PROPOSED OUTLINE FOR RO EXAM

Facility: San Onofre 2 & 3		Date of Examination: 09/25/00
Examination Level (circle one): RO / SRO		Operating Test Number: 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Verify Valve Alignment ~~J159A~~ J173A [K/A 2.1.29 (3.4)]	~~Perform a SDC Valve Alignment~~ Shift Manning
	Plant Data Evaluation J053S [K/A 2.1.19 (3.0)]	Calculate the Time Until Shutdown Cooling is Required
A.2	Equipment Control N167A [K/A 2.2.13 (3.6)]	Disable a Nuisance Annunciator
A.3	Radiation Controls N166A [K/A 2.3.10 (2.9)]	Determine Dose Rates and Contaminated Areas on HP Survey Map
A.4	Emergency Plan J157A [K/A 2.4.39 (3.3)]	Perform Siren and PA Coordination During Emergency Plan Implementation

SUBSTITUTE FOR J154A

System JPM.

JPM INFORMATION SHEET

JPM NUMBER

J159A

INITIAL PLANT CONDITIONS

The Unit 3 Reactor is shutdown with a plant heatup in progress. The last loop of Shutdown Cooling was recently removed from service. Containment Spray System lineups are in progress in preparation for Mode change.

TASK TO BE PERFORMED

The Control Operator directs you to perform a Unit 3 Containment Spray flow path alignment of Containment Spray Pump P013 in accordance with SO23-3-2.9, Attachment 1.

JOB PERFORMANCE MEASURE J159A

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J159A

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

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

POSITION: UACO

TASK SYS ID: 1945

TASK DESCRIPTION:

Place the Containment Spray System in the normal standby condition.

KA NUMBER: 2.1.29

KA VALUES: **RO** 3.4 **SRO** 3.3

10CFR55.45 APPLICABILITY: 1, 12

REFERENCES:

SO23-3-2.9, Containment Spray System Operation, Rev. 18, TCN 18-1.
SO123-0-23, Control of System Alignments, Rev. 9.

AUTHOR: L. Zilli **DATE:** 07/10/00

OPERATIONS REVIEW: M. Jones **DATE:** 08/02/00

APPROVED BY: W. Lyke **DATE:** 08/04/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
1	Reviewed SO23-3-2.9, Rev.18, TCN 18-1 and modified as required.	LRZ	07/10/00	WLL

SET-UP

Provide the examinee with a copy of SO23-3-2.9, Containment Spray System Operation.

Mark up a copy of SO23-3-2.9, Attachment 1 with all steps N/A'd except for the Prerequisites and Sections 2.1 and 2.2.2.

JPM: J159A **TITLE:** Place the Containment Spray System in the normal standby condition.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: Provide the examinee with a marked up copy of SO23-3-2.9, Attachment 1.			
1*	Locate and verify the position of S31204MU005, CS Pump MP-013 Suction Isolation Valve.	Locates S31204MU005 and verifies LOCKED OPEN by checking the local position indicator and by checking the locking device properly installed.		Start Time: _____
	CUE: The valve is LOCKED OPEN.			
2*	Locate and verify the position of S31201MU993, CS Pump MP-013 Suction from SFP Isolation Valve.	Locates and verifies S31201MU993 is LOCKED CLOSED by checking the local position indicator and by checking the locking device properly installed.		
	CUE: The valve is LOCKED CLOSED.			
3*	Locate and verify the position of S31201MU236, Integral Bypass for 1201MU993.	Locates and verifies S31201MU236 is LOCKED CLOSED by checking the local position indicator and by checking the locking device properly installed.		
	CUE: The valve is LOCKED CLOSED.			

JPM: J159A **TITLE:** Place the Containment Spray System in the normal standby condition.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
4*	Locate and verify the position of S31206MU014, CS Pump MP-013 Discharge Stop Check Valve.	Locates S31206MU014 and verifies LOCKED OPEN by checking the local position indicator and by checking the locking device properly installed.		
	CUE: The valve is LOCKED OPEN.			
5*	Locate and verify the position of S31206MU011, CS Pump MP-013 Miniflow Recirculation Valve.	Locates S31206MU011 and verifies LOCKED OPEN by checking the local position indicator and by checking the locking device properly installed.		
	CUE: The valve is LOCKED OPEN.			
6*	Locate and verify the position of S31203MU227, CCW to CS Pump MP-013.	Locates S31203MU227 and verifies OPEN by checking the local position indicator and by simulate checking the valve in the CLOSED direction.		
	CUE: The valve is OPEN.			

JPM: J159A **TITLE:** Place the Containment Spray System in the normal standby condition.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
7*	Locate and verify the position of S31203MU029, CCW from CS Pump MP-013.	Locates S31203MU029 and verifies OPEN by checking the local position indicator, by simulate checking the valve in the CLOSED direction and by checking the flow rate > 45 gpm on FI-6334. **TERMINATING CUE:** **The valve is OPEN and the flow rate is > 45 gpm. 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:** 08/08/00

Ro

JPM INFORMATION SHEET

JPM NUMBER

J053S

INITIAL PLANT CONDITIONS

Unit 2 has experienced a Loss of Forced Circulation/Loss of Offsite Power.

Recovery actions have commenced and SO23-12-7, Loss of Forced Circulation/Loss of Offsite Power, Attachment 9, Determine Time Until Shutdown Cooling Required, has been implemented.

The reactor tripped 4 hours ago.

TASK TO BE PERFORMED

Determine the time until Shutdown Cooling is required.

Ro A 15.

JOB PERFORMANCE MEASURE J053S

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J053S

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 15 minutes

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

POSITION: UACO

TASK SYS ID: 2637

TASK DESCRIPTION:

Determine the time until Shutdown Cooling is required.

KA NUMBER: 025-AK1.01

KA VALUES: **RO** 3.9 **SRO** 4.3

10CFR55.45 APPLICABILITY: 7

REFERENCES:

SO23-12-7, Loss of Forced Circulation/Loss of Offsite Power, Rev. 16.

AUTHOR: L. Zilli **DATE:** 06/14/00

OPERATIONS REVIEW: M. Jones **DATE:** 06/26/00

APPROVED BY: W. Lyke **DATE:** 06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
1	Deleted all critical steps, except for step no. 8. Determining individual tank inventories is not critical, because the individual only has to read the table to convert from percent level to gallons. No tolerance is given on the gallons for the same reason. A plus or minus 0.5 hour tolerance is given on reading figure 1. BR-0122 Group III system approved for use as JPM due to KA value >3.0.	RR	09/24/93	MJK
1-1	Removed step 1 which required examinee to go to procedure since the procedure is identified in the task statement; changed estimated time from 20 to 5 minutes based on history; minor editorial corrections to standards for clarity.	HJW	04/01/94	n/a
1-2	Compared against SO23-12-7, Rev. 11 with a minor rewording from "Table" to "Figure" in step 7.	HJW	09/30/94	n/a
1-3	Compared against SO23-12-7, Rev 12 with no changes required.	HJW	10/27/95	n/a
2	Compared against SO23-12-7, Rev. 14 with no changes required. Made steps 2, 4, 5, & 6 critical steps. Update KA to agree with NUREG-1122, Rev. 1.	SGA	6/18/97	KHR

2-1	Compared against SO23-12-7, Rev. 16, changed the following: verb "check" changed to "verify", new step 1 added (T120/T121 only source), condensate changed to feedwater source, title for Figure 1 added, and 55k replaced 46k gallons for net determination. Final determination changed to 11 to 13 hours. Updated KA designation and values and changed old task number to VISION SYS ID.	JJM	10/01/99	WLL
3	Compared against SO23-12-7, Rev. 16, added a missing step and made procedural modifications.	LRZ	06/14/00	WLL

SET-UP

Provide examinee with a copy of SO23-12-7, Loss of Forced Circulation/Loss of Offsite Power, Attachment 9.

JPM: J053S **TITLE:** Determine the time until Shutdown Cooling is required.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
CUE: Once you have identified the appropriate instrumentation the Examiner will supply you with the value the instrument is reading.				
1	Verify T-120/T-121 the only current feedwater source to S/G's.	Verifies T-120/T-121 the only current feedwater source to S/G's.		Start Time: _____
CUE: T-120/T-121 are the only current Feedwater Sources to the S/G's.				
2	Verify T-120 level indication - available.	Observes 2LI-4357B, CONDENSATE STORAGE TANK LEVEL 2T120(W) on CR52/53.		
CUE: LI-4357B indicates 13.4%.				
3*	Determine T-120 inventory from Table 1, Condensate Storage Tank Inventory.	Determines T-120 inventory to be **60,270 gallons.**		
4	Verify T-121 level indication - available.	Observes 2LI-4356B, CONDENSATE STORAGE TANK LEVEL 2T121(E) or 2LI-3204-1, CONDENSATE STORAGE TK 2T-121 LEVEL, and/or 2LI-3204-2, CONDENSATE STORAGE TK 2T-121 LEVEL on CR52/53.		
CUE: LI-3204-1 and LI-3204-2 indicate 94%.				

JPM: J053S **TITLE:** Determine the time until Shutdown Cooling is required.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
5*	Determine T-121 inventory from Table 1, Condensate Storage Tank Inventory.	Determines T-121 inventory to be **139,748 gallons.**		
6*	Determine total Feedwater Source inventory.	Determines total condensate inventory to be **200,018 gallons.**		
7*	Determine Net Available Feedwater for decay heat removal.	Determines condensate inventory available for decay heat removal to be **145,018 gallons.**		
8	Determine the number of hours the reactor has been shutdown.	The reactor was shutdown four (4) hours ago.		
9*	Using Figure 1: Remaining Time S/G's Available for Heat Sink determine time remaining until Shutdown Cooling required for decay heat removal.	Determines time S/G's remain available for a heat sink and SDC will be required to be **11 to 13 hours.** **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:** 06/27/00

CORRECTIONS/REVISIONS AS REQUESTED FOR STEPS 3, 5 & 6

JPM INFORMATION SHEET

JPM NUMBER

N167A

INITIAL PLANT CONDITIONS

During operations at 100% power, Annunciator 53A46, "2nd POINT HEATER LEVEL HI/LO", has been coming in repeatedly for the last 2 hours. An investigation revealed that 2LSHL-3157 (2ME-039 Second Point Heater Level Switch HI/LO) is 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.

JOB PERFORMANCE MEASURE N167A

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

N167A

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

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

POSITION: UACO

TASK SYS ID: 2266

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. 9.

AUTHOR: L. Zilli **DATE:** 06/19/00

OPERATIONS REVIEW: M. Jones **DATE:** 06/26/00

APPROVED BY: W. Lyke **DATE:** 06/29/00

MODIFICATION HISTORY

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

SET-UP

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 located.

JPM: N167A **TITLE:** Disable a Nuisance Annunciator.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	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 located. **CUE: The alarm is not a result of any maintenance or planned testing.**			
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	Tailboard the Compensatory Actions from the associated ARP with the responsible operator.	Identifies the requirement to monitor 2ME-039 Second Point Heater Level every four (4) hours with the responsible operator.		
	CUE: The tailboard for Compensatory Actions from the associated ARP is complete.			
3*	Disable the alarm inputs.	Determines disabling of the alarm inputs is required.		
	CUE: The annunciator inputs have been disabled. The Electrician informs you that full reflash capability is no longer available.			
4	Evaluate for compensatory actions per Step 6.3.8.	Evaluates for compensatory actions per Step 6.3.8.		
	NOTE: JPM terminates at Step 5 for the ROs and Step 6 for the SROs.			

JPM: N167A **TITLE:** Disable a Nuisance Annunciator.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
5*	Determine that equipment serviced by the alarm is still in service.	Determines that another 2nd Point Heater Level Switch is serviced by this annunciator and full reflash capability is no longer available, therefore, an ACA sticker is required. **TERMINATING CUE:** **This JPM is complete for the RO examinee.**		Stop Time: _____
6*	Request the SRO Operations Supervisor review the associated ARP to determine if any compensatory actions are required.	Requests the SRO Operations Supervisor review the associated ARP and determines that 2nd Point heater levels will have to be monitored every four (4) hours. **TERMINATING CUE:** **This JPM is complete for the SRO examinee.**		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:** 08/08/00

SUBSTITUTE FOR N171A (SRO) & N172A (RO)

JPM INFORMATION SHEET

JPM NUMBER

N166A

INITIAL PLANT CONDITIONS

You have been assigned to perform a valve alignment verification in the Safety Equipment Building, Elev. 8'. The valve alignment will occur in both rooms. Health Physics has provided a recent SONGS Radiological Survey Map for the area.

TASK TO BE PERFORMED

Using the SONGS Radiological Survey Map provided, determine the following:

- Highest "On Contact" dose rate
- Highest "General Area" radiation level
- Highest "Contaminated Area" in DPM/100cm^2
- Highest "Dose Rate at 30 cm"

JOB PERFORMANCE MEASURE N166A

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

N166A

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 5 minutes

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

POSITION: CO/CRS

TASK SYS ID: 2923

TASK DESCRIPTION:

Use procedures to conduct plant operations.

KA NUMBER: 2.3.10

KA VALUES: **RO** 2.9 **SRO** 3.3

10CFR55.45 APPLICABILITY: 10

REFERENCES:

SO123-VII-20.9, Radiological Surveys, Rev. 4, TCN 4-4.

AUTHOR:	L. Zilli	**DATE:**	07/11/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	08/02/00
APPROVED BY:	W. Lyke	**DATE:**	08/04/00

MODIFICATION HISTORY

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

SET-UP

Provide the examinee with a copy of SO123-VII-20.9, Radiological Surveys, if requested, and the applicable HP Survey Map.

JPM: N166A **TITLE:** Determine does rates and contaminated areas from an HP survey map.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: The following steps can be performed in any order. **NOTE: Provide the examinee with a copy of SO123-VII-20.9, Radiological Surveys, if requested, and the applicable HP Survey Map.**			
1*	Determine the highest "On Contact" dose rate in mrem/hr.	Determines the highest "On Contact" dose rate to be 10 mrem/hr.		Start Time: _____
2*	Determine the highest "General Area" radiation level in mrem/hr.	Determines the highest "General Area" radiation level to be 10 mrem/hr.		
3*	Determine the highest "Contaminated Area" in DPM/100cm^2.	Determines the highest "Contaminated Area" to be <1K DPM/100cm^2.		
4	Determine the highest "Dose Rate at 30 cm" in mrem/hr.	Determines the highest "Dose Rate at 30 cm" to be 6 mrem/hr. **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). *(Selected as RO task due to importance despite a K/A of 2.9)

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:** 08/09/00

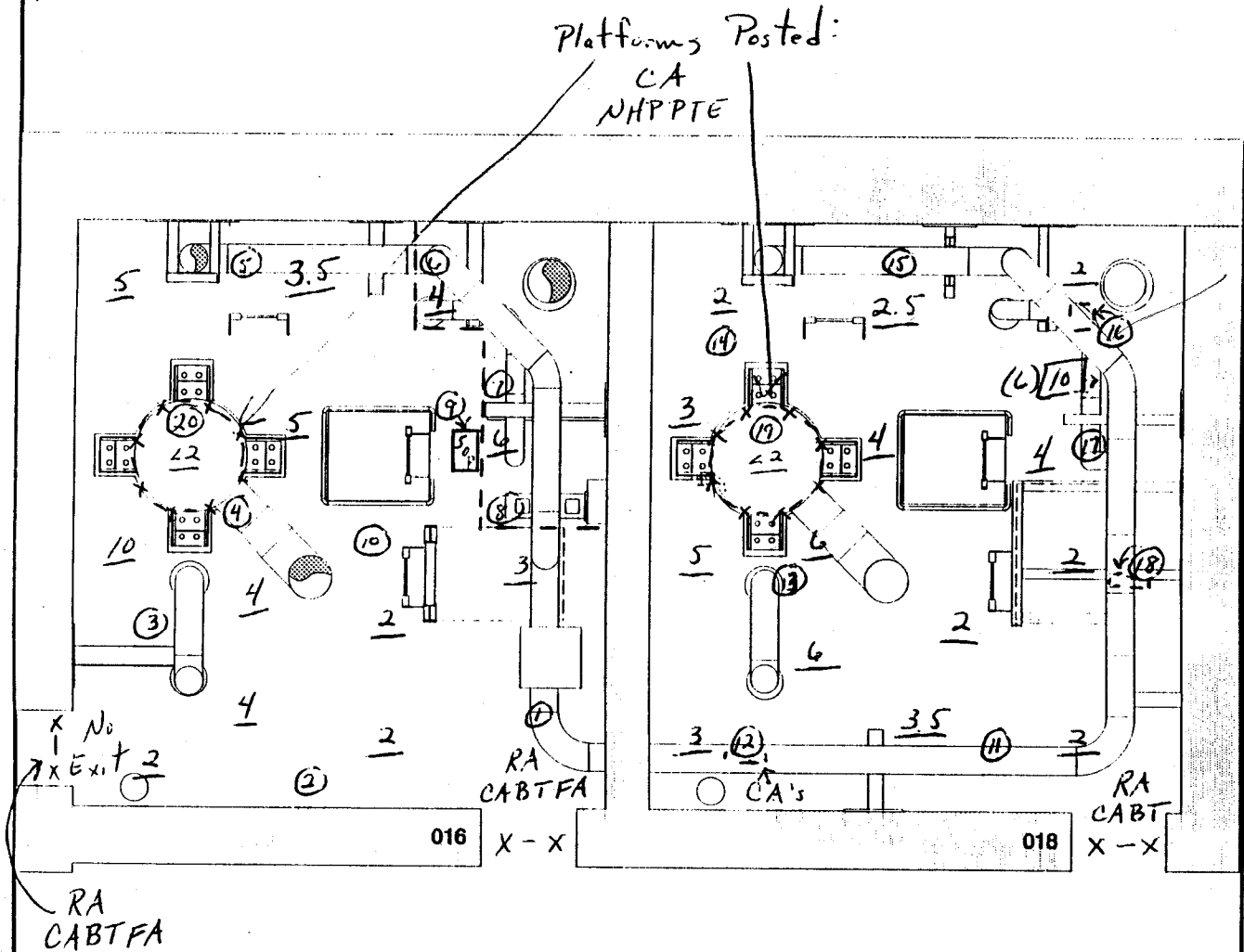
SONGS RADIOLOGICAL SURVEY

UNIT	2
AREA	SB
ELEV	8
ROOM	

SURVEY REASON: [X] Routine M-016 [ ] Post-Decon [ ] Pre-Job [ ] Shipment/Receipt [ ] Job Coverage [ ] Source/Leak Test [ ] Pwr Entry ____ % [ ] Other ____

SURVEY NO.	000607-008
MO NO.	A1028940006
REP NO.	200101-6
EQUIP. ID.	

