Draft Submittal

(Pink **Paper)**

1. Administrative Topics Outline (ES-301-1)
2. Control Room Systems & Facility Walk-Through Test Outline (ES-301-2)
3. Administrative JPMs
4. In-plant JPMs
5. Control Room JPMs (simulator JPMs)

DRAFT

Facility: V. C. Summer	Date of Examination: 04/19/2004
Examination Level (circle one): **RO** / SRO	Operating Test Number: 1

Administrative Topic (see Note)	Describe activity to be performed:
Conduct of Operations	Shutdown Margin Verification STP-134.001 Attachment 1 for Mode 3 entry.
Conduct of Operations	Perform a QPTR Calculation STP-108.001
Equipment Control	Prepare a Tagout for maintenance on the "C" Charging pump.
Radiation Control	Determine dose rates with airborne activity present.
Emergency Plan	N/A

NOTE: **All** items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

DRAFT

Facility: V.C. Summer Date of Examination: 04/19/2004
Exam Level (circle one): ***RO*** / SRO(I) / SRO(U) Operating Test No.: 1

Control Room Systems (*8* for RO; 7 for SRO-I; 2 or 3 for SRO-U)

	System / JPM Title	Type Code*	Safety Function
a.	Transfer to Hot Leg Recirc. **JPSF-002** ***Develop*** an alternate path JPM for Hot leg recirc.	MAS	4P
b.	Operate the CVCS System to Increase RCS Pressure. **(JPS-023)** 04A1.03) ✓	DSL	**2**
c.	Start and Load **'B** Diesel Generator **(JPSF-025)** ***Develop*** ✓ alternate path (malfunction that requires tripping the generator after parallel	MAS	**6**
d.	Minimize the Consequences of **A** Total **Loss** of Service Water. **(JPS- 033).** ✓	DS	4S
e.	Perform Boron Concentration Dilution of the RCS. (**JPS-052**) ✓	DS	1
f.	Steam Generator Tube Rupture (depressurize RCS to less than S/G pressure). (**JPSF-007**) ✓	DAS	**3**
g.	Loss of Power Range Instrument N-44 (**JPS-008**) ✓	DS	7
h.	Control Room Evacuation Duties of NROATC (**JPS-056**) ✓	DS	**8**
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i.	Start-up and Parallel A Rod Drive M/G Set. (**JPPF-028**)	DA	1
j.	Locally Shed Non-essential DC Loads. EOP-6.0 (**JPP-108**) ✓	D	6
lk.	**boss** of Containment Integrity **(JPPF-112)** ***Develop*** a modified JPM using a different valve in RCA.	MAR	**5**

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

ADMINISTRATIVE JPMs

NRC-A-001	Shutdown Margin Verification STP-I34.001 Attachment I for Mode 5 Entry
NRC-A-002	Perform a **QPTR** Calculation STP-108.001
NRC-A-003	Prepare a Tagout for Maintenance on the 'C' Charging Pump
NRC-A-004	Determine Dose Rates with Airborne Activity Present

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM **NRC-A-001**

CALCULATE RCS BORON CONCENTRATION FOR
COLD SHUTDOWN, XENON FREE AT 68°F

APPROVAL: ***APPROVAL DATE:***

REV NO: 0

CANDIDATE: _____

EXAMINER: _____

THIS JPM IS NOT APPROVED

TASK:

TASK STANDARD:

NO::

Obtain required datea from the Curve Book tables and graphs. Use obtained data to calculate required boron concentration, using Attachment IV of STP-134 001

PREFERRED EVALUATION LOCATION ***PREFERRED EVALUATION METHOD***

SIMULATOR PERFORM

REFERENCES: STP-134.001 SHUTDOWN MARGIN VERIFICATION

TOOLS: GOP-5; STP-134.001; Station Curve Book

EVALUATION TIME 24 ***TIME CRITICAL*** NO ***10CFR55:*** 45(a)8

CANDIDATE: TIME

TIME FINISH

PERFORMANCE RATING: **SAT** **UNSAT**

QUESTION GRADE PERFORMANCE

EXAMINER:

SIGNATURE **DATE**

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH **TO** PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL **BE** SATISFIED.

SAFETY CONSIDERATIONS: N/A

INITIAL

1. The reactor is being shutdown after several months operation at 100% power.
2. The initial conditions for entry into GOP-5, Reactor Shutdown from Startup to Hot Standby, have been met.
3. Reactor power **has** been reduced to 10E-1% and RCS temperature has been stabilized at 557°F using the steam dumps.
4. Current core burnup **is** 16,000 MWD/MTU.
5. Current boron concentration is 1000 ppm.
6. All control rods are operable.
7. Shutdown and Control Rod Drop Testing is to be performed.

INITIATING

In preparation for borating the RCS to shutdown the Reactor for this testing per Step **3.5** of GOP-5, you have been directed to calculate the boron concentration required for Cold Shutdown, Mode 5, Xenon Free? **at** 68°F using STP-134.001.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS: N/A

INITIAL

1. The reactor is being shutdown after several months operation **at** 100% power.
2. The initial conditions for entry into GOP-5, Reactor Shutdown from Startup to **Hot** Standby, have been met.
3. Reactor power has been reduced to 10E-1% and RCS temperature has been stabilized at 557°F using the steam dumps.
4. Current core burnup is 16,000 MWD/MTU
5. Current boron concentration is 1000 ppm.
6. All control rods are operable.
7. Shutdown and Control Rod Drop Testing is to be performed.

INITIATING

In preparation for borating the RCS **to** shutdown the Reactor **for** this testing per Step 3.5 of GOP-5, you have been directed to calculate the boron concentration required for Cold Shutdown, Mode 5, Xenon Free, at **68°F** using STP-134.001.

Rx ENGINEERING PROVIDES A SAMARIUM WORTH OF 200 PCM

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

START:

TIME:

CONDITION:

CUES:

STEPS

CR SEQ *STEP:* 1

No Yes Review Precautions.

STEP STANDARD:

Reviews Precautions in front of STP-134.001. Initials the top blank on Page 1 of Attachment IV of STP-134.001.

CUES:

SAT

UNSAT

COMMENTS:

CR SEQ *STEP:* 2

No Yes Review Initial Conditions.

STEP STANDARD:

Reviews Initial Conditions for STP-134.001.

Initials the second blank on **Page** 1 of Attachment IV of STP-134.001.

CUES:

SAT

UNSAT

COMMENTS:

CR SEQ *STEP:* 3

No Yes Record Cycle Burnup.

STEP STANDARD:

Enters "16,000 on Attachment IV. Page 1. of STP-134.001.

CUES:

SAT

UNSAT

COMMENTS:

CR SEQ *STEP:* 4 *STEP STANDARD:*

No **Yes** **Record the present RCS temperature** **Enters "557" on Attachment IV, Page 1 of** STP-134.001

CUES: *SAT*

UNSAT

COMMENTS:

CR SEQ *STEP:* *5* *STEP STANDARD:*

No Yes **Record the desired temperature.** **Enters "68" on Attatchment IV, page 1** of STP134.001

CUES: *SAT*

UNSAT

COMMENTS:

CR SEQ *STEF:* *6* *STEP STANDARD:*

Yes Yes **Record the highest boron concentration within the desired temperature range** to **be maintained as well as the Curve** Book **Figure from which** it **was obtained.** **Enters "1319 ppm" and Figure 11-9.4" on Attachment IV, Page 1** of STP-134.001.

CUES: *SAT*

UNSAT

COMMENTS:

CR SEQ ***STEP: 7*** ***STEP STANDARD:***

Yes No Contacts Reactor Engineering. Contacts Reactor Engineering via phone or plant page system.

CUES: ***SAT***

As the Reactor Engineering representative, the Evaluator should cue the examinee ***UNSAT***
to enter 200 pcm for Samarium.

Since this calculation is being performed for conditions other than the current conditions of this JPM, the examinee should apply "NOTE 2.1" and contact Reactor Engineering.

COMMENTS:

CR SEQ ***STEP: 8*** ***STEP STANDARD:***

Yes Yes Enter Samarium Worth. Enters "200 pcm" on Attachment IV, Page 1 of STP-134.001.

CUES: ***SAT***

UNSAT

COMMENTS:

CR SEQ ***STEP: 9*** ***STEP STAXDARD:***

Yes Yes Bounding Worth of one or more inoperable Control Rods. Enters "0" pcm on Attachment IV, Page 2 of STP-134.001.

CUES: ***SAT***

UNSAT

COMMENTS:

CR	SEQ	STEP: 10	STEF STANDARD:
	Yes Yes	Add lines 2.1 and 2.2 .	Enter "-200 pcm" on line 2.3 of Attachment IV, Page 2 of STP-134.001

CUES:

SA1'

UNSAT

COMMENTS:

CR	SEQ	STEP: 11	STEP STANDARD:
	Yes **Yes**	Enter Differential Boron Worth for the boron concentration on line 1.4 (Use Figure 11-73 @ **557°F).**	Enters "7.45 (allow for rounding off) on line 2.4of Attachment IV, Page 2 of STP-134.001.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 12	STEP STANDARD:
	Yes Yes	Divide line 2.3 by line **2.4**	Enters "26.85 (allow for rounding cff) on line 2.5 of Attachment IV, Page 2 of STP-134.001.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 13	STEP STANDARD:
Yes	Yes	Minimum boron concentration to maintain Shutdown Margin (subtract line 2.5 from line 1.4).	Subtracts "29" from "7319" and enters "1292" on line 3.1 of Attachment IV. Page 2 of STP-134.001.

CUES: *SAT*

Examinee may be conservative and subtract "26 (rounding down) from "1319 then enter "1293 on line 4.1. *UNSAT*

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NRC-A-001

DESCRIPTION: CALCULATE RCS BORON CONCENTRATION FOR COLD SHUTDOWN. XENON FREE AT 68°F

IC SET:

INSTRUCTIONS:

COMMENTS:

KEY

SHUTDOWN MARGIN VERIFICATION FOR MODES 4 AND 5

6.1 PRECAUTIONS, Section 2.0 have been reviewed. _____ INITIALS

6.2 INITIAL CONDITIONS, Section 5.0 have been met. _____ INITIALS

1.1 Cycle Burn-up. 16,000 MWD/MTU

1.2 Present RCS temperature: 557 °F

1.3 Desired WCS temperature: 68 °F

CAUTION 1.4

a. The RCS must be borated to a Cold Shutdown, Xenon-Free concentration prior to manually blocking either the Low Pressurizer Pressure SI below P-11 or the Low Steam Line Pressure SI below P-12.

b. The Shutdown boron concentration requirements of some Mode 4 temperatures may be greater than the Cold Shutdown, Xenon-Free concentration required for Mode 5.

1.4 The highest baron Concentration required to maintain Shutdown Margin for all Modes and temperatures between the present WCS temperature and the desired RCS temperature: 1319 ppm

1.5 The Curve Book Figure from which this boron concentration was obtained:

Curve Book Figure: II-9.4
(Figure II-9.2, 9.3, or 9.4)

NOTE 2.1

The IPCS (XENDISP or U1503) should be used. if the IPCS is not available, or if a calculation is desired for other than current conditions, Reactor Engineering should be contacted to obtain Samarium worth.

2.2 Record Samarium Worth using 2.1.a or 2.1.b:

a. IPCS Samarium Worth (XENBISP or U1503). (-) N/A pcm

b. Obtain Samarium Worth from Reactor Engineering. (-) 200 pcm

SHUTDOWN MARGIN VERIFICATION **FOR** MODES **4** AND 5 (Cont'd)

NOTE 2.2

In Mode 4 or 5 with one or more inoperable Control Rod(s), the RCS should be borated per the applicable Abnormal Operating Procedure. A value of 2200 pcm should be entered for one inoperable rod and 7000 pcm for more than one inoperable rod.

2.2 Bounding Worth of one or more inoperable Control Rods. (+) 0 /pcm

2.3 Add lines 2.1 and 2.2:

(-) 200 (Step 2.1 Samarium Worth) + (+) 0 (Step 2.2 Inoperable Control Rods Bounding Worth) = (-) 200 ✓ pcm

2.4 Enter the Differential Boron **Worth** for the boron concentration on line 1.4 (Use Figure 11-7.3 at 557°F). (-) 7.45 ✓ pcm/ppm

2.5 Divide line 2.3 **by** line **2.4:**

(-) 200 (Step 2.3) pcm ÷ (-) 7.45 ✓ (Step 2.4) pcm/ppm = (+) 26.85 ✓ ppm

3.1 Minimum boron concentration to maintain Shutdown Margin (Subtract line 2.5 from line 1.4):

1319 (Step 1.4 Required Shutdown Margin Boron Concentration) (-) 27 or 26 (Step 2.5) = 1292 or 1293 ppm

+.15 / -.85

← **STOP**

3.2 Present boron concentration: _____ ppm

8.3 Shutdown Margin ***is*** satisfied if line 3.2 is greater than line 3.1. _____ INITIALS

Calculated By: _____ _____ DATE

Verified By: _____ _____ DATE

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM **NRC-A-002**

PERFORM A QPTR CALCULATION

APPROVAL: ***APPROVAL DATE:***

REV NO: 5

CANDIDATE: _____

EXAMINER: _____

THIS JPM IS NOT APPROVED

TASK:

TASKSTANDARD:

NO::

QPTR has been calculated within 0.001 of actual QPTK value and identified **as** within Technical Specifications (61.02) per SPP-108.001.

PREFERRED EVALUATION LOCATION	***PREFERRED EVALUATION METHOD***
CLASSKOOM	PERFORM

REFERENCES: STP-108.001 QUADRANT POWER TILT RATIO

TOOLS: : CALCULATOR
STP-108.001
DETECTOR CURRENT VALUES HANDOUT

EVALUATION TIME ***20*** ***TIME CRITICAL*** No ***10CFR55:*** 41(b)2

CANDIDATE: 17 min

TIME

TIME FINISH

PERFORMANCE RATING: SAT: UNSAT:

QUESTION GRADE: PERFORMANCE

EXAMINER:

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN i TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO **BE** PERFORMED AND PROVIDE THE NECESSARY TOOL§ WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS: WHICH STEPS TO SIMULATE **OR** DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS **JOB** PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL The plant is operating at 100% power.

