____
2	Discuss the Compensatory Actions from the associated ARP with the responsible operator.	Identifies the Compensatory Actions for 53A46 to monitor 2 nd Point Heater levels at least twice per shift.		
3*	Disable the alarm inputs.	Identifies alarm links 929 through 932 for Unit 2 per the ARP.		
4*	Identify location of links.	Identifies location of links for 53A46 at 2L-040 on Panel 03F and describes sliding all four (4) links to the open position.		
<p>CUE: The annunciator inputs have been disabled.</p>				
<p>TERMINATING CUE: This JPM is complete.</p>				<p>Stop Time: _____</p>

* Denotes a CRITICAL STEP

JPM CHECKLIST

- 1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

- 2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 2/24/05

JPM: SO-05 NRC RO JPM A.2 TITLE: Disable a Nuisance Annunciator

* Denotes a CRITICAL STEP

JPM INFORMATION SHEET

JPM NUMBER

SO-05 NRC RO JPM S-1

INITIAL PLANT CONDITIONS

The reactor has just tripped from full power. The CRS has directed the crew to carry out the Standard Post Trip Actions and report.

TASK TO BE PERFORMED

Perform the Control Operators portion of the Standard Post Trip Actions. Provide feedback to the Control Room Supervisor, as appropriate.

THIS IS A TIME CRITICAL JPM

JPM: SO-05 NRC RO JPM A.2 TITLE: Disable a Nuisance Annunciator

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM S-1

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR <u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO JPM A.2 **TITLE:** Disable a Nuisance Annunciator

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM S-1

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 4 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** 10 minutes

POSITION: CO

TASK SYS ID: 192836

TASK DESCRIPTION

Respond to a reactor trip by performing Standard Post Trip Actions.

KA NUMBER: 007 EA1.06

KA VALUES: **RO** 4.4 **SRO** 4.5

10CFR55.45 APPLICABILITY: 5 and 6

REFERENCES:

SO23-12-1, Standard Post Trip Actions, Rev. 19

AUTHOR: R. Whitehouse

DATE: 09/02/04

OPERATIONS REVIEW: M. Jones

DATE: 09/02/04

APPROVED BY: A. Hagemeyer

DATE: 09/07/04

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New	-	-	-
0-1	Modified Set-up page.	RCW	09/16/04	N/A
0-2	Modified Initial Plant Conditions and Task To Be Performed to indicate that the crew is performing the second pass through the SPTAs, and should feed information back to the CRS.	RCW	09/28/04	MRN
0-3	Compared to SO23-12-1, Rev. 19 with minor valve wording changes required.	LRZ	02/24/05	AHH

* Denotes a CRITICAL STEP

SET-UP

Use IC-137 for the 2005 NRC Exam. Otherwise use any full power IC that has Train B CCW in service, as well as Charging Pump P-191 aligned to Train B, and perform the following:

Hang on OOS tag on P174.

Trip the Reactor.

Insert the following malfunctions:

- **RD0602 and RD1302 (2 stuck CEAs on the trip).**
- **CV17A = FAILURE (P174 pump failure).**
- **CV17B = FAILURE (P175 pump failure).**

Insert the following Overrides:

- **2HS-9242-1-CR58-L01 = OFF (P174 red light off).**
- **2HS-9242-1-CR58-L02 = OFF (P174 green light off).**
- **2HS-9242-1-CR58-L03 = OFF (P174 double brilliant green light off).**
- **2HS-9242-1-CR58-L04 = OFF (P174 white light off).**
- **2HS-9242-1-CR58-L04 = OFF (P174 white light off).**
- **2HS-9242-1-CR58-S01 = OUT (P174 START pushbutton)**
- **58A46 = NO_ALARM (P174 overcurrent annunciator).**

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Standard Post Trip Actions

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<i>CUE: Perform Standard Post Trip Actions for Reactivity Control.</i>				
1	VERIFY Reactor Trip Circuit Breakers (8) are open.	Observes REACTOR TRIP STATUS, 2UI-9157 green lights illuminated for reactor trip breakers.		Start Time: _____
2	VERIFY a maximum of one full length CEA NOT fully inserted.	Observes CEA ROD BOTTOM INDICATION, 2ZI-9133, and or CEA Operator Module 2UI-9134 and determines that two full length CEA's are NOT fully inserted.		
3	Initiate Emergency Boration.	Determines that Emergency Boration is required.		
4	VERIFY that at least one Charging Pump is available.	Observes at least one Charging Pump START light is illuminated for 2P-191, and/or 2P-192 with proper discharge pressure displayed on 2PI-0212 and flow displayed on 2FI-0212.		
5	OPEN 2HV-9247, Emergency Boration Block Valve.	Opens 2HV-9247, Emergency Boration Block Valve.		
6	START either BAMU Pump.	Determines that Boric Acid Makeup Pump, 2P-174 (E) or Boric Acid Makeup Pump, 2P-175 (W) are both not available.		
7	INITIATE Emergency Boration using Gravity Feed.	Goes to RNO column to initiate Emergency Boration using Gravity Feed.		

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Standard Post Trip Actions

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
8	CLOSE 2HV-9247, Emergency Boration Block Valve.	Closes 2HV-9247, Emergency Boration Block Valve.		
9*	OPEN 2HV-9240, BAMU Tank 2T-071 Gravity Feed Valve.	Opens 2HV-9240, BAMU Tank 2T-071 Gravity Feed Valve.		
10*	OPEN 2HV-9235, BAMU Tank 2T-072 Gravity Feed Valve.	Opens 2HV-9235, BAMU Tank 2T-072 Gravity Feed Valve.		
11*	CLOSE 2LV-0227B, VCT Tank Outlet Block Valve.	Pushes the MANUAL pushbutton, and closes 2LV-0227B, VCT Tank Outlet Block Valve.		
12	ENSURE charging flow greater than 40 gpm.	Observes charging flow greater than 40 gpm on 2FI-0212.		
<p align="center">TERMINATING CUE: This JPM is complete.</p>				<p>Stop Time: _____</p>

* Denotes a CRITICAL STEP

JPM CHECKLIST

- 1. The JPM is:
 - a. X Supported by facility’s job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

- 2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/24/05

JPM INFORMATION SHEET

JPM NUMBER

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Standard

* Denotes a CRITICAL STEP

SO-05 NRC RO JPM S-1

INITIAL PLANT CONDITIONS

The reactor has just tripped from full power. The CRS has directed the crew to carry out the Standard Post Trip Actions and report.

TASK TO BE PERFORMED

Perform the Control Operators portion of the Standard Post Trip Actions. Provide feedback to the Control Room Supervisor, as appropriate.

THIS IS A TIME CRITICAL JPM

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Stand

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE SO-05 NRC RO JPM S-1

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR X _____
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO JPM S-1 **TITLE:** Perform the Control Operator actions of the Stand

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM S-1

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 4 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** 10 minutes

POSITION: CO

TASK SYS ID: 192836

TASK DESCRIPTION

Respond to a reactor trip by performing Standard Post Trip Actions.

KA NUMBER: 007 EA1.06

KA VALUES: **RO** 4.4 **SRO** 4.5

10CFR55.45 APPLICABILITY: 5 and 6

REFERENCES:

SO23-12-1, Standard Post Trip Actions, Rev. 19

AUTHOR: R. Whitehouse

DATE: 09/02/04

OPERATIONS REVIEW: M. Jones

DATE: 09/02/04

APPROVED BY: A. Hagemeyer

DATE: 09/07/04

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New	-	-	-
0-1	Modified Set-up page.	RCW	09/16/04	N/A
0-2	Modified Initial Plant Conditions and Task To Be Performed to indicate that the crew is performing the second pass through the SPTAs, and should feed information back to the CRS.	RCW	09/28/04	MRN
0-3	Compared to SO23-12-1, Rev. 19 with minor valve wording changes required.	LRZ	02/24/05	AHH

* Denotes a CRITICAL STEP

SET-UP

Use IC-137 for the 2005 NRC Exam. Otherwise use any full power IC that has Train B CCW in service, as well as Charging Pump P-191 aligned to Train B, and perform the following:

Hang on OOS tag on P174.

Trip the Reactor.

Insert the following malfunctions:

- **RD0602 and RD1302 (2 stuck CEAs on the trip).**
- **CV17A = FAILURE (P174 pump failure).**
- **CV17B = FAILURE (P175 pump failure).**

Insert the following Overrides:

- **2HS-9242-1-CR58-L01 = OFF (P174 red light off).**
- **2HS-9242-1-CR58-L02 = OFF (P174 green light off).**
- **2HS-9242-1-CR58-L03 = OFF (P174 double brilliant green light off).**
- **2HS-9242-1-CR58-L04 = OFF (P174 white light off).**
- **2HS-9242-1-CR58-L04 = OFF (P174 white light off).**
- **2HS-9242-1-CR58-S01 = OUT (P174 START pushbutton)**
- **58A46 = NO_ALARM (P174 overcurrent annunciator).**

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Standard Post Trip Actions

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<i>CUE: Perform Standard Post Trip Actions for Reactivity Control.</i>				
1	VERIFY Reactor Trip Circuit Breakers (8) are open.	Observes REACTOR TRIP STATUS, 2UI-9157 green lights illuminated for reactor trip breakers.		Start Time: _____
2	VERIFY a maximum of one full length CEA NOT fully inserted.	Observes CEA ROD BOTTOM INDICATION, 2ZI-9133, and or CEA Operator Module 2UI-9134 and determines that two full length CEAs are NOT fully inserted.		
3	Initiate Emergency Boration.	Determines that Emergency Boration is required.		
4	VERIFY that at least one Charging Pump is available.	Observes at least one Charging Pump START light is illuminated for 2P-191, and/or 2P-192 with proper discharge pressure displayed on 2PI-0212 and flow displayed on 2FI-0212.		
5	OPEN 2HV-9247, Emergency Boration Block Valve.	Opens 2HV-9247, Emergency Boration Block Valve.		
6	START either BAMU Pump.	Determines that Boric Acid Makeup Pump, 2P-174 (E) or Boric Acid Makeup Pump, 2P-175 (W) are both not available.		
7	INITIATE Emergency Boration using Gravity Feed.	Goes to RNO column to initiate Emergency Boration using Gravity Feed.		

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Standard Post Trip Actions

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
8	CLOSE 2HV-9247, Emergency Boration Block Valve.	Closes 2HV-9247, Emergency Boration Block Valve.		
9*	OPEN 2HV-9240, BAMU Tank 2T-071 Gravity Feed Valve.	Opens 2HV-9240, BAMU Tank 2T-071 Gravity Feed Valve.		
10*	OPEN 2HV-9235, BAMU Tank 2T-072 Gravity Feed Valve.	Opens 2HV-9235, BAMU Tank 2T-072 Gravity Feed Valve.		
11*	CLOSE 2LV-0227B, VCT Tank Outlet Block Valve.	Pushes the MANUAL pushbutton, and closes 2LV-0227B, VCT Tank Outlet Block Valve.		
12	ENSURE charging flow greater than 40 gpm.	Observes charging flow greater than 40 gpm on 2FI-0212.		
<p align="center">TERMINATING CUE: This JPM is complete.</p>				<p>Stop Time: _____</p>

* Denotes a CRITICAL STEP

JPM CHECKLIST

- 1. The JPM is:
 - a. X Supported by facility’s job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

- 2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/24/05

JPM INFORMATION SHEET

JPM NUMBER

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Standby

* Denotes a CRITICAL STEP

SO-05 NRC RO JPM S-2

INITIAL PLANT CONDITIONS

Unit 2 is operating at power.

All systems are OPERABLE.

Maintenance is scheduled for the Unit Auxiliary Transformer feeder breaker to 6.9 kV Bus 2A01.

TASK TO BE PERFORMED

Manually transfer 6.9 kV Bus 2A01 from the Unit Auxiliary Transformer (2XU2) to the Reserve Auxiliary Transformer (2XR3).

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Stand

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM S-2

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR <u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO JPM S-1 **TITLE:** Perform the Control Operator actions of the Standby

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM S-2

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 5 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: ACO

TASK SYS ID: 186193

TASK DESCRIPTION

Manually transfer a 6.9 kV bus from the Unit Auxiliary Transformer to the Reserve Auxiliary Transformer.