DATE 6/7/00 TIME 0430 Page ____ of ____



NO.	β⁻ γ DPM/100cm² or mr/hr/100cm² OW-CW	α DPM 100cm² or <MDCR	NO.	β⁻ γ DPM/100cm² or mr/hr/100cm² OW-CW	α DPM 100cm² or <MDCR
1	<1K	N/A	16	<1K	N/A
2			17	<1K	N/A
3			18	<1K	N/A
4			19	<1K	N/A
5			20	<1K	N/A
6			21		
7			22		
8			23		
9			24		
10			25		
11					
12					
13					
14					
15	<1K	N/A			

Masslinn

NO.	Max net cpm	Hot Part. (Y/N)
A		
B		
C		
D		
E		
F		

SURVEY CLASS
- [ ] Boundary
- [ ] Trend Pt.
- [X] General Area
- [ ] Component
- [ ] Individual

SURVEY DESCRIPTION: M-10

REMARKS:

--- = Tape Boundary

Instruments used

Model	RO2	RM-14			
Serial No.	2478	5659			

TECHNICIAN

Print: F. Hennessey

Sign: F. Hennessey

APPROVED BY

Print: S. Allen

Sign:

Approval Date: 6/8/00 Time: 0522

Page 3 of 3 (for this survey)

Reference Number SO123-VII-20.9

Form Number SCE HP (2/3) 1259-1603 REV. 1 11/1/94

JPM INFORMATION SHEET

JPM NUMBER

J157A

INITIAL PLANT CONDITIONS

You are the Auxiliary Reactor Operator. A Site Area Emergency has just been declared at Unit 2. The Shift Manager (EC) has assigned you to the position of Operations Leader. Non-emergency response personnel are to report to their designated assembly areas and wait there for further instructions. Protected Area personnel are to walk to the assembly area through their normal exit gates and wait there for further instructions.

TASK TO BE PERFORMED

Perform the Siren and PA coordination and Perimeter PA announcements in accordance with SO23-VIII-30, Units 2/3 Operations Leader Duties, Attachment 1. Inform the Shift Manager (EC) when complete.

RO A4.

JOB PERFORMANCE MEASURE J157A

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J157A

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

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

POSITION: CO

TASK SYS ID: 895

TASK DESCRIPTION:

Activate the emergency sirens during an emergency event.

KA NUMBER: 2.4.39, 2.4.40

KA VALUES: **RO** 3.3 **SRO** 4.0

10CFR55.45 APPLICABILITY: 11

REFERENCES:

SO23-VIII-30, Units 2/3 Operations Leader Duties, Rev.3, TCN 3-1.

AUTHOR:	L. Zilli	**DATE:**	06/13/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/27/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
0	New			
1	Reviewed SO23-VIII-30, Rev.3, TCN 3-1 and modified as required.	LRZ	06/13/00	WLL

SET-UP

Provide the examinee with a copy of SO23-VIII-30, Units 2/3 Operations Leader Duties.

JPM: J157A **TITLE:** Perform Siren and PA Coordination Duties as Operations Leader

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
CUE: The Siren/PA process is <u>not</u> being coordinated from outside the Control Room.				
1*	Prepare the Site PA message using Attachment 1.	Prepares the Site PA message using Attachment 1 and the information provided by the Shift Manager (EC).		Start Time: _____
2*	Announce the message <u>once</u> over the Site PA system.	Makes the announcement by reading the message <u>once</u> over the Site PA system by depressing the SITE PA button(s) on 2CR65 and depressing the button on the handset OR dial 429 on any Control Room phone.		
3*	Hold down the PA Tone Generator "Siren All" button on the phone turret until the "Kill" button illuminates.	Holds down the PA Tone Generator "Siren All" button on the phone turret until the "Kill" button/light illuminates (approximately 1-4 seconds).		
NOTE: The PA Tone Generator will time out and stop after 60 seconds and the "Kill" button/light will extinguish. **CUE: The "Kill" button is illuminated. After 60 seconds the "Kill" light has extinguished.**				

JPM: J157A **TITLE:** Perform Siren and PA Coordination Duties as Operations Leader

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
4*	Press the Emergency Evacuation Siren START push-button (HS-7890-1) on CR 57.	Presses the Emergency Evacuation Siren START push-button (HS-7890-1) on CR 57.		
5*	After a 60 second run, press the Emergency Evacuation Siren Stop push-button.	After a 60 second run, presses the Emergency Evacuation Siren Stop push-button on CR 57.		
6	Ensure all sirens are secured.	Ensures all sirens are secured by checking with plant personnel.		
	CUE: All sirens are secured.			
7*	Repeat the PA announcement from Attachment 1 <u>two</u> times.	Repeats the PA announcement from Attachment 1 by reading the message two (2) times over the Site PA system by depressing the SITE PA button(s) on 2CR65 and depressing the button on the handset OR dial 429 on any Control Room phone.		

JPM: J157A **TITLE:** Perform Siren and PA Coordination Duties as Operations Leader

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	CUE: The Emergency Coordinator directs you to make a perimeter PA announcement for beach evacuation.			
8*	Make a Perimeter PA announcement for beach evacuation.	Makes the Perimeter PA announcement for beach evacuation by reading the announcement from Step 3.0 of Attachment 1 twice over the Perimeter PA handset in the Shift Manager's office.		
9	Inform the Shift Manager (EC) when complete.	Informs the Shift Manager (EC) that the sirens have been sounded, and the Site and Beach Evacuation PA announcements have been completed. **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:** 06/27/00

PROPOSED OUTLINE FOR SRO (U) EXAM

Facility: San Onofre 2 & 3		Date of Examination: 09/25/00
Examination Level (circle one): RO / SRO(U)		Operating Test Number: 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Parameter Verification N169A [K/A 2.1.20 (4.2)]	Determine Required Boron Concentration for Cooldown to Mode 5
	Surveillance Verification N170A [K/A 2.1.12 (4.0)]	Verify Equipment Operability
A.2	Equipment Control N167A [K/A 2.2.13 (3.8)]	Disable a Nuisance Annunciator
A.3	Radiation Controls N166A [K/A 2.3.10 (3.3)]	Determine Dose Rates and Contaminated Areas on HP Survey Map
A.4	Emergency Plan J126S [K/A 2.4.44 (4.0)]	Determine Protective Action Recommendations

10
11

JPM INFORMATION SHEET

JPM NUMBER

N169A

INITIAL PLANT CONDITIONS

The plant is shutdown, at normal operating temperature and pressure (Mode 3). Current core burnup is 200 EFPD. A cooldown to Mode 5 is required for RCP seal maintenance.

TASK TO BE PERFORMED

Determine the required boron concentration for RCS cooldown to Mode 5.

SRO A1a

JOB PERFORMANCE MEASURE N169A

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

N169A

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 10 minutes

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

POSITION: UACO

TASK SYS ID: 929

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. 19, TCN 19-2.
Operations Figure 2.3-1, Songs Unit 2 Cycle 10 Minimum Boron Concentration for 5.15% Shutdown Margin.

AUTHOR:	L. Zilli	**DATE:**	06/20/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/27/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

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

SET-UP

Provide the examinee with a copy of SO23-5-1.5, Plant Shutdown from Hot Standby to Cold Shutdown.

When located in the Simulator or plant, provide the examinee with a copy of Operations Figure 2.3-1, Songs Unit 2 Cycle 10 Minimum Boron Concentration for 5.15% Shutdown Margin.

JPM: N169A **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)
Cue: The CO has commenced the boration. All control rods are inserted.				
1*	Determine target boron concentration.	Determines target boron concentration using OPS Figure 2.3-1, SDM 5.15% Δk/k @ 200°F (Non-Refueling Outage Method). (**Calculates a value between 1590 ppm & 1610 ppm**) **TERMINATING CUE:** **This JPM is complete.**		Start Time: _____ 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. __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:** 06/27/00

JPM INFORMATION SHEET

JPM NUMBER

N170A

INITIAL PLANT CONDITIONS

The Containment Emergency Cooling System Monthly Test - Train A has just been completed IAW SO23-3-3.13, Containment Cooling/Spray Monthly Tests, Attachment 1.

TASK TO BE PERFORMED

Determine Operability of the Train A Containment Emergency Cooling Units by performing the SRO Operations Supervisor review.

SRO A16

JOB PERFORMANCE MEASURE N170A

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

N170A

JPM LEVEL: SRO

ESTIMATED TIME TO COMPLETE: 15 minutes

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

POSITION: CRS

TASK SYS ID: 860

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.

AUTHOR:	L. Zilli	**DATE:**	06/14/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/27/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

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

SET-UP

Provide a marked-up copy of SO23-3-3.13, Containment Cooling/Spray Monthly Tests, Attachment 1. Ensure that the E-401 STOP TIME is less than 15 minutes after the E-401 START TIME.

JPM: N170A **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)
1	Perform final SRO review of the surveillance procedure.	Reviews the surveillance procedure.		Start Time: _____
2*	Discover error in step 2.7.1.	Discovers that the difference between Stop Time and Start Time for E-401 was less than 15 minutes, and that YES has been circled instead of NO.		
3	Perform the step required for unsatisfactory results.	Performs the following: - Refers to TS LCO's 3.6.6.1, 3.6.6.2, and 3.7.7. - Initiates LCOAR/EDMR/AR - Repeats the surveillance test **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:** 06/27/00

Make consistent w/ Scenario

JPM INFORMATION SHEET

JPM NUMBER

J126S

INITIAL PLANT CONDITIONS

A SGTR is in progress. RE-7870-1 has been reading >5E7 μCi/sec for 15 minutes. You have classified the event as a Site Area Emergency (SAE), Tab A3-1. HP provided a dose assessment at the EAB of 17 mRem TEDE and 10 mile EPZ dose assessment of 0.05 mRem TEDE. There is no Iodine CDE.

TASK TO BE PERFORMED

Determine the Protective Action Recommendations using SO123-VIII-10.3, Protective Action Recommendations.

SRO A4

JOB PERFORMANCE MEASURE J126S

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J126S

JPM LEVEL: SRO

ESTIMATED TIME TO COMPLETE: 10 minutes

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

POSITION: SM

TASK SYS ID: 167

TASK DESCRIPTION:

Determine additional protective action recommendations during implementation of the emergency plan.

KA NUMBER: 2.4.44

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

10CFR55.45 APPLICABILITY: 11

REFERENCES:

SO123-VIII-10.3, Protective Action Recommendations, Rev. 4.

AUTHOR:	L. Zilli	**DATE:**	06/09/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/26/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
0	New			
1	Updated format for JPM consistency and modified Initial Plant Conditions for consistency with EAL Tables.	LRZ	06/08/00	WLL

SET-UP

Provide examinee with a copy of SO123-VIII-10.3, Protective Action Recommendations.

JPM: J126S **TITLE:** Determine Protective Action Recommendations

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
1	Determine that the PAR required is based on the Emergency Class.	Use criteria in Step 6.1.2.2 to determine that Emergency Class PARs apply.		Start time: _____
2*	Based on a Site Area Emergency with doses as stated in the Initial Conditions the PAR is to evacuate State Beach.	Using the Table in Step 6.1.2.2, based on a Site Area Emergency, recommend evacuating the State Beach. **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:** 06/27/00

Facility: San Onofre 2 & 3	Date of Examination: 09/25/00
Exam Level (circle one): RO / SRO(I) / SRO(U)	Operating Test Number: 1

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a. AC	Transfer 2A04 from the Bus Tie to the Reserve Auxiliary Transformer	D, S	6 ✓ J054S
b. ESFAS	Perform RAS Actuation Verification	D, S, A	2 ✓ J113FS
c. MSS/AFW	Monitor Plant for Natural Circulation Conditions	N, S, A	4 J116FS
d. RHR	Perform Actions for a Loss of Shutdown Cooling	N, S, L	4 ✓ N152S
e. CVCS	Perform an Emergency Boration	D, S, A	1 J025FS
f. RPS	Restore a Bypassed RPS Channel to Service	D, S	7 J143S
g. CSS	Terminate Containment Spray	N, S, A	5 ✓ J049FS

Needs to be replaced

B.2 Facility Walk-Through

a. FPS	Perform the Duties of the Unit 2 CO Following Control Room Evacuation	D, R	8 J004
b. PZR PCS	Perform Manual Auxiliary Spray Actions in the Penetration Building	N	3 N148
c. CRDS	Locally Perform ATWS Actions	D, R	1 J021

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

RO/SROI/SROU
Simulator
RO & SRO I are the same
SROU is a subset

JPM INFORMATION SHEE

JPM NUMBER

J054S

INITIAL PLANT CONDITIONS

The unit is raising power and the Control Room Supervisor directs a transfer of 2A04 from the Bus Tie to the Reserve Auxiliary Transformer.

2A04 is on the bus tie due to a recent electrical transient resulting in an inadvertent transfer to the bus tie.

TASK TO BE PERFORMED

Remove the 1E 4 kV Bus Tie from Service on 2A04.

RO Blc
SRO-I Blc

JOB PERFORMANCE MEASURE J054S

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J054S

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

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

POSITION: CACO

TASK SYS ID: 271

TASK DESCRIPTION:

Manually transfer 1E 4KV bus power source.

KA NUMBER: 062-A4.07

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

10CFR55.45 APPLICABILITY: 6

REFERENCES:

SO23-6-2, Transferring of 4 kV Buses, Rev. 7.

AUTHOR:	L. Zilli	**DATE:**	06/09/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/26/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
0	New Format	HJW	02/17/94	N/A
0-1	Corrected "Position" on Documentation page.	HJW	02/09/95	N/A
0-2	Compared against SO23-6-2 with minor editorial corrections.	HJW	07/02/96	N/A
0-3	Compared against SO23-6-2 with no modifications required.	RCW	09/02/98	N/A
0-4	Compared against SO23-6-2 with no changes reqd. Changed "Common CO" to SRO Ops Supv. for initial plant conditions. Added two cues to the beginning of the JPM to preclude confusion for the student. Updated KA designation and changed old task number to VISION SYS ID.	JJM	10/26/99	WLL
1	Compared against SO23-6-2, Rev. 7 with minor changes required. Updated format.	LRZ	06/15/00	WLL

SET-UP

Any at power IC.

Transfer 2A04 to the Bus Tie Breaker.

Provide the examinee with a copy of SO23-6-2, Transferring of 4 kV Buses when located.

JPM: J054S **TITLE:** Remove the 1E 4 kV Bus Tie from Service on 2A04

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: When the correct procedure is located provide a copy to the examinee. **CUE: The CRS has reviewed Technical Specification 3.8.1 and actions are being met.** **CUE: The Tailboard session between all participants is complete.**			
1	Verify the incoming 4160V source has normal voltage and is available for load.	Checks RSV AUX XFR 2XR1 MEGAWATTS meter 2JI-1606 and/or places sync circuit in service to verify incoming volts/Hz OK.		Start Time: _____
	CUE: The incoming 4 kV source has normal voltage and is available for load.			
2*	Place the synchroscope in service by placing the respective key operated Master Control switch to ON.	Places the synchroscope, 2/3SI-1627A, in service by placing key operated TRAIN A SYNC CKT CONTROL, 2HS-1627-1 ESF A SYNC MASTER Control switch to ON.		
3*	Place synchronizing circuit in service by depressing SYNC pushbutton for the Incoming Breaker.	Presses SYNC pushbutton for Incoming Breaker (identified from Attachment 1) RES AUX XFMR 2XR1 FDR BREAKER 2A0418, 2HS-1659-1.		

JPM: J054S **TITLE:** Remove the 1E 4 kV Bus Tie from Service on 2A04

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
4	Verify breaker SYNC light illuminated.	Verifies breaker SYNC light illuminated on RES AUX XFMR 2XR1 FDR BREAKER 2A0418, 2HS-1659-1.		
5	Verify SYNC IN MODE light illuminated.	Verifies SYNC IN MODE light illuminated on TRAIN A SYNC CKT CONTROL, 2HS-1627-1 ESF A SYNC MASTER Control switch.		
6	Verify SYNC RELAY TROUBLE light off.	Verifies SYNC RELAY TROUBLE light off on TRAIN A SYNC CKT CONTROL, 2HS-1627-1 ESF A SYNC MASTER Control switch.		
7	Verify Incoming and Running voltages and frequencies matched.	Verifies Incoming and Running voltages matched on 2/3EI-1627A & 2/3EI-1627B and frequencies matched on 2/3SI-1627C & 2/3SI-1627D.		
8	Verify synchroscope moves to straight up (12 o'clock) position.	Verifies synchroscope 2/3SI-1627A moves to straight up (12 o'clock) position.		
9*	Select the Bus Transfer Controls AUTO/MANUAL switch to MANUAL.	Ensures BUS TIE 2A04 TO 3A04 FDR BKR 2A0417 SELECTOR 2HS-1660B1 in MANUAL.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
10*	Close the Incoming breaker.	Depresses the CLOSE pushbutton on RES AUX XFMR 2XR1 FDR BREAKER 2A0418 2HS-1659-1.		
11*	Open the running bus tie breaker manually.	Depresses the TRIP pushbutton on BUS TIE 2A04 TO 3A04 FDR BKR 2A0417 2HS-1660A-1.		
12	Verify the BUSES PARALLELED alarm clears.	Observes 63B55 2A04/3A04 PARALLELED alarm cleared.		
13	Open the opposite unit supply bus tie breaker.	Opens the Unit 3 supply bus tie breaker.		
	CUE: The Unit 3 bus tie breaker is open.			
14*	Select the Bus Transfer Controls AUTO/MANUAL switch to AUTO.	Selects BUS TIE 2A04 TO 3A04 FDR BKR 2A0417 SELECTOR 2HS-1660B1 to AUTO.		
	CUE: The Unit 3 bus tie breaker Auto/Manual switch is in AUTO.			
15	Remove the synchronizing circuit from service by depressing SYNC pushbutton for the Incoming breaker.	Presses SYNC pushbutton for Incoming Breaker RES AUX XFMR 2XR1 FDR BREAKER 2A0418, 2HS-1659-1.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
16	Remove the synchroscope from service by placing the respective key-operated Master Controls switch to OFF.	Removes the synchroscope, 2/3SI-1627A, from service by placing key operated TRAIN A SYNC CKT CONTROL, 2HS-1627-1 ESF A SYNC MASTER Control switch to OFF. **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:** 06/27/00

JPM INFORMATION SHEET

JPM NUMBER

J113FS

INITIAL PLANT CONDITIONS

Unit 2 has undergone a major LOCA. The operating crew has transitioned to SO23-12-3, Loss of Coolant Accident.