INITIATING Tha Shift Supervisor directs **a** Licensed Operator to perform a QPTR surveillance test, per STP-108.001, ~~step 6.2: Due to~~ IPCS being out of service. ~~Take calculation out to 3 decimal places).~~ 15

AND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

START:

TIME:

CONDITION:

CUES:

STEPS

CR	***SEQ***	***STEP:*** 1	***STEP STANDARD:***
No	No	Review Precautions of STP-208.001	Operator reviews precautions and initials the first blank on page 1 of Attachment I, STP-108.001

CUES: ***SAT***

UNSAT

COMMENTS:

CR	***SEQ***	***STEF:*** 2	***STEF STANDARD:***
No	No	Reviews initial conditions of STP-108.001	Operator reviews precautions section of STP108.001 and initials the second blank on page 1 of Attatchment **I,** STP108.001.

CUES: ***SAT***

UNSAT

COMMENTS:

CR	***SEQ***	***STEP:*** 3	***STEF STANDARD:***
No	No	Determine method of QPTR caculation to be used.	Operator determines Manual calculation per step 6.2 will be used, due **to** IPCS not being available. Operator cicles "Step 6.2 on page 1 of Attachment I, STP108.001.

CUES: ***SAT***

UNSAT

Cue operator if asked: All Power Range Instruments are operational.

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD):
Yes	No	Record the expected detector current for 100% power for each excore detector using VCS curve book Figure V-3A.	Records the detector current values for 100% power from VCS curve bock Figure V-3A

CUES: *SAT* *UNSAT*

If the JPM is being performed in the plant control room, after the student has satisfactorily demonstrated that they know where to obtain the values the evaluator should give the student the handout sheet for FIGURE V-3A with the expected detector currents for 400% power.

COMMENTS:

CR	SEQ	STEP: 5	STEP STANDARD:
No	No	At the NI panel: ensure all detector's range selector switches are in the same scale.	Verifies all detector range selector switches are selected to 4000 micro amps/slow

CUES: *SAT* *UNSAT*

COMMENTS:

CR	SEQ	STEP: 6	STEP STANDARD:
Yes	Yes	Read the actual excore detector readings snd record on Attachment II of STP-108.001.	Reads actual excore detector readings for all Nis and records on Attachment I of STP-108.001

CUES: *SAT* *UNSAT*

if the JPM is being performed in the plant control room, after the student has satisfactorily demonstrated that they know where to obtain the values the evaluator should give the student a handout sheet with detector current values.

COMMENTS:

CR	SEQ	STEP: 7	STEP STANDARD:
No	No	Read reactor power and control bank "D" position and record on Attachment II of STP-108.001.	Reads reactor power and control rod bank "D" position, records on Attachment II of STP-108.001

CUES: *SAT*

If JPM is performed in classroom. Cue operator when asked: Reactor power as read on NI's =100% Control Bank D position = 230 steps *UNSAT*

COMMENTS:

CR	SEQ	STEP: 8	STEP STANDARD:
Yes	Yes	Calculate maximum QPTR pet Attachment I and record data on Attachment II	Calculates maximum QPTR (1.004 ±0.001 for handout values) per STP-108.001, Attachment II and records QPTR for upper and lower core sections.

CUES: *SAT*

Prompt operator that all calcuation should be taken out to AT LEAST THREE DECIMAL PLACES. *UNSAT*

COMMENTS:

CR	SEQ	STEP: 9	STEP STANDARD:
Yes	Yes	Determines if the QPTR is within specifications.	Determines calcuiated QPTR to be within T.S. limit of 1.02. Operator initials Acceptance criteria met on page 1 of Attatchment I, STP108.001

CUES: *SAT*

If necessary, prompt the operator to state whether or not the QPTR is acceptable. *UNSAT*

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NRC-A-002

DESCRIPTION: PERFORM A QPTR CALCULATION

IC SET: 10

INSTRUCTIONS:

1. Insert the following overrides:

IND-NI048	Analog Value=310	N-41 Detector A
IND-NI049	Analog Value=331	N-41 Detector B
IND-NI084	Analog Value=335	N-42 Detector A
IND-NI 085	Analog Value=364	N-42 Detector B
IND-NI099	Analog Value=317	N-43 Detector A
IND-NI100	Analog Value=347	N-43 Detector B
IND-NI135	Analog Value=389	N-44 Detector A
IND-NI 136	Analog Value=377	N-44 Detector B

2. When student is ready

RUN

COMMENTS:

Step 1 is critical because student must be able to read proper normalized detector current values in order to properly calculate the **QPTW.**

Step 3 is critical because the student must record the detector readings properly on Attachment I to calculate the QPTR

Step **5: Must** calculate correct **QPTR** (fO.OO1 if given in-plant). Tolerance is low because student **is** g ven values and no interpretation **is** required. Tolerance is given solely for roundoff error.

TESTDATASHEET

2.0 PRECAUTIONS reviewed: _____
Initials

5.0 INITIAL CONDITIONS *met:* _____
Initials

6.0 Method used (circle one):

Step 6.1 Step 6.2 Step 6.3

8.0 ACCEPTANCE CRITERIA met: _____
Initials

PERFORMED BY: _____ DATE/TIME: _____

STEP 6.2 TEST DATA SHEET

N-41	DETECTOR A CURRENT / EXPECTED UPPER CURRENT AT 100%	310 / 302.39 =	1.025
N-42	DETECTOR A CURRENT / EXPECTED UPPER CURRENT AT 100%	335 / 326.60 =	1.026
N-43	DETECTOR A CURRENT / EXPECTED UPPER CURRENT AT 100%	317 / 311.63 =	1.017
N-44	DETECTOR A CURRENT / EXPECTED UPPER CURRENT AT 100%	389 / 380.88 =	1.021
SUM OF NORMALIZED UPPER READINGS / NO OF DETECTORS		4.089 / 4 =	1.022
HIGHEST NORMALIZED UPPER READING / AVERAGE NORMALIZED UPPER READING		1.026 / 1.022 =	1.004

N-41	DETECTOR B CURRENT / EXPECTED LOWER CURRENT AT 100%	331 / 320.21 =	1.034
N-42	DETECTOR B CURRENT / EXPECTED LOWER CURRENT AT 100%	364 / 352.12 =	1.034
N-43	DETECTOR B CURRENT / EXPECTED LOWER CURRENT AT 100%	347 / 338.74 =	1.024
N-44	DETECTOR B CURRENT / EXPECTED LOWER CURRENT AT 100%	377 / 365.76 =	1.031
SUM OF NORMALIZED LOWER READINGS / NO OF DETECTORS		4.123 / 4 =	1.031
HIGHEST NORMALIZED LOWER READING / AVERAGE NORMALIZED LOWER READING		1.034 / 1.031 =	1.003

MAXIMUM QUADRANT POWER TILT RATIO: 1.004
(The Quadrant Power Tilt Ratio shall not exceed 1.02)

U9005 Rx PWR ROLLING 15 MIN. AVERAGE: 100
(IPCS equivalent if U9005 unavailable or NI's if IPCS unavailable

PERFORMED BY: _____ _____
Date/Time

BANK D POSITION: 230

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL The plant is operating at 100% power. (NI Reading)

INITIATING The Shift Supervisor directs a Licensed Operator to perform a QPTR surveillance test, per STP-108.001, step 6.2. Due to IPCS being out of service. ~~Take calculation out to 3 decimal places~~)

NEED Rod Position For Bank D

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

EXCORE DETECTOR CURRENT READINGS

NRC-A-002

	DETECTOR A	DETECTOR B
N41	310	331
N42	335	364
N43	317	347
N44	389	377

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM **NRC-A-003**

TAGOUT "C" CHARGING PUMP

APPROVAL: ***APPROVAL DATE:***

REV NO:

CANDIDATE: _____

EXAMINER: _____

THIS JPM IS NOT APPROVED

TASK:

TASK STANDARD:

NO::

'C' CHG/SI Pump is tagged out IAW SAP-201. The pump is hydraulically isolated from the CVCS system, electrical power is removed from pump and valve motors, and pump is vented and drained. The correct tag hang sequence. is identified. The use of Human Performance Tools (3-way communications, self-checking, peer checking, phonetic alphabet, etc.) and industrial safety practices.

PREFERRED EVALUATION LOCATION	***PREFERRED EVALUATION METHOD***
CLASSROOM	PERFORM
SAP-201	DANGER TAGGING
REFERENCES: SAP-201	DANGER TAGGING

TOOLS:
SAP-201
SAP-201, ATTATCHMENT IA
SAP-201, ATTATCHMENP IB
SAP-201, ATTATCHMENP IC
D-302-675, Chemical and Volume Control
ELECTRICAL FEEDER LIST FOR IDA, 1DB, and 1DB2Y
SOP-102 VALVE LINEUPS
TECH SPEC CROSS REFERENCE FOR XPP-0043C

EVALUATION TIME 30 ***TIME CRITICAL*** NO ***10CFR55:*** 45.13

CANDIDATE: TIME

TIME FINISH

PERFORMANCE RATING: SAT: UNSAT:

QUESTION GRADE: PERFORMANCE

EXAMINER:

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YQU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE: THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE **STARTING**, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS **TO** SIMULATE OR RISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THLS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL

The plant is in Mode 1. "C" CHG/SI PUMP (XPP0043C) **has** developed a significant leak from the flex gasket on the pumps balancing line. Mechanical Maitainence has requested an "Emergency Repair" **tagout,** under MWR 041234, to replace flex gasket.

INITIATING

Shift Supervisor directs you to **generate a** tagout for the 'C' CHG/SI Pump ~~(isolated, vented and drained)~~ to facilitate flex gasket replacement. Completion of individual Danger Tags, Hold Tags, **or** Locked Component Tracking Sheets is NOT REQUIRED.

→ [illegible] elements of the Comp't ⇒ The portion(s) the Log. needed to prepare system for maintenance

Identify (process) necessary.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

START:

TIME:

CONDITION:

CUES:

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
No	No	SYSTEM- Enter the system desinator affected by this Danger **Tag.**	Enters "CS" beside "SYSTEM" on **SAP-201, ATT. IA**

CUES: *SAT*

Once the operator has determined that Attachments 1A, 1B, and 1C need to be completed, the evaluator will provide these attachments. *UNSAT*
SAP-201 is classified as "INFORMATION USE". The procedure may be performed from memory; hcwever, the user retains accountability for proper performance.

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
No	No	TRAIN - Enter train association as appropriate, i.e. A,B,S(SWING) or N/A	Enters "S" beside "TRAIN" on Attachment **IA.**

CUES: ***SAT***

UNSAT

COMMENTS:

CR	SEQ	STEP: 3	STEP STANDARD:
No	No	REASON FOR TAG - Enter a brief and accurate account *of* work being performed or reason for equipment not to be operated, I.e. MWRs, PMs or when operation of the equipment results in a hazard	Enters wording similar to "Replace Flex Gasket on ' C CHG/SI pump (XPP0043C) " beside "REASON FOR TAG" on Attachment IA.

CUES: ***SAT***

UNSAT

If operator wants to include nomenclature in addition to the valve number, examiner should ask "Where can you obtain the nomenclature?" Operator **should** answer "CHAMPS". If **so,** examiner should say, "CHAMPS is unavailable, where else can you find the nomenclature?" Operator should answer "**SOP** valve lineups." When examinee volunteers "valve lineups" examiner should hand the operator SOP-102 valve lineups.

COMMENZS:

CR	SEQ	STEP: 4	STEP STANDARD:
No	No	SAFETY REMINDER - Indicate any precautions such as draining, venting, special notes or hazards associated with this tagout.	Enters wording similar to "Ensure deenergined and isolated and drained" beside "SAFETY REMINDER" on Attachment IA

CUES: ***SAT***

UNSAT

Operator may elect to include wording similar to "Contaminated System: RWP required".

COMMENTS:

CR	SEQ	STEP: 5	STEP STANDARD:
No	No	SAFETY RELATED - Circle YES or NO.	Circles "YES" beside "SAFETY RELATED" on Attachment IA.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 6	STEP STANDARD:
No	No	TECH SPEC - Circle YES or NO.	Circles "YES" beside "TECH SPEC" on Attachment IA.

CUES:

ec Cross

SAT

UNSAT

Operator may ask for a Tech Sp c Cross Reference for XPP-0043C. If so, the evaluator will provide the Tech Spec Cross Reference.

Operator may ask for a Removal and Restoration (R&R) number (or the R&R form). Examiner should tell the operator "The NROATC is completing the R&R and will provide that number when the tagout is complete."

COMMENTS:

CR	SEQ	STEP: 7	STEP STANDARD:
No	No	PREPARED BY - Enter name of the individual preparing this tagout package.	Enters own name beside 'PREPARED BY" on Attachment IA.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 8	STEP STANDARD:
No	No	ALTERNATESFOR CLEARANCE - Enter the lead individual's name(s) for each crew or N/A. Foreman or Supervisor may be used in lieu of a specific individual name, ie Electrical Foreman	May enter "Mechanical Supervisor" or "Foreman" under "MECH" and beside "ALTERNATES FOR CLEARANCE" on Attachment IA.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 9	STEP STANDARD:
No	No	MWR - Enter work activity number, ie MWR, PMTS, MRF, ECR or N/A as appropriate.	Enters "041234" under "MWR" on Attachment IA.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 10	STEP STANDARD:
No	No	EQUIPMENT - Enter the complete CHAMPS identification number as listed on the associated work document.	Enters "XPP0043C" under "EQUIPMENT" on Attachment IA.

CUES:

SAT

If the operator asks for the work document, evaluator should hand the operator the *UNSAT*
Maintainence Work Request Sheet ("green sheer') included with this package.

COMMENTS:

CR	SEQ	STEP: 11	STEP STANDARD:
No	No	RSP GRP - Enter the abbreviation for the discipline to which the work activity is assigned.	Enters "MECH" under "RSP GRP" on Attachment IA.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 12	STEP STANDARD:
No	No	COMPONENT I.D. -Enter the complete CHAMPS identification number of the component to be realigned.	See completed Attachment IB.

CUES:

SAT

UNSAT

If operator wants to include nomenclature in addition to the valve number, examiner should ask 'Where can you obtain the nomenclature?" Operator should answer "CHAMPS". If so, examiner should say, "CHAMPS is unavailable, where else can you find the nomenclature?" Operator should answer "SOP valve lineups." When examinee volunteers "vaive lineups" examiner should hand the operator *SOP-102* valve lineups..

COMMENTS:

CR	SEQ	STEP: 13	STEP STANDARD:
No	No	PLANT LOCATION - Enter the specific plant location of the component to be realigned.	See completed Attachment IB

CWES:

SAT

UNSAT

For this JPM, the building and elevation is all that is required for component location.

COMMENTS:

CR SEQ *STEP:* 14 *STEP STANDARD:*

No No . REQ'D OPERABLE POSITION - Enter the normal operable position of the component as specified by the applicable SOP

See completed Attachment IB.