KA NUMBER: 062 A4.07

KA VALUES: **RO** 3.1 **SRO** 3.1

10CFR55.45 APPLICABILITY: 2, 6

REFERENCES:

SO23-6-1, Transferring 6.9 kV Buses, Rev. 6

AUTHOR: S. Hollinger

DATE: 09/16/92

OPERATIONS REVIEW: J. Salinger

DATE: 10/08/93

APPROVED BY: M. Kirby

DATE: 10/14/93

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
1	New format.	SW	07/07/93	MJK
1-1	Changed setup page; changed estimated time from 6 to 5 minutes based on history; minor editorial changes to standards for clarity.	HJW	03/22/94	N/A
1-2	Compared against SO23-6-1, TCN 3-4 with no changes required.	HJW	09/21/94	N/A
1-3	Compared against SO23-6-1, TCN 3-4 with no changes required.	RCW	09/09/98	N/A
1-4	Compared against SO23-6-1, TCN 4-1 with no changes required. Deleted two cues that are not necessary when JPM is performed on the simulator. Updated KA designation and changed old task number to VISION SYS ID.	JJM	10/01/99	WLL
1-5	Compared against SO23-6-1, Revision 5 and reordered JPM steps to match the wording of the procedure.	JJM	09/14/00	WLL
1-6	Compared against SO23-6-1, Revision 5 and corrected nomenclature for procedure to JPM consistency.	LRZ	05/11/01	WLL
1-7	Compared against SO23-6-1, Revision 6 with no changes required.	JJM	07/25/02	N/A
1-8	Updated Vision Task ID.	RCW	08/09/04	AHH
1-9	Compared against SO23-6-1, Revision 6 with no changes required.	LRZ	02/15/05	AHH

JPM: SO-05 NRC RO JPM S-1 TITLE: Perform the Control Operator actions of the Standby

* Denotes a CRITICAL STEP

SET-UP

Use any at power IC.

NOTE: Provide the examinee with a copy of SO23-6-1, Transferring 6.9 kV Buses when identified.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
1	Locate procedure SO23-6-1, Transferring 6.9kV Buses and review Limitations and Specifics LS-1.3.	Locates a current copy of SO23-6-1, Transferring 6.9kV Buses and reviews Limitations and Specifics LS-1.3.		Start Time: _____
NOTE: When the correct procedure is located provide a copy to the examinee.				
2	VERIFY ENERGIZED 2XR3 Transformer.	Observes 2XR3 Transformer is energized by visually checking the alignment of power to 2XR3.		
3	ENSURE OPEN 3A0105 Res Aux XFMR 2XR3 FDR Breaker.	Ensures 3A0105 Res Aux XFMR 2XR3 FDR Breaker open.		
CUE: Unit 3 bus tie breaker is open (3A01 is not being fed from 2XR3).				
4*	PLACE IN MANUAL 2HS-1613B Res Aux XFMR 2XR3 FDR Bkr 2A0102 Mode Selector.	Places 2HS-1613B, Res Aux Xfmr 2XR3 FDR Bkr 2A0102 Mode Selector switch to MANUAL.		
5*	PLACE IN SERVICE 2/3HS-1627A NON-1E Sync Master CNTRL.	Places key operated 2/3HS-1627A NON-ESF SYNC MASTER CNTRL TO ON.		
6*	DEPRESS 2A0102 Res Aux XFMR 2XR3 FDR Breaker SYNC pushbutton to place the synchronizing circuit in service.	Depresses SYNC pushbutton on 2HS-1613A, Res Aux Xfmr 2XR3 FDR Breaker 2A0102.		
7	Verify Breaker SYNC light ILLUMINATED.	Observes SYNC light on 2HS-1613A, Res Aux Xfmr 2XR3 FDR Breaker 2A0102 is illuminated.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
8	Verify SYNC IN MODE light ILLUMINATED.	Observes SYNC IN MODE light on the Non-ESF Sync Master switch is illuminated.		
9	Verify SYNC RELAYS TROUBLE light EXTINGUISHED.	Observes SYNC RELAYS TROUBLE light on the Non-ESF Sync Master switch is extinguished.		
10	Verify INCOMING and RUNNING voltage and frequencies matched.	Observes meters 2/3EI-1627A, Running Volts, and 2/3EI-1627B, Incoming Volts; 2/3SI-1627C, Running Hertz, and 2/3SI-1627D, Incoming Hertz to ensure they are matched.		
11	Verify Synchroscope moves to straight up (12 o'clock) position.	Observes Synchroscope 2/3SI-1627A moves to straight up (12 o'clock) position.		
12*	CLOSE 2A0102, Res Aux XFMR 2XR3 FDR Breaker, paralleling 2XU2 and 2XR3.	Depresses CLOSE pushbutton 2HS-1613A, Res Aux Xfmr 2XR3 FDR Breaker 2A0102.		
13	VERIFY OPEN 2A0104, Unit Aux XFMR 2XU2 FDR Breaker.	Observes Trip light illuminated on 2HS-1614, Unit Aux Xfmr 2XU2 FDR Breaker 2A0104.		
14	DEPRESS 2A0102 Res Aux XFMR 2XR3 FDR Breaker SYNC pushbutton to remove the synchronizing circuit from service.	Depresses 2HS-1613A Res Aux XFMR 2XR3 FDR Breaker 2A0102 SYNC pushbutton.		

JPM: SO-05 NRC RO JPM S-2

TITLE: Manually Transfer 6.9kV Bus 2A01 from the UAT to the RAT

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
15	PLACE in OFF 2/3HS-1627A.	Places key operated Non-ESF Sync Master switch HS-1627A to OFF.		
TERMINATING CUE: This JPM is complete.				Stop Time: _____

**JPM: SO-05 NRC RO
JPM S-2**

**TITLE: Manually Transfer 6.9kV Bus 2A01 from the
UAT to the RAT**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/15/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC RO
JPM S-2**

**TITLE: Manually Transfer 6.9kV Bus 2A01 from the
UAT to the RAT**

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC RO JPM S-3

INITIAL PLANT CONDITIONS

Unit 2 was operating at 100% power when a Steam Line break occurred inside Containment. Containment Spray Actuation System (CSAS), failed to automatically actuate. Up to this point, all attempts to manually actuate CSAS have been unsuccessful. Containment pressure is rising.

TASK TO BE PERFORMED

The Control Room Supervisor directs you to perform Floating Step 12, Monitor Containment Pressure, of SO23-12-11, EOI Supporting Attachments.

**JPM: SO-05 NRC RO
JPM S-2**

**TITLE: Manually Transfer 6.9kV Bus 2A01 from the
UAT to the RAT**

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM S-3

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR <u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO
JPM S-2

TITLE: Manually Transfer 6.9kV Bus 2A01 from the
UAT to the RAT

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM S-3

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 10 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: CO

TASK SYS ID: 184570

TASK DESCRIPTION

Initiate Containment Temperature and Pressure Control Recovery by CSAS.

KA NUMBER: 009 EA1.07

KA VALUES: **RO** 3.7 **SRO** 3.9

10CFR55.45 APPLICABILITY: 5, 6

REFERENCES:

SO23-12-11, EOI Supporting Attachments, FS-12, Monitor Containment Pressure, Revision 2

AUTHOR: L. Zilli

DATE: 02/15/05

OPERATIONS REVIEW: M. Jones

DATE: 03/09/05

APPROVED BY: A. Hagemeyer

DATE: 03/09/05

**JPM: SO-05 NRC RO
JPM S-2**

**TITLE: Manually Transfer 6.9kV Bus 2A01 from the
UAT to the RAT**

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
1	Reviewed SO23-12-5, Rev. 16 and modified as required.	LRZ	07/05/00	WLL
1-1	Compared against SO23-12-5, Rev. 16 with no changes required.	LRZ	08/29/01	WLL
2	Revised to reflect new procedure and Floating Step number SO23-12-11, EOI Supporting Attachments, Rev. 2, Floating Step 12. Added steps required by procedure revision. New VISION ID.	LRZ	02/15/05	REV

**JPM: SO-05 NRC RO
JPM S-2**

**TITLE: Manually Transfer 6.9kV Bus 2A01 from the
UAT to the RAT**

* Denotes a CRITICAL STEP

SET-UP

Use IC #136 for the 2005 NRC Exam, otherwise, use any at power IC.

Enter malfunctions to disable CSAS automatic and manual actuation of Containment Spray and Containment Spray Pump P012 to start.

Insert the malfunction for a Steam Line Break inside Containment and allow the Simulator to run until Containment pressure reaches approximately 15 psig. Choose the severity such that pressure is rising about 1 psig/min then freeze the simulator.

MS03A @ 10% for ~1 minute then 0.9%

RP01M – CS Pump P012 Failure to Start

RPL104 = Fail energized (ON) = True for the following items:

Schematic pages for CSAS = RPL104

**CSAS = RP_CSAS_MI1_Fail
RP_CSAS_MI2_Fail
RP_CSAS_MI3_Fail
RP_CSAS_MI4_Fail
RP_CSAS_SSR1_Fail
RP_CSAS_SSR2_Fail
RP_CSAS_SSR3_Fail
RP_CSAS_SSR4_Fail**

NOTE: Provide the Examinee with a copy of SO23-12-11, EOI Supporting Attachments, Floating Step 12, Monitor Containment Pressure.

NOTE: Ensure DAS alarms are reset.

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Control Recovery by CSAS

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: Provide the Examinee with a copy of SO23-12-11, EOI Supporting Attachments, Floating Step 12, Monitor Containment Pressure. Ensure the DAS alarms are reset.</p>				
1	VERIFY Containment pressure less than 3.4 psig.	Verifies Containment pressure Narrow Range indications 2PI-0351-1, 2, 3, 4 or Wide Range indications 2PI-0352-1, 2, 3, 4, greater than 3.4 psig and enters the RNO.		Time Start: _____
2	ENSURE SIAS actuated.	Verifies SIAS actuated by observing annunciators 57A01 SIAS TRAIN A ACTUATION and 57B01 SIAS TRAIN B ACTUATION.		
<p>NOTE: The Examinee may choose to start Containment Spray Pump 2P-012 at this point or later in the Floating Step.</p>				
3	Recognizes that Containment Spray Pump 2P-012 is not running.	Starts Containment Spray Pump P-012 by depressing the START pushbutton, 2HS-9395-1.		
4	ENSURE CCAS actuated.	Verifies CCAS actuated by observing annunciators 57A07 CCAS TRAIN A ACTUATION and 57B07 CCAS TRAIN B ACTUATION.		
5	ENSURE CRIS actuated.	Verifies CRIS actuated by observing annunciator 60B07 CRIS ACTUATION.		

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Control Recovery by CSAS

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
6	ENSURE CIAS actuated.	Verifies CIAS actuated by observing annunciators 57A02 CIAS TRAIN A ACTUATION and CIAS TRAIN B ACTUATION and/or CFMS page 342.		
CUE: If CFMS page 342 is accessed, state all CIAS valves are closed.				
7	VERIFY Containment Area Radiation Monitors – NOT alarming or trending to alarm.	Verifies Containment Area Radiation Monitors are not alarming or trending to alarm using the DAS Home Page or DAS Containment page.		
8	VERIFY Containment High Range Area Radiation Monitors – reading less than 40R/hr.	Verifies Containment High Range Area Radiation Monitors reading less than 40R/hr using the DAS Home Page or DAS Containment page.		
9	VERIFY Containment pressure less than 14 psig.	Verifies Containment Pressure Wide Range indications 2PI-0352-1, 2, 3, or 4 greater than 14 psig and enters the RNO.		

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Control Recovery by CSAS

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
10	ENSURE CSAS actuated.	Observes CSAS <u>not</u> actuated: <ul style="list-style-type: none"> • Annunciators 57A03 CSAS TRAIN A ACTUATION and 57B03 CSAS TRAIN B ACTUATION. • Containment Spray Pump 2P012, 2HS-9395-1, did not start. • 2HV-9367, Containment Spray Header 1 Control Valve, did not open. • 2HV-9368, Containment Spray Header 2 Control Valve, did not open. 		
11	MANUALLY actuate CSAS.	Attempts to actuate CSAS by pressing at least any two of four CSAS initiation pushbuttons, 2HS-9139-1, 2, 3, 4.		
CUE: An ARO has been sent to L-034 and L-035 and CSAS actuation has been unsuccessful..				
NOTE: The Containment Spray Pump 2P012 may already have been started in Step 3.				
12*	START Containment Spray Pump P-012.	Starts Containment Spray Pump P-012 by depressing the START pushbutton, 2HS-9395-1.		