RWST level has lowered below 19%. The CRS has directed you to implement Attachment 6, RAS Actuation.

TASK TO BE PERFORMED

Perform Attachment 6, RAS Actuation of SO23-12-3, Loss of Coolant Accident.

RO B16
SRO I B16 SRO U B16

JOB PERFORMANCE MEASURE J113FS

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J113FS

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 15 minutes

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

POSITION: UACO

TASK SYS ID: 2007

TASK DESCRIPTION:

Verify proper actuation of the recirculation actuation system.

KA NUMBER: 011-EA1.11

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

10CFR55.45 APPLICABILITY: 4, 5, 7

REFERENCES:

SO23-12-3, Loss of Coolant Accident, Rev. 16.

AUTHOR:	L. Zilli	**DATE:**	06/14/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/26/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
0	New JPM			
0-1	Compared against SO23-12-3, Rev. 14, no changes required. Minor editorial changes. Update KA to agree with NUREG-1122, Rev. 1.	SGA	06/24/97	n/a
0-2	Changed standard for step 18 to remove guage observation for hot/cold leg simultaneous flow at direction of SOT.	HJW	09/09/97	n/a
0-3	Compared against SO23-12-3, Rev 16, changed attachment number to 6, changed verb "check" to "verify", deleted step to notify HP on rad levels, added each operating train for containment spray, added verify that RWST not reqd for borated water source (and its associated cue). Updated the KA designation and values and changed old task number to VISION SYS ID.	JJM	10/21/99	WLL
1	Compared against SO23-12-3, Rev 16, and incorporated changes.	LRZ	06/14/00	WLL

SET-UP

Use any at power IC and then insert a large Loss of Coolant Accident (RC01A) and allow event to proceed until the RWST levels are below the RAS setpoint.

Enter "Insert RP04, Failure of RAS to Actuate"

Place key switches back to open prior to restoring for next JPM.

Provide the examinee with a copy of SO23-12-3, Loss of Coolant Accident, Attachment 6.

Provide keys #8, #9, #10, #23, #24, & #25 to examiner.

Note: Verify that the CCW to Letdown Heat Exchanger valve is reopened when repeating this JPM.

JPM: J113FS **TITLE:** Verification of RAS Actuation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
1	Verify RAS conditions established by checking RWST level <19%.	Observes at least two (2) of the following; RWT 2T006 LEVEL LI-0305-1, -2, -3, -4 and RWT 2T005 LEVEL 2LI-0301 < 19%.		Time Start: _____
2	Verify Containment Emergency Sump level >18' 4".	Observes CNTMT EMER SUMP LEVEL 2LI-9386-1 OR 2LI-9389-2 greater than 18' 4".		
NOTE: The following four (4) valves can be done in any order.				
3*	Ensure Containment Emergency Sump Outlet Valve, HV-9303, open.	Opens CNTMT EMER SUMP OUTLET ISO VALVE 2HV-9303.		
4*	Ensure Containment Emergency Sump Outlet Valve, HV-9305, open.	Opens CNTMT EMER SUMP OUTLET ISO VALVE 2HV-9305.		
5*	Ensure Containment Emergency Sump Outlet Valve, HV-9302, open.	Opens CNTMT EMER SUMP OUTLET ISO VALVE 2HV-9302.		
6*	Ensure Containment Emergency Sump Outlet Valve, HV-9304, open.	Opens CNTMT EMER SUMP OUTLET ISO VALVE 2HV-9304.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
7*	Ensure LPSI Pump P015 stopped.	Depresses SIAS OVERRIDE pushbutton and then STOP pushbutton for LPSI PUMP P015(E) 2HS-9390-1.		
8*	Ensure LPSI Pump P016 stopped.	Depresses SIAS OVERRIDE pushbutton and then STOP pushbutton for LPSI PUMP P016 (N) 2HS-9391-2.		
NOTE: The following four (4) valves can be done in any order.				
9*	Ensure SI Pump & CNTMT Spray Pump mini-flow HV-9306 closed.	Closes SI Pump & CNTMT Spray Pump mini-flow iso valve 2HV-9306. (Key #9)		
10*	Ensure SI Pump & CNTMT Spray Pump mini-flow HV-9307 closed.	Closes SI Pump & CNTMT Spray Pump mini-flow iso valve 2HV-9307. (Key #10)		
11*	Ensure SI Pump & CNTMT Spray Pump mini-flow HV-9347 closed.	Closes SI Pump & CNTMT Spray Pump mini-flow iso valve 2HV-9347. (Key #24)		
12*	Ensure SI Pump & CNTMT Spray Pump mini-flow HV-9348 closed.	Closes SI Pump & CNTMT Spray Pump mini-flow iso valve 2HV-9348. (Key #25)		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
13	Verify Containment Spray flow on each operating train >1625 gpm.	Observes Containment Spray Hdr No. 1 & No. 2 flow indicators 2FI-0338-1 and 2FI-0348-2 > 1625 gpm.		
14	Verify Containment Emergency Sump level >18' 4" and RWST not required for borated water source.	Observes CNTMT EMER SUMP LEVEL 2LI-9386-1 OR 2LI-9389-2 greater than 18' 4".		
	CUE: The RWST is not required for a borated water source.			
15*	Close RWST outlet Isolation valve HV-9300.	Inserts key and closes RWT 2T005 Outlet Iso Valve 2HV-9300. (Key #8)		
16*	Close RWST outlet Isolation valve HV-9301.	Inserts key and closes RWT 2T005 Outlet Iso Valve 2HV-9301. (Key #23)		
17	Verify HPSI Flow criteria: With Cold Leg Injection only: Total HPSI flow >160 gpm in any one loop per operating pump; With simultaneous Hot/Cold Leg Injection >160 gpm in any one loop per operating pump.	Observes HPSI FLOW TO COLD LEGS 2FI-0321-1, 2FI-0331-1, 2FI-0311-2, & 2FI-0341-2 to verify total HPSI flow >160 gpm in any one loop per operating pump.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
18	Close CCW to Letdown Heat Exchanger valve Train A 2HV-6293B/A and 2HV-6522B/A.	Depresses the CLOSE pushbutton for the in-service CCW CLA/B LTDN HX 2E062 Supply/Return valves 2HV-6293B/A or 2HV-6522B/A. **TERMINATING CUE:** **This JPM is complete.**		Time Stop: _____

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:** 06/27/00

JPM INFORMATION SHEET

JPM NUMBER

J116FS

INITIAL PLANT CONDITIONS

The reactor was manually tripped from full power approximately 30 minutes ago due to a LOCA. Forced circulation was lost upon the trip.

TASK TO BE PERFORMED

Monitor the RCS for natural circulation according to SO23-12-3, Loss of Coolant Accident, Attachment 2, Floating Step 3.

RO Blc
SRO Blc

JOB PERFORMANCE MEASURE J116FS

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J116FS

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

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

POSITION: UACO

TASK SYS ID: 2619

TASK DESCRIPTION:

Monitor natural circulation established.

KA NUMBER: 011-EA2.09

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

10CFR55.45 APPLICABILITY: 4

REFERENCES:

SO23-12-3, Loss of Coolant Accident, Rev. 16, Attachment 2.

AUTHOR: L. R. Zilli **DATE:** 06/08/00

OPERATIONS REVIEW: M. Jones **DATE:** 06/26/00

APPROVED BY: W. Lyke **DATE:** 06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
0	Created faulted JPM from J116S.	LRZ	06/08/00	

SET-UP

IC-53 with all RCPs off and natural circulation established.

RC03 @ 50% and all RCS makeup secured to establish 82% reactor vessel plenum level. When 82% reactor vessel plenum level is reached then RC03 to 0%.

Provide the examinee with a copy of SO23-12-3, Loss of Coolant Accident, Attachment 2.

JPM: J116FS **TITLE:** Monitor RCS for Natural Circulation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
1	Verify all RCPs stopped.	Observes zero speed indicators 2SL-9107, 9110, 9113, and 9116 illuminated **or** Stop (green) lights 2HS-9160A, 9161A, 9162A, and 9163A illuminated.		Time Start: _____
2*	Verify at least one S/G operating and feedwater available.	Checks either SBCS or ADV available and feedwater, main or auxiliary, available.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
3*	Verify operating loop ΔT less than 58°F.	Verifies ΔT less than 58°F by observing any of the following for Loop 1: • 2TI-0122(1-4) and 2TI-0112(1-4) • CFMS (311 or 223) or • QSPDS (611) • Loop 1 WR temps, or • Loop 1 NR temps, using: 2TI-0911X1, Loop 1(S) Hot Leg WR temperature minus 2TI-0911Y1, Loop 1A (SE) Cold Leg WR temperature OR 2TI-0915-2, Loop 1B (SW) Cold Leg WR temperature; Verifies ΔT less than 58°F by observing any of the following for Loop 2: • 2TI-9178(1-4) and 2TI-9179(1-4) • CFMS (311 or 223) or • QSPDS (611) • Loop 2 WR temps, or • Loop 2 NR temps, using: 2TI-0921X2, Loop 2(N) Hot Leg WR temperature minus 2TI-0921Y2, Loop 2B (NE) Cold Leg WR temperature OR 2TI-0925-1, Loop 2A (NW) Cold Leg WR temperature.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
4*	Verify T_C and T_H not rising.	Observes any of the following: • T_H & T_C temperature recorders on CR50, or • NR temperatures, using: 2TI-0112-1,-2,-3,-4 Hot Leg NR temperature Loop 1; 2TI-0122-1,-2,-3,-4 Hot Leg NR temperature Loop 2; 2TI-9178-1,-2,-3,-4 Cold Leg NR temperature Loop 1; 2TI-9179-1,-2,-3,-4 Cold Leg NR temperature Loop 2.		
	CUE: T_H & T_C are not rising.			
5*	Verify reactor vessel level greater than or equal to 100% (Plenum).	Observes QSPDS page 622 and/or CFMS page 312 or uses Attachment 7, Alternate Reactor Vessel Level Verification to verify reactor vessel level less than 100%.		
6	With reactor vessel plenum level <100% the RNO must be entered.	Recognizes that the AER column is not met and enters the RNO column due to low reactor vessel plenum level.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
7*	MAXIMIZE S/G level at less than 80% NR and RAISE available S/G steaming rate to RAISE Core Exit Saturation Margin to greater than 20°F.	Perform the following to restore reactor vessel level: 1.) Raise S/G level by: • Raising AFW flow to #1 S/G by opening 2HV-4731 or 2HV-4715 and JOG OPEN 2HV-4713 or 2HV-4706 • Raising AFW flow to #2 S/G by opening 2HV-4714 or 2HV-4730 and JOG OPEN 2HV-4712 or 2HV-4705 2.) Raise steaming rate by: • For #1 S/G by placing 2PIC-8421-2 in MANUAL and RAISE the output • For #2 S/G by placing 2PIC-8419 in MANUAL and RAISE the output **TERMINATING CUE:** **This JPM is complete.**		Time Stop: _____

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:** 06/27/00

JPM INFORMATION SHEET

JPM NUMBER

N152S

INITIAL PLANT CONDITIONS

Unit 2 is in Mode 5 with Train B Shutdown Cooling in service when a loss of offsite power occurs.

The Train A EDG (2G002) is Out of Service and in Maintenance Lockout. The Containment Spray Pumps are not aligned for Shutdown Cooling.

TASK TO BE PERFORMED

Perform actions for a Loss of Shutdown Cooling.

RO Bld
SRO-I-Bld
SRO Bld

JOB PERFORMANCE MEASURE N152S

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

N152S

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

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

POSITION: CO/CRS

TASK SYS ID: 677

TASK DESCRIPTION:

Respond to a loss of shutdown cooling.

KA NUMBER: 025-AA1.01

KA VALUES: **RO** 3.6 **SRO** 3.7

10CFR55.45 APPLICABILITY: 6, 7

REFERENCES:

SO23-13-15, Loss of Shutdown Cooling, Rev. 11.

AUTHOR: L.Zilli **DATE:** 06/20/00

OPERATIONS REVIEW: M. Jones **DATE:** 06/26/00

APPROVED BY: W. Lyke **DATE:** 06/29/00

MODIFICATION HISTORY

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

SET-UP

IC-54 with Mode 5 SDC in service.

2G002 placed in Maintenance Lockout using #2 key.

Run RLP to make LPSI Pump amps 40 vice 18 upon pump start.

Provide examinee with a copy of SO23-13-15, Loss of Shutdown Cooling when requested.

CAUTION: Prior to starting this JPM ensure that the SDC valves have cycled to their fully open position. This may take several minutes after the Simulator is placed in RUN. Failure to wait for the valves to fully open will result in an RNO attempt that is not addressed by this JPM.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
1	Identify correct procedure to use.	Identifies SO23-13-15, Loss of Shutdown Cooling as the correct procedure to use.		Start Time: _____
	NOTE: Provide the examinee with a copy of SO23-13-15, Loss of Shutdown Cooling when identified. **CUE: There are no personnel in Containment, the Containment Equipment Hatch is closed, and the RCS is closed and pressurized.**			
2	Initiate Attachment 4, Containment Closure/RCS Vent Checklist.	Initiates Containment closure and RCS monitoring.		
	CUE: Attachment 4, Containment Closure/RCS Vent Checklist is being performed by the ARO.			
3	Implement Attachment 1, RCS/SDCS Parameter Monitoring.	Implements Attachment 1, RCS/SDCS Parameter Monitoring.		
	CUE: Attachment 1, RCS/SDCS Parameter Monitoring is also being performed by the ARO.			
4	Ensure RCS dilutions stopped.	Ensures all RCS dilutions in progress are stopped.		
	CUE: There are no RCS dilutions in progress.			

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
5	Verify RCS/SDCS parameters.	Verifies RCS/SDCS parameters by: • Verifying all SDCS/LTOP Isolation valves OPEN: HV-9339, HV-9336, HV-9377, HV-9378 • Verifying RCS level greater than or equal to 21 inches in the Hot Leg and NOT lowering on page 622 of QSPDS or CFMS		
6*	Recognize that inadequate flow exists and the SDC pump is not running and go to the RNO column.	Recognizes that there is inadequate flow and the SDC pump is not running and goes to Step 5.		
7*	Recover SDC flow - Verify at least one SDC pump running.	Cannot verify that a SDC pump is running and refers to the RNO for 4 kV Buses A04 or A06 energized by the Diesel Generator. Exits main body of procedure to Attachment 8, Restoration of 1E Bus Voltage, Step 6.		
8a*	Load 4 kV Bus A06.	Ensures a CCW Pump started by checking CCW PUMP 2HS-6320-2 start light on and amps normal.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
8b*	Load 4 kV Bus A06.	Ensures a Salt Water Pump started on loop with running CCW Pump by checking SALTWATER PUMP 2P114 UNIT 3 INTAKE 2HS-6383-2 start light on and amps normal		
8c	Load 4 kV Bus A06.	Ensures Intake Cooling Unit associated with operating SWC Pump started by checking SWTR PUMP 2P-114 ROOM VENT UNIT 2A372 UNIT 3 INTAKE 2ZL-9606-2 start light on.		
8d*	Load 4 kV Bus A06.	Starts the SDC Pump associated with the running CCW pump by DEPRESSING LPSI PUMP 2P-016 2HS-9391-2 Start pushbutton.		
8e	Exit Attachment 8 and go to Step 5.b of SO23-13-15.	Exits Attachment 8 and goes to Step 5.b of SO23-13-15		
9	Verify running SDC Pump amperage normal.	Verify running SDC Pump amperage normal on LPSI PUMP 2P-016 2HS-9391-2 escutcheon.		

JPM: N152S **TITLE:** Perform Actions for a Loss of Shutdown Cooling

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
10	Recover SDC flow. Verify SDCS flow > 2300 gpm.	Verifies SDC flow by observing LPSI/SDC FLOW 2FI-0306 (or PMS display F306) is greater than 2300 gpm. **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:** 06/27/00

JPM INFORMATION SHEET

JPM NUMBER

J025FS

INITIAL PLANT CONDITIONS

The CRS directs you to emergency borate to satisfy the Reactivity Control Criteria of SO23-12-1, Standard Post Trip Actions.

TASK TO BE PERFORMED

Take the required actions to emergency borate.

THIS IS A TIME CRITICAL JPM

RO Ble
SRO-I Ble

JOB PERFORMANCE MEASURE J025FS

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J025FS

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 3 minutes

TIME CRITICAL JPM: Yes **CRITICAL TIME:** 6 minutes

POSITION: UACO

TASK SYS ID: 2641

TASK DESCRIPTION:

Initiate reactivity control recovery by CVCS emergency boration.

KA NUMBER: 024-AA1.17

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

10CFR55.45 APPLICABILITY: 5, 6

REFERENCES:

SO23-13-11, Emergency Boration of the Reactor Coolant System, Rev. 5.