CUES:

SAT

UNSAT

COMMENTS:

CR SEQ *STEP:* 15 *STEP STANDARD:*

No No **TAG -** Enter the sequential **tag** number.

See completed Attachment IC.

CUES:

Tag number is not critical, **only** the sequence **is.**

SAT

UNSAT

COMMENTS:

CR SEQ *STEP:* 16 *STEP STANDARD:*

No No ISSUED *TO* - Check blocks *for* which discipline each component is tagged.

See completed Attachment IC.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 17	STEP STANDARD:
No	No	HOLD TAG INST - Enter a check mark if a Hold Tag is to be placed on a control panel component.	See completed Attachment IC.

CUES: *SAT*

UNSAT

COMMENTS:

CR	SEQ	STEP: 18	STEP STANDARD:
No	No	COMPONENT I.D. - Enter the complete CHAMPS identification number *of* the component being tagged.	See completed Attachment IC.

CUES: *SAT*

If operator wants to include nomenclature in addition to the valve number, examiner should ask 'Where can you obtain the nomenclature? Operator should answer "CHAMPS". If **so,** examiner should say, "CHAMPS is unavailable, where else can you find the nomenclature?" Operator should answer "SOP valve lineups." When examinee volunteers "valve lineups" examiner should hand **the** operator SOP-102 valve lineups.. *UNSAT*

COMMENTS:

CR	SEQ	STEP: 49	STEP STANDARD:
No	No	PLANT LOC - Enter the specific plant location of the component beging tagged.	**See** completed Attachment IC.

CUES: *SAT*

For this **JPM,** the building and elevation is all that is required for component location. *UNSAT*

COMMENTS:

CR SEQ	***STEP:*** *20*	*STEP STANDARD:*
No No	REQ'D TAG POSIT - Enter the position in which the component is to be tagged.	See completed Attachment IC.

CUES:

SAT

UNSAT

COMMENTS:

CR SEQ	***STEP:*** **21**	*STEP STANDARD:*
No No	INST SEQ - Enter sequence that tags are to be installed. If no sequence is needed, place a 1 in each INST SEQ black. If only some tags require a sequence, number these tags in sequence starting with 1 and ending with all tags not requiring sequence having the same number, for example, 1, 2. 3, 4, 4,4.	See completed Attachment IC.

CUES:

SAT

UNSAT

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

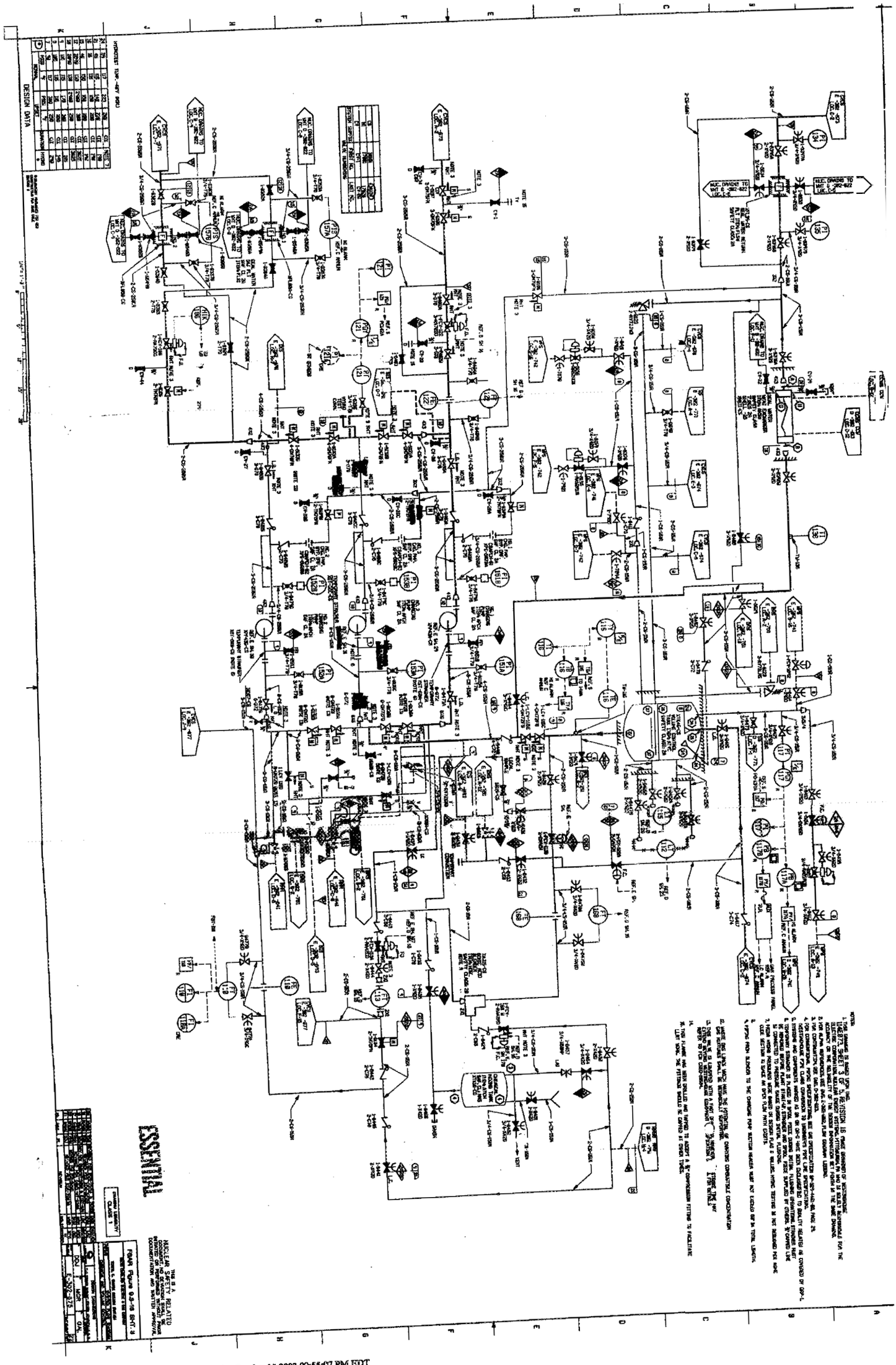
JPM NO: NRC-A403

DESCRIPTION: TAGOUT " C CHARGING PUMP

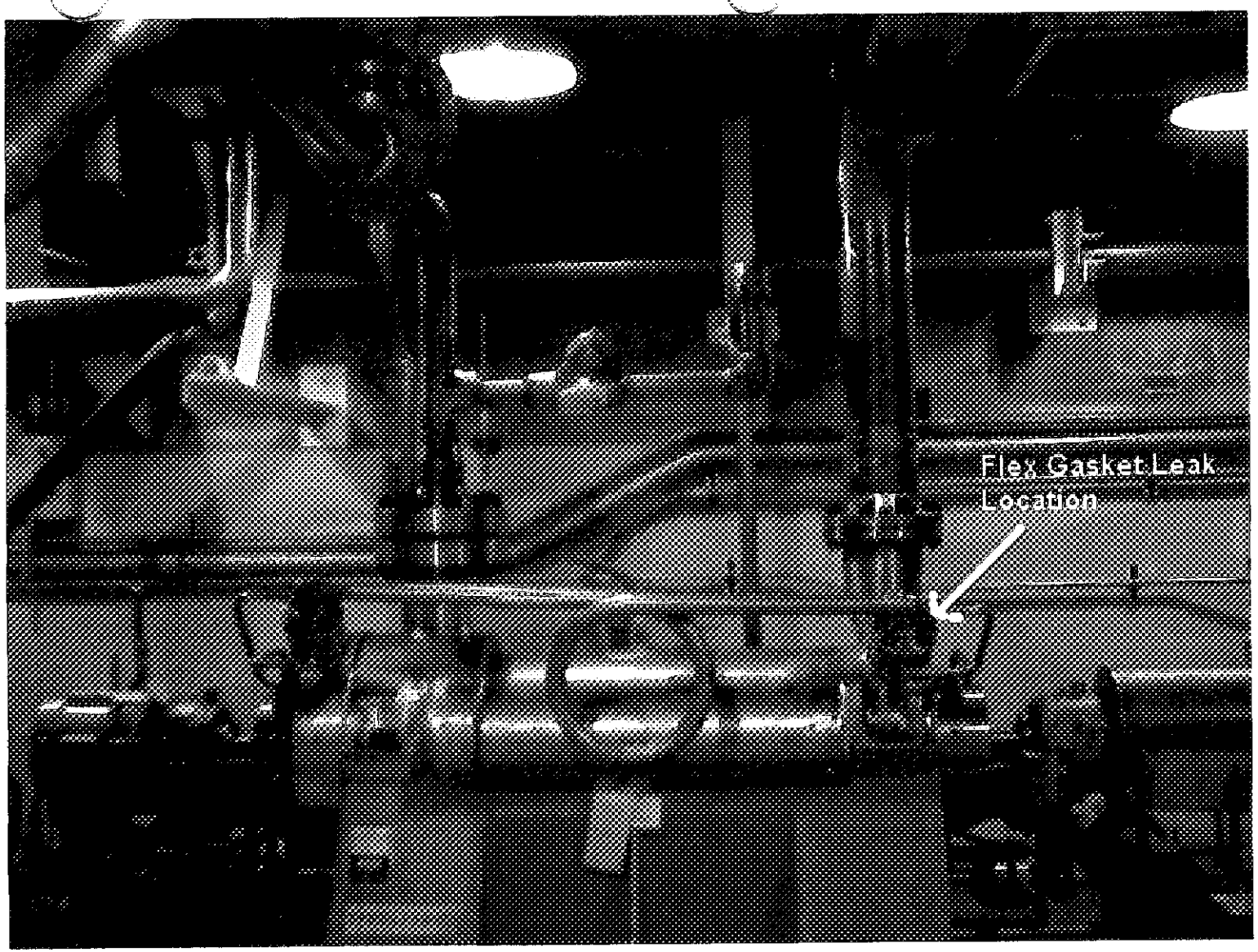
IC SET:

INSTRUCTIONS:

COMMENTS:



i3026675_0001.n Printed by rm15043 Wednesday October 15 2003 09:55:07 PM EDT


Flex Gasket Leak
Location

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL The plant is in Mode 1. "C" CHG/SI **PUMP** (XPP0043C) has developed a significant leak from the flex gasket on the pumps balancing line. Mechanical Maitainence has requested an "Emergency Repair" tagout, under MWR 041234, to replace flex gasket.

INITIATING Shift Supervisor directs you to generate a tagout **for** the 'C' CHG/SI Pump (isolated, vented and drained) to facilitate flex gasket replacement. Completion of individual Danger Tags, Hold **Tags,** or Locked Component Tracking Sheets is NOT REQUIRED.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL

An NLO has been assigned the task of performing a valve lineup in the Auxiliary Building. The area where the valves ate located has **a** dose rate of **24** mR/Hr. and also has **some** airborne activity. From experience the NLO knows that it will take **45** minutes to perform the valve lineup with out a respirator, or 75 minutes to complete the **job** with a respirator. **If** the **job** is done without a respirator the NLO will receive 2 DAC-hours of internal exposure.

INITIATING

You have been directed to: Determine the **dose** the NLO will receive **if** he doesn't wear a respirator whiie performing the valve lineup and the dose he will receive if he wears a respirator. Report to the Shift Supervisor which method will **be** the lowest dose and keep exposure ALARA.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

10 MIN

10 05

tu%

CONDITION:

2000 DAC HOUR/YR = 5R
5000MR

2.5MR = 1 DAC HR

CUES:

DOSE RATE

2.5 MR/DAC HOUR

24MR/HR

5 MR/2 DAC HOUR

45MIN DOSE - NO RESP
18MR
+ 5MR INTERNAL
23MR TOTAL

75MIN DOSE
30 MR

$\frac{45}{60} = \frac{X}{24}$

$X = 18$

$\frac{75}{60} = \frac{X}{24}$

$X = 30$

CHEAPER TO GO W/ NO RESP.

23MR

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM **NRC-A-004**

Determine Dose Rates with Airborne Activity Present

APPROVAL: ***APPROVAL DATE:***

REV NO:

CANDIDATE_____

EXAMINER:_____

THIS JPM IS NOT APPROVED

TASK:

343-029-03-03 **Assess exposure limits of personnel for assigned duties**

TASK STANDARD:

NO::

Dose is correctly calculated with a respirator and without a respirator.
GEN 2.3.1 Knowledge of 10 **CFR:** 20 **and related facility radiation control requirements.** (RO 2.6/SRO **3.0).**
GEN 2.3.4 Knowledge of **facility** ALARA **program. (RO** 2.5/SRO2.9)

PREFERRED EVALUATION LOCATION *PREFERRED EVALUATION METHOD*

PLANT **PERFORM**

REFERENCES:

TOOLS:

EVALUATION TIME 10 *TIME CRITICAL* **NO** *10CFR55:* 43B4

CANDIDATE:

TIME

TIME FINISH:

PERFORMANCE RATING: SAT: UNSAT

QUESTION GRADE: PERFORMANCE

EXAMINER:

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL An NLO has been assigned the task of performing a valve lineup in the Auxiliary Building. The area where the valves are located has a dose rate of 24 mR/Hr. and also has some airborne activity. From experience the NLO knows that it will take 45 minutes to perform the valve lineup with out a respirator, or 75 minutes to complete the job with a respirator. If the job is done without a respirator the NLO will receive 2 DAC-hours of internal exposure.

INITIATING You have been directed to: Determine the dose the NLO will receive if he doesn't wear a respirator while performing the valve lineup and the dose he will receive if he wears a respirator. Report to the Shift Supervisor which method will be the lowest dose and keep exposure ALARA.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

START:

TIME:

STEPS

CR SEQ ***STEP:*** 1

Yes No Calculates NLO dose without a respirator.

STEP STANDARD:

Calculates the **dose** to the NLO without a respirator.
0.75 hours X 24 mR/hour = 18.0 mRem +
2 DAC hours X 2.5 mRem/DAC-hour =
18.0+ 5 mRem = 23 mRem

CUES:

SAT
UNSAT

COMMENTS:

CR SEQ ***STEP:*** *2*

Yes No Calculates NLO dose with a respirator

STEP STANDARD:

Calculates **the dose** to the NLO with a respirator
1.25 hours X **24** mRem/hour = 30 mRem.

CUES:

SAT
UNSAT

COMMENTS:

CR SEQ ***STEP:*** 3

Yes No Determines that the job should be performed without a respirator and reports findings to Shift Supervisor.