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Control Recovery by CSAS

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
13	VERIFY Containment Spray Pump P-012 started.	Verifies Containment Spray Pump P-012 has started by observing: <ul style="list-style-type: none"> • Red START light illuminates on 2HS-9395-1. • Pump amps at a normal no flow value of about 25 amps on 2HS-9395-1. • Discharge pressure rises to approximately 250 psig on 2PI-0303-1. 		
14*	OPEN 2HV-9367, Containment Spray Header Isolation Valve.	Opens 2HV-9367, CNTMT Spray Header 1 Control Valve, by depressing and holding the JOG OPEN pushbutton and observing the red JOG OPEN light illuminates and the green JOG CLOSED light extinguishes.		
15	VERIFY Containment Spray Pump P-013 started.	Verifies Containment Spray Pump P-013 has started by observing: <ul style="list-style-type: none"> • Red START light illuminates on 2HS-9396-2. • Pump amps at a normal no flow value of about 25 amps on 2HS-9396-2. • Discharge pressure is approximately 250 psig on 2PI-0303-2. 		
16*	OPEN 2HV-9368, Containment Spray Header Isolation Valve.	Opens 2HV-9368, CNTMT Spray Header 2 Control Valve by depressing and holding the JOG OPEN pushbutton and observing the red JOG OPEN light illuminates and the green		

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Control Recovery by CSAS

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
		JOG CLOSED light extinguishes.		
17	CLOSE CCW to/from Letdown Heat Exchanger Valves for Train A and Train B.	Closes CCW CLA LTDN HX 2E062 Supply/Return Valve 2HV-6293B/A..		
18	ENSURE each Containment Spray header flow – greater than 1625 GPM.	Verifies Containment Spray flow is satisfactory by observing: <ul style="list-style-type: none"> • 2FI-0338-1, Train A Containment Spray Flow, greater than 1625 gpm. • 2FI-0348-2, Train B Containment Spray Flow, greater than 1625 gpm. 		
TERMINATING CUE: This JPM is complete.				Stop Time: _____

* Denotes a CRITICAL STEP

JPM CHECKLIST

- 1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

- 2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/26/05

JPM INFORMATION SHEET

JPM NUMBER

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Conti

* Denotes a CRITICAL STEP

SO-05 NRC RO JPM S-4

INITIAL PLANT CONDITIONS

A small Steam Generator Tube leak has developed in SG 2E-088. The leak rate is approximately 32 gallons per day (gpd) and increasing very slowly. On the DAS LEAK RATE page the Hi-Hi alarm is present for Condenser Air Ejector WRGM, RE-7870.

The Shift Manager has directed that RE-7870's Hi-Hi Alarm setpoint be raised to a new value of 60 gpd in order to alert the crew if the leak is trending to 75 gpd.

TASK TO BE PERFORMED

Reset the Hi-Hi Alarm setpoint on the DAS LEAK RATE page for Condenser Air Ejector Wide Range Gas Monitor, RE-7870 to a new value of 60 gpd per SO23-3-2.36, Radiation Monitoring Data Acquisition System (DAS).

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Conti

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM S-4

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR <u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO JPM S-3 **TITLE:** Initiate Containment Temperature and Pressure Conti

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM S-4

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 5 minutes

TIME CRITICAL JPM: N/A **CRITICAL TIME:** N/A

POSITION: RO

VISION ID: 191191

TASK DESCRIPTION

Verify, acknowledge, and bypass alarms using DAS.

KA NUMBER: 073 A4.02

KA VALUES: RO 3.7 SRO 3.7

10CFR55.45 APPLICABILITY: 9

REFERENCES:

SO23-3-2.36, Radiation Monitor Data Acquisition System (DAS), Rev. 3-2

AUTHOR: J. Marron

DATE: 02/18/03

OPERATIONS REVIEW: P. Sandberg

DATE: 02/19/03

APPROVED BY: S. Whitley

DATE: 02/19/03

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New JPM			
0-1	Compared against SO23-3-2.36, Revision 3-2, with no changes required. New VISION ID.	LRZ	02/24/05	AHH

JPM: SO-05 NRC RO JPM S-3 TITLE: Initiate Containment Temperature and Pressure Conti

* Denotes a CRITICAL STEP

SET-UP

Use IC #129 for the NRC 2005 Exam or follow guidance below.

From any full power initial condition, insert malfunction SG01A at a severity level of 0.03. When the leak rate increases to 20 gpd, verify that the Condenser Air Ejector WRGM, RE-7870 LEAKRATE page indicates the Hi-Hi Alarm and lower the leakrate to 0.001 (32 gpd).

Place the simulator in FREEZE until the examinee is ready to proceed with the task then place the simulator in RUN.

NOTE: Provide the Examinee with a copy of SO23-3-2.36.

CAUTION: Ensure the DAS Home Page is being displayed on the flat screen monitor on the Control Operator's Desk.

Ensure RE-7870 alarm is reset to 30 gpd.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>CAUTION: ENSURE the DAS Home Page is being displayed on the flat screen monitor on the Control Operator’s Desk. ENSURE RE-7870 alarm is reset to 30 gpd.</p>				
1	CONFIRM that the setpoint has been changed in RE-7870 Radiation Monitor.	Determines from the Examiner the status of the setpoint change in Condenser Air Ejector WRGM, RE-7870.		Start Time: _____
<p>CUE: The setpoint has been changed in the Condenser Air Ejector Radiation WRGM, RE-7870 by Radiation Monitoring I&C.</p>				
2	GO TO the DAS Home Page.	Observes that the DAS Home Page is currently being displayed.		
3	SELECT the Unit 2 LEAK RATE Button at the top of the display screen.	Uses the mouse to click on the U2 LEAK RATE button at the top of the Home Page.		
4	NAVIGATE to the applicable monitor Leak Rate Page.	Determines the correct Leak Rate Page is displayed by its title, RE-7870.		
5*	DOUBLE CLICK the Hi-Hi Alarm Setpoint parameter to cause the keypad pop-up window to appear.	Double clicks the Hi-Hi Alarm Setpoint parameter and causes the keypad pop-up window to appear on the screen.		
6*	ENTER the new value in the keypad pop-up window by clicking on the numerals “6” then “0”.	Enters the new value for the Hi-Hi Alarm Setpoint in the keypad pop-up window by clicking on the numerals “6” then “0” or type in the new setpoint using the keyboard.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
7*	SELECT the “ENTER” button.	Selects the “ENTER” button by clicking on the “ENTER” button on the keypad pop-up window or depresses the ENTER key on the keyboard.		
8*	SELECT “OK” to confirm.	Selects “OK” to confirm by clicking on the “OK” button on the keypad pop-up window or depresses the ENTER key on the keyboard.		
9	Observe that the new value of the Hi-Hi Alarm Setpoint is now being displayed.	Observes that the value of the Hi-Hi Alarm Setpoint has been set to 60.		
CUE: Another operator will perform the UPDATE SCADA task.				
TERMINATING CUE: This JPM is complete.				Stop Time: _____

**JPM: SO-05 NRC RO
JPM S-4**

**TITLE: Changing the Alarm Setpoint on the DAS LEAK
RATE Page**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.

 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.

 - f. X Statements describing important actions or observations that should be made by the Examinee.

 - g. X Criteria for successful completion.

 - h. X Identification of the critical steps and their associated performance standards.

 - i. X Validated time limits (average time allowed for completion).

 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/24/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC RO
JPM S-4**

**TITLE: Changing the Alarm Setpoint on the DAS LEAK
RATE Page**

* Denotes a CRITICAL STEP

JPM NUMBER

SONGS-05 NRC RO JPM S-5

INITIAL PLANT CONDITIONS

The plant is in Mode 4 (~365 psia and 255°F) on the Shutdown Cooling System when a Loss of Offsite Power occurs. Vital Bus 2A06 did not transfer due to a bus fault. The running Shutdown Cooling Pump on Train A has tripped on an overcurrent/ground. RCS level is stable (NOT lowering).

Prior to the loss of offsite power, SBCS was in service assisting with the cooldown. The Steam Generator Pressure Channels in use were 2PI-1023A4 for E088 and 2PI-1013A4 for E089.

TASK TO BE PERFORMED

The Control Room Supervisor directs you to perform Attachment 5, Alternate Reactor Core Cooling, Step 2.1 per SO23-13-15, Loss or Shutdown Cooling System.

The CRS also directs you to maximize RCS heat removal with the Steam Generators in order to promote natural circulation.

**JPM: SO-05 NRC RO
JPM S-4**

**TITLE: Changing the Alarm Setpoint on the DAS LEAK
RATE Page**

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM S-5

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR <u> X</u>
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO
JPM S-4

TITLE: Changing the Alarm Setpoint on the DAS LEAK
RATE Page

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM S-5

JPM LEVEL: RO/SRO _____

ESTIMATED TIME TO COMPLETE: 10 minutes

TIME CRITICAL JPM: N/A **CRITICAL TIME:**

POSITION: ACO _____

VISION ID: 188158

TASK DESCRIPTION

Respond to a Loss of Shutdown Cooling.

KA NUMBER: 025-AA1.03 _____

KA VALUES: RO 3.4 SRO 3.3 _____

10CFR55.45 APPLICABILITY: 6, 7

REFERENCES:

SO23-13-15, Loss of Shutdown Cooling, Attachment 5, Alternate Reactor Core Cooling, Rev. 15

AUTHOR: L. Zilli _____

DATE: 02/15/05 _____

OPERATIONS REVIEW: M. Jones _____

DATE: 03/09/05 _____

APPROVED BY: A. Hagemeyer _____

DATE: 03/09/05 _____

**JPM: SO-05 NRC RO
JPM S-4**

**TITLE: Changing the Alarm Setpoint on the DAS LEAK
RATE Page**

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New			

JPM: SO-05 NRC RO
JPM S-4

TITLE: Changing the Alarm Setpoint on the DAS LEAK
RATE Page

* Denotes a CRITICAL STEP

SET-UP

Use IC #123 for the 2005 NRC Exam.

Obtain and insert the following Control Room keys:

- 13, 14, 15, and 19 for Train A LPSI
- 28, 29, 30, and 34 for Train B LPSI
- 21 and 22 for Train A SIT
- 35 and 36 for Train B SIT
- 38 for Train A CPC Bypass
- 42 for Train B CPC Bypass
- 46 for Train C CPC Bypass
- 50 for Train D CPC Bypass

Perform the following if using Base IC #2:

Insert the following:

Malfunction EC08A – LPSI P015 Fault

Malfunction ED03B – 2A06 Bus Fault

Malfunction PG24 – Loss of Edison Grid

Malfunctions SG03A/B/C/E/F/G – SG Pressure Instrument failure to 600 psia

Perform the following:

Close the Main Steam Isolation Valves

Start CCW Pump P025

NOTE: Provide the Examinee with a copy of SO23-13-15, Attachment 5, Alternate Reactor Core Cooling.

NOTE: The Machine Operator will setup the PMS monitor at the CO desk with the “Natural Circulation” display and the PMS monitor on the other side of the CO desk with the “Shutdown Cooling System” display.

Examiner NOTE: In order to establish the criteria for entry into this scenario an IC with Shutdown Cooling in service was used. In that IC, Steam Generator pressure indications (3 of 4) are artificially set higher than the MSIS setpoint to prevent inadvertent MSIS. This is a standard practice in the Control Room.

Identify the indication on each SG that is reading the actual value of SG pressure as stated in the Initial Conditions. This can be accomplished by covering those indications that are set higher (as done in the Control Room when on Shutdown Cooling) and placing yellow arrows on the one indication for each Steam Generator that is reading the correct value of SG pressure (~50 psia). This also is a standard practice in the Control Room.