AUTHOR:	L. Zilli	**DATE:**	06/06/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/26/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
1	New Format.	SW	07/05/93	MJK
1-1	Changed setup page; changed estimated time from 5 to 3 minutes based on history; minor editorial changes to standards for clarity.	HJW	03/22/94	N/A
1-2	Corrected "Position", "Task Number" and "Task Statement" on Documentation page.	HJW	02/09/95	N/A
1-3	Compared against SO23-13-11, Rev. 2 withand added new step 4 due to procedural changes.	HJW	08/19/96	N/A
1-4	Compared against SO23-13-11, Rev. 4. Changed step 7 to agree with procedure changes. Updated new KA number for NUREG-1122, Rev. 1.	HJW	08/19/97	N/A
1-5	Added a note prior to JPM step 4 to indicate that the BAMU pump did not start. Moved existing note to prior to JPM step 5.	RCW	09/15/98	N/A
1-6	Compared to SO23-13-11, Rev. 5, added two steps at the beginning to match the procedure. Changed setup commands that were non-ROSE. Updated KA designation and values and changed old task number to VISION SYS ID.	JJM	10/21/99	WLL
2	Compared to SO23-13-11, Rev. 5, TCN 5-1 and modified steps to match the procedure.	LRZ	06/06/00	WLL

SET-UP

Use any IC with the reactor tripped and SO23-12-1, Standard Post Trip Actions in progress, and:

- Override P-174 start switch to OFF.
- Override P-174 stop light to OFF or remove power supply to P-174 and its recirc valve for clearance.
- Hang Boundary of the Week tag on P-174 hand switch.
- Override P-175 start switch to OFF so that the pump does not start when the examinee depresses the start pushbutton.
- Ensure BAMU pump selector switch selected to P-175.

JPM: J025FS **TITLE:** Emergency Borate

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
Note: These are the steps listed in the AOI for Emergency Boration.				
1	Verify Refueling NOT in progress.	Requests CRS or SM verify that Refueling NOT in progress.		Start Time: _____
CUE: CRS/SM states that Refueling is not in progress.				
2	Verify at least one Charging Pump is available.	Observes at least one charging pump 2-190, 2P-191, or 2P-192 operating on CR-58.		
3	Place Makeup Mode Selector Switch in the MANUAL position.	Places Makeup Mode Selector Switch, 2HS-0210, in the MANUAL position.		
4	Open 2HV-9247, Emergency Boration Block Valve.	Depresses OPEN on 2HV-9247, Emergency Boration Block Valve.		
5	Start BAMU Pump P-175 or P-174.	Depresses START push button for P-175, BAMU Pump.		
CUE: P-175 and P-174 do not start.				
6	Close 2HV-9247, Emergency Boration Block Valve.	Depresses CLOSE on 2HV-9247, Emergency Boration Block Valve.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
NOTE: Opening either of the following valves admits boric acid to the RCS. Opening either valve satisfies the critical nature of the step.				
7*	Open 2HV-9240 and 2HV-9235, BAMU Tank to Charging Pump Gravity Feed Valves.	Depresses OPEN on 2HV-9240, BAMU Tk 2T071 Gravity Feed Valve and 2HV-9235, BAMU Tk 2T072 Gravity Feed Valve.		
8*	Close 2LV-0227B, Volume Control Tank T-077 Outlet Valve.	Depresses MANUAL and CLOSE on 2LV-0227B, Volume Control Tank Outlet Block Valve.		Critical time: _____
9	Ensure charging flow >40 gpm.	Observes Digital Display 2UJI-0051G, or Charging Flow indication 2FI-0212 on CR-58. **TERMINATION 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:** 06/27/00

JPM INFORMATION SHEET

JPM NUMBER

J143S

INITIAL PLANT CONDITIONS

Unit 2 is operating at 100% power. Yesterday, Channel 'A' Narrow Range Pressure, 2PT-0101-1, failed and the associated Functional Units were bypassed. I&C has since completed repairs and the channel is ready to be returned to service.

TASK TO BE PERFORMED

The Control Room Supervisor (CRS) directs you to return the associated Functional Units to service IAW SO23-3-2.12, Reactor Protective System Operation, Section 6.2.

RO B1f
SRO-I B1f

JOB PERFORMANCE MEASURE J143S

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J143S

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 8 minutes

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

POSITION: UACO

TASK SYS ID: 608

TASK DESCRIPTION:

Bypass a Reactor Protective System Trip Channel.

KA NUMBER: 012-A4.03

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

10CFR55.45 APPLICABILITY: 2, 6

REFERENCES:

SO23-3-2.12, Reactor Protective System Operation, Rev. 8, TCN 8-1.

AUTHOR:	L. Zilli	**DATE:**	06/14/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/26/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
0	New			
1	Reviewed SO23-3-2.12, Rev.8 TCN 8-1 and modified as required.	LRZ	06/14/00	WLL

SET-UP

Any at-power IC.

Bypass the following Functional Units:

- Pressurizer Pressure High
- LPD High
- DNBR Low

For setup: Execute RLP #6, step 1.

For Bypass removal: Execute RLP #6, Steps 2, 3, 4.

Provide examinee a copy of SO23-3-2.12, Reactor Protective System Operation, Section 6.2 (Bypass Operation of Trip Channels).

Use the attached picture of the inside of 2UIK078 Cabinet A to aid the examinee.

Station an instructor (in contact with the Machine Operator) who can relay the operation of the pushbuttons inside 2UIK078 Cabinet A.

JPM: J143S **TITLE:** Return a Reactor Protective System Trip Channel to service.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: The Trip Bypasses may be removed in any order.			
1	Verify no trip signals are present.	Verifies the following annunciators, and their associated PPS Operator Module lights on 2UI-9149-1, are extinguished: • 56A03, LOCAL POWER LEVEL HI CHANNEL TRIP • 56A04, DNBR LO CHANNEL TRIP • 56A05, PZR PRESS HI CHANNEL TRIP		Start Time: _____
2*	Remove the Trip Bypass for LPD High by depressing the Bypass switch.	At 2UIK078, A Cabinet, depresses pushbutton #3, making sure the white light extinguishes.		
	NOTE: Show the cabinet mimic to the examinee. **CUE: The white light is off.**			
3*	Remove the Trip Bypass for DNBR Low by depressing the Bypass switch.	At 2UIK078, A Cabinet, depresses pushbutton #4, making sure the white light extinguishes.		

JPM: J143S **TITLE:** Return a Reactor Protective System Trip Channel to service.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: Provide the cabinet mimic to the examinee. **CUE: The white light is off.**			
4*	Remove the Trip Bypass for Pressurizer Pressure High by depressing the Bypass switch.	At 2UIK078, A Cabinet, depresses pushbutton #5, making sure the white light extinguishes.		
	NOTE: Provide the cabinet mimic to the examinee. **CUE: The white light is off.**			
5	Verify the Trip Channel Bypassed Annunciator 56A29 (Channel 1) is reset.	Verifies annunciator 56A29 is extinguished. **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:** 06/27/00

JPM INFORMATION SHEET

JPM NUMBER

J049FS

INITIAL PLANT CONDITIONS

A LOCA inside containment has occurred.

Containment pressure rose to 38 psig and is now 11 psig and dropping.

You are the CO performing SO23-12-3, Loss of Coolant Accident, Attachment 2, Floating Steps, 105 minutes after the accident.

TASK TO BE PERFORMED

Perform Floating Step 13, Terminate Containment Spray of SO23-12-3, Loss of Coolant Accident.

RO B1g
SRO-I B1g SRO U B1c

JOB PERFORMANCE MEASURE J049FS

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J049FS

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 15 minutes

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

POSITION: UACO

TASK SYS ID: 2628

TASK DESCRIPTION:

Terminate Containment Spray.

KA NUMBER: 026-A2.08

KA VALUES: **RO** 3.2 **SRO** 3.7

10CFR55.45 APPLICABILITY: 6, 7, 8, & 12

REFERENCES:

SO23-12-3, Loss of Coolant Accident, Rev. 16.

AUTHOR: L. Zilli **DATE:** 06/08/00

OPERATIONS REVIEW: M. Jones **DATE:** 06/27/00

APPROVED BY: W. Lyke **DATE:** 06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
0	Created faulted JPM from J049S	LRZ	06/08/00	

SET-UP

Use IC52 and insert a steam line break inside Containment (MS03A@100%) until 14 psig in containment then MS03A to 0%. Then insert RC03@20% and execute RLP #7 in user NRCJPMS (password required).

Provide examinee a copy of SO23-12-3, Loss of Coolant Accident, Attachment 2.

Note: Verify that the CCW to Letdown Heat Exchanger valve is reopened when repeating this JPM.

JPM: J049FS **TITLE:** Terminate Containment Spray

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
1	Verify Containment pressure less than 14 psig, stable, and lowering.	Observes Containment Pressure WR Recorder 2PR-0353-1 or Containment Pressure Recorder 2PR-0352-1 or observe Containment Pressure NR indications 2PI-0351-1, 2, 3, & 4 on CR-57 or Containment Pressure WR indications 2PI-0352-1, 2, 3, & 4 on CR-57.		Start Time: _____
	CUE: Containment pressure is lowering.			
2	Verify at least 2 Containment Emergency Cooling Units operating.	Observes indicating lights for Containment Emergency Cooling Units (ECU): • 2E399 2HS-9953-1 • 2E401 2HS-9947-1 • 2E402 2HS-9955-2 • 2E400 2HS-9939-2		
3*	With only Containment Emergency Cooling Unit E399 operating the RNO must be entered.	Recognizes that the AER column is not met and enters the RNO column due to only one Containment Emergency Cooling Unit operating.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
4	Ensure that CSAS is actuated.	Verifies that CSAS is actuated by observing annunciators 57A/B03 CSAS TRAIN A/B ACTUATION illuminated. Verifies Containment Spray pumps (P012/P013) operating and Containment Spray Header Control valves (2HV-9367 & 2HV-9368) open.		
5*	Close CCW to/from Letdown Heat Exchanger Valves.	Depresses the CLOSE pushbutton for either Train A L/D HX valve CCW CLA LTDN HX 2E062 SUPPLY/RETURN VALVE 2HV-6293B/A **or** for Train B L/D HX valve CCW CLB LTDN HX 2E062 SUPPLY/RETURN VALVE 2HV-6522B/A (whichever is in service).		
6*	Ensure that each Containment Spray Header flow is greater than 1625 gpm.	Observes Containment Spray Hdr No.1 & No.2 flow indicators 2FI-0338-1 and 2FI-0348-2.		
7*	Exits FS-13 and goes to FS-14, Transfer Charging Pump Suction.	Proceeds to Floating Step 14, Transfer Charging Pump Suction of SO23-12-3, LOCA.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
8	Verifies elapsed time from SIAS actuation greater than 1-1/2 hours.	Calculates per initial conditions state that 1-3/4 hours have elapsed.		
9	Verifies elapsed time from SIAS actuation less than 2 hours.	Calculates per initial conditions state that 1-3/4 hours have elapsed.		
10*	Verify RWST level greater than 6%.	Observes RWT 2T006 Level, 2LI-0305-1 through 4.		
11	Ensure LV-0227C, RWST to Charging Pumps gravity feed valve open.	Verifies open 2LV-0227C, RWT 2T006 Gravity Feed Valve.		
12*	Override BAMU Pump 2P174.	Depresses the OVERRIDE pushbutton for BAMU Pump 2P174.		
13*	Stop BAMU Pump 2P174.	Depresses the STOP pushbutton for BAMU Pump 2P174.		
14*	Override BAMU Pump 2P175.	Depresses the OVERRIDE pushbutton for BAMU Pump 2P175.		
15*	Stop BAMU Pump 2P175.	Depresses the STOP pushbutton for BAMU Pump 2P175.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
16*	Override gravity feed valve 2HV-9235.	Depresses the OVERRIDE pushbutton for 2HV-9235, BAMU Tank 2T072 Gravity Feed Valve.		
17*	Close gravity feed valve 2HV-9235.	Depresses the CLOSE pushbutton for 2HV-9235, BAMU Tank 2T072 Gravity Feed Valve.		
18*	Override gravity feed valve 2HV-9240.	Depresses the OVERRIDE pushbutton for 2HV-9240, BAMU Tank 2T071 Gravity Feed Valve.		
19*	Close gravity feed valve 2HV-9240.	Depresses the CLOSE pushbutton for 2HV-9240, BAMU Tank 2T071 Gravity Feed Valve.		
20*	Override the emergency boration isolation valve 2HV-9247.	Depresses the OVERRIDE pushbutton for 2HV-9247, Emergency Boration Block Valve.		
21*	Close emergency boration isolation valve 2HV-9247.	Depresses the CLOSE pushbutton for 2HV-9247, Emergency Boration Block Valve.		

JPM: J049FS **TITLE:** Terminate Containment Spray

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
22*	Ensure the Volume Control Tank Outlet Valve 2LV-0227B is closed.	Verifies 2LV-0227B, Volume Control Tank Outlet Block Valve is closed. **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:** 06/27/00

CORRECTIONS AS REQUESTED TO START TIME

JPM INFORMATION SHEET

JPM NUMBER

J004

INITIAL PLANT CONDITIONS

The Control Room has been evacuated.

Both units completed necessary actions prior to evacuation.

You are the Unit 2(3) CO.

TASK TO BE PERFORMED

Perform the duties of the Unit 2(3) CO following a Control Room evacuation.

THIS IS A TIME CRITICAL JPM

JOB PERFORMANCE MEASURE J004

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J004

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 12 minutes

TIME CRITICAL JPM: YES **CRITICAL TIME:** 16 minutes

POSITION: CO

TASK SYS ID: 63025

TASK DESCRIPTION:

Operate the 480 volt electrical system AC control power switch.

KA NUMBER: 068-AA1.10

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

10CFR55.45 APPLICABILITY: 6, 8, 12

REFERENCES:

SO23-13-2, Shutdown From Outside the Control Room, Rev. 5, TCN 5-3.

AUTHOR:	L. Zilli	**DATE:**	06/13/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/27/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
1	New format, suggested Time Critical JPM, with a maximum time of 9 minutes excluding abnormal transit time. Actual time allow in SONGS 2/3 Appendix R Time and Manpower study is 8.9 minute. Past performance indicates an average time to complete this JPM is 10 minutes. Until better data is gathered (when did the clock start) it is suggested the critical time be 18 minutes to allow for administrative delays. Added additions steps clarifying actions to be performed per procedure.	SW	8/25/93	MJK
1-1	Compared against SO23-13-2, TCN 2-17; no changes required.	HJW	12/28/93	N/A
1-2	Changed step 1 to conform with other JPMs. Renumbered all steps.	HJW	12/30/93	N/A
2	Changed steps 24 & 25 to critical steps; changed setup page to new format; changed estimated time from 10 to 12 minutes and critical time from 18 to 16 minutes based on history.	HJW	03/01/94	MJK
2-1	Compared against SO23-13-2, TCN 2-18 with no changes required.	HJW	09/08/94	N/A
2-2	Compared against SO23-13-2, TCN 2-20 with no changes required.	HJW	04/26/95	N/A
2-3	Added attachment 21 as required to be provided on setup page.	HJW	12/07/95	N/A

2-4	Compared against SO23-13-2, Rev. 3, with no changes required.	HJW	09/13/96	N/A
2-5	Compared against SO23-13-2, Rev. 5, with no changes required.	RCW	08/26/98	N/A
2-6	Compared against SO23-13-2, TCN 5-2, with no changes reqd. Made JPM performable on either Unit by including the Unit 3 designations for equipment. Updated KA designation and values and changed old task numbers to VISION SYS ID.	JJM	10/26/99	WLL
3	Compared against SO23-13-2, TCN 5-3, with minor changes required. Updated format.	LRZ	06/13/00	WLL

SET-UP

NOTE: Circle the unit on which this JPM will be performed and inform the examinee.

NOTE: Examiner must obtain the JPM keyset to the Safe Shutdown Locker.

Provide examinee with a copy of SO23-13-2, Shutdown from Outside the Control Room, Attachment 4 if performed on Unit 2 (or Attachment 5 if performed on Unit 3) and Attachment 21.

JPM: J004 **TITLE:** Perform the duties of the Unit 2(3) CO following a Control Room evacuation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: Start this JPM from the Control Building lobby. Provide examinee with a copy of SO23-13-2, Attachments 4(5) and 21. **NOTE: The initial start time is logged as the examinee leaves the Control Building lobby.** **CUE: Simulate all actions throughout this procedure.**			
1*	Proceed to SSD locker and obtain an emergency lantern, steam tables, alarming dosimeter, headsets, and 21(31) keyset. [SSD KIT: 21(31)]	Proceeds to SSD locker and obtains an emergency lantern, steam tables, alarming dosimeter, headsets, and 21(31) keyset. [SSD KIT: 21(31)]		Start Time: _____
	CUE: Locate from the Control Building side, the door leading to the Penetration Building, but do <u>not</u> open the door.			
2*	Proceed to the door accessing the SSD route to Unit 2(3) Penetration Building.	Locates the door to the Unit 2(3) Penetration Building. The door for Unit 2 is AC307 and Unit 3 is AC342.		Stop Time: _____
	NOTE: Stop the clock when the door to the Penetration Building is located. Restart the clock when the SSD route door on the Radwaste side is located. **CUE: Proceed to the other side of the door via Radwaste.**			

JPM: J004 **TITLE:** Perform the duties of the Unit 2(3) CO following a Control Room evacuation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
3*	Proceed to penetration area 45'.	Proceeds to penetration area and locates the SSD route door and then proceeds to Switchgear 2A01(3A01).		Start Time: _____
4	Check open RCP breaker 2A0101 for 2P-001 (3A0102 for 3P-001).	Observes the indicating lights for RCP P-001 supply breaker 2A0101 (3A0102).		
	CUE: The green light is on. All actions to trip and lockout breakers should be simulated.			
5*	Remove plastic cover to AUX TRIP & LOCKOUT RELAY 286.	Simulates removing plastic cover to AUX TRIP & LOCKOUT RELAY 286 on 2A0101(3A0102).		
6*	Trip the AUX TRIP & LOCKOUT RELAY 286 with the plastic cover.	Simulates using the plastic cover to trip the AUX TRIP & LOCKOUT RELAY 286 on 2A0101(3A0102).		
7	Check open RCP breaker 2A0103 for 2P-004 (3A0104 for 3P-004).	Observes the indicating lights for RCP P-004 supply breaker 2A0103 (3A0104).		
	CUE: The green light is on.			
8*	Remove plastic cover to AUX TRIP & LOCKOUT RELAY 286.	Simulates removing plastic cover to AUX TRIP & LOCKOUT RELAY 286 on 2A0103(3A0104).		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
9*	Trip the AUX TRIP & LOCKOUT RELAY 286 with the plastic cover.	Simulates using the plastic cover to trip the AUX TRIP & LOCKOUT RELAY 286 on 2A0103(3A0104).		
10	Proceed to the Penetration Area 63'.	Proceeds switchgear 2A02 (3A02) in the Penetration Area 63'.		
11	Check open RCP breaker 2A0201 for 2P-002(3A0202 for 3P-002).	Observes the indicating lights for RCP P-002 supply breaker 2A0201(3A0202).		
	CUE: The green light is on.			
12*	Remove plastic cover to AUX TRIP & LOCKOUT RELAY 286.	Simulates removing plastic cover to AUX TRIP & LOCKOUT RELAY 286 on 2A0201(3A0202).		
13*	Trip the AUX TRIP & LOCKOUT RELAY 286 with the plastic cover.	Simulates using the plastic cover to trip the AUX TRIP & LOCKOUT RELAY 286 on 2A0201(3A0202).		
14	Check open RCP breaker 2A0203 for 2P-003(3A0204 for 3P-003).	Observes the indicating lights for RCP P-003 supply breaker 2A0203(3A0204).		
	CUE: The green light is on.			