STEP STANDARD:

Reports to Shift Supervisor that performance of work should **be** performed without a respirator to
achieve **a** dose that is **ALARA.**

CUES:

SAT
UNSAT

COMMENTS:

Examiner ends JPM **at this** point

JPM SETUP SHEET

JPM NO: NRC-A-004

DESCRIPTION: Determine Dose Rates with Airborne Activity Present

IC SET:

INSTRUCTIONS:

COMMENTS:

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: **JPPF-028**

STARTUP **AND** PARALLEL A ROD DRIVE M/G **SET**

APPROVAL: TRH ***APPROVAL DATE:*** **07/07/2003**

REV NO: 0

CANDIDATE _____

EXAMINER _____

THIS JPM IS APPROVED

TASK:

001-007-01-**04** STARTUP THE FULL LENGTH ROD CONTROL SYSTEM

TASK STAXDARD:

The "#1" rod drive M/G set has been started and parallel has been attempted. Due to the failure to parallel, the operator restores #1 MG set to standby status in accordance with Step III.A.2.3.c. The use of applicable Human Performance Tools (3-way communications, **self** checking, peer checking, phonetic alphabet, etc) and industrial safety practices meets expectations.

PREFERRED EVALUATION LOCATION	*PREFERRED EVALUATION METHOD*
PLANT	SIMULATE

REFERENCES: SOP-403 ROD CONTRQL AND POSITION INDICATING SYSTEM

TOOLS: SOP-403 SECTION III.A, STEPS 2.1 AND 2.3

EVALUATION TIME **20** *TIME CRITICAL* No *10CFR55:* 45(a)1

CANDIDATE: _____ TIME START: _____

TIME FINISH: _____

PERFORMANCE RATING: SAT: _____ UNSAT: _____

QUESTION GRADE: _____ PERFORMANCE TIME: _____

EXAMINER: _____ _____

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU *COMPLETE* THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: A plant heatup is in progress. Initial conditions for startup of the rod drive M/G sets have been completed per SOP-403, Section III.A. The "#2" Rod Drive Motor Generator is already running.

INITIATING CUES: NROATC directs that #1 red drive M/G **set be** started and paralleled in accordance with SOP-403, Section III.A, Steps 2.1 and 2.3.

AT NO TIME ARE YOU TO OPERATE ANY PLANT EQUIPMENT!

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: A plant heatup is in progress. Initial conditions for startup of the rod drive M/G sets have been completed per SOP-403, Section III.A. The "#2" Rod Drive Motor Generator is already running.

INITIATING CUES: *NROATC* directs that #1 *rod* drive M/G set be started and paralleled in accordance with SOP-403, Section III.A, Steps *2.1* and **2.3.**

AT NO TIME ARE YOU TO OPERATE ANY PLANT EQUIPMENT!

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	***SEQ***	***STEP:*** 1	***STEP STANDARD:***
No	Yes	Place VOLTMETER selector is position 1-2.	Positions M/G set #1 VOLTMETER selector switch to the 1-2 position.

CUES:

Cue operator before entering Rod Control Room to point to each operation performed and indication observed due to high noise area. Operator may use a pad of paper to write down additional information for examiner. Cue operator that voltmeter selector switch is in position 1-2.

SAT ____ __

UNSAT

COMMENTS:

CR	***SEQ***	***STEP:*** 2	***STEP STANDARD:***
No	Yes	Adjust VOLTAGE ADJUST potentiometer to minimum by releasing the lock and turning fully counterclockwise.	Adjusts VOLTAGE ADJUST potentiometer to minimum by releasing the lock and rotating potentiometer fully counterclockwise.

CUES:

Cue operator that VOLTAGE ADJUST potentiometer has been turned fully counterclockwise.

SAT ....

UNSAT ____

COMMENTS:

CR	***SEQ***	***STEP:*** 3	***STEP STANDARD:***
No	Yes	Place AMMETER selector in position A.	Places M/G set #1 AMMETER selector switch to the " A position.

CUES:

Cue operator that AMMETER switch is in the " A position.

SAT ___

UNSAT ____

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD:
Yes	Yes	Close MOTOR Breaker to start M/G #1.	Positions M/G set #1 MOTOR Breaker to CLOSE position.

CUES:

After operator describes the expected response, then cue operator that the red light is lit on M/G set #1 and the green light is off.

COMMENTS:

SAT

UNSAT

CR	SEQ	STEP: 5	STEP STANDARB:
Yes	Yes	Depress and hold GEN FIELD FLASH pushbutton until voltage is at least 235 VOLTS *as* indicated by GENERATOR LINE VOLTS, then release.	Depresses and holds GEN FIELD FLASK pushbutton until voltage reads **at** least 235 volts on voltmeter and then releases pushbutton.

CUES:

Examiner informs operator that the voltmeter reads 240 volt after field flash by pointing at indication.

COMMENTS:

SAT _____

UNSAT _

CR	SEQ	STEP: 6	STEP STANDARD:
Yes	Yes	Adjust VOLTAGE ADJUST potentiometer clockwise until 255 TO 265 VOLTS is indicated by GENERATOR LINE VOLTS.	Adjusts VOLTAGE ADJUST potentiometer clockwise until voltage meter at M/G control panel for #1 M/G **set** indicates 260 ± 5 volts.

CUES:

Cue operator that voltage increases to 260 VOLT§ (as seen) by pointing at indication.

COMMENTS:

SAT

UNSAT _____

CR SEQ *STEP: 7* *STEP STANDARD:*

No Yes With the VOLTMETER selector in position 2-3, verify indication is between 255 and 265 volts.

Verifies 260 a 5 volts on voltmeter phase 2-3 by placing voltmeter selector switch to the 2-3 position.

CUES: *SAT* .....

Examiner informs operator that each phase indicates 260 volts when each phase is selected by pointing at indication. *UNSAT* ____

COMMENTS:

CR SEQ *STEP: 8* *STEP STANDARD:*

No Yes With the VOLTMETER selector in position 3-1, verify indication is between 255 and 265 volts.

Verifies 260 ± 5 volts on voltmeter phase 3-1 by placing voltmeter selector switch to the **3-1** position.

CUES: *SAT* _

Examiner informs operator that each phase indicates 260 volts when each phase is selected by pointing at indication. *UNSAT* _____

COMMENTS:

CR SEQ *STEP:* 9 *STEP STANDARD:*

No Yes Lock the VOLTAGE ADJUST potentiometer. Locks the Voltage Adjust potentiometer.

CUES: *SAT*

If performed correctly, cue operator that the voltage adjust potentiometer is lacked. *UNSAT*

COMMENTS:

CR	SEQ	STEP: 10	STEP STANDARD:
Yes	Yes	Parallel Generator No. 1 as follows: Turn Generator No.1 SYNCHRONIZE Switch ON.	Positions the Generator No.1 SYNCHRONIZE Switch to the ON position.

CUES:

Examiner informs operator that #2 M/G set is already running per step 2.2 SOP-403 and the #2 M/G set generator breaker is as-is if information is requested.

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 11	STEP STANDARD:
Yes	Yes	Place Generator No. 1 GENERATOR Breaker Switch to CLOSE.	Positions the M/G set #1 GENERATOR circuit breaker switch to the CLOSE position.

CUES:

After examinee describes expected actions, cue operator that green light is off and that red light is lit by pointing to indication.

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 12	STEP STAXDARD:
Yes	Yes	Verify GENERATOR No. 1 GENERATOR Breaker closed.	Verifies M/G set #1 generator breaker closed by red light indicator lit for #1 M/G generator breaker.

CUES:

After examinee describes expected actions, cue examinee that green light **is** lit and that the red light is off by pointing to M/G set #1 generator circuit breaker. Inform examinee that conditions have not changed for TWO (2) minutes. NOTE: This indicates a failure to parallel, the examinee should perform the following steps. (13 -18).

SAT _____

UNSAT

COMMENTS:

CR	SEQ	STEP: 13	STEP STANDARD:
Yes	Yes	Place Generator No. 1 GENERATOR Breaker Switch to TRIP.	Positions the M/G set #1 GENERATOR circuit breaker switch to the TRIP position.

CUES:

After examinee describes expected actions, cue operator that green light is ON and that red light is OFF by pointing to indication.

SAT _____

UNSAT

COMMENTS:

CR	SEQ	STEP: 14	STEP STANDARD:
No	Yes	Turn Generator No. I SYNCHRONIZE Switch to OFF.	Positions Generator No. 1 SYNCHRONIZE switch to the OFF position.

CUES:

After examinee describes expected actions, cue operator that M/G set #1 synchronizer is in OFF position.

SAT _____

UNSAT

COMMENTS:

CR	SEQ	STEP: 15	STEP STANDARD:
Yes	Yes	Readjust VOLTAGE ADJUST potentiometer clockwise until 255 TO 265 VOLTS is indicated by GENERATOR LINE VOLTS.	Readjusts VOLTAGE ADJUST potentiometer clockwise until voltage meter at M/G control panel for #1 M/G set indicates ***260*** ± 5 volts.

CUES:

Cue operator that voltage increases to 260 VOLTS (as seen) by pointing at indication.

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 16	STEP STANDARD:
No	Yes	Turn Generator No. 1 SYNCHRONIZE Switch to ON.	Positions Generator No. 1 SYNCHRONIZE switch to the ON position.

CUES:

After examinee describes expected actions, cue operator that M/G set #1 synchronizer is in ON position.

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 17	STEP STANDARD:
Yes	Yes	Place Generator No. 1 GENERATOR Breaker Switch to CLOSE.	Positions the M/G set #1 GENERATOR circuit breaker switch to the CLOSE position.

CUES:

After examinee describes expected actions, cue operator that green light is off and that red light is lit by pointing to indication.

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 18	STEP STANDARD:
No	No	Verify Generator No. 1 GENERATOR breaker closed.	Verifies Generator No. 1 GENERATOR breaker closed.

CUES:

After examinee describes expected actions, cue operator that green light is off and that red light is lit by pointing to Generator Breaker indication.

SAT

UNSAT

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPPF-028

DESCRIPTION: STARTUP AND PARALLEL A ROD DRIVE M/G §ET

IC SET:

INSTRUCTIONS:

COMMENTS:

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: **JPP-108**

LOCALLY SHED NOM-ESSENTIAL DC LOADS

APPROVAL: TRH ***APPROVAL DATE:*** **07/31/2003**

REV NO: **9**

CANDIDATE _____ _____ _____

EXAMINER: _____ _____

THIS JPM IS APPROVED

TASK:

000-114-05-04 RESPOND TO LOSS OF ALL ENGINEERING SAFETY FEATURES ALTERNATING CURRENT POWER

TASK STANDARD:

Nonessential DC loads have been shed per EQP-6.0. Attachment 2. The use of applicable Human Performance Tools (3-way communications, self checking, peer checking, phonetic alphabet, etc) and industrial safety practices meets expectations.

PREFERRED EVALUATION LOCATION ***PREFERRED EVALUATION METHOD***

PLANT SIMULATE

REFERENCES: EOS-6.0 LOSS OF ALL ESF **AC** POWER

TOOLS: EOP-6.0, Attachment 2
FLASHLIGHT

EVALUATION TIME 15 ***TIME CRITICAL*** No ***10CFR55:*** 45(a)8

CANDIDATE: _____ TIME START: _____

TIME FINISH: _____

PERFORMANCE RATING: SAT UNSAT: ____

QUESTION GRADE: _____ PERFORMANCE TIME: _____

EXAMINER: _____ / _____

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL **BE** SATISFIED

SAFETY CONSIDERATIONS:

INITIAL CONDITION: **The plant is at 100% power when a station blackout occurs, with subsequent entry into** EOP-6.0.

INITIATING CUES: **Control Room Supervisor directs stripping nonessential DC loads per** EOP-6.0, **Attachment 2.**

AT NO TIME ARE YOU TO OPERATE ANY PLANT EQUIPMENT!

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The plant is at 100% power when a station blackout occurs, with subsequent entry into EOP-6.0.

INITIATING CUES: Control Room Supervisor directs stripping nonessential DC loads per EOP-6.0, Attachment 2.

AT NO TIME ARE YOU TO OPERATE ANY PLANT EQUIPMENT!

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
Yes	Yes	Close GEN GAS PURGING SYS HYDROGEN SUPPLY valve **(TB-412).**	Operator closes GEN GAS PURGING SYS HYDROGEN SUPPLY VLV (XVT12225-HY) by turning valve handwheel in the clockwise direction until the valve is closed.

CUES:

Valve turns clockwise then stops

SAT

UNSAT

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
Yes	Yes	Open HYDROGEN-CARBON DIOXIDE XCONN VALVE (TB-412).	Operator opens HYDROGEN-CARBON DIOXIDE XCONN VALVE (XVT-12218-HY) by turning the handwheel in the counter-clockwise direction until the valve is open.

CUES:

Valve turns counter-clockwise then stops

SAT _____

UNSAT _

COMMENTS:

CR	SEQ	STEP: 3	STEP STANDARD:
	Yes Yes	Open CARBON DIOXIDE VENT HEADER ISOL VALVE (TB-412).	Operator opens CARBON DIOXIDE VENT HEADER ISOL VALVE (XVT10556-CD) by turning the valve handwheel in the counter-clockwise direction until the valve is open

CUES:

Valve turns counter-clockwise then stops.

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD:
	Yes Yes	Open MAIN CONDENSER A & B VACUUM BREAKER (TE-436).	Operator opens MAIN CONDENSER A&B VACUUM BREAKER (XVB00101-AR) operating the Declutch mechanism and turning the handwheel CCW until handwheel stops.

CUES:

Valve position indicator is not calibrated and therefore not required for this step.
Valve turns clockwise then stops.

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 5	STEP STANDARD:
	No Yes	Check if the MFW pumps have stopped. (TB-436).	Operator verifies that the shafts of the MFW pumps are stopped.

CUES:

When requested. inform the examinee that each MFW pump shaft is stopped

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 6	STEP STANDARD:
No	Yes	Check if the Main Turbine has stopped. (TB-463).	Operator verifies that the main turbine shaft has stopped.

CUES:

When requested inform the examinee that Main Turbine speed indicates "zero".

COMMENTS:

SAT _____

UNSAT _____

CR	SEQ	STEP: 7	STEP STANDARD:
No	Yes	Check that IPI-5130, MACHINE HYDROGEN GAS PRESSURE INDICATOR, indicates less than 5 psig. (TB-412).	Operator verifies that IPI-5130 indicates less than 5 psig on the Turbine/Generator Auxiliary Panel.

CUES:

Cue examinee that 20 minutes has elapsed and hydrogen pressure indicates "zero" after XVT10556 is opened.