JPM: SO-05 NRC RO JPM S-5 TITLE: Alternate Reactor Core Cooling

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: Review the Setup page and ensure the PMS Monitors are properly aligned and the SG Pressure indications are correctly identified.</p>				
<p>NOTE: The Simulator is frozen until just prior to the first manipulation. As soon as the Simulator is placed in RUN, RCS Subcooling will decrease as Thot rises. The examiner should verify that the candidate establishes core cooling by verifying that natural circulation conditions exist on at least one SG.</p>				
1	Initiate operating the AFW System.	Initiates operating the AFW System.		Start Time: _____
<p>NOTE: Examinee may choose either of the two methods listed for initiating AFW flow.</p>				
2*	Start AFW Pump P141.	Starts AFW Pump P141 by depressing 2HS-4707-1 start pushbutton.		
3	Verify 2HV-4731 AFW to SG 2E089 ISO VALVE is open.	Verifies 2HV-4731, AFW to SG 2E089 ISO VALVE is open.		
4*	Commence feeding an available SG using P141.	Commences feeding SG E089 by depressing OPEN/MODULATE on 2HV-4713 AFWP 2P141 to SG 2E089 DISCH VALVE.		
<p>NOTE: Steps 5 and 6 may not be performed by the examinee if they recognize that there is insufficient SG pressure to adequately feed the SGs.</p>				
5	Start AFW Pump P140.	Starts AFW Pump P140 by depressing 2HV-4716 AFWPT 2K007 STEAM INLET VALVE open pushbutton.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
6	Commence feeding an available SG using P140.	Commences feeding SG by opening 2HV-4705 AFWP 2P140 to SG 2E088 DISCH VALVE and/or 2HV-4706 AFWP 2P140 to SG 2E089 DISCH VALVE.		
7	Initiate operating the SBCS and/or ADVs.	Initiates operating the Atmospheric Dump Valves.		
8*	Prepare to open an Atmospheric Dump Valve.	Depress OPEN/MODULATE on 2HV-8421 SG E089 ADV and/or 2HV-8419 SG E088 ADV.		
9*	Raise ADV Controller Output to open valve.	Depress SELECT push button on ADV Controller 2PIC-8421-2 and/or 2PIC-8419-1 and raise OUTPUT to open valve.		
<p>NOTE: Any hesitation on the part of the Examinee to fully open the ADVs will delay in establishing natural circulation with the present RCS conditions.</p>				
10	Ensure one RCP is running per SO23-3.1.7. If forced circulation cannot be established, then provide natural circulation.	Identifies that no RCPs are running.		
<p>NOTE: Examinee may access “Natural Circulation” screen on CFMS to assess the following data.</p>				
11	Commence monitoring QSPDS Page 622 and/or CFMS Page 312.	Monitors QSPDS Page 622 and/or CFMS Page 312.		
12	Adjust steaming rate and feedwater flow to attain the following conditions:	Adjusts steaming rate and feedwater flow as required.		
13	Operating loop ΔT – less than 58°F.	Verifies operating loop ΔT – less than 58°F.		

JPM: SO-05 NRC RO JPM S-5 TITLE: Alternate Reactor Core Cooling

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
14	Tcold and Thot – NOT rising.	Verifies Tcold and Thot – NOT rising.		
15	RX Vessel (Plenum) level – greater than <u>or</u> equal to 100%.	Verifies Reactor Vessel (Plenum) level – greater than <u>or</u> equal to 100%.		
16	Core Exit Saturation Margin – greater than 20°F.	Verifies Core Exit Saturation Margin – greater than 20°F.		
17	Operating loop Thot and REP CET – within 16°F.	Verifies operating loop Thot and REP CET – within 16°F.		
18	Maintain alternate RX Core cooling until SDC is restored.	Maintains Alternate Reactor Core Cooling until SDC is restored.		
<p align="center">TERMINATING CUE: This JPM is complete.</p>				<p>Stop Time: _____</p>

**JPM: SO-05 NRC RO
JPM S-5**

TITLE: Alternate Reactor Core Cooling

* Denotes a CRITICAL STEP

JPM CHECKLIST

- 1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

- 2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 03/05/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC RO
JPM S-5**

TITLE: Alternate Reactor Core Cooling

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC RO JPM S-6

INITIAL PLANT CONDITIONS

A Unit 2 Containment entry must be made to investigate an abnormal noise in a Reactor Coolant Pump. Prior to the entry, a Containment Mini-Purge is to be performed. 2RT-7828, Containment Purge Stack Radiation Monitor, is out-of-service.

TASK TO BE PERFORMED

The Control Room Supervisor directs you to initiate a Containment Mini-Purge using SO23-1-4.2, Containment Purge and Recirculation Filtration System.

Attachment 6, Operation of the Containment Mini-Purge System has been completed through Step 2.4.3.

2RT-7865, Plant Vent Stack/Containment Purge Stack Wide Range Gas Monitor, is aligned to the Containment Purge Stack.

**JPM: SO-05 NRC RO
JPM S-5**

TITLE: Alternate Reactor Core Cooling

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO JPM S-6

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR <u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO **TITLE:** Alternate Reactor Core Cooling
JPM S-5

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO JPM S-6

JPM LEVEL: RO / SRO _____

ESTIMATED TIME TO COMPLETE: 20 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: ACO _____

TASK SYS ID: 193205

TASK DESCRIPTION

Startup the Containment Mini-Purge System.

Secure the Containment Mini-Purge System.

KA NUMBER: 103 A4.01 _____

KA VALUES: **RO** 3.2 **SRO** 3.3 _____

10CFR55.45 APPLICABILITY: 3, 8

REFERENCES:

SO23-1-4.2, Containment Purge and Recirculation Filtration System, Attachment 6, Rev. 27

SO23-15-61.A, Alarm Response Instruction for Panel 61A, Window 61A09, Rev. 13-1.

AUTHOR: K. Meagher _____

DATE: 08/07/01 _____

OPERATIONS REVIEW: W. Lyke _____

DATE: 09/27/01 _____

APPROVED BY: A. Hagemeyer _____

DATE: 10/10/01 _____

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
2	Compared to SO23-1-4.2, Revision 24 and SO23-15-61.A, Revision 10-2. No changes required. Updated VISION system ID number. Verified KA number. Made into faulted JPM due to Rad. Monitor failure. Made into simulator JPM since this is performed in simulator. Made steps 3, 4, 5 and 6 critical steps since they are the steps to start the Mini-Purge.	KM	008/07/01	REV
2-1	Compared to SO23-1-4.2, Revision 27 with minor changes required. New VISION ID.	LRZ	02/24/05	AHH

**JPM: SO-05 NRC RO TITLE: Alternate Reactor Core Cooling
JPM S-5**

* Denotes a CRITICAL STEP

SET-UP

SIMULATOR:

For April 2005 NRC Exam this JPM will be performed concurrent with S-2.

Use any IC.

- **Open mini-purge valves 2HV-9824 and 2HV-9825.**
- **Plant Vent Stack Rad Monitor 2RT-7865 will need to be aligned to the Ctmt. Purge Stack.**

INSTRUCTOR/MACHINE OPERATOR:

This is a faulted JPM. The fault is that Plant Vent Stack Rad Monitor 2-RT7865 fails after the mini-purge is initiated (JPM Step 9). This will require the examinee to stop the mini-purge.

Simulator RT-7828, Containment Purge Monitor, is presently out-of-service. ENSURE RT-7828 is failed on the Data Acquisition System. This necessitates 2RT-7865, PVS Wide Range Gas Monitor, being aligned to the Containment Purge Stack.

OBTAIN a copy of SO23-1-4.2, Containment Purge and Recirculation Filtration System and MARK-UP Attachment 6 as complete up through Step 2.4.3. This will make Section 2.5, Start Mini-Purge, as the next step to be performed.

A laminated copy of the DAS page for Unit 2 RT-7865, showing instrument failure is in the JPM folder for use at JPM Step 9.

VERIFY Containment Pressure is equal to or slightly above atmospheric pressure.

ALERT the Machine Operator that after the report to Chemistry (JPM Step 7) has been made, ANNUNCIATE 61A09 - Unit 2 AND COMMON INSTRUMENT FAILURE alarm.

CAUTION: ENSURE that 2HV-9825 and 2HV-9824 are open before starting this JPM.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: Provide the Examinee with the marked-up copy of SO23-1-4.2, Containment Purge and Recirculation Filtration System completed through Step 2.4.3. Ensure that 2HV-9825 and 2HV-9824 are open before starting this JPM.</p>				
<p>NOTE: It may be necessary to cue the Examinee that Containment pressure is greater than atmospheric pressure.</p>				
<p>CUE: There is an ARO standing by to assist you in performing manipulations outside of the Control Room.</p>				
1	ENSURE OPEN HV-9825, Containment Mini-Purge Exhaust 2 (3) MA-059 Isolation Valve. (Outside Containment)	Verify open 2HV-9825, CNTMT MINI PRG EXH 2A-059 ISO Valve.		Time Start: _____
2	ENSURE OPEN HV-9824, Containment Mini-Purge Exhaust 2 (3) MA-059 Isolation Valve. (Inside Containment)	Verify open 2HV-9824, CNTMT MINI PRG EXH 2A-059 ISO Valve.		
3*	ENSURE OPEN HV-9823, Containment Mini-Purge Supply 2 (3) MA-379 Isolation Valve. (Inside Containment)	Opens 2HV-9823, CNTMT MINI PRG SPLY 2A-379 ISO Valve, by depressing the OPEN pushbutton on 2HV-9823 and observing the red OPEN lamp illuminates.		
4*	ENSURE OPEN HV-9821, Containment Mini-Purge Supply 2 (3) MA-379 Isolation Valve. (Outside Containment)	Opens 2HV-9821, CNTMT MINI PRG SPLY 2A-379 ISO Valve, by depressing the OPEN pushbutton on 2HV-9821 and observing the red OPEN lamp illuminated.		
5*	START 2 (3) MA-059, Mini-Purge Exhaust Unit.	Directs the ARO to START 2MA-059, Mini-Purge Exhaust Unit.		

JPM: SO-05 NRC RO JPM S-6 TITLE: Perform a Containment Mini-Purge

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
CUE: The ARO acknowledges and reports that 2MA-059, Mini-Purge Exhaust Unit is running.				
6*	START 2 (3) MA-379, Mini-Purge Supply Unit.	Directs the ARO to START 2MA-379, Mini-Purge Supply Unit.		
CUE: The ARO acknowledges and reports that 2MA-379, Mini-Purge Supply Unit is running.				
7	Notify the Chemistry Division that a purge is in progress.	Contacts Chemistry and informs them that a Containment Mini-Purge is in progress.		
CUE: Chemistry acknowledges that the mini-purge is in service. Steps 2.5.8, 2.5.9, and 2.5.10 were completed by another operator.				
NOTE: ALERT the Machine Operator that after the report to Chemistry has been made, ANNUNCIATE alarm 61A09 - UNIT 2 AND COMMON INSTRUMENT FAILURE.				
8	Acknowledge annunciator 61A09, U2 AND COMMON INSTRUMENT FAILURE.	Acknowledges 61A09, UNIT 2 AND COMMON INSTRUMENT FAILURE alarm, by depressing the Alarm Acknowledge button for Panel 61A.		
NOTE: Provide the cue for JPM Step 9 as soon as the Examinee accesses DAS.				
NOTE: A laminated copy of the DAS page for 2RT-7865, showing an instrument failure is given to the examinee.				
9	Determine which instrument has failed.	Accesses DAS or views 2L-405 to determine the instrument failure to be a channel failure of 2RT-7865.		
CUE: If the examinee goes to 2L-405 to determine if an instrument failure has occurred, report that a channel failure is indicated for 2RT-7865, Plant Vent Stack/Containment Purge Stack Wide Range Gas Monitor.				

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
10	STOP 2 (3) MA-379, Mini-Purge Supply Unit.	Directs the ARO to STOP 2MA-059, Mini-Purge Supply Unit.		
<p>CUE: The ARO acknowledges and reports that 2MA-379, Mini-Purge Supply Unit is stopped.</p>				
11	STOP 2 (3) MA-059, Mini-Purge Exhaust Unit.	Directs the ARO to STOP 2MA-059, Mini-Purge Exhaust Unit.		
<p>CUE: The ARO acknowledges and reports that 2MA-059, Mini-Purge Exhaust Unit is stopped.</p>				
<p>NOTE: The Examinee need only perform JPM Step 12 <u>or</u> 13 <u>and</u> JPM Step 14 <u>or</u> 15 to meet the intent of isolating the Containment Mini-Purge.</p>				
12*	CLOSE 2 (3) HV-9821, Containment Mini-Purge Supply MA-379 Isolation. (Outside Containment)	Closes 2HV-9821, CNTMT MINI PRG SPLY 2A-379 ISO Valve, by depressing the CLOSE pushbutton for on 2HV-9821 and observing only the green CLOSE lamp illuminated.		
13*	CLOSE 2 (3) HV-9823, Containment Mini-Purge Supply MA-379 Isolation. (Inside Containment)	Closes 2HV-9823, CNTMT MINI PRG SPLY 2A-379 ISO Valve, by depressing the CLOSE pushbutton on 2HV-9823 and observing only the green CLOSE lamp illuminated.		
14*	CLOSE 2 (3) HV-9824, Containment Mini-Purge Exhaust MA-059 Isolation Valve. (Inside Containment)	Closes 2HV-9824, CNTMT MINI PRG EXH 2A-059 ISO Valve, by depressing the CLOSE pushbutton on 2HV-9824 and observing only the green CLOSE lamp illuminated.		

JPM: SO-05 NRC RO JPM S-6

TITLE: Perform a Containment Mini-Purge

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
15*	Close 2 (3) HV-9825, Containment Mini-Purge Exhaust MA-059 Isolation Valve. (Outside Containment)	<i>Closes 2 HV-9825, CNTMT MINI PRG EXH 2A-059 ISO Valve, by depressing the CLOSE pushbutton on 2HV-9825 and observing only the green CLOSE lamp illuminated.</i>		
TERMINATING CUE: Another operator will complete the procedure. This JPM is complete.				Stop Time: _____

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.

 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.

 - f. X Statements describing important actions or observations that should be made by the Examinee.

 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/25/05

JPM INFORMATION SHEET

JPM NUMBER

SO-05 NRC RO JPM S-7

INITIAL PLANT CONDITIONS

An ESDE and a LOCA has occurred on Unit 2. Vital Bus 2A06 was lost upon plant trip and HPSI Pump P-018 tripped on overcurrent. The Control Room Supervisor has entered SO23-12-9, Functional Recovery.

TASK TO BE PERFORMED

The Control Room Supervisor has reviewed the RACs and directs you to perform SO23-12-9, Functional Recovery Attachment FR-4, PC-1 - Subcooled Pressure Control Recovery Actions, Step 9.

SUGGESTED TESTING ENVIRONMENT:	PLANT _____	SIMULATOR <u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT _____	SIMULATOR _____
ACTUAL TESTING METHOD:	PERFORMED _____	SIMULATED _____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

DOCUMENTATION

SO-05 NRC RO JPM S-7

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 10 minutes

TIME CRITICAL JPM: N/A **CRITICAL TIME:**

POSITION: CO

VISION ID: 192187

TASK DESCRIPTION

Respond to a Loss of Coolant Accident.

KA NUMBER: EA1.3

KA VALUES: RO 3.6 SRO 3.8

10CFR55.45 APPLICABILITY: 6, 7

REFERENCES:

SO23-12-9, Functional Recovery, Attachment FR-4, Recovery - RCS Pressure Control, Rev. 23

SO23-12-11, EOI Supporting Attachments, FS-7, SI Throttle / Stop Criteria, Rev.2

AUTHOR: L. Zilli

DATE: 02/15/05

OPERATIONS REVIEW: M. Jones

DATE: 03/09/05

APPROVED BY: A. Hagemeyer

DATE: 03/09/05

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New			

SET-UP

Use IC #125 for 2005 NRC Exam.

NOTE: Provide the Examinee with a copy of SO23-12-9, Functional Recovery, Attachment FR-4, Recovery - RCS Pressure Control and a copy of FS-7, SI Throttle/Stop Criteria from SO23-12-11, EOI Supporting Attachments.

NOTE: Examiner should have Control Room Key #20 in hand to expedite JPM.

NOTE: Examiner should wear a headset to be in communication with the Machine Operator.

JPM: SO-05 NRC RO JPM S-7 TITLE: Subcooled Pressure Control Recovery Actions

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
NOTE: Provide the Examinee with a copy of SO23-12-9, Functional Recovery, Attachment FR-4, Recovery - RCS Pressure Control. Examiner should have Control Room Key #20 in hand to expedite JPM.				
1	VERIFY RWST level – greater than 19%.	Verifies RWST level greater than 19%.		Start Time: _____
2	INITIATE FS-20, MONITOR RWST Level.	Initiates FS-20, Monitor RWST Level.		
CUE: Another operator will perform FS-20, Monitor RWST Level.				
3	ENSURE at least one RWST Outlet Valve – open: <u>Train A</u> <u>Train B</u> HV-9300 HV-9301	Verifies RWST Outlet Valve open on Train A, HV-9300.		
4	VERIFY PZR pressure – less than 1500 PSIA.	Verifies PZR pressure less than 1500 PSIA.		
NOTE: Provide a copy of FS-7, SI Throttle/Stop Criteria to the examinee.				
5	VERIFY FS-7, VERIFY SI Throttle/Stop Criteria – NOT satisfied.	Determines FS-7, SI Throttle/Stop Criteria – NOT satisfied due to Pressurizer level < 30%.		
CUE: Another operator will monitor FS-7, SI Throttle/Stop Criteria.				

JPM: SO-05 NRC RO JPM S-7 TITLE: Subcooled Pressure Control Recovery Actions

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
6	VERIFY at least two HPSI to RCS Cold Leg Injection Valves on operating HPSI train – open: <u>Train A</u> <u>Train B</u> HV-9324 HV-9323 HV-9327 HV-9326 HV-9330 HV-9329 HV-9333 HV-9332	Verifies that only one (1) HPSI to RCS Cold Leg Injection Valve, 2HV-9327 on HPSI Train A is open.		
7	ESTABLISH HPSI Hot Leg Injection for operating HPSI trains:	Establishes HPSI Hot Leg Injection for operating HPSI trains.		
8	CLOSE applicable breakers: <u>Train A</u> <u>Train B</u> BY-29 BZ-39	Directs an operator to close Train A breaker BY-29.		
NOTE: Direct Machine Operator to activate event for MCC Breaker BY-29 closed.				
CUE: Breaker BY-29 is closed.				
NOTE: Hand Control Room Key #20 to examinee when at the Key Locker.				
9*	OPEN applicable HPSI to RCS Hot Leg Injection Valves: <u>Train A</u> <u>Train B</u> HV-9420 HV-9434	Opens Train A HPSI to RCS Hot Leg Injection Valve HV-9420 by inserting the key and turning to the OPEN position.		

JPM: SO-05 NRC RO JPM S-7 TITLE: Subcooled Pressure Control Recovery Actions

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
10*	ENSURE available HPSI Pumps – operating.	Starts Train A HPSI Pump P017 by depressing START on 2HS-9392-1, HPSI PUMP 2P017 and verifies proper running pump amps (~40 to 50 amps).		
<p>TERMINATING CUE:</p> <p>This JPM is complete.</p>				<p>Stop Time: _____</p>

**JPM: SO-05 NRC RO TITLE: Subcooled Pressure Control Recovery Actions
JPM S-7**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 03/05/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC RO TITLE: Subcooled Pressure Control Recovery Actions
JPM S-7**

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC RO/SRO JPM A.3

INITIAL PLANT CONDITIONS

A LOCA has occurred on Unit 2. An operator has been seriously injured in the Train A Containment Spray Pump Room.

Extremely high radiation levels require a volunteer to attempt a rescue. The Emergency Coordinator has authorized a volunteer to attempt a rescue.

The estimated dose to the rescuer is 50 Rem.

The TSC and OSC have NOT yet been activated.

TASK TO BE PERFORMED

The Emergency Coordinator has directed you to select a volunteer from the list of candidates available in accordance with SO23-VIII-30, Units 2/3 Operations Leader Duties.

JPM: SO-05 NRC RO TITLE: Subcooled Pressure Control Recovery Actions
JPM S-7

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE SO-05 NRC RO/SRO JPM A.3

SUGGESTED TESTING ENVIRONMENT:	PLANT	<u> X </u>	SIMULATOR	<u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT	<u> </u>	SIMULATOR	<u> </u>
ACTUAL TESTING METHOD:	PERFORMED	<u> </u>	SIMULATED	<u> </u>

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO **TITLE:** Subcooled Pressure Control Recovery Actions
JPM S-7

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO/SRO JPM A.3

JPM LEVEL: RO / SRO _____

ESTIMATED TIME TO COMPLETE: 10 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: CO _____

TASK SYS ID: 186266

TASK DESCRIPTION

Implement exposure control in the control room during an emergency event.

KA NUMBER: 2.3.4 _____

KA VALUES: **RO** 2.5 **SRO** 3.1 _____

10CFR55.45 APPLICABILITY: 10

REFERENCES:

SO23-VIII-30, Units 2/3 Operations Leader Duties, Rev. 10

EPIP Form EP (123) 3, Emergency Exposure Authorization, Rev. 1

AUTHOR: Joseph G. Arsenault _____

DATE: 10/28/03 _____

OPERATIONS REVIEW: M. Jones _____

DATE: 11/10/03 _____

APPROVED BY: K. Rauch _____

DATE: 11/10/03 _____

JPM: SO-05 NRC RO TITLE: Subcooled Pressure Control Recovery Actions
JPM S-7

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New	-	-	-
0-1	Compared against SO23-VIII-30, Rev. 9 with minor changes required. Modified JPM to have the examinee select an appropriate volunteer.	LRZ	04/05/05	AHH

**JPM: SO-05 NRC RO TITLE: Subcooled Pressure Control Recovery Actions
JPM S-7**

* Denotes a CRITICAL STEP

SET-UP

NOTE: Provide the examinee with copies of SO23-VIII-30, EPIP Form EP (123) 3 and the list of available volunteers.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>CUE: Provide examinee with a clean copy of SO23-VIII-30, EPIP Form EP (123) 3 and a list of available volunteers.</p>				
1	Refer to SO23-VIII-30 Section 6.7 and EPIP Form EP (123) 3.	Refers to guidance in SO23-VIII-30 Section 6.7 and EPIP Form EP (123).		Start Time: _____
2*	Determine if individual is a volunteer.	Determines that all individuals have volunteered for Emergency Exposure.		
3*	Determine age of volunteer.	Determines the desired age of the volunteer is > 45 years old.		
4*	Determine if volunteer is pregnant.	Determines that the ideal volunteer has not declared herself pregnant.		
5*	Determine if volunteer can read and understand the potential biological consequences.	Determines that the ideal volunteer can read and understand the potential biological consequences.		
6*	Determine if volunteer is allergic to shellfish and has a history of thyroid disease.	Determines ideal volunteer is NOT allergic to shellfish and has NO history of thyroid disease.		
7*	Select a volunteer.	Selects Volunteer C as the most appropriate candidate for Emergency Exposure.		
<p>TERMINATING CUE: This JPM is complete.</p>				<p>Stop Time: _____</p>

**JPM: SO-05 NRC RO /
SRO JPM A.3**

**TITLE: Provide Briefing for Emergency Exposure
Authorization**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater). This task is ranked at 2.5 for the RO, however, these are duties that are required at SONGS for both ROs and SROs.
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 04/04/05

**JPM: SO-05 NRC RO /
SRO JPM A.3**

**TITLE: Provide Briefing for Emergency Exposure
Authorization**

* Denotes a CRITICAL STEP

List of Available Volunteers

1. Volunteer A is a 35-year-old female who is trying to start a family.
2. Volunteer B is a 40-year-old male who recently qualified as a Primary PEO.
3. Volunteer C is a 48-year-old male with a lifetime exposure of 1.75 REM.
4. Volunteer D is a 52-year-old male with a lifetime exposure of 105 REM, including a Protecting Valuable Property dose of 9.5 REM at another facility.
5. Volunteer E is a 46-year-old female with sensitivity to shellfish.
6. Volunteer F is a 47-year-old female that tells you she is pregnant.
7. Volunteer G is a 60-year-old male that does not speak or read English.

JPM INFORMATION SHEET

JPM NUMBER

SO-05 NRC RO/SRO JPM P-1

INITIAL PLANT CONDITIONS

The Unit 2 (3) CRS is performing RCS Pressure Control Recovery in SO23-12-9, Functional Recovery procedure. Normal Pressurizer spray is not available and the crew is directed to establish Pressurizer Auxiliary Spray. The NOA has provided key 2(3) AB for S2(3)1208MU084, Charging Line to Regenerative Heat Exchanger Block Valve and key 2(3) CIV for S2(3)1208MU130, Auxiliary Spray Bypass Line.

**JPM: SO-05 NRC RO /
SRO JPM A.3**

**TITLE: Provide Briefing for Emergency Exposure
Authorization**

* Denotes a CRITICAL STEP

TASK TO BE PERFORMED

As the Primary ACO, establish the alternate Auxiliary Spray flowpath using SO23-12-11, EOI Supporting Attachments, FS-31, Establish Manual Auxiliary Spray **and** control the rate of pressure reduction as directed by the Control Room Supervisor.

**JPM: SO-05 NRC RO /
SRO JPM A.3**

**TITLE: Provide Briefing for Emergency Exposure
Authorization**

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO/SRO JPM P-1

SUGGESTED TESTING ENVIRONMENT:	PLANT	X	SIMULATOR	_____
ACTUAL TESTING ENVIRONMENT:	PLANT	_____	SIMULATOR	_____
ACTUAL TESTING METHOD:	PERFORMED	_____	SIMULATED	_____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO /
SRO JPM A.3

TITLE: Provide Briefing for Emergency Exposure
Authorization

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO/SRO JPM P-1

JPM LEVEL: RO / SRO

ESTIMATED TIME TO COMPLETE: 5 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: PPEO

TASK SYS ID: 193333

TASK DESCRIPTION

Locally operate Pressurizer Auxiliary Spray System under harsh environment conditions.

KA NUMBER: 010 A2.02

KA VALUES: **RO** 3.9 **SRO** 3.9

10CFR55.45 APPLICABILITY: 6, 12

REFERENCES:

SO23-12-11, EOI Supporting Attachments, FS-31, Establish Manual Auxiliary Spray, Revision 2

AUTHOR: L. Zilli

DATE: 04/06/05

OPERATIONS REVIEW: M. Jones

DATE: 04/08/05

APPROVED BY: A. Hagemeyer

DATE: 04/08/05

**JPM: SO-05 NRC RO /
SRO JPM A.3**

**TITLE: Provide Briefing for Emergency Exposure
Authorization**

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0-1	Compared against SO23-12-9, Rev. 21 with minor changes required to allow JPM to be performed on either unit.	LRZ	09/05/01	KR
0-2	Changed reference to SO23-12-11, Rev. 2. Added two cues. Updated Task Sys ID.	RCW	08/25/04	MRN
1	Compared against SO23-12-11, Rev. 2 and modified to include the requirement to reduce pressure via valve manipulation.	LRZ	04/06/05	REV

**JPM: SO-05 NRC RO /
SRO JPM A.3**

**TITLE: Provide Briefing for Emergency Exposure
Authorization**

* Denotes a CRITICAL STEP

SET-UP

**NOTE: Provide the examinee with a copy of SO23-12-11, EOI Supporting Attachments,
FS-31, Establish Manual Auxiliary Spray.**

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: Provide the examinee with a copy of SO23-12-11, EOI Supporting Attachments, FS-31, Establish Manual Auxiliary Spray.</p>				
1	Ensure HV-9201 is closed.	Ensures 2(3)HV-9201 is closed by contacting the Control Room and verifying 2(3)HV-9201 position.		Start Time: _____
<p>CUE: The CRS reports that the PZR Auxiliary Spray Valve 2(3)HV-9201 is closed.</p>				
2*	UNLOCK and OPEN 1208MU130, PZR Auxiliary Spray Bypass Line Isolation Valve (CIV Key Penetration 68).	Simulates unlocking and opening S2(3)1208MU130, PZR Auxiliary Spray Bypass Line Isolation Valve at Penetration 68 with CIV Key.		
<p>CUE: The valve is unlocked and open.</p>				
<p>NOTE: Examinee should report to the Control Room that MU130 is open.</p>				
<p>CUE: CRS directs you to throttle MU084 to 50% open.</p>				
3*	UNLOCK and THROTTLE 1208MU084, PZR Charging Line Block Valve (AB Key Penetration 8), to control spray flow to establish required PZR pressure.	Simulates unlocking and throttling S2(3)1208MU084, Charging Line Block Valve using AB Key at Penetration 8 to 50% open.		
<p>NOTE: MU084 is normally open, so the examinee should simulate throttling the valve in the closed direction (clock-wise).</p>				
<p>CUE: The valve is unlocked and throttled.</p>				

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
4	Contact the Control Room to verify correct valve position.	Contacts the Control Room to verify the rate of depressurization is acceptable.		
<p>CUE: CRS directs you to adjust MU084 to increase the rate of pressure reduction.</p>				
<p>NOTE: Examinee should indicate that the valve should be throttled further in the closed direction.</p>				
5*	Control Room requests that the operator increase the rate of pressure reduction.	Throttles closed MU084 and contacts the Control Room to verify the rate of depressurization is acceptable.		
<p>CUE: CRS reports the rate of pressure reduction is acceptable (if the valve is throttled closed).</p> <p>CRS reports the rate of pressure reduction is unacceptable (if the valve is throttled opened).</p>				
<p>NOTE: Examinee should indicate that the valve should be throttled further in the closed direction.</p>				
<p>TERMINATING CUE:</p> <p>This JPM is complete.</p>				<p>Stop Time: _____</p>

**JPM: SO-05 NRC RO/SRO
JPM P-1**

TITLE: Perform Manual Auxiliary Spray Actions

* Denotes a CRITICAL STEP

JPM CHECKLIST

- 1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

- 2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.

 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.

 - f. X Statements describing important actions or observations that should be made by the Examinee.

 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/24/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC RO/SRO
JPM P-1**

TITLE: Perform Manual Auxiliary Spray Actions

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC RO/SRO JPM P-2

INITIAL PLANT CONDITIONS

A Blackout has occurred on Unit 2.

OFF-Site power has just been restored to Unit 3.
Buses 3A04 and 3B04 are energized from Off-Site power.

The Unit 2 Crew has determined that Bus 2B04 needs to be energized from Unit 3.

Declaration of 10CFR50.54(x) and (y) has been made.

MCC BS is required by SO23-12-11, Attachment 9, Control Building Ventilation Emergency Actions.

MCC BQ is currently aligned to Unit 2.

TASK TO BE PERFORMED

Energize 1E 480V bus 2B04 from Unit 3 per SO23-12-11, Attachment 23. Use MCC BQ for the cross-connect. You have been issued an extra interlock key for MCC BQ.

**JPM: SO-05 NRC RO/SRO
JPM P-1**

TITLE: Perform Manual Auxiliary Spray Actions

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO/SRO JPM P-2

SUGGESTED TESTING ENVIRONMENT:	PLANT	X	SIMULATOR	_____
ACTUAL TESTING ENVIRONMENT:	PLANT	_____	SIMULATOR	_____
ACTUAL TESTING METHOD:	PERFORMED	_____	SIMULATED	_____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO/SRO **TITLE:** Perform Manual Auxiliary Spray Actions
JPM P-1

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO/SRO JPM P-2

JPM LEVEL: RO / SRO _____

ESTIMATED TIME TO COMPLETE: 13 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: PEO _____

TASK SYS ID: 188352

TASK DESCRIPTION

Energize class 1E 4KV buses from the other unit during response to a station blackout.

KA NUMBER: 055 EA2.03 _____

KA VALUES: **RO** 3.9 **SRO** 4.7 _____

10CFR55.45 APPLICABILITY: 6, 12

REFERENCES:

SO23-12-11, EOI Supporting Attachments, Attachment 23, Revision 2

AUTHOR: L. Zilli _____

DATE: 02/24/05 _____

OPERATIONS REVIEW: M. Jones _____

DATE: 03/09/05 _____

APPROVED BY: A. Hagemeyer _____

DATE: 03/09/05 _____

**JPM: SO-05 NRC RO/SRO
JPM P-1**

TITLE: Perform Manual Auxiliary Spray Actions

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New	-	-	-
0-1	Compared against SO23-12-11, Rev. 2, Attachment 23 with minor changes required.	LRZ	2/24/05	AHH

**JPM: SO-05 NRC RO/SRO
JPM P-1**

TITLE: Perform Manual Auxiliary Spray Actions

* Denotes a CRITICAL STEP

SET-UP

NOTE: Provide the Examinee with a copy of SO23-12-11, EOI Supporting Attachments, Attachment 23, Cross Connecting Class 1E 480V Buses Between Units.

JPM: SO-05 NRC RO JPM P-2 TITLE: Energize Class 1E 480V Bus B04 from Unit 3

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
NOTE: Provide the Examinee with a copy of SO23-12-11, EOI Supporting Attachments, Attachment 23, Cross Connecting Class 1E 480V Buses Between Units.				
1	Verify BS required by Attachment 9, Control Building Ventilation Emergency Action.	Identified in Initial Conditions.		Start Time: _____
2	Verify A04 and B04 on other Unit energized.	Identified in Initial Conditions.		
3	Verify A04 and B04 energized on other Unit NOT supplied by Diesel Generator.	Identified in Initial Conditions.		
4*	Open 2B04 4kV supply breaker 2A0420.	Contact Unit 2 Control Room and request that they open breaker 2A0420.		
CUE: The breaker is open.				
5*	Open 2B04 480V supply breaker 2B0401.	Simulate opening 2B0401 by pressing the TRIP pushbutton.		
CUE: The breaker is open.				
6*	Open all the breakers on affected unit B04.	Simulate opening all breakers on 2B04 by pressing the TRIP pushbuttons.		
NOTE: Trainee does not have to simulate opening each individual breaker. After trainee simulates opening the first breaker, and identifies he will open the remaining breakers, provide the Cue below.				
CUE: All breakers on 2B04 are open.				

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
7	Ensure both MCC BQ supply breakers open: <ul style="list-style-type: none"> • 2B0417 • 3B0417 	Verify 2B0417 is open by checking indicating flag in the breaker window (breaker was opened on previous step). Verify 3B0417 is open by checking indicating flag in the breaker window.		
NOTE: Breaker is already open due to initial condition of BQ aligned to Unit 2.				
CUE: 2B0417 and 3B0417 are open.				
NOTE: The next three (3) steps can be done in any order.				
8	Open all breakers on BE (affected unit).	Simulate opening all breakers on MCC 2BE by pulling the breaker levers down to the OFF position.		
NOTE: Examinee does not have to simulate opening each individual breaker. After examinee simulates opening the first breaker and identifies they will open the remaining breakers, provide the Cue below.				
CUE: All breakers on MCC 2BE are open.				
9	Open all breakers on BY (affected unit).	Simulate opening all breakers on MCC 2BY by pulling the breaker levers down to the OFF position.		
NOTE: Examinee does not have to simulate opening each individual breaker. After examinee simulates opening the first breaker and identifies they will open the remaining breakers, provide the Cue below.				

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
CUE: All breakers on MCC 2BY are open.				
10*	Open all breakers on BQ.	Simulate opening all load breakers on MCC by BQ by pulling the breaker levers down to the OFF position. (Unit 2 supply breaker BQ-01 is currently closed and does not have to be opened.)		
NOTE: Examinee does not have to simulate opening each individual breaker. After examinee simulates opening the first breaker and identifies he will open the remaining breakers, provide the Cue below.				
CUE: All load breakers on MCC 2BQ are open.				
11	Obtain second MCC BQ power supply interlock key.	Key already obtained.		
CUE: You have the interlock key.				
12*	Ensure Unit 2 power supply feeder BQ-01 to MCC BQ is closed.	Verify BQ-01 is closed by observing breaker lever up in the ON position.		
NOTE: If examinee opened BQ-01 in Step 10, they will have to re-close it here.				
CUE: The breaker is closed.				
13*	Ensure Unit 3 power supply feeder BQ-02 to MCC BQ is closed.	Simulate opening the Kirk Key Panel door to the right of the BQ-02 supply breaker to expose the Kirk Key lock.		
CUE: BQ-02 Kirk Key lock is empty.				

JPM: SO-05 NRC RO JPM P-2 TITLE: Energize Class 1E 480V Bus B04 from Unit 3

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
14*	Ensure Unit 3 power supply feeder BQ-02 to MCC BQ is close.	Simulate inserting the second Kirk Key into the BQ-02 Kirk Key lock. Simulate turning the BQ-02 Kirk Key to unlock the breaker. Simulate closing the MCC supply breaker BQ-02 by raising the breaker lever up to the ON position.		
CUE: The breaker is closed.				
15*	Energize MCC BQ by closing supply breaker from energized B04: <ul style="list-style-type: none"> • 3B0417 	Simulate closing 3B0417 by pressing the CLOSE pushbutton.		
CUE: The breaker is closed.				
16*	Energize affected B04 by closing MCC BQ supply breaker.	Simulate closing 2B0417 by pressing the CLOSE pushbutton.		
CUE: The breaker is closed.				
TERMINATING CUE: Another operator will energize loads. This JPM is complete.				Stop Time: _____

**JPM: SO-05 NRC RO
JPM P-2**

TITLE: Energize Class 1E 480V Bus B04 from Unit 3

* Denotes a CRITICAL STEP

JPM CHECKLIST

- 1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

- 2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.

 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.

 - f. X Statements describing important actions or observations that should be made by the Examinee.

 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/24/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC RO
JPM P-2**

TITLE: Energize Class 1E 480V Bus B04 from Unit 3

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC RO/SRO JPM P-3

INITIAL PLANT CONDITIONS

The Control Room has just been evacuated.

You have been to the Safe Shutdown Locker and have an emergency lantern, earplugs, and the ACO Keyset.

TASK TO BE PERFORMED

Manually feed the Unit 2 (Unit 3) Steam Generators with the Steam Driven Auxiliary Feedwater Pump, P-140, in Local-Manual using SO23-13-2, Attachment 12, AFW Pump Local Manual Operation.

**JPM: SO-05 NRC RO
JPM P-2**

TITLE: Energize Class 1E 480V Bus B04 from Unit 3

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC RO/SRO JPM P-3

SUGGESTED TESTING ENVIRONMENT:	PLANT	X	SIMULATOR
	_____	_____	_____
ACTUAL TESTING ENVIRONMENT:	PLANT		SIMULATOR
	_____	_____	_____
ACTUAL TESTING METHOD:	PERFORMED		SIMULATED
	_____	_____	_____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO
JPM P-2

TITLE: Energize Class 1E 480V Bus B04 from Unit 3

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC RO/SRO JPM P-3

JPM LEVEL: RO / SRO _____

ESTIMATED TIME TO COMPLETE: 13 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: PPEO _____

TASK SYS ID: 193557

TASK DESCRIPTION

Perform AFW Pump local manual operations during a Plant shutdown from outside the Control Room.

KA NUMBER: 068 AA1.02 _____

KA VALUES: **RO** 4.3 **SRO** 4.5

10CFR55.45 APPLICABILITY: 6, 8, 12

REFERENCES:

SO23-12-2, Shutdown from Outside the Control Room, Rev. 7-3

AUTHOR: S. Hollinger _____

DATE: 09/16/92 _____

OPERATIONS REVIEW: K. Eckman _____

DATE: 10/21/93 _____

APPROVED BY: M. Kirby _____

DATE: 10/26/93 _____

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
1-1	Added step 11 per OPS comments.	SW	10/26/93	MJK
1-2	Compared against SO23-13-2, TCN 2-17; no changes required.	HJW	01/18/94	N/A
1-3	Changed setup page; minor editorial corrections; changed time from 15 to 14 minutes based on history.	HJW	03/18/94	N/A
1-4	Compared against SO23-13-2, TCN 2-18; changes made in steps for operation with governor out-of-service to match procedure.	HJW	09/08/94	N/A
1-5	Correct "Position" on Documentation page.	HJW	02/09/95	N/A
1-6	Compared against SO23-13-2, TCN 2-19; with no changes required.	HJW	04/17/95	N/A
1-7	Compared against SO23-13-2, TCN 2-20; with no changes required.	HJW	05/03/95	N/A
1-8	Compared against SO23-13-2, Rev. 3 with no changes required. Changed the time to 13 minutes.	HJW	08/20/96	N/A
1-9	Compared against SO23-13-2, Rev. 5. Removed JPM step 3. Reversed the order of JPM steps 17 and 18 to match the order in the procedure.	RCW	08/13/98	N/A
1-10	Compared against SO23-13-2, TCN 5-2. Changed verbs "verify" to "ensure" and changed cue following step 9. JPM can be performed on any unit.	JJM	09/30/99	WLL
1-11	Checked against SO23-13-2, Rev. 6-3 with minor rewording required. Added use of laser pointer to setup page.	KM	08/03/01	KR
1-12	Checked against SO23-13-2, Rev. 7-3 with minor rewording required.	RCW	09/01/04	AHH

**JPM: SO-05 NRC RO
JPM P-2**

TITLE: Energize Class 1E 480V Bus B04 from Unit 3

* Denotes a CRITICAL STEP

1-13	Compared against SO23-13-2, Rev. 7-3 with no changes required.	LRZ	02/15/05	AHH
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SET-UP

NOTE: Provide the Examinee with a copy of SO23-13-2, Shutdown from Outside the Control Room Attachment 12, AFW Pump Local Manual Operation.

NOTE: Circle the unit on the JPM Information Sheet on which this JPM will be performed and inform the Examinee.

A working flashlight will be required and a LASER pointer would be helpful in pointing out components at P140.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
NOTE: Provide the Examinee with a copy of SO23-13-2, Shutdown from Outside the Control Room Attachment 12, AFW Pump Local Manual Operation.				
1*	Open DC to HV-4716 Disconnect inside Panel MS-4716 (west side of MP140).	Simulates opening the disconnect switch for DC power to 2(3) HV-4716 inside panel 2(3)MS-4716.		Start Time: _____
CUE: The switch is open.				
2*	Manually close HV-4716.	Simulates manually closing 2(3)HV-4716 by depressing the clutch lever and rotating the handwheel clockwise.		
CUE: The valve is closed.				
3	Ensure Trip Rod is pulled toward HV-4716 and latched.	Simulates pulling Trip Rod toward 2(3)HV-4716 and verifying Trip Rod is latched into the gripper pawl.		
CUE: The hook is latched with the gripper pawl.				
4	Ensure the trip plunger is fully seated and the flat side is toward HV-4716.	Simulates opening cover on shatter shield over the front standard. Locate the trip plunger and indicate the plunger would be fully seated with the flat side of the washer toward 2(3)HV-4716.		
CUE: The plunger is fully seated with the flat side of the washer toward 2(3)HV-4716.				

JPM: SO-05 NRC RO/SRO JPM P-3

TITLE: Manually Feed the Steam Generators with the Steam Driven Aux. Feedpump

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
5*	Open HV-4716 1-1/2 turns to roll turbine to approximately 1800 RPM on SI-4732 (Panel L-298-C).	Simulates opening 2(3)HV-4716 by rotating handwheel counter-clockwise. Observes turbine speed indication on 2(3)SI-4732, AFWPT K007 Tach. Indicator on Panel 2(3)L-298-C.		
CUE: Turbine speed is 1800 rpm, as indicated on 2(3)SI-4732.				
6*	Continue opening HV-4716; Ensure K-007 governor controls speed at approximately 3500 RMP on SI-4732.	Simulates continuing to open 2(3)HV-4716 by rotating handwheel counter-clockwise. Observes turbine speed on 2(3)HV-4732, AFWPT K007 Tach. Indicator, monitoring for the governor to control speed at 3500 RPM on panel 2(3)L-298.		
CUE: Turbine speed is erratic at approximately 3500 rpm.				
7*	Manually close HV-4716.	Simulates manually closing 2(3) HV-4716 by rotating the handwheel in the clockwise direction.		
CUE: 2(3)HV-4716 is closed.				
8*	Open DC to K007 Governor Disconnect inside panel MS-4716.	Simulates opening DC to K007 Governor Disconnect switch inside panel 2(3)MS-4716.		
CUE: The disconnect switch for DC to K007 governor is open.				

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
9	Ensure Trip Rod is pulled toward HV-4716 and latched.	Simulates pulling Trip Rod toward 2(3)HV-4716 and verifying Trip Rod is latched into the gripper pawl.		
CUE: The hook is latched with the gripper pawl.				
10	Ensure the trip plunger is fully seated and the flat side is toward HV-4716.	Simulates opening cover on shatter shield over the front standard. Locates the trip plunger and indicates the plunger would be fully seated with the flat side of the washer toward 2(3)HV-4716.		
CUE: The plunger is fully seated with the flat side of the washer toward 2(3)HV-4716.				
11*	Slowly throttle open HV-4716, to raise MP-140 discharge pressure to 1350 PSIG on PI-4703L, East (West) side of P140.	Simulates slowly opening 2(3)HV-4716 by slowly rotating handwheel in the counter-clockwise direction. Observes 2(3)PI-4703L to monitor pump discharge pressure.		
CUE: 2(3)PI-4703L indicates pump discharge pressure of 1350 psig.				
12*	Open HV-4706, P140 Discharge to ME-089.	Simulates manually opening 2(3)HV-4706 by depressing the clutch lever and rotating the handwheel counter-clockwise.		
CUE: 2(3)HV-4706 is open.				
13	Open HV-4705, P140 Discharge to ME-088 (inside West RWST vault).	No action required (see CUE below).		

JPM: SO-05 NRC RO/SRO JPM P-3

TITLE: Manually Feed the Steam Generators with the Steam Driven Aux. Feedpump

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
CUE: Due to personal safety considerations, 2(3)HV-4705 will not be accessed. Assume 2(3)HV-4705 is open.				
CUE: Communications are established with the CO.				
CUE: The CO directs you to open 2(3)HV-4730 until flow is heard.				
14*	Manually Open HV-4730, AFW isolation valve.	Simulates manually opening 2(3)HV-4730 by depressing the clutch lever and rotating the handwheel counter-clockwise.		
CUE: You hear flow.				
CUE: The CO directs you to open 2(3)HV-4715 until flow is heard.				
15*	Manually Open HV-4715, AFW isolation valve.	Simulates manually opening 2(3)HV-4715 by depressing the clutch lever and rotating the handwheel counter-clockwise.		
TERMINATING CUE: This JPM is complete.			Stop Time: _____	

**JPM: SO-05 NRC RO/SRO
JPM P-3**

**TITLE: Manually Feed the Steam Generators with
the Steam Driven Aux. Feedpump**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.

 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.

 - f. X Statements describing important actions or observations that should be made by the Examinee.

 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/26/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC RO/SRO
JPM P-3**

**TITLE: Manually Feed the Steam Generators with
the Steam Driven Aux. Feedpump**

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC SRO JPM A.1.a

INITIAL PLANT CONDITIONS

Unit 2 is in Mode 1.

With ME-335 CCW aligned to Unit 3, the Unit 2 Containment Emergency Cooling System Monthly Test – Train B has just been completed IAW SO23-3-3.13, Containment Cooling /Spray Monthly Tests, Attachment 2.

TASK TO BE PERFORMED

Determine OPERABILITY of the Train B Containment Emergency Cooling Units by performing the SRO Operations Supervisor review.

**JPM: SO-05 NRC RO/SRO
JPM P-3**

**TITLE: Manually Feed the Steam Generators with
the Steam Driven Aux. Feedpump**

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC SRO JPM A.1.a

SUGGESTED TESTING ENVIRONMENT:	PLANT	X	SIMULATOR	X
ACTUAL TESTING ENVIRONMENT:	PLANT	_____	SIMULATOR	_____
ACTUAL TESTING METHOD:	PERFORMED	_____	SIMULATED	_____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC RO/SRO
JPM P-3

TITLE: Manually Feed the Steam Generators with
the Steam Driven Aux. Feedpump

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC SRO JPM A.1.a

JPM LEVEL: SRO Only

ESTIMATED TIME TO COMPLETE: 15 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: CRS

TASK SYS ID: 187652

TASK DESCRIPTION

Authorize, supervise, and review all surveillance tests performed on shift.

KA NUMBER: 2.1.12

KA VALUES: **RO** N/A **SRO** 4.0

10CFR55.45 APPLICABILITY: 12

REFERENCES:

SO23-3-3.13, Containment Cooling/Spray Monthly Tests, Rev. 9-1

AUTHOR: L. Zilli

DATE: 02/25/05

OPERATIONS REVIEW: M. Jones

DATE: 03/09/05

APPROVED BY: A. Hagemeyer

DATE: 03/09/05

**JPM: SO-05 NRC RO/SRO
JPM P-3**

**TITLE: Manually Feed the Steam Generators with
the Steam Driven Aux. Feedpump**

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New			
0-1	Modified for different error.	JGA	10/27/03	KR
1	Compared against SO23-3-3.13, Revision 9-1 with no minor changes required. Modified JPM to change to Train B and CCW Chiller ME-335 with different errors inserted.	LRZ	02/25/05	REV

**JPM: SO-05 NRC RO/SRO
JPM P-3**

**TITLE: Manually Feed the Steam Generators with
the Steam Driven Aux. Feedpump**

* Denotes a CRITICAL STEP

SET-UP

NOTE: Provide a marked-up copy of SO23-3-3.13, Containment Cooling/Spray Monthly Tests, Attachment 2.

JPM: SO-05 NRC SRO JPM A.1.a TITLE: Authorize, Supervise, and Review all Surveillance Tests Performed On Shift

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
NOTE: Proved a marked-up copy of SO23-3-3.13, Containment Cooling / Spray Monthly Tests, Attachment 2.				
1	Perform final SRO review of the surveillance procedure.	Reviews the surveillance procedure provided.		Start Time: _____
2*	Discovers error at Step 2.4.1.	Discovers that the wrong space was checked. Should have checked off “ Other Unit ” in the “ Train B ME-335 Emergency Chiller Supply ” box.		
3*	Discovers error at Step 2.5.4.	Discovers that the CCW flow rate requirements are not met for ME-335 being aligned to other Unit. Should have checked off “ Other Unit ” in the “ Train B ME-335 Emergency Chiller Supply ” box and flow should be ≥ 2265 gpm.		
4	Perform the step required for unsatisfactory results.	Identifies the need to: <ul style="list-style-type: none"> • Initiate LCOAR/EDMR. • Realign ME-335 to Unit 2. • Re-perform this Attachment. • Indicate action taken in the Comment Section. 		
TERMINATING CUE: This JPM is complete.				Stop Time: _____

JPM: SO-05 NRC SRO JPM A.1.a TITLE: Authorize, Supervise, and Review all Surveillance Tests Performed On Shift

* Denotes a CRITICAL STEP

**JPM: SO-05 NRC SRO
JPM A.1.a**

**TITLE: Authorize, Supervise, and Review all
Surveillance Tests Performed On Shift**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/25/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC SRO
JPM A.1.a**

**TITLE: Authorize, Supervise, and Review all
Surveillance Tests Performed On Shift**

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC SRO JPM A.1.b

INITIAL PLANT CONDITIONS

Unit 2 is in Mode 4 HOT SHUTDOWN at 340°F. At 2000 hours on Sunday, **Train A** Emergency Diesel Generator **2G002** was taken out of service for scheduled maintenance. All required Technical Specification surveillances are being tracked. Maintenance should be completed at 1430 hours on Monday.

You are informed at 1330 hours on Monday that the **Train B** Emergency Diesel Generator **2G003** T-338 & T-341 air receivers are out of service (pressure is 130 psig) and T-337 pressure relief valve (2PSV-5921C) is leaking by (pressure is 135 psig) and cannot be gagged.

TASK TO BE PERFORMED

Determine the required ACTION(s) per Technical Specifications for the problem associated with the **Train B** Emergency Diesel Generator **2G003**,

and

Determine if a heatup can be completed to a Mode 3 temperature of 400°F at this time.

**JPM: SO-05 NRC SRO
JPM A.1.a**

**TITLE: Authorize, Supervise, and Review all
Surveillance Tests Performed On Shift**

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC SRO JPM A.1.b

SUGGESTED TESTING ENVIRONMENT:	PLANT	<u> X </u>	SIMULATOR	<u> X </u>
ACTUAL TESTING ENVIRONMENT:	PLANT	<u> </u>	SIMULATOR	<u> </u>
ACTUAL TESTING METHOD:	PERFORMED	<u> </u>	SIMULATED	<u> </u>

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

**JPM: SO-05 NRC SRO
JPM A.1.a**

**TITLE: Authorize, Supervise, and Review all
Surveillance Tests Performed On Shift**

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New	-	-	-
0-1	Compared against current Technical Specifications with no changes required.	LRZ	02/15/05	AHH

**JPM: SO-05 NRC SRO
JPM A.1.a**

**TITLE: Authorize, Supervise, and Review all
Surveillance Tests Performed On Shift**

* Denotes a CRITICAL STEP

SET-UP

NOTE: Provide the examinee with a copy of the Diesel Air Start P&ID (40110F). Ensure that Technical Specifications are available for the examinee to use.

JPM: SO-05 NRC SRO JPM A.1.b

TITLE: Determine Technical Specifications and Requirements for a Technical Specification Mode Change

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
NOTE: Provide the examinee with a copy of Diesel Air Start P&ID (40110F).				
NOTE: Examinee may reference Technical Specifications during performance of this JPM.				
1*	Determine the action required per Technical Specifications.	Determines that both EDGs are inoperable and Technical Specification 3.8.1.E requires restoration of one EDG to OPERABLE status within 2 hours.		Start Time: _____
2*	Determine if a heatup can be completed to a temperature of 400°F prior to returning the EDGs to OPERABLE status.	Determines that a heatup can not be completed prior to returning the EDGs to OPERABLE status per Technical Specification 3.0.4 which prohibits entry into another Mode when an LCO is not met.		
TERMINATING CUE: This JPM is complete.				Stop Time: _____

**JPM: SO-05 NRC SRO
JPM A.1.b**

**TITLE: Determine Technical Specifications and
Requirements for a Technical Specification
Mode Change**

* Denotes a CRITICAL STEP

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.
 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.
 - f. X Statements describing important actions or observations that should be made by the Examinee.
 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 02/15/05

JPM INFORMATION SHEET

**JPM: SO-05 NRC SRO
JPM A.1.b**

**TITLE: Determine Technical Specifications and
Requirements for a Technical Specification
Mode Change**

* Denotes a CRITICAL STEP

JPM NUMBER

SO-05 NRC SRO JPM A.2

INITIAL PLANT CONDITIONS

The Boric Acid Makeup Pump 2MP174 has recently been overhauled and is ready to be aligned for return to service.

TASK TO BE PERFORMED

The Shift Manager directs you to review the Return to Service WAM and report your finding when complete.

**JPM: SO-05 NRC SRO
JPM A.1.b**

**TITLE: Determine Technical Specifications and
Requirements for a Technical Specification
Mode Change**

* Denotes a CRITICAL STEP

JOB PERFORMANCE MEASURE

SO-05 NRC SRO JPM A.2

SUGGESTED TESTING ENVIRONMENT:	PLANT	X	SIMULATOR	X
ACTUAL TESTING ENVIRONMENT:	PLANT	_____	SIMULATOR	_____
ACTUAL TESTING METHOD:	PERFORMED	_____	SIMULATED	_____

OPERATOR'S NAME: _____

The operator's performance was evaluated against the standards contained in this JPM and is determined to be:

SATISFACTORY: _____
UNSATISFACTORY: _____

JPM: SO-05 NRC SRO
JPM A.1.b

TITLE: Determine Technical Specifications and
Requirements for a Technical Specification
Mode Change

* Denotes a CRITICAL STEP

DOCUMENTATION

SO-05 NRC SRO JPM A.2

JPM LEVEL: SRO only

ESTIMATED TIME TO COMPLETE: 30 minutes

TIME CRITICAL JPM: NO **CRITICAL TIME:** N/A

POSITION: SM

TASK SYS ID: 182220

TASK DESCRIPTION

Manage the control of equipment status.

KA NUMBER: 2.2.13

KA VALUES: **RO** 3.6 **SRO** 3.8

10CFR55.45 APPLICABILITY: 13

REFERENCES:

SO123-XX-5, Work authorizations, Revision 13-1

SO23-3-2.2, Makeup Operations, Revision 18

Boric Acid Makeup P&ID #40125A, Revision 14

Boric Acid Makeup P&ID #40125B, Revision 17

480 V Load Center Bus 2BY One Line Diagram #30162, Revision 32

AUTHOR: R. Clement

DATE: 09/02/00

OPERATIONS REVIEW: K. Rauch

DATE: 09/04/00

APPROVED BY: W. Lyke

DATE: 09/05/00

**JPM: SO-05 NRC SRO
JPM A.1.b**

**TITLE: Determine Technical Specifications and
Requirements for a Technical Specification
Mode Change**

* Denotes a CRITICAL STEP

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOT APPROVAL
0	New			
0-1	Compared against SO123-XX-5, Revision 13-1 and the P&IDs with no changes required.	LRZ	03/14/05	AHH

**JPM: SO-05 NRC SRO
JPM A.1.b**

**TITLE: Determine Technical Specifications and
Requirements for a Technical Specification
Mode Change**

* Denotes a CRITICAL STEP

SET-UP

Prepare a Work Authorization Return to Service WAM that is complete up to the SRO review of the Return to Service WAM sheet. Include errors associated with the Return to Service WAM sheet.

Obtain P&IDs for:

- **Boric Acid Makeup Pump #40125A**
- **Boric Acid Makeup Pump #40125B**

Obtain One-Line Diagram for:

- **480 V Load Center Bus 2BY #30162**

The P&IDs should be prepared as follows:

- **Highlight in BLUE the problem area(s)**
- **Highlight in YELLOW the Cleared line(s)**
- **Highlight in RED the isolation area(s)**

The completed Return to Service List should be prepared as follows:

- **Obtain a CLOSED Work Authorization Record (WAR). Use WAR 2-0400636.**
- **Modify the WAR to include errors as listed in the JPM body by cutting and pasting.**

NOTE: Provide the examinee with a copy of SO123-XX-5, Work Authorizations, the applicable P&IDs and drawings, and the completed Work Authorization Record for the Boric Acid Makeup Pump S21218MP174.

JPM: SO-05 NRC SRO JPM A.2

TITLE: Review the Return to Service WAM List of a Completed Work Authorization

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
<p>NOTE: The following steps may be performed in a sequence other than indicated below.</p>				
<p>NOTE: Provide the examinee with a copy of SO123-XX-5, the completed Return to Service WAM List (with errors), SO23-3.2.2, Makeup Operations and copies of highlighted P&IDs and Electrical Print when located.</p>				
1	Check the Equipment ID, Equipment Description and Work Description.	Checks the Equipment ID, Equipment Description and Work Description on the WAR to compare with the information on the Tagging List and the applicable drawings.		Start Time: _____
2	Check the Work Authorization Numbers match for each page of the Request.	Checks the Work Authorization Numbers match on each page of the Request.		
3*	Examine the Return to Service (RTS) WAM to determine if it is correct and adequate for system restoration.	Examines the adequacy and accuracy of the RTS alignment and identifies: <ul style="list-style-type: none"> • S21218MU036 should be LOCKED OPEN. • S21218MU007 should be LOCKED OPEN. • S21218MU040 should be OPEN. 		

JPM: SO-05 NRC SRO JPM A.2

TITLE: Review the Return to Service WAM List of a Completed Work Authorization

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	COMMENTS (Required for Unsat)
4	Report to the Shift Manager the incorrect Return to Service alignment and return the WAM Installation Sheet without signature.	Reports to the Shift Manager the incorrect Return to Service alignment and returns the WAM Installation Sheet without signature.		
TERMINATING CUE: This JPM is complete.				Stop Time: _____

JPM CHECKLIST

1. The JPM is:
 - a. X Supported by facility's job task analysis.
 - b. X Operationally important (meets threshold criterion of K/A 3.0 or greater).
 - c. X Designed as either SRO only, or RO/SRO.

2. Each JPM includes:
 - a. X Initial conditions.
 - b. X Initiating cues.
 - c. X References, including associated procedures.
 - d. X Performance standards which are specific in that control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step.

 - e. X System response cues that are complete and correct so that the examiner can properly cue the Examinee, if asked.

 - f. X Statements describing important actions or observations that should be made by the Examinee.

 - g. X Criteria for successful completion.
 - h. X Identification of the critical steps and their associated performance standards.
 - i. X Validated time limits (average time allowed for completion).
 - j. X JPMs identified as time critical or not time critical by the Operations Division based on NRC commitments.

COMPLETED BY: L. Zilli **DATE:** 03/11/05