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
15*	Remove plastic cover to AUX TRIP & LOCKOUT RELAY 286.	Simulates removing plastic cover to AUX TRIP & LOCKOUT RELAY 286 on 2A0203(3A0204).		
16*	Trip the AUX TRIP & LOCKOUT RELAY 286 with the plastic cover.	Simulates using the plastic cover to trip the AUX TRIP & LOCKOUT RELAY 286 on 2A0203(3A0204).		
17	Check Non-1E PZR backup heater supply breaker 2(3)B0805 position.	Observes breaker 2(3)B0805 indication window.		
	CUE: The red closed indicator is visible.			
18*	Place the Charging Power Toggle Switch to OFF.	Simulates placing Charging Power Toggle Switch to OFF (down) on 2(3)B0805.		
19*	Trip breaker 2(3)B0805.	Simulates moving the trip pushbutton guard aside then push the trip button on 2(3)B0805.		
	CUE: The green open indicator is visible.			
20	Check Non-1E PZR backup heater supply breaker 2(3)B0806 position.	Observes breaker 2(3)B0806 indication window.		

JPM: J004 **TITLE:** Perform the duties of the Unit 2(3) CO following a Control Room evacuation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
CUE: The red closed indicator is visible.				
21*	Place the Charging Power Toggle Switch to OFF.	Simulates placing Charging Power Toggle Switch to OFF (down) on 2(3)B0805.		
22*	Trip breaker 2(3)B0806.	Simulates moving the trip pushbutton guard aside then push the trip button on 2(3)B0806.		
CUE: The green open indicator is visible.				
23	Check PZR proportional heater supply breaker 2(3)B0810 position.	Observes breaker 2(3)B0810 indication window.		
CUE: The red closed indicator is visible.				
24*	Place the Charging Power Toggle Switch to OFF.	Simulates placing Charging Power Toggle Switch to OFF (down) on 2(3)B0810.		
25*	Trip breaker 2(3)B0810.	Simulates moving the trip pushbutton guard aside then push the trip button on 2(3)B0810.		
CUE: The green open indicator is visible.				

JPM: J004 **TITLE:** Perform the duties of the Unit 2(3) CO following a Control Room evacuation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
26	Proceed to Penetration Area 45' by way of the Fuel Handling Building Stairwell.	Proceeds to Penetration Area 45' by way of the Fuel Handling Building Stairwell.		
27	Check Non-1E PZR back up heater supply breaker 2(3)B0205 position.	Observes breaker 2(3)B0205 indication window.		
	CUE: The green open indicator is visible.			
28*	Place the Charging Power Toggle Switch to OFF.	Simulates placing charging power toggle switch to OFF (down) on 2(3)B0205.		
29*	Trip breaker 2(3)BO205.	Simulates moving the trip pushbutton guard aside then push and hold the trip button while lifting the manual close lever to the right of the trip button on 2(3)B0205.		
	CUE: You hear the closing springs discharge.			
30	Check Non-1E PZR back up heater supply breaker 2(3)B0206 position.	Observes breaker 2(3)B0206 indication window.		
	CUE: The green open indicator is visible.			

JPM: J004 **TITLE:** Perform the duties of the Unit 2(3) CO following a Control Room evacuation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
31*	Place the Charging Power Toggle Switch to OFF.	Simulates placing charging power toggle switch to OFF (down) on 2(3)B0206.		
32*	Trip breaker 2(3)B0206.	Simulates moving the trip pushbutton guard aside then push and hold the trip button while lifting the manual close lever to the right of the trip button on 2(3)B0206.		
	CUE: You hear the closing springs discharge.			
33	Check PZR proportional heater supply breaker 2(3)B0210 position .	Observes breaker 2(3)B0210 indication window.		
	CUE: The green open indicator is visible.			
34*	Place the Charging Power Toggle Switch to OFF.	Simulates placing charging power toggle switch to OFF (down) on 2(3)B0210.		

JPM: J004 **TITLE:** Perform the duties of the Unit 2(3) CO following a Control Room evacuation

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
35*	Trip breaker 2(3)B0210.	Simulates moving the trip pushbutton guard aside then push and hold the trip button while lifting the manual close lever to the right of the trip button on 2(3)B0210. **TERMINATING CUE:** **You hear the closing springs discharge. This JPM is complete.**		Stop Time: _____ Examiner will combine both times to determine the total time to perform this JPM. Total Time: _____ **NOTE: Critical Time is 16 minutes.**

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:** 07/26/00

SUBSTITUTE FOR N153

JPM INFORMATION SHEET

JPM NUMBER

N148

INITIAL PLANT CONDITIONS

The Unit 3 CRS is performing Attachment 7, RCS Pressure Control Recovery of 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 3AB for 1208MU084, Charging Line Block Valve and key 3CIV for 1208MU130, Auxiliary Spray Bypass Line.

TASK TO BE PERFORMED

Establish the alternate auxiliary spray flowpath per Attachment 7, Step 5.k RNO of SO23-12-9, Functional Recovery.

JOB PERFORMANCE MEASURE N148

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

N148

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 5 minutes

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

POSITION: PPEO

TASK SYS ID: 3069

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:

SO23-12-9, Functional Recovery, Attachment 7, Rev. 20.

AUTHOR: L. Zilli **DATE:** 07/05/00

OPERATIONS REVIEW: M. Jones **DATE:** 08/02/00

APPROVED BY: W. Lyke **DATE:** 08/04/00

MODIFICATION HISTORY

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

SET-UP

Provide the examinee with a copy of SO23-12-9, Functional Recovery, Attachment 7.

JPM: N148 **TITLE:** Perform Manual Auxiliary Spray Actions.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
1	Ensure 3HV-9201 is closed.	Ensures 3HV-9201 is closed by contacting the Control Room and verifying 3HV-9201 position.		Start Time: _____
CUE: The CRS reports that the PZR Auxiliary Spray Valve 3HV-9201 is closed.				
2*	UNLOCK and OPEN 1208MU130, PZR Auxiliary Spray Bypass Line Isolation Valve (Penetration 68).	Simulates unlocking and opening 1208MU130, PZR Auxiliary Spray Bypass Line Isolation Valve at Penetration 68.		
3*	UNLOCK and THROTTLE 1208MU084, Charging Line Block Valve to control spray flow to establish required PZR pressure.	Simulates unlocking and throttling 1208MU084, Charging Line Block Valve to control spray flow to establish required PZR pressure. **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:** 08/08/00

JPM INFORMATION SHEET

JPM NUMBER

J021

INITIAL PLANT CONDITIONS

The Unit 3 reactor has just tripped.

Several full length CEA's have not fully inserted.

The CO has directed you to locally open the Reactor Trip Circuit Breakers and all Motor Generator Set Input and Output Breakers per SO23-12-1, Standard Post Trip Actions.

TASK TO BE PERFORMED

Locally open Unit 3 Reactor Trip Circuit Breakers and Motor Generator Set Input and Output Breakers as directed in the Standard Post Trip Actions.

THIS IS A TIME CRITICAL JPM

RO B2a

SRO I B2a SRO U B2b

JOB PERFORMANCE MEASURE J021

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J021

JPM LEVEL: RO/SRO

ESTIMATED TIME TO COMPLETE: 5 minutes

TIME CRITICAL JPM: Yes **CRITICAL TIME:** 8 minutes

POSITION: RWOP

TASK SYS ID: 399

TASK DESCRIPTION:

Manually operate the reactor trip breakers.

KA NUMBER: 029-EA1.12

KA VALUES: **RO** 4.1 **SRO** 4.0

10CFR55.45 APPLICABILITY: 6, 8, 9, 12

REFERENCES:

SO23-12-1, Standard Post Trip Actions, Rev. 16.

AUTHOR: L. Zilli **DATE:** 06/13/00

OPERATIONS REVIEW: M. Jones **DATE:** 06/27/00

APPROVED BY: W. Lyke **DATE:** 06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
1	New format. Split step 1 into multiple steps. This is a Time Critical JPM. Suggest the maximum time be 10 minutes, twice the expected time to complete.	SW	08/03/93	MJK
1-1	Compared against SO23-12-1, Rev. 10; no changes required.	HJW	12/27/93	N/A
1-2	Changed setup page; changed critical time from 10 to 8 minutes based on history.	HJW	03/17/94	N/A
1-3	Compared against SO23-12-1, Rev. 11; no changes required.	HJW	06/28/95	N/A
1-4	Compared against SO23-12-1, Rev. 12; no changes required.	HJW	06/17/96	N/A
1-5	Compared against SO23-12-1, Rev. 16, added the words "Full Length" to the initial plant conditions to describe the CEA's that did not insert. Deleted Unit 2 from initial plant conditions so this task can be performed on either unit. Updated KA designation and changed old task number to VISION SYS ID.	JJM	09/27/99	WLL
2	Compared against SO23-12-1, Rev. 16, made minor editorial corrections and converted to a Unit 3 task.	LRZ	06/13/00	WLL

SET-UP

No procedure allowed for this JPM.

JPM: J021 **TITLE:** Locally open Reactor Trip Breakers and MG Set Breakers

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: Proceed to the Rad Waste Control Room before providing the examinee with a copy of the task to be performed. **NOTE: The examinee is not allowed to refer to a procedure.** **NOTE: Any combination of open breakers (either 1 or 2 and either 7 or 8 AND either 3 or 4 and either 5 or 6) that results in an open circuit to CEDM bus 1 and 2 satisfies critical steps 1 through 8 inclusive for this JPM.** **NOTE: The following steps may be performed in any sequence.**			
1*	Open Reactor Trip Circuit Breakers TCB-1.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-5 & TCB-1 on TCB-5 cubical.		Start Time: _____ (From the Rad Waste Control Room)
	NOTE: The Emergency Trip push button trips 2 associated breakers simultaneously. **CUE: The green light(s) is(are) on.**			
2*	Open Reactor Trip Circuit Breaker TCB-2.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-6 & TCB-2 on TCB-6 cubical.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	CUE: The green light(s) is(are) on.			
3*	Open Reactor Trip Circuit Breaker TCB-3.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-3 & TCB-7 on TCB-3 cubical.		
	CUE: The green light(s) is(are) on.			
4*	Open Reactor Trip Circuit Breaker TCB-4.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-4 & TCB-8 on TCB-4 cubical.		
	CUE: The green light(s) is(are) on.			
5*	Open Reactor Trip Circuit Breaker TCB-5.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-5 & TCB-1 on TCB-5 cubical.		

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	CUE: The green light(s) is(are) on.			
6*	Open Reactor Trip Circuit Breaker TCB-6.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-6 & TCB-2 on TCB-6 cubical.		
	CUE: The green light(s) is(are) on.			
7*	Open Reactor Trip Circuit Breaker TCB-7.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-3 & TCB-7 on TCB-3 cubical.		
	CUE: The green light(s) is(are) on.			
8*	Open Reactor Trip Circuit Breaker TCB-8.	Presses the local trip push button on breaker cubical (behind the stainless steel guard plate), **or** presses the Emergency Trip push button TCB-4 & TCB-8 on TCB-4 cubical.		

JPM: J021 **TITLE:** Locally open Reactor Trip Breakers and MG Set Breakers

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	CUE: The green light(s) is(are) on.			
9*	Open MG set 1 input breaker.	On 3L-045 places the MOTOR INPUT breaker in Off.		
10*	Open MG set 1 output breaker.	On 3L-045 places the GENERATOR OUTPUT breaker in Off.		
11*	Open MG set 2 input breaker.	On 3L-046 places the MOTOR INPUT breaker in Off.		
12*	Open MG set 2 output breaker.	On 3L-046 places the GENERATOR OUTPUT breaker in Off. **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:** 07/26/00

Facility: San Onofre 2 & 3	Date of Examination: 09/25/00
Exam Level (circle one): RO / SRO(I) / SRO(U)	Operating Test Number: 1

B.1 Control Room Systems

System / JPM Title		Type Code*	Safety Function
a. RHR	Perform Actions for a Loss of Shutdown Cooling	N, S, L	**4** N152S
b. ESFAS	Perform RAS Actuation Verification	D, S, A	**2** J113FS
c. CSS	Terminate Containment Spray	N, S, A	**5** J049FS
d.			
e.			
f.			
g.			

B.2 Facility Walk-Through

a. FPS	Perform the Duties of the CRS Following Control Room Evacuation	D	**8** J019
b. CRDS	Locally Perform ATWS Actions	D, R	**1** J021
c.			

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

JPM INFORMATION SHEET

JPM NUMBER

J019

INITIAL PLANT CONDITIONS

You are the Unit 2(3) CRS.
Both plants were operating at full power when dense smoke began filling the control room.

The immediate actions have been taken in accordance with SO23-13-2, Shutdown From Outside the Control Room.

The control room is being evacuated.

TASK TO BE PERFORMED

Evacuate the Control Room per SO23-13-2.
Initiate Attachment 2(3) and perform required duties of Unit 2(3) CRS.

SRO B 2a
SROU B 2a

JOB PERFORMANCE MEASURE J019

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

OPERATOR'S NAME: _____
(Print)

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

SATISFACTORY: _____

UNSATISFACTORY: _____

DOCUMENTATION

J019

JPM LEVEL: SRO

ESTIMATED TIME TO COMPLETE: 20 minutes

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

POSITION: CRS

TASK SYS ID: 1197

TASK DESCRIPTION:

Perform tasks during a shutdown from outside the control room.

KA NUMBER: 068-A1.10

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

10CFR55.45 APPLICABILITY: 3, 6, 8, 12

REFERENCES:

SO23-13-2, Shutdown from Outside the Control Room, Rev. 5, TCN 5-3.

AUTHOR:	L. Zilli	**DATE:**	06/15/00
OPERATIONS REVIEW:	M. Jones	**DATE:**	06/27/00
APPROVED BY:	W. Lyke	**DATE:**	06/29/00

MODIFICATION HISTORY

REV	DESCRIPTION OF CHANGE	MODIFIED BY	DATE MODIFIED	SOL APPROVAL
1	New format. Added clarifying notes for examiner; specific names for breakers. Split steps for locking out Train B supply breakers and opening DC power supply breakers. Made steps 17, 19, 21, 23, & 26 critical.	JW	11/4/93	MJK
1-1	Checked JPM against SO23-13-2 TCN 2-17. No changes required.	SW	11/29/93	N/A
1-2	Changed setup page.	HJW	03/17/94	N/A
1-3	Compared against SO23-13-2, TCN 2-18 with no changes required.	HJW	09/08/94	N/A
1-4	Compared against SO23-13-2, TCN 2-20 with no changes required.	HJW	05/02/95	N/A
1-5	Compared against SO23-13-2, TCN 2-23 with no changes required. Minor additional information provided for examiner.	HJW	10/17/95	N/A
1-6	Compared against SO23-13-2, Rev. 3 and added step 27 to agree with new procedure step.	HJW	09/03/96	N/A
2	Compared against SO23-13-2, Rev. 5, TCN 5-3 with minor changes incorporated. Also made this JPM applicable to both units. Deleted step for CCW pump miniflow valves.	LRZ	06/15/00	WLL

SET-UP

NOTE: Circle the unit on which this JPM will be performed and inform the examinee.

Provide candidate with a copy of SO23-13-2, Shutdown from Outside the Control Room, Attachment 2, Unit 2 CRS Duties or Attachment 3, Unit 3 CRS Duties and Attachment 21, Circuit Breaker Abnormal Operation.

JPM: J019 **TITLE:** Perform required duties of the Unit 2(3) CRS during a Shutdown from Outside the Control Room.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	NOTE: Proceed to the Control Building Lobby; then provide a copy of SO23-13-2, Shutdown from Outside the Control Room, Attachments 2(3) and 21. **NOTE: Start time from the lobby when the examinee indicates he/she is ready to begin.** **NOTE: Obtaining the CRS 2(3) key set is critical in the step below.** **NOTE: When the examinee indicates how to gain access to the Safe Shutdown locker, unlock the Safe Shutdown Locker.**			
1*	Proceed to Control Building 50' Safe Shutdown locker and identify equipment to be taken.	Proceeds to SSD Locker and identifies SSD KIT: CRS 2(3) and simulates removal from locker.		Start time: _____
2	Proceed to 2(3)D2 Vital Power Distribution Room.	Locates Room 310-D.		
3	ENSURE closed ESF DC control power at 2(3)D2P1.	Locates breaker 2(3)D2P101, Power to Sw Gr 2(3)A06, in Panel 2(3)D2P1.		
	CUE: Breaker 2(3)D2P101 is closed.			
4	ENSURE closed ESF DC control power at 2(3)D2P1.	Locates breaker 2D2P102, Power to LC 2B06, in Panel 2D2P1.		
	CUE: Breaker 2(3)D2P102 is closed.			