COMMENTS:

SAT _____

UNSAT _____

CR	SEQ	STEP: a	STEP STANDARD:
Yes	Yes	De-energize TPP0022A, (B), (C) - FWPT EMERGENCY BEARING OIL PP (TB-412).	Operator opens breaker for FWPA(B)(C) - FWP EBOP (XSX0002A(B)(C)) from Panel DPN-2X 01(02)(03) after FW pumps stop.

CUES:

If requested, inform the examinee that each MFW pump shaft is stopped.

COMMENTS:

SAT _____

UNSAT _____

CR	SEQ	STEP: 9	STEP STANDARD:
	Yes Yes	**De-energize** EMERGENCY **SEAL** OIL PUMP, XPT0001-PP3 (TB-412).	ıtor de-energizes XTP0001-PP3 IGEN ?Y SEA L OiL PUMF ım p DPN· !X t opening breaker #4

CUES:

If requested, inform operator that machine gas pressure is < 5 ***psig.***

SAT _____

UNSAT .....

COMMENTS:

CR	SEQ	STEP: 10	STEP STANDARD:
Yes	Yes	**De-energize breaker for EBOP** (XSXOOCS) (TB-412).	**Operator deenergizes** MAIN TURB. EMERG. BEARING **OIL PP,** (XOR001), **by opening breaker 05** (XSXOOOS) on DPN-2X, **after the Main Turbine has stopped.**

CUES:

If requested, inform examinee that Main Turbine shaft has stopped

SAT _____

UNSAT

COMMENTS:

Examiner ends JPM **at this point**

JPM SETUP SHEET

JPM NO: JPP-108

DESCRIPTION: LOCALLY SHED NON-ESSENTIAL DC **LOADS**

IC SET:

INSTRUCTIONS:

COMMENTS:

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM **JPPF-301**

LOSS OF CONTAINMENT INTEGRITY **(MVG-6797)**

APPROVAL: ***APPROVAL DATE:***

REV NO:

CANDIDATE

EXAMINER:

THIS JPM IS NOT APPROVED

TASK:

TASK STANDARD:

NO:.'

Fire service to the Reactor Building is isolated **per** EOP 1.0, Attachment **4 and** 5. The **use of** the

PREFERRED EVALUATION LOCATION ***PREFERRED EVALUATION METHOD***

PLANT SIMULATE

REFERENCES:

EOP-I.0 REACTOR TRIP/SAFETY INJECTION ACTUATION

TOOLS: EOP 1.0 Attachment **4,** page **3** of **4**
EOP 1.0 Attachment 5, page 2 of **4**
OAP 100.5 GUIDELINES FOR CONFIGURATION CONTROL AND OPERATION OF PLANT EQUIPMENT, Step 9.5

EVALCJATION TIME 10 ***TIME CRITICAL*** NO ***10CFR55:***

CANDIDATE: TIME START

TIME FINISH:

PERFORMANCE RATING: SAT: UNSAT:

QUESTION GRADE: PERFORMANCE

EXAMINER:

SIGNATURE **UATE**

COMMENTS:

INSTRUCTIONS TU OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN. YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The plant has experienced an SI from 100% power with the CRS implementing EOP 1.0. The BOP operator, while performing EOP 1.0 Attachment 3, notes that the status light for SAFETY INJECTION PHASE A ISOL on XCP 6104 for FIRE SERV ISOL 6797 CLSD is dim, indicating the valve has failed to close on a valid phase "A" containment isolation signal. The CMC switch on the MCB for MVG 6797 has no white indicating lights, and the red OPEN light is lit and the green CLOSE light is not lit.

INITIATING CUES: The Control Room Supervisor directs you to close MVG-6797 manually as the BACKUP ISOLATION to XVG06797-FS per EOP 1.0, Attachment 5, page 2 of 4.

AT NO TIME ARE YOU TO OPERATE ANY PLANT EQUIPMENT!

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

applicable Human Performance Tools (3-way communications, self checking, peer checking, phonetic

TIME:

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The plant has experienced an SI from 100% power with the CRS implementing EOP 1.0. The BOP operator, while performing EOP 1.0 Attachment 3, notes that the status light for SAFETY INJECTION PHASE A ISOL on XCP 6104 for FIRE SERV ISOL 6797 CLSD is dim, indicating the valve has failed to close on a valid phase "A" containment isolation signal. The CMC switch on the MCB for MVG 6797 has no white indicating lights, and the red OPEN light is lit and the green CLOSE light is not lit.

INITIATING CIJES: The Control Room Supervisor directs you to close MVG-6797 manually as the BACKUP ISOLATION to XVG06797-FS per EOP 1.0, Attachment 5, page 2 of 4.

AT NO TIME ARE YOU TO OPERATE ANY PLANT EQUIPMENT!

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

alphabet, etc.) and industrial safety practices meets expectations.

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
No	No	Puli down on the declutch lever, to disconnect the motor from the handwheel via a clutch assembly.	Examinee simulates pushing the declutching lever away from the handwheel.

CUES: *SAT*

If examinee mentions checking the breaker first and/or opening the breaker prior to operation of the valve manually, inform the examinee that 1DB2Y 23 **AD,** FS TO RB **CHARCOAL CLEANUP** SYS **4A-4B ORC XVG 6797-FS,** has already been checked. The overloads were found tripped and could not be reset, and the breaker was opened. *UNSAT*

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
No	No	Turn the handwheel in the clockwise direction	The examinee simulates turning the valve handwheel in the clockwise (closed) direction until movement stops.

CUES: *SAT*

Cue to examinee that the handwheel rotated manually for several revolutions and then stopped. *UNSAT*

COMMENTS:

CR	SEQ	STEP: 3	STEP STANDARD:
No	No	Leave declutch lever in the down (motor disengaged) position. The motor will re-engage when motion is demanded electrically.	Examinee simulates releasing the declutching lever.

CUES: ***SAT***

There is no reliable valve position indication on an MOV. Cue the operator that the CRS has informed the operator that the SAFETY INJECTION **PHASE A** ISOL monitor light on XCP 6404 for FIRE SERV ISOL 6797 **CLSD** light is now BRIGHT. *UNSAT*

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPPF-301

DESCRIPTION: LOSS OF CONTAINMENT **INTEGRITY (MVG-6797)**

IC SET:

INSTRUCTIONS:

COMMENTS:

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM **JPSF-002**

TRANSFER TO HOT LEG RECIRCULATION

APPROVAL: ***APPROVAL DATE:***

REVNO: 6

CANDIDATE

EXAMINER:

THIS JPM IS NOT APPROVED

TASK:

000-137-05-01 TRANSFER RHR FROM COLD LEG TO HOT LEG RECIRCULATION

TASK STANDARD:

NO::

Safety Injection system has been aligned for Hot Leg Recirculation. Charging pumps h a w not been runout or deadheaded. The use of applicable Human Performance Tools (3-way communications, self checking, peer checking, phonetic alphabet, etc) and industrial safety practices meets expectations.

PREFERRED EVALUATION LOCATION	*PREFERRED EVALUATION METHOD*
SIMULATOR	PERFORM

REFERENCES: EOP-2.0 **LOSS** OF REACTOR OR SECONDARY COOLANT

EOP-2.3 TRANSFER TO HOT LEG RECIRCULATION

TOOLS:

EVALUATION TIME 10 *TIME CRITICAL* No *10CFR55:* 45(a)7

CANDIDATE:

TIME START:

TIME FINISH:

PERFORMANCE RATING: **SAT:** **UNSAT**

QUESTION GRADE: **PERFORMANCE**

EXAMINER:

SIGNATURE **DATE**

COMMENTS:

INSTRUCTIONS TO OPERATOR

***READ** TO OPERATOR:*

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED

SAFETY CONSIDERATIONS:

INITIAL CONDITION: It has been 8 hours since a Loss of Coolant Accident occurred and the plant is presently in the Cold Leg Recirculation mode. The CRS has entered EOP-2.3 (Hot Leg Recirculation) from EOP-2.0. CHG/SI Pump C is aligned to " B train.

INITIATING CUES: The CRS directs the NROATC to transfer from Cold Leg to Hot Leg Recirculation per EOP-2.3.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

TME:

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: It has been 8 hours since a Lass of Coolant Accident occurred and the plant is presently in the Cold Leg Recirculation mode. The CRS has entered EOP-2.3 (Hot Leg Recirculation) from EOQ-2.0. CHG/SI Pump C is aligned to "B" train.

INZTZATZNG CUES: The CRS directs the NROATC to transfer from Cold beg to Hot Leg Recirculation per EOP-2.3.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	***SEQ***	***STEP:*** 1		***STEP STANDARD:***
Ye	Yes	Stop the Charging Pump on "A" Train		CHG/SI Pump 'A indicates OFF

CUES: ***SAT***

If Charging Pump " A is still running when 8885 *is* closed, it will **be** deadheaded; this constitutes failure. Running the charging pump with both **8885** and 8884 runs the pump out, also failing. ***UNSAT***

THIS IS A NOTE! not a cue!

COMMENTS:

CR	***SEQ***	***STEP:*** *2*		***STEP STANDARD:***
No	Yes	Check if CHG/SI Pump C **is** aligned to Train **A** by verifying XFER switch XET 2002C on Train **A** is lit.		XFER SWITCH XET 2002C on Train **A** is not lit, directing the operator to alternative action step 1.**b.**

CUES: ***SAT***

UNSAT

COMMENTS:

CR	***SEQ***	***STEP:*** *3*		***STEP STANDARD:***
Ye	Yes	Ensure MVG-8132A(B), CHG PP C TO LP A BISCH, are closed.		MVG-8132A and MVG-8132B, CHG PPL C TO LP A DISCH, indicate CLOSE.

CUES: ***SAT***

UNSAT

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD:
Ye	Yes	Close charging LP "A" ALT to COLD LEG (MVG-8885).	MVG-8885, CHG LP A TO COLD LEGS, indicates CLOSE.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 5	STEP STANDARD:
Ye	Yes	Open CHG LP "A" to HOT LEGS (MVG-8884).	MVG-8884, CHG LP A TO HOT LEGS, indicates OPEN.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 6	STEP STANDARD:
Ye	No	Start " A Charging Pump	CHG/SI PUMP " A indicates ON with normal running amps.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 7	STEP STANDARD:
Ye	Yes	Stop "B" charging pump.	CHG/SI Pump 'B' indicates OFF with 0 amps.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 8	STEP STANDARD:
No	Yes	Check if 'C' charging pump is aligned to Train B.	Verifies XFER SWITCH XET2000C ON TRAIN B is lit.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 9	STEP STANDARD:
No	Yes	Ensure MVG-8132A and MVG-8132B, CHG PP C TO LP A DISCH, are closed.	MVG-8132A and MVG-8132B, CHG PP C TO LP A DISCH, indicate CLOSE.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 10	STEP STANDARD:
No	Yes	Verify HI HEAD to COLD LEG INJECTION (MVG-8801A) is closed.	MVG-8801A, HI HEAD TO COLD LEG INJ indicates CLOSE.

CUES: *SAT*

UNSAT

COMMENTS:

CR	SEQ	STEP: 11	STEP STANDARD:
Ye	Yes	Close HI HEAD TO COLD LEG INJECTION valve MVG-8801B.	MVG-8801B, HI HEAD TO COLD LEG INJ indicates CLOSE.

CUES: *SAT*

If 8801B is closed with "B" Charging Pump running, this deadheads the pump and constitutes failure of the JPM. AN EXAMINER NOTE - NOT A CUE ! *UNSAT*

COMMENTS:

CR	SEQ	STEP: 42	STEP STANDARD:
Ye	Yes	Open MVG-8886, CHG LOOP "B" in HOT LEGS.	MVG-8886, CHG LP B TO HOT LEGS, indicates OPEN.

CUES: *SAT*

UNSAT

COMMENTS:

CR SEQ ***STEP:*** **13**

Ye No Start "B" CHG/SI pump.

STEP STANDARD:

CHG/SI Pump 'B' indicates OFF with zero running amps, and annuciator XCP 614, 4-2, CHG PP B/C TRIP is received. The NRO should review the ARP for XCP 614, 4-2 and recognize that the only step which will result in a success path would be the direction that if "B" Charging Pump is inoperable, then align "C" Charging Pump to "B" train.

IS THIS THE ONLY PATH ?

CUES: ***SAT***

If requested, IB AO and/or electical maintenance personnel will investigate and determine that **a** breaker malfunction exists and they estimate 6 hours to complete changeout and testing. ***UNSAT***

COMMENTS:

CR SEQ ***STEP:*** 14

No No Align Charging Pump on Train C to B train electically.

STEP STANDARD:

Place "€3" Charging Pump in PTL, direct IB AO to rack down "B" Charging Pump, ensure "C" Charging Pump ("B" train) is in PTL, direct IB **AB** to rack up "C" Charging Pump ("B" train).

CUES: ***SAT***

If requested, SOP 102, **Att** VB, Charging Pump C to Train €3 lineup had previously been performed and verified, with the exception of racking down "B" Charging Pump breaker and racking in "C" Charging Pump ("B" train). Booth operator should request NRO to verify both Charging pump switches are in PTL prior to racking breakers up or down: IAW **SOP** 313. ***UNSAT***

COMMENTS:

CR	SEQ	STEP: 15	STEP STANDARD:
No	No	Start the Charging Pump on Train B (PUMP B or C).	CHG/SI Pump " C indicates ON and normal running amps.

CUES:

This completes this JPM.

COMMENTS:

SAT

UNSAT

Examiner **ends** JPM at this point.

JPM SETUP SHEET

JPM NO: JPSF-002

DESCRIPTION: TRANSFER TO HOT LEG RECIRCULATION

IC SET: 10

INSTRUCTIONS:

1. Activate

   MAL-RCS005A RCS Loop 'A' DBA LOCA

2. RUN

3. Perform actions of EOP-1.0 and **2.0**

4. FREEZE

5. Ensure RHR Sump Level >415', then activate LOA-AUX115 SEVERITY=0.17 (17% in RWST)

6. **RUN**

7. Transfer Cold Leg Injection to Cold Leg Recirculation IAW EOP-2.2.

8. To shift CCW to fast speed during EQP-2.2:

   LOA-CCW050 SELECT–FAST SPEED 'A' CCW Pump Speed Switch to fast
   or
   LOA-CCW052 SELECT=FAST SPEED 'C' CCW Pump Speed Switch to **fast**

9. FREEZE

10. When student is ready:

    RUN

COMMENTS:

Charging Pumps must be stopped before opening **Hot** Leg High Head Valves (8884/8886) to prevent pump runout.

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: **JPS-023**

OPERATE **THE** CVCS **SYSTEM** TO **INCREASE** RCS PRESSURE

APPROVAL: TRH *APPROVAL DATE:* 06/19/2003

REV NO: *3*

CANDIDATE: _____

EXAMINER: _____

THIS JPM IS APPROVED

TASK:

004-032-01-01 **OPERATE CHEMICAL AN5 VOLUME CONTROL SYSTEM TO INCREASE REACTOR COOLANT SYSTEM PRESSURE**

TASK STANDARD:

RCS pressure has been increased to **350-425 psig** without **lifting RHR suction relief** and **is stable**

PREFERRED EVALUATION LOCATION *PREFERRED EVALUATION METHOD*

SIMULATOR **PERFORM**

REFERENCES': SOP-I**02** **CHEMICAL AND VOLUME CONTROL SYSTEM**

TOOLS:

EVALUATION TIME **15** *TIME CRITICAL* **No** *10CFR55:* 45(a)6

CANDIDATE: _____ _____ TME START: _____

TME FINISH: _____

PERFORMANCE RATING: SAT: _____ UNSAT

QUESTION GRADE: _____ PERFORMANCE TIME

EXAMINER: _____ _____ _____ /__

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE **MEASURE** WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: **The plant has been in** long **term cold shutdown due to refueling. The** RCS **is in solid plant conditions with** RCS **pressure at** < 50 **psg and the** RHR **system** in **operation.**

INITIATING CUES: **The** CRS **directs that** RCS **pressure be increased to 350-425 psig per** SOP-102, **Section** III.C., **by performing step** 2.1 **and** 2.2 **so that a reactor coolant pump** *may be* **started for** plant **heatup.**

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The plant has been in long term cold shutdown due to refueling. The RCS is in solid plant conditions with RCS pressure at e 50 psig and the RHR system in operation.

INITIATING CUES: The CRS directs that RCS pressure be increased to 350-425 psig per SOP-102, Section III.C., by performing step 2.1 and 2.2 so that a reactor coolant pump may be started for plant heatup.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
No	Ne	**Ensure RCP seal leakoff valves are open.**	**PVT-8141 A (B,C) A (B) (C) SEAL LKOFF indicate** OPEN.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
No	No	**Ensure normal letdown available.**	**LCV-459 and 460, PVT-8152, LTDN LINE** ISOL, **and 8149A,** B, **C,** LTDN **ORIFICE A** (B) **(C)** ISOL **indicate OPEN.**

CUES:

SAT _____

UNSAT

COMMENTS:

CR	*SEQ*	*STEP:* 3	*STEP STANDARD:*
Yes	**Yes**	**Adjust PCV-145 controller** *to* **increase RCS pressure.**	**Decreases PCV-145 controller output to close PCV-145.**

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD:
No	Yes	Monitor RCS pressure meters and/or recorders to observe trend in RCS pressure.	Monitors N.R. and/or W.R. RCS pressure meters and recorders to determine increase in RCS pressure above 50 psig.

CUES:

SAT ____

UNSAT ____

COMMENTS:

CR	SEQ	STEP: 5	STEP STANDARD:
No	No	Establish RCP Seal Water Return.	MVT-8112 SEAL WTR TRN ISOL, and MVT-8100, SEAL WTR RPN ISOL, indicate OPEN.

CUES:

SAT ____

UNSAT ____

COMMENTS:

CR	SEQ	STEP: 6	STEP STANDARD:
No	No	Maintain Seal Injection Flow.	Adjusts HCV-186, INJ FLOW, as required to keep seal injection flow between 6 and 13 gpm.

CUES:

SAT ____

UNSAT ____

COMMENTS:

CR	SEQ	STEP: 7	STEP STANDARD:
Yes	Yes	Adjust PCV-145 controller to maintain RCS pressure at 350-425 psig.	Adjusts PCV-145 controller output to maintain RCS pressure at 350-425 psig.

CUES:

SAT

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 8	STEP STANDARD:
No	No	Monitor RCS pressure meters and/or recorders to observe trend in RCS pressure.	Monitors N.R. and/or W.K. RCS pressure meters and recorders to determine RCS pressure stable at 350-425 psig.

CUES:

SAT

UNSAT _

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPS-023

DESCRIPTION: OPERATE THE CVCS SYSTEM TO INCREASE RCS PRESSURE

IC SET: 1

INSTRUCTIONS:

1. RUN
2. Close PCV-145. Establish »100 gpm flow on FI-122 by manually opening FCV-122.
3. When RCS pressure »20 psig, reduce charging flow *to* »75 gpm. Open PCV-145 to 40% demand.
4. FREEZE
5. When student is ready

   RUN

COMMENTS:

V.C. SUMMER NUCLEAR STATION
JQB PERPQRMANCE MEASURE

JPM **JPSF-025**

START AND LOAD "B" EMERGENCY DIESEL GENERATOR

APPROVAL: ***APPROVAL DATE:***

REV NO: 4

CANDIDATE

EXAMINER:

THIS JPM IS NOT APPROVED

TASK:

064-003-01-01 LOAD THE DIESEL GENERATOR

NO::

"B" Diesel Generator is started and loaded to 4150-4250 KW, and then tripped and the engine shutdown when oscillations occur. The use of applicable Human Performance Tools (3-way communications, self checking, peer checking, phonetic alphabet, etc) and industrial safety practices meets expectations.

PREFERRED EVALUATION LOCATION	*PREFERRED EVALUATION METHOD*
SIMULATOR	PERFORM

REFERENCES:	SSCB-IV-7	DIESEL GENERATOR POWER FACTOR, CURRENT VS. LOAD
	SOP-306	EMERGENCY DIESEL GENERATOR

TOOLS:

EVALUATION TIME 15 *TIME CRITICAL* No *10CFR55:* 45(a)8

CANDIDATE:

TIME START

TIME FINISH:

PERFORMANCE RATING: **SAT** **UNSAT:**

QUESTION GRADE: **PERFORMANCE**

EXAMINER:

SIGNATURE **DATE**

COMMENTS:

TASK STANDARD:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The plant is operating at 100% power with normal AC power available to all buses. "B" D/G is to be started and loaded for monitoring cylinder temperatures. All local steps have been completed.

INITIATING CUES: CRS directs starting and loading of "B" D/G to 4150-4250 KW per SOP-306, Section IV.B, steps 2.3 thru 2.10.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

TIME:

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: **The plant is operating at 100% power with normal AC power available to all buses. "B" D/G is to be started and loaded for monitoring cylinder temperatures. All local steps have been completed.**

INITIATING CUES: **CRS directs starting and loading of "B" DIG to 4150-4250 KW per SOP-306, Section IV.B, steps 2.3 thru 2.10.**

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
No	No	Verify Annunciator XCP-637 1-2, DG B START NOT READY, is clear.	Verifies Annunciator XCP-637 1-2, DG B AUTOSTART NOT READY, is clear.

CUES: ***SAT***

UNSAT

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
No	No	The READY FOR AUTO START light is illuminated at the D/G Local Control Panel	Calls the IB operator and verifies the "READY FOR AUTO START" light is lit at the "B" D/G Local Control Panel.

CUES: ***SAT***

When requested, as the IB operator, inform the operator that the "READY FOR AUTO START" light is lit at the "B" D/G Local Control Panel. ***UNSAT***

COMMENTS:

CR	*SEQ*	*STEP:* 3	*STEP STANDARD:*
No	Yes	Verify D/G starts and accelerates to 58.9 - 61.1 Hertz and 6700-7600 volts.	DG B VOLTS indicates 6700-7600 volts and FREQUENCY indicates 58.9 - 61.1 Hertz.

CUES: ***SAT***

UNSAT

COMMENTS:

CR SEQ ***STEP: 4*** ***STEP SZANDARD:***

No Yes Place "**E**" Diesel Generator **TEST** switch to **START.** Momentarily rotates "**B**" Diesel Generator **TEST** switch to the **START** position.

CUES: ***SAT***

UNSAT

COMMENTS:

CR SEQ ***STEP: 5*** ***SZEP STANDARD:***

No Yes Place the DG B SYNC **SEL** switch in **DSL.** DG B SYNC SEL switch indicates **DSL.**

CUES: ***SAT***

CRS directs BOP to load "B" DG per Section II, Precaution 2.g. When examinee *UNSAT*
mentions that he is waiting 3-5 minutes for pressures and temperatures to stabilize
inform examinee that he may continue without waiting the 3-5 minutes referenced
by the procedure.

COMMENTS:

CR SEQ ***STEP: 6*** ***STEP STANDARD:***

No **No** Ensure **VOLT REG** switch is in **AUTO.** **VOLT** REG switch **for** the 'B' D/G indicates **AUTO.**

CUES: ***SAT***

UNSAT

COMMENTS:

CR	SEQ	STEP: 7	STEP STANDARD:
No	No	Monitor voltage on 1DB SYNC VOLTS and SYNC VOLTS.	Locates 1DB SYNC VOLTS and SYNC VOLTS meters and monitors voltage.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 8	STEP STANDARD:
Ye	No	Adjust SYNC VOLTS to slightly higher than 1DB SYNC VOLTS using VOLT REG RAISE LOWER.	VOLT REG RAISE LOWER switch used to adjust DG 'B' SYNC VOLTS slightly higher than 1DB SYNC VOLTS.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 9	STEP STANDARD:
Ye	No	Adjust Diesel Generator "B" frequency to cause synchroscope to rotate slowly in the FAST direction using SPEED switch.	DG ' B SPEED switch used to adjust D/G speed so that SYNCHROSCOPE rotates slowly in the FAST direction.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 10	STEP STANDARD:
	Ye Yes	When synchroscope is in proper position, close BUS 1DB DG FEED breaker.	When synchroscope is between 11 o'clock and 12 o'clock, closes BUS 1DB DG FEED breaker.

CUES: *SAT*

UNSAT

COMMENTS:

CR	SEQ	STEP: 11	SZEP STANDARD:
	No Yes	Verify breaker 1DB DG FEED breaker closed.	Bus 1DB DG FEED breaker indicates red light ON, green light OFF.

CUES: *SAT*

UNSAT

COMMENTS:

CR	SEQ	STEP: 12	STEP STANDARD:
	No Yes	Adjust load to 850-1250 KW using SPEED switch and maintain for 3-5 minutes	D/G 'B' KILOWATTS indicates 850-1250 KW for 3-5 minutes. DG B VOLTS indicates 6840-7344 volts and DG AMPS indicates ÷100 amps.

CUES: *SAT*

UNSAT

When examinee mentions that he is waiting 3-5 minutes for pressures and temperatures to stabilize inform examinee that he may continue without waiting the 3-5 minutes referenced by the procedure.

COMMENTS:

CR	SEQ	STEP: 13	STEP STANDARD:
No	Yes	Adjust load to 2150-2550 KW using SPEED switch and maintain for 3-5 minutes.	DIG 'B' KILOWATTS indicates 2150-2550 KW for 3-5 minutes. DG B VOLTS indicates 6840-7344 volts and DG AMPS indicates ÷ 100 amps. D/G 'B indicates 2150 - 2550 KW for 3-5 minutes.

CUES: *SAT*

When examinee mentions that **he** is waiting 3-5 minutes for pressures and temperatures to stabilize, inform examinee that he may continue without waiting the 3-5 minutes referenced in the procedure. *UNSAT*

COMMENTS:

CR	SEQ	STEP: 14	STEP STANDARD:
Ye	Yes	Adjust load to between 4150 and 4250 KW using SPEED switch.	D/G '3' KILOWATTS indicates 4150-4250 KW 6800-7400 VOLTS.

CUES: *SAT*

UNSAT

COMMENTS:

CR	SEQ	STEP: 15	STEP STANDARD:
No	Yes	Place DIG 'B' SYNC SEL switch in OFF.	DG B SYNC SEL switch indicates OFF.

CUES: *SAT*

UNSAT

COMMENTS:

CR	SEQ	STEP: 16	STEP STANDARD:
Ye	No	Annunciator XCP 637, 6-3 DG B ENG TEMP TRBL is received.	Operator reviews ARP for XCP 637, 6-3 and dispatches the DG operator to investigate.

CUES: *SAT*

DG operator reports receipt of XCP 5202, 1-2 HIGH LUBE OIL TEMPERATURE and reports that LUBE OIL TEMP TO ENGINE on the "B" DG gaugeboard reads 170 degrees F and increasing. If the operator requests permission to begin decreasing load on "B" DG, prompt him to begin a normal load reduction using SOP 305, step 2.6.b using normal time limits. *UNSAT*

COMMENTS:

CR	SEQ	STEP: 17	STEP STANDARD:
Ye	No	Annuciator XCP 637, 2-5 DG B ENG TRBL SHUTBN is received.	Refers to ARP for XCP 637, 2-5 and notes that the diesel should have shutdown. ARP further directs that the operator ensure "B" DG is shutdown.

CUES: *SAT*

DG Operator reports receipt of XCP 5202, 6-3 ENGINE TROUBLE SHUTDOWN, but the diesel engine continues to run at full load and LUBE OIL TEMP TO ENGINE on the "B" DG gaugeboard now reads 176 degrees F and still increasing. If the operator requests permission to trip the "B" DG under full load, CRS directs that load be rapidly reduced using SOP 306, step 2.6.b as a guide only. If the operator trips "B" DG under full load due to a trip condition being exceeded without receiving a trip, proceed to step 21 of this JPM and continue. *UNSAT*

COMMENTS:

CR	SEQ	STEP: 18	STEP STANDARD:
No	No	Unload Diesel Generator B by holding the SPEED Switch in LOWER until load is 50 KW.	DG B KILOWATTS indicates less than 100 KW.

CUES:

If the operator requests guidance from the CRS as to whether or not to trip "B" DG or unload, the CRS will direct that the "B" DG be unloaded rapidly using SOP 306, step 2.6.b as a guide only. if the operator decides to open the DG output breaker under full load due to a trip condition being reached and exceeding without receiving a trip, proceed to step 21 of this JPM and continue.

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 19	STEP STANDARD:
No	No	Using the VOLT REG RAISE-LOWER Switch, reduce KILOVARS to minimum.	DG B KILOVARS indicates approximately zero KVARS.

CUES:

SAT

UNSA 1

COMMENTS:

CR	SEQ	STEP: 20	STEP STANDARD:
No	No	Open BUS 1DB DG FEED Breaker.	BUS IDB DG FEED breaker green light is LIT.

CUES:

SAT

UNSA T

COMMENTS:

CR	SEQ	STEP: 21	STEP STANDARD:
No	No	Momentarily place the EXCITER Switch in SHUTDN.	DG **E AMPS** and VOLTS decrease to zero, and FREQUENCY decreases to minimum.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 22	STEP STANDARD:
No	No	Momentarily place the TEST Switch in STOP.	TEST Switch is placed in the STOP position.