JPM: J019 **TITLE:** Perform required duties of the Unit 2(3) CRS during a Shutdown from Outside the Control Room.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
5	ENSURE closed ESF DC control power at 2(3)D2P1.	Locates breaker 2(3)D2P111, Power to 2(3)G003 2(3)L-161, in Panel 2(3)D2P1.		
	CUE: Breaker 2(3)D2P111 is closed.			
6*	ENSURE open 2(3)D2P103.	Simulates opening 2(3)D2P103, Power to 2(3)L-33, in Panel 2(3)D2P1.		
	CUE: Breaker 2(3)D2P103 is open.			
7*	ENSURE open 2(3)D2P104.	Simulates opening 2(3)D2P104, Power to 2(3)L071-3R, in Panel 2(3)D2P1.		
	CUE: Breaker 2(3)D2P104 is open.			
8*	ENSURE open 2(3)D2P105.	Simulates opening 2(3)D2P105, Power to 2(3)L421, in Panel 2D(3)2P1.		
	CUE: Breaker 2(3)D2P105 is open.			
9*	ENSURE open 2(3)D2P108.	Simulates opening 2(3)D2P108, Power to 2(3)L-345, in Panel 2(3)D2P1.		
	CUE: Breaker 2(3)D2P108 is open.			

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
10*	ENSURE open 2(3)D2P109.	Simulates opening 2(3)D2P109, Power to NSSS Cabinet 2(3)L-071-4R Flood Alarms, in Panel 2(3)D2P1.		
	CUE: Breaker 2(3)D2P109 is open.			
11*	At the 2(3)D2 Switchboard open power supply breaker, 2(3)D205, providing power to HV-4706 and HV-4715.	Simulates opening breaker 2(3)D205, Power to 2(3)HV-4706 & 4715, in Panel 2(3)D2, 125 VDC Bus.		
	CUE: Breaker 2(3)D205 is open.			
12	Proceed to Unit 2(3) Train B Switchgear Room.	Proceeds to Unit 2(3) Train B Switchgear Room 302A.		
	NOTE: The key for Fire Isolation Panel "B" 2(3)L-413 is not on the JPM key ring.			
13*	Unlock and open Fire Isolation Panel 2(3)L-413.	Simulates unlocking and opening Fire Isolation Panel "B" 2(3)L-413.		
14*	Select all Fire Isolation Switches to LOCAL.	Simulates or indicates the following: • Placing all Fire Isolation Switches to LOCAL		
	CUE: All Fire Isolation Switches are in LOCAL.			

JPM: J019 **TITLE:** Perform required duties of the Unit 2(3) CRS during a Shutdown from Outside the Control Room.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
15*	Open Second Point of Control cubicle 2(3)A0601.	Opens Second Point of Control cubicle 2(3)A0601.		
16*	Select all control switches to stop.	Simulates placing all Second Control Point switches to STOP.		
	CUE: All control switches are in STOP. **NOTE: The following CUE should NOT be provided until the examinee has proceeded to bus A06 and looked at the breakers:** **CUE: Bus 2(3)A06 status is:** **• 2(3)A06-13, 2(3)G003 output breaker GREEN light is on** **• 2A06-19 (3A06-03), 1E 4kV bus tie GREEN light is on** **• 2(3)A06-18, Reserve Aux Transformer breaker RED light is on**			
17*	Lockout 2(3)A0613, 2(3)G003 output breaker.	Simulates removing cover to overcurrent lockout relay 186-2, DSL GEN 2(3)G003 LOCKOUT, (located on 2(3)A0614 cubicle) and uses insulated cover to actuate relay.		
	CUE: 2(3)A0613 is open.			

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
18*	Turn off DC control power to 2(3)A0613, 2(3)G003 output breaker.	Simulates opening front panel of breaker and opening DC control power breaker.		
	CUE: DC control power switch is off.			
19*	Lockout 2A0619 (3A0603), 1E Bus Tie breaker.	Simulates removing cover to overcurrent lockout relay 186-1 and uses insulated cover to actuate relay.		
	CUE: 2A0619 (3A0603) is open.			
20*	Turn off DC control power to 2A0619 (3A0603), 1E Bus Tie breaker.	Simulates opening front panel of breaker and opening DC control power breaker.		
	CUE: DC control power switch is off.			
21*	Lockout 2(3)A0618, 1E Reserve Aux Transformer breaker.	Removes cover to overcurrent lockout relay 186-1 and uses insulated cover to actuate relay.		
	CUE: 2(3)A0618 is open.			
22*	Turn off DC control power to 2(3)A0618, 1E Reserve Aux Transformer breaker.	Simulates opening front panel of breaker and opening DC control power breaker.		

JPM: J019 **TITLE:** Perform required duties of the Unit 2(3) CRS during a Shutdown from Outside the Control Room.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
	CUE: DC control power switch is off.			
23*	Select Transfer Switch 2(3)XS539B for Train B Source Range Neutron Flux Monitor power supply to ALTERNATE SOURCE.	Simulates selecting Transfer Switch 2(3)XS539B for Train B Source Range Neutron Flux Monitor power supply to ALTERNATE SOURCE. (Transfer switch located in southeast corner of room).		
	CUE: Transfer Switch is in ALTERNATE SOURCE.			
24*	Remove key from Transfer Switch 2(3)XS539B.	Simulates removing key from Transfer Switch 2(3)XS539B.		
25*	Insert key in Isolation Switch 2(3)XS539A.	Simulates inserting key in Isolation Switch 2(3)XS539A. (Transfer switch located in southeast corner of Room 308A(B) Train A Switchgear Room).		
26*	Select 2(3)XS539A to CLOSED.	Simulates selecting 2(3)XS539A to CLOSED.		

JPM: J019 **TITLE:** Perform required duties of the Unit 2(3) CRS during a Shutdown from Outside the Control Room.

* Denotes a CRITICAL STEP

NO	PERFORMANCE STEP	STANDARD	S/U	Comments (Required for Unsat)
27	Proceed to EVSD.	Proceeds to Evacuation Shutdown Panel and simulate establishing communications. **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:** 07/26/00

Facility: SONGS Scenario No.: 1 Op-Test No.: A/B

Examiners: _____ Operators: _____

Initial Conditions: 70% reactor power Middle of Core Life 2GOO2 OOS, 2HPSI 18 OOS, 2PI0351-1 Containment NR pressure Failed Channel A , Channel A high Containment pressure trip bypassed

Turnover: 70% power 285 EFPD CCW Train B in service.

Event No.	Malf. No.	Event Type*	Event Description
1		N-ACO R-CO	**T+5** Raise power
2	SG03A RLP2	I-ACO	**T+15** 2PT1023-1 Fails low (SG E088 pressure Protection Channel A) Reactor Protection System Failure/Loss of Vital Inverter AOI **SO23-13-18**
3	ED11 RLP3	I-ALL	**T+25** Loss of all Control Room Annunciators **SO23-13-22**
3	RC10B RLP3	I-CO	**T+27** TE0111Y RCS cold leg Temperature input to RRS Fails high, Pressurizer level set point 1 input failure.
4	RLP4		**T+35** Small Earthquake, Earthquake AOI **SO23-13-3**
5	CC03B RLP4	C-ACO	**T~~+40~~ 35** CCW train B pipe rupture Loss of CCW/SWC AOI **SO23-13-7**
6	RC07 RLP5		**T+50** RCP 2P003 seized shaft Reactor Trip
6	RC03 RLP5	M-ALL	Reactor Trip Small Break LOCA
7	RP01A EC08E RLP1	C-CO	SIAS HPSI 17 Fail to Start of only available HPSI pump. HPSI 19 OC Trip

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

Objectives:

- Evaluate the crew's ability to raise reactor power and control RCS temperature.
- The crew should recognize and respond to a failure of Steam Generator Pressure instrument.
- Respond to a Loss of Annunciators
- Evaluate the crew's response to a failure of an input to the Pressurizer Level Controller set point and control Pressurizer level.
- Evaluate the crew's response to a seismic event.
- Evaluate the crew's response to a loss of Component Cooling Water caused by a rupture of a Critical loop.
- Evaluate the crew's response to a Loss of Coolant Accident complicated by failure of the HPSI pump to start.
- Evaluate the crew's restoration of RCS subcooling.

Critical Tasks
CO
Manually control Pressurizer level.
Manually start HPSI pump after SIAS to provide adequate HPSI flow.

ACO
Transfer NCL to train A to prevent damage to RCP and Reactor Trip.
Cooldown to restore Core Exit Sat. margin to greater than 20°F

Core Damage Risk related events:
Event 5 Operator Action 19
6 Important Risk Accident
7 Operator Action 47

USER: NRCDYN IC: 61-70% POWER M OF CYCLE DYNAMIC NRC # 1 SETUP RLP: 1 CCW ALIGNED TO TRAIN B					
RLPs/STEPS	TYPE	MALF #	DESCRIPTION	DEM VALUE	INITIATING PARAMETER
1(1)	OVER	2G002	2G002 IN MAINTENANCE LOCK OUT (USE KEY NUMBER 2)	MAG TAGS	STARTUP OF SETUP RLP
1(2)	OVER	MP-018	HPSI PUMP MP-018 OOS FOR BOW	MAG TAGS	STARTUP OF SETUP RLP
1(3)	OVER	PI-0351-1	PI-0351-1 CHANNEL A CONTAINMENT NR PRESSURE IND. FAILURE	BYPASSES	STARTUP OF SETUP RLP
1(4)	MF	RP01A	HPSI PUMP MP-017 AUTO START FAILURE	TRUE	STARTUP OF SETUP RLP
1(5)	OVER	LSL-0302	RWST LEVEL ALARM SWITCH FAILS LOW	TRUE	SIAS + 5 MINS
1(6)	MF	EC08E	LOSS OF HPSI 19	TRUE	SIAS

RLPs/STEPS	TYPE	MALF #	DESCRIPTION	DEM VALUE	RAMP	DELAY
2(1)	MF	SG03A	SG E-088 PRESSURE TRANSMITTER PT-1023-1 FAILS LOW	0%	2 MINS	2 SECS
2(2)	OVER	PPS BYPASSES	PPS DOOR OPEN ALARM LO SG-2 PRESS HI SG-1 DP EFAS 1 HI SG-2 DP EFAS 2 PPS DOOR OPEN ALARM CLEARS	TRUE		5 SECS 10 SECS 15 SECS 20 SECS
3(1)	MF	ED11	LOSS OF ANNUNCIATORS	TRUE		
3(2)	MF	RC10B	RCS COLD LEG TEMP TE-0111Y FAILS HIGH	100%	2 MINS	2
4(1 - 5)	MF	SIESMIC	SMALL SIESMIC EVENTS			
4(5)	MF	CC03B	CCW TRAIN B PIPE RUPTURE	100	5 MINS	
4(6)	OVER	SIESMIC	CLEAR SIESMIC ALARM	DELETE		40 SECS
4(7)	OVER	SIESMIC	CCW TANK T-004 OUTLET ISOLATION VALVE POWER ON	FALSE		
5(1)	MF	RC07	RCP MP-003 SHAFT SEIZURE	TRUE		
5(2)	MF	RC03	RCS LEAK INSIDE CONTAINMENT	10%	5 MINS	RX TRIP

(0) INDICATES THE SUB STEP OF THE INDICATED RLP.

Op-Test No.: 1 Scenario No.: 1 Event No.: 1 Page 4 of 13

Event Description: Raise reactor power
CO Reactivity Manipulation
ACO Normal Evolution

Time	Position	Applicant's Actions or Behavior
		T+ 5
	SRO	Direct raising power.
	CO	RAISE RCS temperature by dilution per SO23-3-2.2 Makeup Operations, Section for Dilution Makeup Mode.
	ACO	RAISE Turbine load, as necessary, to maintain Tc within the normal operating band of the chart in Attachment 3 of Procedure SO23-5-1.7.
		End of event.

Comments:

CO Selects DILUTE and ~~places~~ opens ~~the~~ blended MU valve and verifies that ~~the~~ controller controls flowrate.

Op-Test No.: 1 Scenario No.: 1 Event No.: 2 Page 5 of 13

Event Description: Steam Generator # 2 EO88 2PT1023-1 Fails low pressure Protection Channel A.
ACO Instrument Failure

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at T+14 to verify execution of **RLP#2 at T+ 15**
		CUE: Machine Operator execute **RLP #2 (1)** (SG03A) per Lead Examiner
		Alarms 56A51 SG2 E088 PRESS LO PRETRIP 56A54 SG1 E089 PRESS > SG2 E088 PRETRIP 56A41 SG2 E088 PRESS LO CHANNEL TRIP 56A44 SG1 E089 PRESS > SG2 E088 ESFAS CH TRIP Indications 2PI1023A1 lowering (Channel A SGE088 Press.) Pretrip and Trip lights on channel A PPS ROM
	SRO	Enter SO23-13-18 Reactor Protection System Failure/Loss of Vital Inverter AOI
	ACO	Determine 2PI1023A1 is the only failed instrument
	SRO	Determine A Single Functional Unit has FAILED.
		Note Tech Specs impacted 1 hr to place in bypass 3.3.1, 3.3.3 30 days to restore to operable 3.3.11, 3.3.12, 3.3.110 7 days to establish fire watch 60 days to restore to operable 3.7.113.1
	SRO	Request placing in bypass on Channel A: S/G 2 Pressure - Low(RPS) S/G 1 ΔP (EFAS 1) S/G 2 ΔP (EFAS 2)
		Cue: Machine Operator execute **RLP #2 (2)** to bypass the above trips.
	CO	Verify correct bypasses installed on correct channel
		End of event.

Comments: Add:
CO - Refers to ARP for 56A41

Op-Test No.: 1 Scenario No.: 1 Event No.: 3 Page 6 of 13

Event Description: Loss of All Control Room Annunciators with TE0111Y RCS Cold Leg Temperature Fails high, RRS input to Pressurizer level control level set point 1.
CO & ACO Component Failure
CO Instrument Failure
CO Critical Task

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at T+24 to verify execution of **RLP#3 at T+ 25**
		CUE: Machine Operator execute RLP #3 (1) per Lead Examiner
	CO	Respond to Alarm 50C01 Loss of Annunciator ✓
	CO/ACO	Test All Annunciators ✓
	CO/ACO	Report all Annunciators have failed ✓
	SRO	Direct Monitoring Plant Parameters per Loss of all Control Room Annunciators SO23-13-22 Att. 3 ✓
	SRO	Contact Electrical Maint. to assist with troubleshooting. ✓
	SRO	Request CO to Report D5 bus Voltage ✓
	CO	Reports Bus Voltage normal ✓
	SRO	Request outside operator to verify normal D5 alignment and check status of D5P4 Breaker 74 ✓
		Indications:2TI011AY ~~rising~~ STET Min. letdown Max charging ✓
	CO	(Actions Directed by ARP 50A05) for "T AVG HI" Depress the "A/M" Button on 2LIC-0110, PZR Level Controller, to place PZR level control in MANUAL.
	CO	Stop Charging Pumps to match Letdown flow as closely as possible. ✓
	CO	Adjust 2(3)LIC-0110, PZR Level Controller, to match Letdown and Charging flows. ✓
	CO	***Manually control pressurizer level*** ✓
		CUE: Machine Operator report 2D5P4 Breaker 74 open not tripped, cleaning crew in the area and worker reports accidental contact with breaker.
	SRO	Request the outside operator to reclose 2D5P4 Breaker 74 ✓

CO ARP for 50C01
CO Stops Dilution by . . . .

		CUE: Machine Operator remove malfunction ED11 and report 2D5P4 Breaker 74 is closed
	CO	Determine T111AY has failed by comparing temperature instruments.
	CO	Change LIC-0110 to level set point 2 and return to automatic
		End of event.

Comment:

CO Checks annunciators that are in alarm and verifies actions per ARPs.

Op-Test No.: 1 Scenario No.: 1 Event No.: 4 Page 8 of 13

Event Description: Seismic Event
Abnormal Event - All

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at T+34 to verify execution of **RLP#4 at T+ 35**
		CUE: Machine Operator execute RLP #4 (1-5) per Lead Examiner
		Alarms 61C21 Seismic Recording System Activated ✓
		CUE: Floor Operator report ground motion. ✓
		CUE: Machine Operator Unit 1 SCFH Calls to report ground motion felt.
	AO SRO	Enter SO23-13-3, Earthquake. ✓
	SRO	Enter Earthquake AOI SO23-13-3 and determine the alarm is valid ✓
	SRO	Direct Attachment 4 to be performed ✓
		Cue : Machine Operator when the Floor Operator is requested to perform Attachment 4 then remove seismic alarm 64A21 and have floor operator return a completed copy of attachment 4 of SO23-13-3.
		End of event.

Comments:

→ Reads ARP for 61C21 and tells SRO to enter

Op-Test No.: 1 Scenario No.: 1 Event No.: 5 Page 9 of 13

Event Description: CCW Train B pipe rupture
ACO component
ACO critical task

Time	Position	Applicant's Actions or Behavior
		CUE: Malfunction on timer from RLP#4 ~~5min time delay and~~ 5 min ramp and **T+~~10~~ 35**
		Alarms 64A08 CCW Pump Train B Disch Press lo 64A29 CCW Surge Tank Train B Level HI/LO 64A50 CCW Hx Train B Outlet Press LO 56C58 Safety Eqpt Bldg Sump Level HI-HI 57C56 Safety Eqpt Bldg Train B Flooding Indications 2LI6499-2 T004 surge tank level lowering
	ACO SRO	Enter SO23-13-7 Loss of CCW/SWC
	SRO	Directs transfer of CCW Non Critical Loop to Train A CCW
	ACO	***Transfer NCL to train A to prevent damage to RCP and Reactor Trip***
	SRO	Directs transfer of Letdown Heat Exchanger to Train A CCW
	ACO	Transfer of Letdown Heat Exchanger to Train A CCW
		CUE: Machine Operator if requested to power up 2HV6505 CCW surge tank outlet valve execute RLP4 (7)
		Note Tech Specs impacted 72 hrs to restore to Operable CCW 3.7.7 ~~7 days to restore to Operable ECW 3.7.10~~
		End of event.

Comments:

Reviews ARP for 64A18

SRO | Directs stopping of 2P025 Pump

add actions taken

Started 2P024

Opened HV6212 & 6218

Verified HV 6213 & 6219 closed

Closed HV6522A

Open HV6293 B/A

Op-Test No.: 1 Scenario No.: 1 Event No.: 7 Page 10 of 13

Event Description: RCP P003 seized shaft and Small break LOCA, Stardard Post Trip Actions

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+54** to verify execution of **RLP#5 at T+ 50**
		CUE: Machine Operator execute RLP #5 (1) Machine Operator verify RCO3 is active upon reactor trip and ramping to 10%
		Alarms 56A07 C06 OC trip P003 ✓ 56A35 Containment Press Hi Pretrip ✓ 56A55 Containment Sump Level Hi Hi 56A56 Containment Sump Level Hi 57C10 Containment Radiation hi ✓ Indications 2LI5839 Containment Sump level rising ✓ 2RE7848 Rad Hi
	SRO/CO	~~Rx Trip~~ **Reactivity Control** criteria satisfied: All CEAs inserted, neg SUR, Power lowering ✓
	SRO/ACO	**Vital Auxiliaries** criteria satisfied:: Main Turbine tripped, Unit Output breakers open, Main Turbine speed less than 2000 RPM, both 1E 4 kV Buses energized, 6.9 kV and Non-1E 4 kV Buses transferred to Reserve Auxiliary Transformers and energized, all Class 1E DC Buses energized.
	SRO/CO	**RCS Inventory Control** criteria not satisfied: because Pressurizer level between 10 and 70% and trending to between 30% and 60% and Core Exit Sat. margin >20°F
	SRO/CO	**RCS Pressure Control** criteria not satisfied: because not Pressurizer pressure between 1740 and 2380 PSIA and controlled
	SRO/CO	**Core Heat Removal** not criteria not satisfied: because At least 1 RCP operating, core ΔT less than 10°F and Core Exit Sat. margin >20°F **Note** may be satisfied prior to CIAS.
	SRO/ACO	**RCS Heat Removal** criteria satisfied: ✓ Both S/G's level - between 21% NR and 80% NR, Auxiliary feedwater available to restore both S/G's level between 40% NR and 80% NR at greater than or equal to 200 GPM, Block valves closed, T_C - less than 555°F, S/G pressures approximately 1000 PSIA, T_C >545 °F or controlled, and S/G pressure >740 PSIA.

	SRO/CO	**VERIFY Containment Isolation** criteria not satisfied: because Containment pressure <1.5 psig, Containment rad monitors ~~not~~ alarming, ~~and secondary rad monitors not alarming.~~
	SRO/CO	**Containment Temperature, Pressure and Combustible Gas Control** criteria not satisfied: because Containment average temperature < 120 °F and Containment pressure < 1.5 psig
	SRO	**DIAGNOSE Event in Progress** as a LOCA and go to SO23-12-3 Loss of Coolant Accident.

Comments:

using SO23-12-1 Att 2 RECOVERY DIAGNOSTIC

Op-Test No.: 1 Scenario No.: 1 Event No.: 8 Page 12 of 13

Event Description: Failure of the only HPSI pump with CCW to start
CO Component failure
CO Critical Task

Time	Position	Applicant's Actions or Behavior
		Note Triggered by SIAS
		Alarms 57B21 Safety Inj Pump Train B OC Indications FI-0311, FI-0321, FI-0331, and FI-0341 HPSI flow instruments indicate zero flow when RCS pressure is below shutoff head of the HPSI pumps
	CO	Recognize HPSI pump 17 Failed to start and HPSI 19 failed on a SIAS
	CO	***Manually start HPSI pump 17 after SIAS to provide adequate HPSI flow.***
	SRO	Direct Securing pumps cooled by CCW if Started by ESFAS signal if not needed to maintain a safety function.
		End of event.

Comments:

Op-Test No.: 1 Scenario No.: 1 Event No.: 89 Page 13 of 13

Event Description: Small break LOCA , LOCA procedure
ACO Critical task

Time	Position	Applicant's Actions or Behavior
	SRO	Direct SIR to INITIATE Attachment 1, of S023-12-3 Safety Function Status Check.
	SRO	VERIFY LOCA diagnosis, using Attachment 16, Break Identification Chart.
	CO	Report Natural Circulation conditions not met and determine the need to increase feeding and steaming.
	SRO	Direct ENSURE the following - actuated: SIAS, CCAS, CRIS.
	SRO	Direct STOP unloaded Diesel Generators
	SRO	Direct Direct Attachment 12, Non-Qualified Loads Restoration
	SRO	Direct VERIFY SI pump flow - greater than minimum limits of Attachment 4, Minimum Expected SI Flowrates During Cold Leg Injection.
	ACO	INITIATE RCS Cooldown
	ACO	***Cooldown to restore Core Exit Sat. margin to >20 °F***
		Terminate when Core Exit Sat. margin restored to greater than 20°F

Comments

Facility: SONGS Scenario No.: 2 Op-Test No.: A

Examiners: _____ Operators: _____

Initial Conditions: 100% reactor power Middle of Core Life, 2GOO2 OOS, 2HPSI 18 OOS, 2PI0351-1 Containment NR pressure Failed Channel A , Channel A high Containment pressure trip bypassed

Turnover 100% power 285 EFPD CCW train B in service

Event No.	Malf. No.	Event Type*	Event Description
1	CV22B RLP9	C-CO	**T+5** 2P191 Charging pump trips
~~2~~	~~Overrides RLP10~~	~~I-ACO~~	~~**T+10** 2PI3202A Condenser back pressure instrument failure.~~
2	SG04A RLP10	I-ACO	2LT1106 SG 88 fails high.
3	RC17B RLP11	I-CO	**T+15** Pressurizer Press Trans Failure PT0102-2 low Reactor Protection System Failure/Loss of Vital Inverter AOI **SO23-13-18**
4	SG01B RLP12	C-ALL	**T+25** 6gpm tube leak on SG E089
5		R-CO N-ACO	**T+35** Plant shutdown per Reactor Coolant Leak AOI **SO23-13-14**
6	CC06B RLP13	C-ACO	**T+45** CCW Pump 25 trips on OC Loss of Component Cooling Water/Saltwater Cooling AOI **SO23-13-7**
7	Overrides RLP14	M-ALL	**T+50** Inadvertent MSIS
7	MS01A RLP14	~~C-ACO~~	**Reactor Trip** Main Steam Safety Valve Failure PSV8401
~~7~~	~~RLP 8~~	~~I-ACO~~	~~**Reactor Trip** 2JI2195 Main Generator Gross MW fails to 1000~~
8			Functional Recovery SO23-12-9

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

Objectives

- Evaluate the crew's response to the loss of a charging pump
- The crew should recognize and respond to a failure of Condenser Vacuum instrument
- The crew should recognize and respond to a failure of 1E Wide Range Pressurizer Pressure Instrument.
- Evaluate the crew's response to an RCS leak.
- Evaluate the crew's ability to lower reactor and turbine power.
- The crew should recognize and respond to a loss of a CCW Pump.
- Evaluate the crew's response to and recovery from an Excessive Steam Demand Event and a Steam Generator Tube Rupture.

Critical Tasks

CO
Perform HPSI throttle stop

ACO
Prevent PTS
Restore CCW to the ECCS Equipment to prevent damage and loss.

Core Damage Risk related events:
Event 4 Operator Action 26
6 Operator Action 19

DYNAMIC NRC # 2
MACHINE OPERATOR'S INSTRUCTIONS

USER: NRCDYN IC:100% POWER M OF CYCLE DYNAMIC NRC #2 SETUP RLP: 8 CCW ALIGNED TO TRAIN B					
RLPs/STEPS	TYPE	MALF #	DESCRIPTION	DEM VALUE	INITIATING PARAMETER
8(1)	OVER	2G002	2G002 IN MAINTENANCE LOCK OUT (USE KEY NUMBER 2)	MAG TAGS	STARTUP OF SETUP RLP
8(2)	OVER	MP-018	HPSI PUMP MP-018 OOS FOR BOW	MAG TAGS	STARTUP OF SETUP RLP
8(3)	OVER	PI-0351-1	PI-0351-1 CHANNEL A CONTAINMENT NR PRESSURE IND. FAILURE	BYPASSES	STARTUP OF SETUP RLP
~~8(4)~~	~~OVER~~	~~JI-2195~~	~~GROSS GENERATOR MW INDICATION~~	~~1000~~	~~RX TRIP~~

RLPs/STEPS	TYPE	MALF #	DESCRIPTION	DEM VALUE	RAMP	DELAY
9(1)	MF	CV22B	CHARGING PUMP MP-191 OC/GRD	TRUE		
9(2)	OVER	MP-191	CHARGING PUMP MP-191 BREAKER RACKED-OUT ON TRAIN B	RACKED OUT (3)		
10(1)	MF	SG04A	STEAM GENERATOR LEVEL LT 1106 FAILURE	100		
11(1)	MF	RC17B	PZR PRESSURE INSTRUMENT PT-0102-2 FAILS LOW	0%	5 MINS	
11(2)	OVER	PPS BYPASSES	PPS DOOR OPEN ALARM PZR PRESS LO BYPASS PPS DOOR ALARM CLEARS	TRUE TRUE DELETE	5 SECS 10 SECS	
12(1)	MF	SG01B	SG E-089 TUBE RUPTURE (6 GPM)	1%		
13(1)	MF	CC06B & C	CCW PUMP MP-025 TRIPS ON OC	TRUE		
13(2)	OVER	MP-025	CCW PUMP MP-025 BREAKER RACK-OUT AND KIRK KEY TRANSFERRED TO TRAIN A	3		
14(1)	OVER	MSIS	INADVERTENT MSIS	TRUE		
14(2)	MF	MS01A	MAIN STEAM SAFETY PSV-8401 FAILS OPEN (E-088	35%		RX TRIP

(0) INDICATES THE SUB STEP OF THE INDICATED RLP.

Op-Test No.: _____ Scenario No.: __2___ Event No.: ____1_ Page 4 of 12

Event Description: 2P191 Charging pump trips.
CO Component

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+4** to verify execution of **RLP#9 at T+5**
		CUE: Machine Operator execute RLP#9 (1)
		Alarms 58A12 Charging Header Flow lo ✓ 58A43 Charging Pump P191 Train B OC ✓ Indications Charging Flow goes to Zero ✓
	CO	Determine the running charging pump tripped ✓
	CO	Start one of the remaining charging pumps ✓
	SRO	Request outside operator to investigate 2P191 Trip
		CUE: Machine Operator report the solid state device tripped 2P191 (little white button is extended)
	Co	**CUE: Machine Operator** if requested to rack out 2P191 breaker execute RLP#9 (2)
		End of event.

Comments

Add: Review ARI 5023-15-58.A for 58A43 alarm.

Op-Test No.: _____ Scenario No.: __2___ Event No.: __2___ Page 5 of 12

Event Description: SG Level Lt 1106 fails high
ACO Instrument

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+9** to verify execution **of RLP#10 at T+10**
		CUE: Machine Operator execute RLP#10 (1)
		Alarms 52A01 SG 88 level HI/LO ✓ 52A02 SG 88 Levewl deviation ✓ Indications SG E088 level rising ✓
	ACO	Take manual control of SG E088 level ✓
	~~SRO~~ ACO	Determine LT1106 has failed. ✓
	SRO	Request ARO change FWCS #2 to sleected level #2 (LT1121)
		CUE Machine Operator Remote Function RX54 to 2 — SHADED
	SRO	Direct return to automatic FW control when level and setpoint are matched. (Matched pointers on 2FIC-1121 Master Control)
	ACO	Restore FWCS to auto
		End of event.

Comments:
Add: ARA Annu Review ARI for alarm 52A02 SG88 level deviation.
Add step to report RX 54 in "2".

Op-Test No.: _____ Scenario No.: _2____ Event No.: __3___ Page 6 of 12

Event Description: Pressurizer Press Trans Failure PT0102-2 low
CO Instrument

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+14** to verify execution of **RLP#11 at T+ 15**
		CUE: Machine Operator execute RLP#11 (1)
		Alarms 56A06 PZR Press Lo Channel Trip ✓ 56A16 PZR Press Lo Pretrip ✓ 56B45 RCS Subcooled Margin Lo ✓ Indications 2PI 0102A2 pressure lowering ✓ 2PI0102B pressure lowering ✓ PPS ROM Trip and Pre Trip lights Channel 2 ✓ QSPDS Channel B low subcooling
	SRO	Enters SO23-13-18, Reactor Protection System Failure/Loss of Vital Inverter AOI
	CO	Determine 2PI 0102A2 ~~(LT0103)~~ is the only failed RPS instrument ✓ Note: LT 0103 has also failed
	SRO	Determine A Single Functional Unit has failed. ✓
		Note Tech Specs impacted 1 hr to place in bypass 3.3.1, 3.3.5 ~~30 days to restore to operable 3.3.11, 3.3.12, 3.3.1T0~~ ~~7 days to establish fire watch 60 days to restore to operable 3.7.113.1~~
	SRO	Request placing in bypass on Channel B: Pressurizer Pressure - Low ~~(RPS)~~ ~~Pressurizer Pressure - Low - (SIAS/CCAS)~~
		CUE: Machine Operator When Requested to bypass Channel B pressurizer pressure execute RLP#11 (2) to bypass the above.
	CO	Channel placed in bypass. Reports that **End of event.**
Add:	CO	Review ARFs 56A06 & 56B45

Op-Test No.: _____ Scenario No.: __2___ Event No.: ___4__ Page 7 of 12

Event Description: Steam Generator tube leak on SG E089

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+24** to verify execution of **RLP#12 at T+ 25**
		CUE: Machine Operator execute RLP#12 (1)
		Alarms 60A46 Secondary Radiation Hi ✓ Indications 2RE7818 (condenser) radiation levels rising. ✓ 2RE7870 (condenser) radiation levels rising. ✓ 2RE7874B1 (MSL) radiation levels rising. ✓ 2RE6753 (SG Blowdown) radiation levels rising. ✓ Letdown flow lowers about 7gpm ✓
	SRO	Enters SO23-13-14, Reactor Coolant Leak AOI ✓
	SRO	Determine the leakage is within the Charging Pump capacity and CVCS makeup ✓
	SRO	Initiate SO23-3-3.37 RCS Water Inventory Balance. ✓
	SRO	REQUEST Chemistry to confirm and quantify Steam Generator Tube leak. ✓
		CUE: Machine Operator 10 min after sample is requested, call back and report "per frisker it appears that SG E089 has higher activity than SG E088.
		STA or other operator reports ↓ of **CUE: ~~Floor Operator~~** ~~If~~ requested to ~~evaluate~~ leak rate ~~report~~ 6gpm or 8640gpd
		~~**Cue:** if cal sticker value for 2RE7870 is requested it is 1.05 E^0 (30gpd).~~
		Note Tech Specs impacted ✓ 4 hr to reduce leakage to within limits 3.4.13 6 hr to be in MODE 3 3.4.13.
	SRO	Direct a rapid down power to 35% due to Leak rate exceeding a 60 gpd change in one hour. IAW Proc SO23-5-1.7.
		End of event.
CO	Reviews alarm response	
	SRO	Initiates Att 1 of 13-14 to evaluate amount of SG leakage
		~~Sol~~ directs additional operator or STA to
	SRO	Determine affected SG by reviewing Rad Monitor. Determine leakage on SG 89.

Op-Test No.: _____ Scenario No.: __2___ Event No.: ___5__ Page 8 of 12

Event Description: Plant shutdown

CO Reactivity
ACO Normal

Time	Position	Applicant's Actions or Behavior
		T+35
	CO	Begin boration
	ACO	Reduce Turbine load and maintain Tc within the Tech Spec Band
		End of event.

Comments:

SRO Directs performance of Attz of 13-14 to minimizing contamination during a S/G tube leak

Op-Test No.: _____ Scenario No.: __2___ Event No.: ___6__ Page _9_ of 12___

Event Description: CCW Pump 25 trips on OC
ACO Component

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+44** to verify execution of **RLP#13 at T+ 45**
		CUE: Machine Operator execute RLP#13 (1)
		Alarms 64A22 CCW Pump Train B OC 56C34 RCP P001 CCW Flow lo 56C36 RCP P003 CCW Flow lo 56C38 RCP P004 CCW Flow lo 56C40 RCP P002 CCW Flow lo Indications 2P025 hand switch bright green light
	ACO	Report 2P025 has tripped - refers to ARP 64A22.
	SRO	Direct Starting 2P026 (per ARP 64A22) **OR** ; insure that 2P024 is running and Direct transfer of NCL and LDHX to train A (Per AOI)
	ACO	Start 2P026 if Directed **OR** Transfer NCL and LDHX if directed to train A
	SRO	Direct outside operator to determine the breaker status
		CUE: Machine Operator 186 relay and 151N relay actuated on 2AO608 for 2P025 train B no other signs of distress.
		CUE: If requested to rack out 2A0608 **delay until 2P026 is started** by crew.
		End of event.

Comments:

Op-Test No.: _____ Scenario No.: __2___ Event No.: ___7__ Page 10 of 12

Event Description: Inadvertent MSIS with a stuck open SG safety and Instrument failure
ACO instrument
ACO Component
ACO Critical Task

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+49** to verify execution of **RLP#14 at T+ 50**
		CUE: Machine Operator execute RLP#14 (1)
		Alarms 52A20 MSIV HV-8205 Trouble 52A30 MSIV HV-8204 Trouble 50A05 T AVG HI 50A07 SBCS Demand Present 56A15 PZR Press Hi Pretrip Indications Hand Switches for MSIVs closed lights lit
	SRO/CO	Trip Rx and entry into 12-1 **Reactivity Control** criteria satisfied All CEAs inserted, neg SUR, Power lowering
	SRO/ACO	**Vital Auxiliaries** criteria satisfied: Main Turbine tripped, Unit Output breakers open, Main Turbine speed less than 2000 RPM, both 1E 4 kV Buses energized, 6.9 kV and Non-1E 4 kV Buses transferred to Reserve Auxiliary Transformers AND energized, all Class 1E DC Buses energized.
	ACO	**2JI2195 Main Generator Gross MW reads 1000 MW** with turbine and generator Tripped, need to check other indication, PMS CFMS or recorders to determine no MW are being generated
	SRO/CO	**RCS Inventory Control** criteria - not satisfied: because Pressurizer level between 10 and 70% and trending to between 30% and 60% and Core Exit Sat. margin >20°F
	SRO/CO	**RCS Pressure Control** criteria not satisfied because Pressurizer pressure between 1740 and 2380 PSIA and controlled
	ACO	If alarms come in (first 3 alarms) Start 2P026 ~~(could be started in Event 6)~~ ***Restore CCW to the ECCS Equipment to prevent damage and loss.*** ~~(May be performed earlier in Event 6)~~ have been
	SRO/CO	**Core Heat Removal** criteria satisfied: At least 1 RCP operating, core ΔT less than 10°F and Core Exit Sat. margin >20°F

Change like Sc 3.

	SRO/ACO	**RCS Heat Removal** criteria not satisfied: because At least 1 RCP operating, core ΔT less than 10°F and Core Exit Sat. margin >20°F
	SRO/ACO	**RCS Heat Removal** criteria not satisfied: Both S/G's level - between 21% NR and 80% NR, Auxiliary feedwater available to restore both S/G's level between 40% NR and 80% NR at greater than or equal to 200 GPM, Block valves closed, T_C - less than 555°F, S/G pressures approximately 1000 PSIA, T_C >545 °F or controlled and S/G pressure >740 PSIA.
		CUE: **Machine Operator** When contacted for status of SG Safeties Report that the north end [E088] has a safety valve with steam coming out of it.
	SRO/CO	**VERIFY Containment Isolation** criteria not satisfied: because ~~Containment pressure <1.5 psig, Containment rad monitors not alarming, and~~ secondary rad monitors ~~not~~ alarming.
	SRO/CO	**Containment Temperature, Pressure and Combustible Gas Control** criteria satisfied: ~~Containment average temp~~erature < 120 °F and Containment pressure ≤ ~~1.5~~ psig
	SRO	**DIAGNOSE Event in Progress** is an SGTR and ESDE go to SO23-12-9 using Diagnostic Chart from Proc. 12-1

Comments

~~Post Trip Actions~~

Will add note saying that PTS (next page) will be performed if SG 88 level approaches 10%.

Op-Test No.: _____ Scenario No.: 2 Event No.: 8 7 Same event Page 12 of 12

Event Description: Inadvertent MSIS with a stuck open ~~SG~~ safety and SGTR SO23-12-9
Functional Recovery of
CO Critical Task
ACO Critical task

Time	Position	Applicant's Actions or Behavior
	SRO	Direct the STA to Initiate Attachment 1, Safety Function Status Check
	SRO → CO	Direct the ACO to stop unloaded Diesel Generators
ACO action	SRO	Direct ACO to initiate attachment 29, Isolation of S/G with ESDE and initiate attachment 2, FS-27 establish stable RCS temperature during ESDE
	ACO	Isolate the S/G with ESDE by initiating attachment 29. Add actions.
	ACO	***Prevent PTS*** by initiating attachment 2, FS-27, establish stable RCS temperature during ESDE @ 10% Level Position ADV 10% open in manual for least affected S/G @ 5% Level Set least affected S/G ADV at P_{sat} for lowest T_C and place in auto. Initial Dry Out Adjust least affected S/G ADV at P_{sat} for lowest T_C attained as S/G boils dry.
	SRO	Direct the CO to initiate Attachment 9, Recovery - Containment Isolation Success Path CI-2, S/G ISOLATION.
	CO	Determine most affected SG due to a SGTR but it must remain in service or be returned to service to provide heat removal .
	CO	***Perform HPSI throttle stop***
		Terminate scenario when the RCS is stable and HPSI throttle stop has been performed.

Comments:

Facility: SONGS Scenario No.: 3 Op-Test No.: B

Examiners: _____ Operators: _____

_____ _____

_____ EDGA

Initial Conditions: 100% reactor power Middle of Core Life, 2GOO2 OOS, 2HPSI 18 OOS, 2PI0351-1 Containment NR pressure Failed Channel A , Channel A high Containment pressure trip bypassed (ACA on annunciator)

Turnover: 100% power 285 EFPD CCW train B in service

Event No.	Malf. No.	Event Type*	Event Description
1	NI08E RLP18	I-CO	**T+ 5** Linear Amplifier Failure Ch 1 Middle detector amplifier failed low. Reactor Protection System Failure/Loss of Vital Inverter **SO23-13-18**
2	ED03A RLP19	C-ALL	**T+ 15** No action req'd – Loss of 2A04 Bus
3	RX11A RLP20	I-ACO	2MP062 Main Feedwater Pump Speed failure
4		R-CO N-ACO	**T+ 35** Down power due to Tech Spec LCO 3.0.3
4	FW17A RLP21	C-ACO	Initiate when down power started Input to 2FV1121 Main Feedwater Regulating Valve fails
5	MS03A RPL22	M-ALL	**T+ 45** Steam line break inside containment SG E089
6	CS03B RLP17	C-CO	**SIAS** Loss of Containment Spray Pump P013
7			Excessive Steam Demand Event SO23-12-5 and Functional Recovery SO23-12-9

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

Objectives:

- The crew should recognize and respond to a failure of Excore NI.
- Evaluate the crew's response to the loss of a 1E 4kv bus.
- Evaluate the crew's ability to lower reactor and turbine power.
- The crew should recognize and respond to an input failure to Main Feedwater Reg. Valve.
- Evaluate the crew's response to an ESDE inside containment without Containment Spray.
- The crew should recognize and respond to a loss of Containment Spray Pump.

Critical Tasks:
CO
Perform HPSI throttle stop.

ACO
Control SG level on line to prevent Reactor trip.
Prevent PTS

Core Damage Risk related events:
Event 2 Operator Action 9

DYNAMIC NRC # 3
MACHINE OPERATOR'S INSTRUCTIONS

USER: NRCDYN IC:100% POWER M OF CYCLE DYNAMIC NRC #3 SETUP RLP: 18 CCW ALIGNED TO TRAIN B					
RLPs/STEPS	TYPE	MALF #	DESCRIPTION	DEM VALUE	INITIATING PARAMETER
17(1)	OVER	2G002	2G002 IN MAINTENANCE LOCK OUT (USE KEY NUMBER 2)	MAG TAGS	STARTUP OF SETUP RLP
17(2)	OVER	MP-018	HPSI PUMP MP-018 OOS FOR BOW	MAG TAGS	STARTUP OF SETUP RLP
17(3)	OVER	PI-0351-1	PI-0351-1 CHANNEL A CONTAINMENT NR PRESSURE IND. FAILURE	BYPASSES	STARTUP OF SETUP RLP
17(4)	MF	CS03B	LOSS OF CONTAINMENT SPRAY PUMP MP-013	TRUE	SIAS A & B

RLPs/STEPS	TYPE	MALF #	DESCRIPTION	DEM VALUE	RAMP	DELAY
18(1)	MF	NI08E	CHANNEL 1 LINEAR AMPLIFIER MIDDLE DETECTOR FAILURE	0%		
18(2)	OVER	PPS BYPASSES	PPS DOOR OPEN ALARM HI LIN POWER HI LOCAL POWER LOW DNBR LOSS OF LOAD PPS DOOR OPEN ALARM CLEARS	TRUE TRUE TRUE TRUE TRUE DELETE		5 SECS 10 SECS 15 SECS 20 SECS 25 SECS
19(1)	MF	ED03A	LOSS OF 4Kv EMERGENCY BUS 2A04	TRUE		
20(1)	MF	RX11A	MFWP P062 (K006) SPEED FAILURE	0		
21(1)	MF	RX09A	INPUT TO 2FV1121 MAIN FEEDWATER REGULATING VALVE FAILS	83		
22(1)	MF	MS03B	MAIN STEAM LINE BREAK INSIDE CONTAINMENT E-089	1 to 3%	15 MINS	

(0) INDICATES THE SUB STEP OF THE INDICATED RLP.

Op-Test No.: _____ Scenario No.: 3 Event No.: 1 Page 4 of 11

Event Description: Linear Amplifier Failure Ch 1 Middle detector fail low **SO23-13-18**

CO Instrument Failure

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+4** to verify execution of **RLP#18 at T+ 5**
		Cue: Machine Operator execute RLP#18 (1)
		Alarms 56B06 PPS Channel 1 Trouble 56A03 Local Power Level Hi Channel Trip 56A04 DNBR Lo Channel Trip 56A13 LOCAL Power Density Hi Pretrip 56A14 DNBR Lo RPS Pretrip Indications Channel A 2JI0002A1 Cal. Lin Pwr. Mid scale. 2JI0002B1 Lin Pwr Mid scale.
	CO	Respond to alarms and identify 2JI0002A1 2JR0002B1 failed on channel A
	SRO	Enter SO23-13-18 Reactor Protection System Failure/Loss of Vital Inverter
	SRO	Determine A Single Functional Unit has failed.
		Note Tech Spec impacted 1 hr to place in bypass LCO 3.3.1
	SRO	Request the following bypasses installed on channel A Linear Power Level - High Local Power Density - High DNBR - Low Loss of Load
		Cue: Machine Operator execute RLP#18 (2) to bypass the above.
		End of Event.

Comments:

Op-Test No.: _____ Scenario No.: 3 Event No.: 2 Page 5 of 11

Event Description: Loss of Vital 4kv bus 2A04

Component All

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+14** to verify execution of **RLP#19 at T+ 15**
		CUE: Machine Operator execute RLP#19 (1)
		Alarms 63B14 Unit 2 Non 1E UPS Trouble ~~63B14~~ 2A04 Supply Bkr 2A0418 OC 63B05 2A04 Voltage Lo 63B06 2B04 Voltage Lo Numerous other alarms due to loss of power to equipment. Indications No voltage on the 4kv bus 2A04
	ACO	ARP indicates Unit is in 3.0.3 Tech Spec due to 2 1E Battery chargers OOS
		Cue: Machine Operator When asked to investigate as the outside operator report the smell of smoke and the 150 and 151 and 186 protection relays actuated and strong smell of smoke.
		Cue: Machine Operator When asked to investigate as maintenance report bus damage that will require a clearance to investigate and repair, no possibility of returning to service without repairs.
		Cue: Machine Operator If requested to place temporary Battery Chargers in service report OOS for Maintenance.
		End of Event.

Comments: No actions required – need to add EDG trip by going to maint. lockout – to be evaluated, for addition.

Op-Test No.: _____ Scenario No.: 3 Event No.: 3 Page 6 of 11

Event Description: Main Feedwater Pump P062 (K006) Speed input fails low
ACO instrument

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+24** to verify execution **of RLP#20 at T+ 25**
		CUE: Machine Operator execute RLP#20 (1)
		Alarms 52A01 SG88 level HI/LO } may or may not come in. 52B02 SG89 level HI/LO } add mini-flow alarms 53A 20 53A 28 Indications MP62 K006 speed lowering MP63 K005 speed increasing
	SRO	Determine K006 speed is failing by the output of both FWCS outputs increasing.
	SRO	Direct the ACO to take manual control of K006 speed
	ACO	Take manual control of K006 speed with EAP and raise speed
	SRO	Discuss actions if the plant trips to prevent trip of both FW pumps on high discharge pressure
		End of Event.

Comments: Due to simulator problem, i.e., inability to raise MP62 back to initial speed, will evaluate whether to leave malfunction in (the plant will continue to operate properly with the lower speed) or take out (which shouldn't affect the balance of the scenario).

Op-Test No.: 1 Scenario No.: 3 Event No.: 4 Page 7 of 11

Event Description: Tech Spec LCO 3.0.3 plant shutdown and 2FV1121 Feedwater Regulating Valve input failure.
CO Reactivity
ACO Normal
ACO Component
ACO Critical Task

Time	Position	Applicant's Actions or Behavior
		CUE: Floor Operator as the Shift Manager direct down power at **T+35**
	SRO	Directs plant shutdown to comply with Tech Specs
		CUE: Machine Operator execute RLP#21
	CO	Starts boration with BAMU gravity feed valves or the RWST suction valve
	ACO	Reduces Turbine load to maintain RCS temp.
		Alarms 52A01 SG2 E088 Level HI/LO ✓ Indications ~~FV1121 valve demand lowering~~ FIC ~~FV1121 valve position unchanged~~ – 2FIC 1121 MASTER CONTROLLER level rising.
	ACO	Task manual control of 2FV1121 Feedwater Reg. Valve
	ACO	***Control SG level on line to prevent Reactor trip.***
		End of Event.

Add indications:
– Bypass Cont Valve ZHV 1106 lowing / valve close light on

Comments:

Add indications, delete "FV1121 VP unchanged", changed FV1121 to FIC 1121.

Op-Test No.: _____ Scenario No.: 3 Event No.: 5 Page 8 of 11

Event Description: Main Steam Line Break in Containment.

Time	Position	Applicant's Actions or Behavior
		CUE: Machine Operator contact evaluators at **T+44 to** verify execution of **RLP#22 at T+45**
		CUE: Machine Operator execute RLP#22 (1)
		Alarms 60A03 Containment/FHB Temperature High 56A17 Containment Pressure Hi ESFAS Pretrip 56A35 Containment Pressure Hi Pretrip Indications 2TJR9899 points 2&3 in alarm Containment pressure instruments rising
	CO	Report containment parameter trends
	SRO	Direct Reactor Trip
	CO/ACO	Manually trip the reactor
	SRO/CO	**Reactivity Control** criteria satisfied All CEAs inserted, neg SUR, Power lowering
	SRO/ACO	**Vital Auxiliaries** criteria satisfied: Main Turbine tripped, Unit Output breakers open, Main Turbine speed less than 2000 RPM, both 1E 4 kV Buses energized, 6.9 kV and Non-1E 4 kV Buses transferred to Reserve Auxiliary Transformers and energized, all Class 1E DC Buses energized
	SRO/CO	**RCS Inventory Control** criteria - not satisfied: Pressurizer level between 10 and 70% and trending to between 30% and 60% and Core Exit Sat. margin >20°F
	SRO/CO	**RCS Pressure Control** criteria not satisfied: Pressurizer pressure between 1740 and 2380 PSIA and controlled
	SRO/CO	**Core Heat Removal** criteria not satisfied: At least 1 RCP operating, core ΔT less than 10°F and Core Exit Sat. margin >20°F **Note** may be satisfied prior to CIAS.

Held cont. spray pump failure to start

because the following was out of spec!

Time	Position	Applicant's Actions or Behavior
	SRO/ACO ACO leave in	**RCS Heat Removal** criteria not satisfied: Both S/G's level - between 21% NR and 80% NR, Auxiliary feedwater available to restore both S/G's level between 40% NR and 80% NR at greater than or equal to 200 GPM, Block valves closed, T_C - less than 555°F, S/G pressures approximately 1000 PSIA, T_C >545 °F or controlled, and S/G pressure >740 PSIA ***Close Feedwater block valve to prevent overfilling Steam Generator***
	SRO/CO	**VERIFY Containment Isolation** criteria not satisfied: Containment pressure <1.5 psig, Containment rad monitors not alarming, and secondary rad monitors not alarming. - remove criteria that was satisfied.
	SRO/CO	**Containment Temperature, Pressure and Combustible Gas Control** criteria not satisfied: Containment average temperature < 120 °F and Containment pressure <1.5 psig
	SRO	**DIAGNOSE Event in Progress** is a ESDE go to SO23-12-5

Comments:

Op-Test No.: _____ Scenario No.: 3 Event No.: 6 Page 10 of 11

Event Description: Failure of Containment Spray Pump 2P013 Make part of event 5.

CO Component

Time	Position	Applicant's Actions or Behavior
		Note when Triggered by SIAS
		Alarms 57B23 Containment Spray Pump P013 OC Indications Bright Stop light on hand switch for P013 No Spray flow after CSAS
	CO	Report the failure of P013
	CO	Report no Spray Flow after CSAS
		End of Event.

Comments:

Op-Test No.: _____ Scenario No.: 3 Event No.: 6 Page 11 of 11

Event Description: Excessive Steam Demand Event SO23-12-5 and Functional Recovery SO23-12-9
CO Critical Task
ACO Critical Task

Time	Position	Applicant's Actions or Behavior
	SRO	Direct performance of Att. 2 FS7 HPSI Throttle stop
	SRO	Direct performance of the Safety Function Status Check Att. 1
	SRO	Confirm ESDE diagnosis
	SRO	Request Chemistry to Sample both Steam Generators
		CUE: Machine Operator If the sample valves are not overridden and opened then report to SRO no sample flow.
	STA	Report Failure of Containment Pressure and Temperature Control Add words to enhance lack of cont cooling.
	SRO	Rediagnose ESDE Announce going to SO23-12-9 Functional Recovery Procedure
	SRO	Direct CO to perform SO23-12-9 Attachment 10
	SRO	Direct the STA to Initiate Attachment 1, Safety Function Status Check
	SRO	Direct the ACO to stop unloaded Diesel Generators
	SRO	Direct ACO to initiate attachment 29, Isolation of S/G with ESDE and Direct attachment 2, FS-27 establish stable RCS temperature during ESDE
	ACO	***Prevent PTS*** by initiate attachment 2, FS-27, establish stable RCS temperature during ESDE. •@ 10% Level Position ADV 10% open for least affected S/G •@ 5% Level Set least affected S/G ADV at P_{sat} for lowest T_C. •Initial Dry Out Adjust least affected S/G ADV at P_{sat} for lowest T_C attained as S/G boils dry.
	CO	***Perform HPSI Throttle Stop*** by initiate attachment 2, FS-7 HPSI Throttle Stop.
		Terminate the Scenario after RCS temperature is controlled and HPSI throttle stop met.

Comments