CUES:

DG "B" operator reports that the "B" DG engine is shutdown.

SAT

UNSAT

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPSF-025

DESCRIPTION: START AND LOAD "B" EMERGENCY DIESEL GENERATOR

ZC SET: 10 (1*00%*

ZNSTRUCTZUNS:

1. When student is ready; RUN

COMMENTS:

JPM Initial Condition of "Cylinder Monitoring" **was** intentionally used to prevent requiring STP-125.002 attachments from having to be available. Also to prevent having to have a stopwatch available. This is too much effort to test the same skills as in SOP-306.

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: JPS-033

MITIGATE THE CONSEQUENCE8 OF A TOTAL LOSS OF SERVICE WATER

APPROVAI,: DOW *APPROVAL DATE:* 06/20/2002

REVNO: 2

CANDIDATE _____

EXAMINER _____

THIS JPM IS APPROVED

TASK:

000-062-05-01 **RESPOND TO LOSS OF NUCLEAR SERVICE WATER**

TASK STANDARD:

Plant is stabilized pending evaluation. 'B' and 'C RCPs have been tripped. B CCW Loop has been placed in service without *loss of* cooling to the running RCP. The use of applicable Human Performance Tools (3-way communications, self checking, peer checking, phonetic alphabet, etc) and industrial safety practices meets expectations.

PREFERRED EVALUATION LOCATION	*PREFERRED EVALUATION METHOD*
SIMULATOR	**PERFORM**

REFERENCES:	**SOP-118**	**COMPONENT COOLING SYSTEM**
	AOP-117.1	**TOTAL LOSS OF SERVICE WATER**

TOOLS:

EVALUATION TIME 10 *TIME CRITICAL* **No** *10CFR55:* **45(a)8**

CANDIDATE: _____ TIME START: _____

TIME FINISH: _____

PERFORMANCE RATING: SAT: _____ UNSAT: _____

QUESTION GRADE: _____ PERFORMANCE TIME: _____

EXAMINER: _____ / _____

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: Mode 3 ready to startup. Both running SW pumps have tripped. The running HVAC chiller units have tripped on high temperature. Attempts to restore at **least** one train of **SW** have failed.

INITIATING CUES: The CRS has directed the NROATC to respond to **a** total **loss** of service water, per AOP-1 17.4 and complete **steps** 11-14.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: Mode 3 ready to startup. Both running SW pumps have tripped. The running HVAC chiller units have tripped on high temperature. Attempts to restore at least one train of SW have failed.

INITIATING CUES: The CRS has directed the NROATC to respond to a total loss of service water, per AOP-117.1 and complete steps 11-14.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
Yes	**Yes**	Minimize CCW heatup by stopping 'A' and 'C' RCPs.	Secures 'A' and 'C' RCPs by taking control switch to trip position and verifying green fight lit.

CUES:

When asked examiner informs examinee that the CRS concurs with securing two **RCPs** and directs securing 'B' and 'C' RCPs per SOP-101 section **4A.**

SAT

UNSAT ____

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
No	**Yes**	Checks RCP **A** temperatures	Displays ZZ RCP BRG on **IPCS** monitor to verify: RCP motor bearing temperature **< 195øF, Lower** seal water bearing temperature **< 225øF.**

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	*SEQ*	*STEP:* 3	*STEP STANDARD:*
No	**Yes**	Minimize CCW heatup by alternating operation of Component Cooling Water loops.	Perform an active CCW loop switchover per SOP-118, section 3B step 2.3.

CUES:

Examiner states that the NROATC has been directed to perform an active CCW loop switchover Per SOP-118, by CRS.

SAT _____

UNSAT ____

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD:
	Yes Yes	Place XPP-0001C, PUMP C, TRAIN B, in PULL TO LOCK.	The B Train Handswitch for C Component Cooling Water Pump is in Pull To Lock.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 5	STEP STANDARD:
	No Yes	Align XPP-0001C PUMP C, to Train B per Attachment VIB with the exception of racking in CCW pump C breaker.	Direct the AB Operator to complete Attachment VIB with the exception of racking up the breaker for C CCW Pump on B Train.

CUES:

Racking up the breaker is a separate direction from the NROATC in a later step in the procedure. Racking up the breaker for C CCW Pump at this time does not constitute 2 failure of this JPM.

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 6	STEP STANDARD:
	Yes Yes	Verify CCW to the RHR HX B is open.	The red light for MVB-95038, CC TO RHR HX B, is lit and the green light is off.

CUES:

SAT

UNSAT

COMMENTS:

CR SEQ *STEP:* 7

STEP STANDARD:

Yes Yes Start B CCW Pump.

Indicated by the red light for B CCW Pump lit and the green light off

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* 8

STEP STANDARD:

Yes Yes Start MVB-9503B in the closed direction.

Start MVB-9503B CC **TO** RHR **HX** B, strocking in the closed direction as indicated by both the red and green lights being lit.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* 9

STEP STAXDARD:

Yes Yes When flow is indicated on FI-7044 between 5000 and 4000 gpm Open MVB-9687B/9525B and MVB-9524B/9526B; and Close MVB-9524A/9526A; MVB-9587A/9525A; and Open MVB-9503A.

Indicated by the red light on the handswitchs for MVB-9687B/9525B, MVB-9524B/9526B being lit and the green light on the handswitches for MVB-9524A/9526A and MVB-9687A/9625A being lit, and the red light on the handswitchs for MVB-9503A being lit.

CUES:

SAT _____

UNSAT _____

The valves listed in this step must be operated in rapid succession to prevent loss of flow or excessive flow perturbations in the non-essential loop and should be operated by Train sequence as indicated. Auto closure of the CCW valves to the RB or Thermal Barrier constitutes a failure of this JPM.

COMMENTS:

CR	SEQ	STEP: 10	STEP STANDARD:
No	No	Rack in the C CCW Pump breaker on Train B.	Direct the AO to Rack in the breaker for B Train power to C CCW Pump per Attachment VIB. Indicated by the green light on the B Train switch for C CCW Pump being lit.

CUES:

SAT ____

UNSAT

COMMENTS:

CR	SEQ	STEP: 11	STEP STANDARD:
No	No	Place XPP-0001C Switch in After-Stop.	Place the handswitch for C CCW Pump in the Normal After-Stop position.

CUES:

SAT ____

UNSAT ____

COMMENTS:

CR	SEQ	STEP: 12	STEP STANDARD:
No	No	Direct the AB Operator to verify flow for RML2B is greater than 1 gpm.	The AB Operator reports that flow is greater than 1 gpm.

CUES:

SAT ____

UNSAT

COMMENTS:

CR	SEQ	STEP: 13	STEP STANDARD:
	Yes Yes	Ensure the following valves have not auto closed due to high flow.	Ensure that MVG-9625, MVG-9626, MVG09583, and MVT-9593A (B) (C) are open as indicated by the red lights on the switches being lit and no alarms indicating closure are received.

CUES:

Closure of these valves constitutes a failure of this JPM. This concludes this JPM.

COMMENTS:

SAT _

UNSAT _

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPS-033

DESCRIPTION: **MITIGATE** THE CONSEQUENCES OF **A** TOTAL LOSS **OF** SERVICE WATER

IC SET:

INSTRUCTIONS:

COMMENTS:

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: **JPS-052**

PERFORM BORON CONCENTRATION DILUTION
OF THE RCS

APPROVAL: TRH ***APPROVAL DATE:*** 06/16/2003

REVNO: **3**

CANDIDATE: _____

EXAMINER:

THIS JPM IS APPROVED

TASK:

004-007-01-01 PERFORM BORON CONCENTRATION/DILUTION OF THE REACTOR COOLANT SYSTEM

TASK STANDARD:

Bank 'D' Control Rods have been alternate diluted to 198 steps using the Alternate Dilution mode of the Reactor Makeup Water System. Tavg-Tref maintained within 1.5°F.

PREFERRED EVALUATION LOCATION	*PREFERRED EVALUATION METHOD*
SIMULATOR	PERFORM

REFERENCES: SOP-106 REACTOR MAKEUP WATER SYSTEM

TOOLS:

EVALUATION TIME 10 *TIME CRITICAL* No *10CFR55:* 45(A)1

CANDIDATE: _____ TIME START ____

TIME FINISH _____

PERFORMANCE RATING: SAT: _____ UNSAT: _____

QUESTION GRADE: _____ PERFORMANCE TIME: _____

EXAMINER: _____ _____ _____

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The reactor is operating at 75% power, all controls in automatic. Turbine load has been held at 75% for 2 weeks due to NIS problems Reactor engineering has requested that Bank "D" control rods be positioned to **198** steps **by** Alternate Dilution (10,000 MWD/MTU).

INITIATING CUES: CRS directs NROATC to alternate dilute Bank D Control Rod to **198 steps.**

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: **The reactor is operating at 75% power, all controis in automatic. Turbine load has been held at 75% for 2 weeks due to NIS problems Reactor engineering has requested that Bank "D" control rods be positioned to 198 steps by Alternate Dilution** (10,000 MWD/MTU).

INITIATING CUES: **CRS directs NROATC to alternate dilute Bank D Control Rod to 198 steps.**

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR SEI,)	*STEP:* 1	*STEP STANDARD:*
No **Yes**	Operator calculates expected amount of dilution.	Calculation result **is** 415 **-** 453 gallons

CUES:

SAT ____ ___

UNSAT

COMMENTS:

CR SEI,)	*STEP: 2*	*STEP STANDARD:*
No Yes	Place RX COOLING **SYS** MU switch to STOP.	RX COOL SYS **MU** SELECT switch in the STOP position.

CUES:

This is a Reference Use Procedure. The operator should verify actions with procedure.

SAT ___

UNSAT ____

COMMENTS:

CR SEQ	*STEP: 3*	*STEP STANDARD:*
Yes Yes	Place RX COOLING **SYS** MU mode **select** switch *to* **ALT** DIL position.	RX COOL SYS MU MODE SELECT switch in the ALT DIL position.

CUES:

SAT

UNSAT

COMMENTS:

CR *SEQ* *STEP:* 4 *STEP STANDARD:*

No Yes Adjust FCV-168, TOTAL MU FLOW controller to desired flowrate. Adjust FCV-168 controller to desired flowrate

CUES: *SAT* _____

Optional: Controller normally set for 120 gpm flow rate. *UNSAT* _____

COMMENTS:

CR *SEQ* *STEP:* 5 *STEP STANDARD:*

Yes Yes Set FIS-168 TOTAL MU FLOW batch integrator to desired volume. Set FIS-168 batch integration to 200 gallons.

CUES: *SAT* _____

Cue the operator to set to 200 gallons. *UNSAT* _____

COMMENTS:

CR *SEQ* *STEP:* 6 *STEP STANDARD:*

Yes Yes Start dilution. RX COOL SYS MU switch indicates red light on, green light off.

CUES: *SAT* _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* 7 *STEP STANDARD:*

No Yes Verify RX MU WTR PP start. RX MU WTR PP running by MCB indication.

CUES: *SAT*

UNSAT _____

COMMENTS:

CR SEQ *STEP:* 8 *STEP STANDARD:*

No Yes Verify FCV-168A, MU TO VCT opens. FCV-168A indicates red light on, green light *off.*

CUES: *SAT*

UNSAT

COMMENTS:

CR SEQ *STEP:* 9 *STEP STANDARD:*

No Yes Verify FCV-168B, MU WTR TO BLENDER opens and FCV-113B, MU TO CHG PP, opens. FCV-1685 indicates red light on, green light off. FCV-113B indicates red light an, green light off.

CUES: *SAT*

UNSAI'

COMMENTS:

CR SEQ ***STEP:*** 10 ***STEP STANDARD:***

No Yes **Verify desired fiowrate on FR-113, TOTAL MU GPM** (F-168). **120 gpm indicated on FR-113 recorder.**

CIJES:

SAT _____

UNSAT

COMMENTS:

CR SEQ ***STEP:*** 11 ***STEP STANDARD:***

Yes Yes **Energize PZR BU Heaters.** **PZR HTRS BU GP** 1 **(2) indicate red light** on, **green light off.**

CIJES:

Step 10 **is** optional.

SAT _____

UNSAT _____

COMMENTS:

CR SEQ ***STEP:*** 12 ***STEP STANDARD:***

No Yes **Verify letdown diverts to Holdup Tanks.** LCV-115A, **LTDN DIVERT TO HU-TK, indicates HU-TK position when VCT level ~ 70%.**

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR *SEQ* *STEP:* 13

STEP STANDARD:

Yes Yes Verifies dilution (alternate dilution) stops when preset volume **is** reached on FIS-168, TOTAL MU FLOW batch integrator.

Verfies dilution has stopped by observing FIS-268, total MU flow batch integrator counter stopped at **set** gallons.

CUES:

SAT __

UNSAT ____

COMMENTS:

CR *SEQ* *STEP:* 14

STEP STANDARD:

No Yes Verify rods controlling Tavg-Tref.

Verifies rods controlling Tavg-Tref within 1.5°F in Auto or Manual.

CUES:

SAT _____

Examinee should be verifying Tavg-Tref controlled by rods during dilution.

UNSAT

COMMENTS:

CR *SEQ* *STEP:* 15

STEP STANDARD:

No **Yes** Place **RX** COOL SYS MU switch to STOP.

RX COOL SYS MU indicates **red** light off. green light on.

CWES:

SAT ____

Cue the operator that 425 gallons have been added and Bank D control rods are at 198 steps.

UNSAT

COMMENTS:

CR	SEQ	STEP: 16	STEP STANDARD:
No	Yes	Place RX COOL SYS MU MODE SELECT switch to AUTO.	RX COOL SYS MU MODE SELECT switch in the AUTO position.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 17	STEP STANDARD:
No	Yes	Place RX COOL SYS MU switch to START.	RX COOL SYS MU indicates red light on, green light off.

CUES:

SAT _____

UNSAT _____

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPS-052

DESCRIPTION: PERFORM BORON CONCENTRATION DILUTION OF THE RCS

ICSET: 11

INSTRUCTIONS:

1. **When student is ready:**

   RUN

COMMENTS:

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: **JPSF-007**

STEAM GENERATOR TUBE RUPTURE
(DEPRESSURIZE **RCS TO** *e* RUPTURED S/G
PRESSURE)

APPROVAL: TRH *APPROVAL DATE:* **05/29/2003**

REVNO: 7

CANDIDATE: _____

EXAMINER: _____

THIS JPM IS APPROVED

TASK:

000-038-05-01 **RESPOND TO STEAM GENERATOR TUBE RUPTURE**

TASK STANDARD:

RCS pressure is reduced to less than ruptured S/G pressure with PZR level > 18% or PZR level > 68% or RCS subcooling < 30°F. The use of applicable Human Performance Tools (3-way communications, self checking, peer checking, phonetic alphabet, etc) and industrial safety practices meets expectations.

PREFERRED EVALUATION LOCATION **SIMULATOR**

PREFERRED EVALUATION METHOD **PERFORM**

REFERENCES: EOP-4.0 **STEAM GENERATOR TUBE RUPTURE**

TOOLS:

EVALUATION TIME 10 *TIME CRITICAL* **No** *10CFR55:* 45(a)6

CANDIDATE: _____ _____ TIME START: _____

TIME FINISH: _____

PERFORMANCE RATING: SAT UNSAT:

QUESTION GRADE: _____ PERFORMANCE TIME: _____

EXAMINER: _____ _____ _____

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING. I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: A Steam Generator Tube Rupture is in progress. S/G "C" has been isolated per EOP-4.0. An operator initiated cooldown has been performed according to EQQ-4.0, through step **24.**

INITIATING CUES: Control Room Supervisor directs operator to depressurize the RCS using PZR Spray, per EQP-4.0, Step 22.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CUNSZDERATIONS:

INITIAL CONDITION: A Steam Generator Tube Rupture is in progress. S/G "C" has been isolated per EOP-4.0. An operator initiated cooldown has been performed according to EOP-4.0, through step 21.

INITIATING CUES: Control Room Supervisor directs operator to depressurize the RCS using PZR Spray, per EOP-4.0, Step 22.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
Yes	Yes	Depressurize the RCS using normal spray valves PCV-444C and 444D.	Places PZR Spray PVC-444C & 444D controllers in **MANUAL** and increases output to 100% demand.

CUES:

Give examinee 1-2 minutes to familiarize himself with his control hoard indications and his place in the procedure.

SAT _____

UNSAT _____

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
No	**Yes**	**Use** maximum available spray until any termination criteria is met; RCS pressure <'C' (ruptured) S/G pressure and PZR level > 18%; or PZR level >68; or RCS subcooling <30°F.	Recognizes from MCB indication that RCS pressure is less than 'C' S/G pressure with PZR level >18% or PZR level >68%.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	*SEQ*	*STEP:* 3	*STEP STANDARD:*
Yes	Yes	Stop RCS depressurization.	Decreases PCV-444C & 444D controller output demand to zero.

CUES:

If RCS pressure equals ruptured S/G pressure first and student continues to depressurize to *68%* PZR level, this would constitute failure.

SAT _____

UNSAT -

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD:
	Yes Yes	Identify failure of PCV-444D to close and secures 'A RCP.	'A RCP tripped to stop depressurization.

CUES:

SAT

UNSAT _____

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SWEET

JPM NO: JPSF-007

DESCRIPTION: STEAM GENERATOR TUBE RUPTURE (DEPRESSURIZE RCS TO *e* RUPTURED S/G PRESSURE)

IC SET: 10

INSTRUCTIONS:

1. Activate

MAL-RCS002C SEVERITY=450 RAMP=30 (S/G Tube Rupture on 'C' S/G)

2. RUN 180 seconds

3. RUN

4. Manual SI and perform actions of EOQ-10 & EOP-4.0 up through step 3g

5. Throttle EFW to 'C' S/G when level > 30%.

6. FREEZE

7. Activate

LOA-MSS033 SELECT–RACK OUT (RACK OUT BKR FOR MVG-2802B (STM SUPPLY TO TDEFP))

8. RUN

9. Perform actions of steps 3h-20 of EOP-4.0.

10. FREEZE

11. Place BIU heaters in P-T-L.

12. When student is ready:

RUN

13. After spray valve is started manually closed by student when depressurization termination criteria met, Activate:

MAL-PRS003B SEVERITY=100 RAMP=0 (PCV-444D STUCK OPEN)

COMMENTS:

This JPM can be run from the same snap as JPS007 with the addition of MAL-PRS003B = 100%

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: JPS-008

LOSS OF **POWER** RANGE INSTRUMENT **N-44**

APPROVAL: TRH ***APPROVAL DATE:*** 06/09/2003

REVNO: 5

CANDIDATE: _____ _____

EXAMINER: _____ _____

THIS JPM IS APPROVED

TASK:

000-034-05-01 RESPOND TO POWER RANGE INSTRUMENTATION CHANNEL FAILURE

TASK STANDARD:

N-44 has been removed from **service** (control power ***fuses removed)*** Control rod *motion* **has been** stopped (Bank **selector switch placed** in MAN).

PREFERRED EVALUATION LOCATION ***PREFERRED EVALUATION METHOD***

SIMULATOR PERFORM

REFERENCES: AOP-401.10 POWER RANGE FAILURE

TOOLS:

EVALUATION TIME 15 ***TIME CRITICAL*** No *10CFR55:* 45(a)4

CANDIDATE: ____ TIME START: _____

TIME FINISH: _____

PERFORMANCE RATING: SAT ___ UNSAT: ___

QUESTION GRADE: ___ ___ PERFORMANCE TIME: ___ ___

EXAMINER: ___ ___ _____ / ___

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY POOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATZONS:

INITIAL CONDITION: **The** reactor **is** at 75% power. All controls **are** in automatic.

INZTZATZNG CUES: Respond to developing plant conditions.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: **The** reactor is at **75% power. All** controls are in automatic.

ZNZTZATZNG CUES: Respond to developing plant conditions.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE

;NED A

STEPS

CR SEQ *STEP:* 1

STEP STANDARD:

No Yes Identify power range channel N-44 has failed.

Operator identifies N-44 has failed low by MCB indication.

CUES:

SAT _____

UNSAT _____

COMMENT'S:

CR SEQ *STEP:* 2

STEP STANDARD:

Yes Yes Manually control rods.

Positions the ROD CNTRL BANK SEL switch to the MAN position.

CUES:

Steps *2* and 3 are immediate Operator Actions.

SAT _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* *3*

STEP STANDARD:

No No Stop any transients in progress.

Verifies no load change is in progress.

CUES:

SAT

UNSAT

COMMENTS:

CR	SEQ	STEP: 4	STEP STANDARD:
No	No	Maintain stable plant conditions.	Pzr pressure and Tavg maintained stable.

CUES:

Note: This is a continuous action step.

SAT ____

UNSAT

COMMENTS:

CR	SEQ	STEP: 5	STEP STANDARD:
No	No	Verify no testing is in progress.	Looks at NI panel and/or asks examiner if any testing is in progress.

CUES:

Cue operator that no testing is in progress.

SAT ____

UNSAT

COMMENTS:

CR	SEQ	STEP: 6	STEP STANDARD:
Yes	No	Set the rod stop bypass switch for the failed channel to bypass and verifies bistable light lit.	Positions the ROD STOP BYPASS switch to the BYPASS PR N-44 position and verifies XCP 6111 light 4-4 lit.

CUES:

SAT ____

UNSAT

COMMENTS:

CR SEQ *STEP:* *7* *STEP STANDARD:*

Yes No Maintain Tavg within 1°F of Tref. Controls Tavg within 1°F of Tref with manual rods.

CUES: *SAT* ____

UNSAT ____

COMMENTS:

CR SEQ *STEP:* 8 *STEP STANDARD:*

Yes No Remove control power fuses from the N-44 power range "A" drawer. Control power fuses fer the N-44 power range "A" drawer removed.

CUES: *SAT* ____

Instruct NROATC that the CRS has requested him to remove N-44 from service. *UNSAT*

COMMENTS:

CR SEQ *STEP:* 9 *STEP STANDARD:*

Yes No Remove instrument power fuses from the N-44 power range "B" drawer. Instrument power fuses from the power range N-44 power range "B" drawer removed.

CUES: *SAT* ____

UNSAT ____

COMMENTS:

CR	SEQ	STEP: 10	STEP STANDARD:
No	No	Set the comparator defeat switch on the comparator and rate drawer to position associated with failed channel.	Positions the comparator channel defeat switch to the N44 position.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 11	STEP STANDARD:
No	No	Set upper section and lower section switches on the detector current comparator to position associated with the failed channel.	Upper and lower section switches on the detector current comparator indicate PR N44 position.

CUES:

SAT

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 12	STEP STANDARD:
No	No	Ensure NR-45 is selected to operable channels.	Selects pen 2 (delta I) to N42 (Delta Flux II).

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	SEQ	STEP: 13	STEP STANDARD:
	No No	**Verify the status lights indicate the bistables trip.**	**Operator verifies that bistable lights fer Channel IV, PR RATE HI,** P? LO and **HI setpoints have energized** to **bright.**

CUES:

SAT _____

UNSAT

COMMENTS:

Examiner ends JPM **at this point.**

JPM SETUP SHEET

JPM NO: JPS-008

DESCRIPTION: LOSS OF POWER RANGE INSTRUMENT N-44

ICSET: 11

INSTRUCTIONS:

1. RUN

2. When student is ready

   Activate

   MAL-NIS003D SEVERITY = 0 RAMP = 5 (N-44 Failure)

COMMENTS:

Rods will eventually (3 min.) restore Tavg to Tref (power **rate** mismatch signals die off, rods control on Tavg/Tref). Leaving rods in AUTO still constitutes failure, as further transients on the failed channel (e.g. trouble shooting) would produce **more** uncontrolled rod motion.

V.C. SUMMER NUCLEAR STATION
JOB PERFORMANCE MEASURE

JPM NO: **JPS-056**

CONTROL ROOM EVACUATION (DUTIES OF NROATC)

APPROVAL: TRH *APPROVAL DATE:* **06/16/2003**

REVNO: 5

CANDIDATE: _____

EXAMINER: _____

THIS JPM IS APPROVED

TASK:

000-068-05-01 PERFORM CONTROL ROOM EVACUATION

TASK STANDARD:

Reactor is tripped, Turbine is tripped, RCPs "B" and "C" are tripped, PCV-444C (spray vlv) is closed

PREFERREQ EVALUATION LOCATION *PREFERRED EVALUATION METHOD*

SIMULATOR PERFORM

REFERENCES: **AOP-600.1 CONTROL ROOM EVACUATION**

TOOLS: **AOP-600.1**

EVALUATION TIME **10** *TIME CRITICAL* **No** *IOCFRSS:* 45(a)12

CANDIDATE: _____ TIME START: _____

TIME FINISH: _____

PERFORMANCE RATING: **SAT** **UNSAT** _____

QUESTION GRADE: _____ PERFORMANCE TIME:

EXAMINER: _____ _____ / _____

SIGNATURE DATE

COMMENTS:

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AN5 PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AN5 PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: **The plant is operating at** 100% **power, all controls in automatic.** A **bomb has been found in the Control Room. The Shift Supervisor has directed a Control Room evacuation.**

INITIATING CUES: **The Shift Supervisor directs that the Control Room should be evacuated. The** CRS **directs the** NROATC **to complete Attachment I of** AOP-600.1, **starting with step 2.**

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The plant is operating at 100% power, all controls in automatic. A bomb has been found in the Control Room. The Shift Supervisor has directed a Control Room evacuation.

INITIATING CUES: The Shift Supervisor directs that the Control Room should be evacuated. The CRS directs the NROATC to complete Attachment I of AOP-600.1, starting with step 2.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU FEEL THAT YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

STEPS

CR	*SEQ*	*STEP:* 1	*STEP STANDARD:*
Yes	Yes	Trip Reactor manually from the MCB.	Position the reactor trip switch (CS-CR01 or CS-CR01A) to the TRIP position

CUES:

Cue operator time is available to complete additional Control Room actions.

SAT

UNSAT

COMMENTS:

CR	*SEQ*	*STEP:* 2	*STEP STANDARD:*
Yes	No	Verify all reactor trip breakers open.	TRIP BKR A & B indicate red light OFF, green light ON.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR	*SEQ*	*STEP:* 3	*STEP STANDARD:*
Yes	No	Verify all rod bottom lights lit.	All rod bottom lights are lit by DRPI indication.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* *4*

Yes No **Verify reactor power level decreasing.**

STEP STANDARD:

Reactor power level decreasing on N35 and N36 indication.

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* 5

Yes Yes **Trip the main turbine from MCB.**

STEP STANDARD:

Momentarily depresses EMERG TRIP **pushbutton.**

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* 6

Yes No **Verifies turbine stop valves closed.**

STEP STANDARD:

STM **STOP VLVs indicate closed by lit indication on** XCP-6114 **status lights.**

CUES:

SAT _____

UNSAT _____

COMMENTS:

CR SEQ *STEP:* 7 *STEP STANDARD:*

Yes No **Ensures** GEN **BKR open (after 30 second time delay).** **GEN BKR indicates red light** *OFF,* **green light** ON.

CUES: *SAT* _____

UNSAT _____

COMMENTS:

CR SEQ *STEP;* 8 *STEP STANDARD:*

Yes No **Ensures generator field breaker is open.** **GEN FIELD BKR indicates red light** OFF, **green light** ON.

CUES: *SAT*

UNSAT

COMMENTS:

CR SEQ *STEP:* 9 *STEP STANDARD:*

Yes No **Trips Exciter Field Control breaker.** **EXC** FIELD CNTRL **indicates red light** OFF, **green light ON .**

CUES: *SAT*

UNSAT

COMMENTS:

CR SEQ *STEP:* 10

Yes No **Stop RCP 'B'.**

STEP STANDARD:

Stop **XPP-0030B,** RCP **B, indicates red light** OFF, **green light** ON.

CUES:

SAT

UNSAT ____

COMMENTS:

CR SEQ *STEP:* 11

No No **Verify RCP** 'A **is running.**

STEP STANDARD:

XPP-0030A, **RCP A, indicates red light** ON, **green light OFF, normal running amps.**

CUES:

SAT ____

UNSAT ____

COMMENTS:

CR SEQ *STEP:* 12

Yes No **Close pressurizer spray valve, PCV-444C.**

STEP STANDARD:

Manuallyclosed PCV-444C, **PZR SPRAY, and indicates red light OFF, green light QN.**

CUES:

SAT ____

UNSAT ____

COMMENTS:

CR SEQ *STEP:* 13

Yes No **Stop RCP 'C'.**

STEP STANDARD:

Stop XPP-0030C, RCP C, indicates red light OFF, **green light** ON.

CUES:

SAT _____

UNSAT

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPS-056

DESCRIPTION: CONTROL ROOM EVACUATION (DUTIES OF NRQATC)

IC SET: 10

INSTRUCTIONS:

1. **When student is ready:** RUN

COMMENTS: