FINAL AS-ADMINISTERED WALKTHROUGH JPMS

FOR THE KEWAUNEE INITIAL EXAMINATION - AUG/SEP 2002

Facility: **KEWAUNEE NUCLEAR PLANT** Date of Examination: **8/26/02**
Exam Level (circle one):**RO** / SRO (I) / SRO(U) Operating Test No: **2002301**

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. ***Chemical and Volume Control System*** / Perform Emergency Boration Due To An ATWS.	M, A, S	1
b. ***Emergency Core Cooling System*** / Respond To An SI Accumulator Alarm.	D, S	2
c. ***Reactor Coolant Pump System*** / Start a Reactor Coolant Pump.	D, S, L	4
d. ***Containment Spray System*** / Secure Containment Spray Pumps.	N, S, L (ESF)	5
e. ***A.C. Electrical Distribution*** / Shift Bus 5 From TAT To The RAT	N, S	6
f. ***Nuclear Instrumentation*** / Place An Excore Nuclear Instrumentation Channel Out of Service.	D, S	7
g. ***Component Cooling Water System*** / Shift Component Cooling Water Pumps (Loss of CC).	M, A, S	8
B.2 Facility Walk-Through		
a. ***Chemical and Volume Control System*** / Perform Actions Necessary For Control Room Evacuation – Establish Letdown (performed from dedicated shutdown panel).	D, A, L	2
b. ***Main Steam System*** / Locally Operate the S/G PORV.	D, L, A, R (normal mode used on last NRC exam)	4
c. ***Emergency Diesel Generators*** / Operate the Diesel Generator (locally).	D, L (alternate mode used on last NRC exam)	6

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

Facility: **KEWAUNEE NUCLEAR PLANT** Date of Examination: **8/26/02**
Exam Level (circle one):RO / **SRO (I)** / SRO(U) Operating Test No: **2002301**

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. ***Chemical and Volume Control System*** / Perform Emergency Boration Due To An ATWS.	M, A, S	1
b. ***Emergency Core Cooling System*** / Respond To An SI Accumulator Alarm.	D, S	2
c. ***Reactor Coolant Pump System*** / Start a Reactor Coolant Pump.	D, S, L	4
d. ***Containment Spray System*** / Secure Containment Spray Pumps.	N, S, L (ESF)	5
e. ***A.C. Electrical Distribution*** / Shift Bus 5 From TAT To The RAT	N, S	6
f. ***Nuclear Instrumentation*** / Place An Excore Nuclear Instrumentation Channel Out of Service.	D, S	7
g. ***Component Cooling Water System*** / Shift Component Cooling Water Pumps (Loss of CC).	M, A, S	8

B.2 Facility Walk-Through		
a. ***Chemical and Volume Control System*** / Perform Actions Necessary For Control Room Evacuation – Establish Letdown (performed from dedicated shutdown panel).	D, A, L	2
b. ***Main Steam System*** / Locally Operate the S/G PORV.	D, L, A, R (normal mode used on last NRC exam)	4
c. ***Emergency Diesel Generators*** / Operate the Diesel Generator (locally).	D, L (alternate mode used on last NRC exam)	6

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

Facility: **KEWAUNEE NUCLEAR PLANT** Date of Examination: **8/26/02**
Exam Level (circle one):RO / SRO (I) / **SRO(U)** Operating Test No: **2002301**

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
b. ***Emergency Core Cooling System*** / Respond To An SI Accumulator Alarm.	D, S	2
d. ***Containment Spray System*** / Secure Containment Spray Pumps.	N, S, L (ESF)	5
g. ***Component Cooling Water System*** / Shift Component Cooling Water Pumps (Loss of CC).	M, A, S	8
B.2 Facility Walk-Through		
b. ***Main Steam System*** / Locally Operate the S/G PORV.	D, A, L, R (normal mode used on last NRC exam)	4
c. ***Emergency Diesel Generators*** / Operate the Diesel Generator (locally).	D, L (alternate mode used on last NRC exam)	6

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

KEWAUNEE NUCLEAR POWER PLANT
TRAINING JOB PERFORMANCE MEASURES

JPM XXXXXXXX
Revision 0 DRAFT
Date

PERFORM EMERGENCY BORATION
DUE TO AN ATWS

K/A REFERENCE: 004.A2.14 (3.8/3.9)
(NUREG-1122)

ALTERNATE PATH JPM __X__ YES _____ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: FR-S.1, Rev. N

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH ____ **DISCUSSION** ____ **PERFORM** X **IN-PLANT** _____ **CONTROL ROOM** X

VALIDATED TIME FOR COMPLETION: 10 **MINUTES**

PERFORM EMERGENCY BORATION
DUE TO AN ATWS

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

FR-S.1, Response To Nuclear Power Generation/ATWS, Rev. N

TASK STANDARDS:

Boration is established using the SI system per FR-S.1 Step 4.g.

SIMULATOR INFORMATION:

Initialize to JPM specific IC.
When the examinee begins to raise Charging Flow and Charging is near 40 gpm, activate Trigger 1.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

- You are the Operator at the Controls.
- Charging Pump C is tagged out for a pump overhaul and is unavailable.
- A reactor startup was in progress with preparations being made to synchronize the Main Generator to the grid.
- A manual reactor trip from approximately 7% power was then initiated due to hostile forces attacking the plant site.
- The reactor did NOT trip and ALL immediate actions of Step 1 of E-0, Reactor Trip or Safety Injection, have been completed.
- A transition was made to FR-S.1, Response To Nuclear Power Generation/ATWS, and ALL actions required by Steps 1, 2, and 3 of FR-S.1 have been attempted or completed.
- NO control rods will insert due to a Rod Control Urgent Failure.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to initiate emergency boration of the RCS per step 4 of FR-S.1, Response To Nuclear Power Generation/ATWS.

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

START TIME _____ **STEP/SEQUENCE/CRITICAL** **SAT** _____
1 1 N **UNSAT** _____

ELEMENT: Determine if SI flow in to the RCS is occurring.

STANDARD: SI is determined to NOT be actuated.

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
2 2 N **UNSAT** _____

ELEMENT: Open CVC-440, Emergency Boration Valve.

STANDARD: Control switch for CVC-440 is placed in OPEN, red light verified ON, green light OFF.

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
3 3 N **UNSAT** _____

ELEMENT: Start both Boric Acid Transfer Pumps in fast speed.

STANDARD: Both Boric Acid Transfer Pumps speed control switches are verified to be in 'Fast'.
Both Boric Acid Transfer Pumps are started by placing their respective control switches to START, red light verified ON, green light OFF.

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT
4	4	N	UNSAT

ELEMENT: Operate two (2) Charging Pumps and manually adjust to maximum speed.

STANDARD: Charging Pump A speed controller is verified in Manual and the black manual speed control knob is adjusted fully clockwise.
Charging Pump B speed controller is verified in Manual and the black manual speed control knob is adjusted fully clockwise

NOTE: Upon increasing flow, a Charging line leak will develop resulting in NO Charging flow. Examinee may lower Charging speed if a relief valve lift is suspected.

CUE: **If informed of Charging problem, acknowledge the report.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
5	5	N	UNSAT

ELEMENT: Determine if SI has initiated.

STANDARD: SI is determined to NOT be initiated and transition made to step 4.f.

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
6	6	N	UNSAT

ELEMENT: Operate Letdown System with two 40 gpm orifices OPEN.

STANDARD: LD-4A is verified OPEN, red light ON, green light OFF.
LD-4B is OPENED by placing its control switch to OPEN and holding until the red light is ON AND the green light is OFF.

NOTE: This step may not be performed due to insufficient Charging flow causing flashing in the Letdown line. Also, due to the flashing, the existing on-line orifice (LD-4A) may be closed.

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
7	7	Y	

ELEMENT: Check Charging flow consistent with number of pumps running.

STANDARD: Charging Pump flow is determined to NOT be consistent with the number of pumps running and transition made to use Safety Injection.

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
8	8	Y	

ELEMENT: Manually start SI pumps.

STANDARD: At least ONE SI Pump is started by placing its control switch to START.

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
9	9	Y	

ELEMENT: Open Pressurizer PORVs and block valves as necessary to obtain SI flow greater than 100 gpm.

STANDARD: One OR both Pressurizer PORVS are opened to obtain SI flow greater than 100 gpm on flow indicator FI-925. PORV(s) will be required to be cycled OPEN and CLOSED periodically to maintain adequate SI flow.

COMMENTS:

NOTE: **When SI flow is verified > 100 gpm, the JPM may be terminated.**

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

RESPOND TO AN SI
ACCUMULATOR ALARM

K/A REFERENCE: 006.A1.13 (3.5/3.7)
(NUREG-1122)

ALTERNATE PATH JPM _____ YES __X__ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: A-SI-33, Rev. O

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH ____ **DISCUSSION** ____ **PERFORM** X **IN-PLANT** _____ **CONTROL ROOM** X

VALIDATED TIME FOR COMPLETION: 10 **MINUTES**

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

A-SI-33, Abnormal Safety Injection Accumulator Level and Pressure, Rev. O.
ARB 47024-C. Rev A.

TASK STANDARDS:

SI Accumulator B pressure is increased per A-SI-33 and alarm 47024-C is clear.

SIMULATOR INFORMATION:

Initialize to JPM specific IC.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

- You are the Operator at the Controls.
- The plant is operating at 100% power.
- Annunciator 47024-C, Accumulator B Pressure High/Low, has been received.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to respond to this alarm.

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

START TIME _____ **STEP/SEQUENCE/CRITICAL** **SAT** _____
1 1 N **UNSAT** _____

ELEMENT: Refer to Annunciator Response Procedure (ARP) 47024-C.

STANDARD: ARP 47024-C is referenced.

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
2 1 N **UNSAT** _____

ELEMENT: Determine cause of 47024-C Alarm.

STANDARD: B Accumulator pressure observed on PI-936 or PI-937 and noted to be reading lower than normal.

CUE **If other steps (steps 2 and 4) in ARP 47024-C are presented to supervision or pursued, inform examinee that the CRS is checking Tech Specs and that a team is being assembled to investigate the leak. The examinee should be informed to proceed on.**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
3 1 N **UNSAT** _____

ELEMENT: Refer to A-SI-33 for the low pressure condition.

STANDARD: A-SI-33 section 4.4 is referenced and determined to be the proper procedure to correct the condition.

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			
4	2	N	

SAT _____
UNSAT _____

ELEMENT: Determine SI B Accumulator level to determine if FILL is required.

STANDARD: B Accumulator level determined to be > 30% by observing level indicators LI-934 or LI-935 – FILL determined to NOT be required.

COMMENTS:

STEP/SEQUENCE/CRITICAL			
5	3	Y	

SAT _____
UNSAT _____

ELEMENT: Direct NAO to locally OPEN NG-100A **OR** NG-100B.

STANDARD: NAO contacted and directed to OPEN NG-100A **OR** NG-100B.

CUE: **Inform examinee that the valve (whichever one is selected) is OPEN.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			
6	3	Y	

SAT _____
UNSAT _____

ELEMENT: Open NG-107/CV-31243, Nitrogen Supply to SI Accumulators.

STANDARD: Control switch for NG-107 is positioned to OPEN, red light verified ON, green light OFF.

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
7	3	Y	

ELEMENT: Open NG-108B/CV-31244, Nitrogen Supply to Accumulator B

STANDARD: Control switch for NG-108B is positioned to OPEN, red light verified ON, green light OFF. Accumulator B pressure observed to be increasing on PI-936 or PI-937.

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
8	4	Y	

ELEMENT: Close NG-108B when Accumulator B pressure is in the required band of 750-755 psig.

STANDARD: Control switch for NG-108B is positioned to CLOSE, green light verified ON, red light OFF when pressure is within the required band of 750-755 psig. (NOTE: It is NOT critical that the final Accumulator B pressure is within the specification of 750-755 psig, it is only critical that Alarm 47024-C is clear when pressurization is stopped.

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
9	4	N	

ELEMENT: Close NG-107/CV-31243, Nitrogen Supply to SI Accumulators.

STANDARD: Control switch for NG-107 is positioned to CLOSE, red light verified OFF, green light ON.

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			
10	4	N	

SAT _____
UNSAT _____

ELEMENT: Direct NAO to locally CLOSE NG-100A **OR** NG-100B (whichever was previously opened).

STANDARD: NAO contacted and directed to CLOSE NG-100A **OR** NG-100B.

CUE: **Inform examinee that the valve (whichever one was previously opened) is CLOSED.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			
11	5	N	

SAT _____
UNSAT _____

ELEMENT: Request Independent Verification per NAD 3.9.

STANDARD: Independent Verification is requested.

CUE: **Independent verification has been completed.**

COMMENTS:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

START A REACTOR COOLANT PUMP

K/A REFERENCE: 003.A4.01 (3.3/3.2)
(NUREG-1122) 003.A4.02 (2.9/2.9)
003.A4.03 (2.8/2.5)
003.A4.04 (3.1/3.0)
003.A4.05 (3.1/3.0)
003.A4.06 (2.9/2.9)
003.A4.07 (2.6/2.6)
003.A4.08 (3.2/2.9)

ALTERNATE PATH JPM _____ YES __X__ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: **N-RC-36A, Rev. AA**

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH ____ **DISCUSSION** ____ **PERFORM** X **IN-PLANT** _____ **CONTROL ROOM** X

VALIDATED TIME FOR COMPLETION: 14 **MINUTES**

START A REACTOR COOLANT PUMP

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

N-RC-36A, Reactor Coolant Pump Operation

TASK STANDARDS:

Reactor Coolant Pump A is started per N-RC-36A.

SIMULATOR INFORMATION:

Initialize to JPM specific IC or as below.

IC-5 Hot Shutdown BOL

Unfreeze the simulator
Trip the reactor.
Secure RXCP A
Close Pressurizer Spray Valve A and place in MANUAL
After the pump has coasted down, acknowledge all annunciators
Freeze the simulator
Snap a temporary IC if desired.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

You are the Operator at the Controls.
The plant is in Hot Shutdown.
RXCP B is running.
RXCP A was secured 25 hours ago for breaker maintenance.
RXCP A breaker maintenance is completed and the pump is now available for use.
All Precautions and Limitations and Initial Conditions for pump start have been satisfied.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to start RXCP A in accordance with step 4.1 of N-RC-36A, Reactor Coolant Pump Operation, Rev. AA.

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

START TIME _____ **STEP/SEQUENCE/CRITICAL** **SAT** _____
1 1 Y **UNSAT** _____

ELEMENT: Start RXCP A Oil Lift Pump, and verify red oil pressure indicating light, ON.

STANDARD: RXCP A Oil Lift Pump is started by placing its control switch to START, red light ON, green light OFF. Red oil pressure indicating light verified ON.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
2 2 N **UNSAT** _____

ELEMENT: Operate Oil Lift Pump for ≥ two minutes before starting RXCP A.

STANDARD: Oil Lift Pump is verified OPERATING ≥ two minutes before starting RXCP A.

CUE: **Oil Lift Pump has operated for ≥ two minutes.**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
3 2 N **UNSAT** _____

ELEMENT: Verify start will NOT violate RXCP duty cycle.

STANDARD: Based on the provided initial conditions (pump secured 25 hours ago), pump start is determined to NOT violate RXCP duty cycle.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT
4	2	N	UNSAT

ELEMENT: Verify RXCP Pump start Initial Conditions are satisfied.

STANDARD: Base on the provided initial conditions, all RXCP pump start Initial Conditions are determined to be satisfied.

CUE: **If required, inform examinee that all initial conditions required for pump start have been met.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
5	2	N	UNSAT

ELEMENT: To manually control RCS pressure, POSITION LD-10/CV-31099, Letdown Pressure Control to MANUAL.

STANDARD: **NOTE: This step may not be performed due to plant conditions (i.e. the plant is NOT solid).**

LD-10/CV-31099, Letdown Pressure Control controller AUTO/BAL/MAN selector switch is placed in AUTO/BAL. The MANUAL CONTROL potentiometer adjusted to null the controller deviation meter and then the LD-10 AUTO/BAL/MAN selector is switched to MAN.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
6	2	N	UNSAT

ELEMENT: Verify Low Voltage is NOT present on Safeguards Buses.

STANDARD: Low Voltage is verified NOT present on Safeguards Buses 5 and 6 voltage by observing voltage meter indications for each Bus.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT
7	3	Y	UNSAT

ELEMENT: Start Reactor Coolant Pump A.

STANDARD: RXCP A control switch is positioned to START. Available indications for pump start include motor amps, pump flow, and breaker indicating light status (red light ON, green light OFF).

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
8	4	N	UNSAT

ELEMENT: Adjust LD-10 and Charging Pump speed to control RCS pressure and maintain RXCP No. 1 Seal Delta-P >200 psi.

STANDARD: LD-10/CV-31099 Manual Potentiometer and/or Charging Pump Speed Manual Potentiometer ADJUSTED to control RCS pressure and maintain ≥200 psid on No. 1 Seal Delta P indicator, PI-173.

CUE:

COMMENTS:

NOTE: No adjustment should be necessary.

STEP/SEQUENCE/CRITICAL			SAT
9	5	N	UNSAT

ELEMENT: When RCS pressure has stabilized, position LD-10 to AUTO.

STANDARD: **IF** LD-10 was previously adjusted, **THEN** RCS pressure is verified to be stable using control board RCS pressure indicators. LD-10 AUTO/BAL/MAN selector switch is placed in MAN/BAL and MANUAL CONTROL potentiometer or setpoint dial ADJUSTED to null the controller deviation meter. LD-10 AUTO/BAL/MAN selector POSITIONED to AUTO.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
10	5	N	UNSAT

ELEMENT: Stop RXCP A Oil Lift Pump after one minute of RXCP operation.

STANDARD: After one minute of RXCP operation, RXCP A Oil Lift Pump control switch is positioned to STOP, GREEN light ON, RED light OFF. Red RXCP A Oil Lift Pressure light OFF.

CUE: **If required, RXCP A has run for greater than one minute.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
11	5	N	UNSAT

ELEMENT: Verify proper values per Appendix A:

- Motor Current
- Labyrinth Seal Differential Pressure
- Seal Leakoff Flow
- CCW Temperature

STANDARD: Appendix A values verified:

- RXCP Motor A Current (41321) 600-750 amps.
- RXCP A Labyrinth Seal Delta P (PI-131B) at 40 to 60" H_20.
- RXCP Seal Leakoff Flow within Normal Range of Figure 1 of N-RC-36A, as indicated by red pen on Low Range Flow indicator (42557) OR High Range Flow indicator (42558).
- Honeywell Computer Point T0621A, Comp Clg HX Out Loop T ≤ 105°F (also on trend recorder green pen #2).

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			
12	5	N	SAT _____ UNSAT _____

ELEMENT: If the RCS is solid, operate first RXCP for at least two minutes before starting second RXCP.

STANDARD: Step determined to be N/A for present conditions.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			
13	6	N	SAT _____ UNSAT _____

ELEMENT: The Operator at the Controls informs the CRS of plant status.

STANDARD: The CRS is informed that RXCP A has been started and is operating normally.

CUE: **The CRS acknowledges your report.**

COMMENTS:

NOTE:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

SECURE CONTAINMENT SPRAY PUMPS

K/A REFERENCE: 026.A4.01 (4.5/4.3)
(NUREG-1122) 026.A4.05 (3.5/3.5)

ALTERNATE PATH JPM _____ YES __X__ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: **E-1, Rev. (*N*)**

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

_____ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH ____ **DISCUSSION** ____ **PERFORM** __X__ **IN-PLANT** ____ **CONTROL ROOM** __X__

VALIDATED TIME FOR COMPLETION: __8__ **MINUTES**

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

E-1, Loss of Reactor or Secondary Coolant, Rev. (*N*).

TASK STANDARDS:

Containment Spay Pumps secured in accordance with step 13 of E-1, Loss of Reactor or Secondary Coolant, Rev. (*N*).

SIMULATOR INFORMATION:

Initialize to JPM specific IC.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

You are the Operator at the Controls.
A Loss of Coolant accident has occurred.
The plant tripped and Safety Injection, Containment Isolation, and Containment Spray actuated 55 minutes ago.
The crew entered E-0, Reactor Trip or Safety Injection and has transitioned to E-1, Loss of Reactor or Secondary Coolant.
E-1 is completed through step 12.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to perform step 13 of E-1, Loss of Reactor or Secondary Coolant, Rev. (*N*).

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

START TIME _____ **STEP/SEQUENCE/CRITICAL** 1 1 N **SAT** _____ **UNSAT** _____

ELEMENT: Check If Containment Spray Should Be Stopped:
Check ICS Pumps – RUNNING

STANDARD: Both ICS pumps determined to be running (indications are red light ON, green light OFF, discharge pressure, and pump flow).

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL 2 1 N **SAT** _____ **UNSAT** _____

ELEMENT: Check ICS Pumps run time – GREATER THAN 50 MINUTES

STANDARD: Run time determined to be >50 minutes from Initial Conditions.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL 3 1 N **SAT** _____ **UNSAT** _____

ELEMENT: Check Containment pressure – LESS THAN 4 PSIG

STANDARD: Containment pressure is determined to be <4 psig using control board meter indications.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
4	2	Y	UNSAT

ELEMENT: Reset Containment Spray Signal.

STANDARD: Containment Spray Signal is RESET by depressing both Containment Spray Train A and B Reset pushbuttons.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
5	3	Y	UNSAT

ELEMENT: Stop ICS Pumps AND place in AUTO.

STANDARD: Both ICS Pumps A and B control switches positioned to STOP and then placed in AUTO, GREEN lights ON, RED lights OFF.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
6	4	Y	UNSAT

ELEMENT: Close ICS-5A and B and ICS-6A and B, ICS Pump Discharge Valves

STANDARD: ICS-5A and B and ICS-6A and B, ICS Pump Discharge Isolation Valves CLOSED, GREEN light ON, RED light OFF. (4 valves total)

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
7	4	Y	

ELEMENT: Close CI-1001A and B, Caustic Additive To CNTMT Spray

STANDARD: CI-1001A and B, Caustic Additive to CNTMT Spray CLOSED, GREEN lights ON, RED lights OFF.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
8	4	N	

ELEMENT: IF RHR Pumps supplying Containment Sump recirculation flow, THEN close RHR-400A and B, RHR Pump Supply To ICS Pump A and B, AND adjust RHR flow using RHR-8A(B) as necessary

STANDARD: RHR determined to NOT be supplying Containment Sump recirculation flow, NO actions performed for this step.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
9	5	N	

ELEMENT: The Operator at the Controls informs the CRS of plant status.

STANDARD: The CRS is informed that step 13 of E-1 is complete, both Containment Spray pumps are secured.

CUE: **The CRS acknowledges your report.**

COMMENTS:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

SHIFT BUS 5 FROM TAT TO THE RAT

K/A REFERENCE: 062.K1.04 (3.7/4.2)
(NUREG-1122) 062.K4.05 (2.7/3.2)
062.K5.03 (2.4/2.6)
062.A4.01 (3.3/3.1)
062.A4.03 (2.8/2.9)
062.A4.07 (3.1/3.1)

ALTERNATE PATH JPM _____ YES __X__ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: **N-EHV-39, Rev. 0**

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH ____ **DISCUSSION** ____ **PERFORM** __X__ **IN-PLANT** ____ **CONTROL ROOM** __X__

VALIDATED TIME FOR COMPLETION: __10__ **MINUTES**

SHIFT BUS 5 FROM TAT TO THE RAT

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

N-EHV-39, 4160V AC Supply and Distribution System Operation, Rev. O

TASK STANDARDS:

Shift Bus 5 from TAT to the RAT in accordance with step 4.2.1 of N-EHV-39, 4160V AC Supply and Distribution System Operation, Rev. O

SIMULATOR INFORMATION:

Initialize to JPM specific IC.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

Breaker maintenance is required on Breaker 1-501, TAT to Bus 5.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to shift Bus 5 from the TAT to the RAT in accordance with step 4.2.1 of N-EHV-39, 4160V AC Supply and Distribution System Operation, Rev. O.

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

START TIME _____ **STEP/SEQUENCE/CRITICAL** 1 1 N **SAT** _____ **UNSAT** _____

ELEMENT: VERIFY power available for incoming source.

STANDARD: Incoming power verified available using the Power Meter for Reserve Auxiliary Transformer (RAT), Winding A.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL 2 1 N **SAT** _____ **UNSAT** _____

ELEMENT: Make plant announcement via Gaitronics.

STANDARD: The following Gaitronics announcement is made:
"Attention all personnel, shifting 4160 Volt power supplies. Stand clear of electrical bus work."

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL 3 1 Y **SAT** _____ **UNSAT** _____

ELEMENT: Position 43 switch to MAN. for Bus 5, Bkr 1-503, and verify proper alarms.

STANDARD: 43 switch positioned to MAN. for Bus 5, Bkr 1-503.
Annunciator "Bus 5 SOURCE BKR 43 SW IN MAN" (47093-H), verified IN ALARM.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
4	2	Y	

ELEMENT: Review precautions and position synchronizing switch to ON for incoming source breaker.

STANDARD: Precautions and Limitations 2.4 and 2.5 are reviewed.
Synchronizing switch positioned to ON for incoming source breaker, Bus 5, Bkr 1-503.

CUE:

COMMENTS:

NOTE: **Although expected to be performed, the review of the P&Ls for this JPM step is NOT considered critical.**

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
5	3	N	

ELEMENT: Verify incoming and running voltmeter indications within 6 volts.

STANDARD: Incoming and running voltmeter indications verified to be within 6 volts using Incoming AC Volts meter and Running AC Volts meter located below syncroscope.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
6	3	Y	

ELEMENT: VERIFY synchroscope indicator within 3.33 minutes (20°) of 12:00 and CLOSE Bkr 1-503.

STANDARD: Synchroscope indicator is verified to be within 3.33 minutes (20°) of 12:00 and the control switch for Bkr 1-503 is positioned to CLOSE..

CUE:

COMMENTS:

NOTE: **Time Critical** **To minimize the consequences of fault current, the time that two transformers operate in parallel should NOT exceed 30 seconds. TIME: _____**

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT
7	4	N	UNSAT

ELEMENT: VERIFY following:
- Incoming breaker red light, ON.
- Increase on megawatt and kiloamp indicators.

STANDARD: The following is verified for Bkr 1-503:
- Breaker red light, ON.
- Increase on Power and Current meters for RAT Winding A.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
8	4	Y	UNSAT

ELEMENT: POSITION running source breaker to TRIP for Bus 5, Bkr 1-501 and place in PULLOUT if required..

STANDARD: Running source breaker is positioned to TRIP for Bus 5, Bkr 1-501 and placed in PULLOUT.

The following is verified:
- Green light ON.
- Decrease on Power and Current meters for the TAT

CUE: **If examinee asks if Bkr 1-501 should be placed in Pullout, inform examinee that it should be placed in pullout for maintenance.**

COMMENTS:

NOTE: **Time Critical** **To minimize the consequences of fault current, the time that two transformers operate in parallel should NOT exceed 30 seconds. Time: _____**

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
9	5	N	UNSAT

ELEMENT: POSITION synchronizing switch to OFF.

STANDARD: Synchronizing switch is positioned to OFF for Bkr 1-503.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
10	6	Y	UNSAT

ELEMENT: Position 43 switch to AUTO for Bus 5, Bkr 1-503, and verify proper alarms.

STANDARD: 43 switch POSITIONED to AUTO for Bus 5, Bkr 1-503.
Annunciator "Bus 5 SOURCE BKR 43 SWITCH IN MAN" (47093-H), verified CLEAR.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
11	7	N	UNSAT

ELEMENT: Perform Independent Verification per NAD 3.9 on Sync Switch, 43 Switch, and Breaker Position.

STANDARD: Independent Verification is requested.

CUE: **Independent Verification on Sync Switch, 43 Switch, and Breaker Position is complete.**

COMMENTS:

NOTE:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
12	8	N	

ELEMENT: The Operator at the Controls informs the CRS of system status.

STANDARD: The CRS is informed that Bus 5 is shifted from the TAT to the RAT and Breaker 1-501 is in PULLOUT.

CUE: **The CRS acknowledges your report.**

COMMENTS:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

KEWAUNEE NUCLEAR POWER PLANT
TRAINING JOB PERFORMANCE MEASURES

JPM XXXXXXX
Revision 0 DRAFT
Date

REMOVE AN EXCORE NUCLEAR INSTRUMENT FROM SERVICE

K/A REFERENCE: 015.K3.01 (3.9/4.3)
(NUREG-1122) 015.K4.05 (4.3/4.5)
015.A3.01 (3.8/3.8)
015.A3.02 (3.7/3.9)
015.A4.01 (3.6/3.6)
015.A4.02 (3.9/3.9)
015.A4.03 (3.8/3.9)

ALTERNATE PATH JPM _____ YES __X__ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: A-MI-87, Rev. N

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH ____ **DISCUSSION** ____ **PERFORM** X **IN-PLANT** ____ **CONTROL ROOM** X

VALIDATED TIME FOR COMPLETION: 8 **MINUTES**

REMOVE AN EXCORE NUCLEAR
INSTRUMENT FROM SERVICE

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

A-MI-87, Bistable Tripping for Failed Reactor Protection or Safeguards Inst., Rev. N.

TASK STANDARDS:

Failed NI channel N-41 is removed from service per A-MI-87.

SIMULATOR INFORMATION:

Initialize to JPM specific IC. (Must be <50%) TLA-8 Power Range Radial Tilt occurs a minute or so after going to run- wait until alarm comes in to snap.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

You are the Operator at the Controls.
The plant is at 48% power.
N-41 Power Range Instrument has failed.
The Control Rod Bank Selector switch is in MANUAL.
A-NI-48, Abnormal Nuclear Instrumentation, has been referenced.
SP-47-316A,Channel I (Red) Instrument Channel Test is complete.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to remove the failed instrument from service by performing steps 1 and 2 of Attachment I of A-MI-87 for N-41 Power Range Instrument.

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

START TIME _____ STEP/SEQUENCE/CRITICAL 1 1 N SAT _____ UNSAT _____

ELEMENT: REFER to procedure A-MI-87, Bistable Tripping for Failed Reactor Protection or Safeguards Inst.

STANDARD: Procedure A-MI-87 is referenced, appropriate pages for removing N-41 from service determined to be pages 18-20 of A-MI-87.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL 2 2 Y SAT _____ UNSAT _____

ELEMENT: Position Upper Section switch on Detector Current Comparator to PRN41.

STANDARD: Upper Section switch on Detector Current Comparator is POSITIONED to PRN41.
NOTE: "Channel Defeat" light will illuminate above control switch.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL 3 2 Y SAT _____ UNSAT _____

ELEMENT: Position Lower Section switch on Detector Current Comparator to PRN41.

STANDARD: Lower Section switch on Detector Current Comparator positioned to PRN41.
NOTE: "Channel Defeat" light will illuminate above control switch.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL
4 2 Y

SAT _____
UNSAT _____

ELEMENT: Position Rod Stop Bypass switch on Miscellaneous Control and Indication Panel to BYPASS PRN41.

STANDARD: Rod Stop Bypass switch on Miscellaneous Control and Indication Panel is positioned to BYPASS PRN41.
NOTE: Status light, N41 Rod Stop Bypassed, on panel 44906-0501 will illuminate.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL
5 2 Y

SAT _____
UNSAT _____

ELEMENT: Position Power Mismatch Bypass switch on Miscellaneous Control and Indication Panel to BYPASS PRN41.

STANDARD: Power Mismatch Bypass switch on Miscellaneous Control and Indication Panel is positioned to BYPASS PRN41.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL
6 2 Y

SAT _____
UNSAT _____

ELEMENT: Position Comparator Channel Defeat switch on Comparator and Rate drawer to N41.

STANDARD: Comparator Channel Defeat switch on Comparator and Rate drawer positioned to N41.
NOTE: Annunciator 47033-K, Power Range Channel Deviation, will CLEAR.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL **SAT** _____
7 2 N **UNSAT** _____

ELEMENT: Review CAUTION concerning P-10 bistable.

STANDARD: CAUTION determined to NOT be of concern for present plant conditions (only a concern if a power reduction <10% is required AND another power range NI stays above 10%).

CUE: **Inform examinee that supervision is aware of the situation and other NIs will be closely monitored if a power reduction is required.**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
8 2 Y **UNSAT** _____

ELEMENT: Position N41A drawer Control Power breaker to OFF

STANDARD: N41A drawer Control Power breaker is positioned to OFF.

CUE: **After the breaker is OFF, the JPM is complete. (I&C will perform the bistable tripping).**

COMMENTS:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

KEWAUNEE NUCLEAR POWER PLANT
TRAINING JOB PERFORMANCE MEASURES

JPM XXXXXXX
Revision 0 DRAFT
Date

LOSS OF COMPONENT COOLING
DURING PUMP SWAP

K/A REFERENCE: 008.K1.02 (3.3/3.4)
(NUREG-1122) 008.K3.03 (4.1/4.2)
008.K4.01 (3.1/3.3)
008.A2.01 (3.3/3.6)

ALTERNATE PATH JPM __X__ YES _____ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: E-CC-31, Rev. L, ARP 47021-I

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH ____ **DISCUSSION** ____ **PERFORM** __X__ **IN-PLANT** _____ **CONTROL ROOM** __X__

VALIDATED TIME FOR COMPLETION: __8__ **MINUTES**

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

ARP 47021-I, RXCP CC Flow Low, Rev. B
E-CC-31, Loss of Component Cooling, Rev. L
N-CC-31, Component Cooling System Operation, Rev. U

TASK STANDARDS:

Respond to a loss of component cooling per E-CC-31 or ARP 47021-I.

SIMULATOR INFORMATION:

Initialize to JPM specific IC.

AFTER pump swap has occurred and the NAO is contacted to OPEN CC-4A, then activate Trigger 1.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

You are the Operator at the Controls.
The plant is at 100% power.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to shift Component Cooling pumps in accordance with Step 4.2.2 of N-CC-31, Component Cooling System Operation, Rev. U.

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

START TIME _____ **STEP/SEQUENCE/CRITICAL** **SAT** _____
1 1 N **UNSAT** _____

ELEMENT: (PER N-CC-31)
IF required, SHIFT component cooling pumps as follows:
START Standby Component Cooling Pump B.

STANDARD: Component Cooling Pump B is started by placing its control switch to START, verifying red light ON and green light OFF.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
2 2 N **UNSAT** _____

ELEMENT: CLOSE CC-4A for pump to be stopped.

STANDARD: NAO is contacted to locally close CC-4A.

CUE: **The NAO reports that CC-4A discharge valve is CLOSED**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
3 3 N **UNSAT** _____

ELEMENT: STOP Component Cooling Pump A and POSITION switch to AUTO.

STANDARD: Component Cooling Pump A control switch is placed in STOP and switch allowed to return to AUTO, green light verified ON and red light OFF.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
4	4	N	

ELEMENT: OPEN CC-4A discharge valve for stopped pump (CC Pump A).

STANDARD: AO is contacted to locally OPEN CC-4A.

CUE: **The AO reports that CC-4A valve is OPEN.**

COMMENTS:

NOTE: **After notifying the AO to open CC-4A, CC Pump B will trip with failure of CC Pump A to start.**

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
5	4	N	

ELEMENT: Examinee responds to trip of running CC Pump B with failure of CC Pump A to auto-start per E-CC-31 or Annunciator 47021-I (RXCP CC Flow Low) or A-RC-36C.

STANDARD: An attempt to start CC Pump A is made by placing its control switch to START (this is unsuccessful).

CUE: **If examinee informs the CRS of the loss of CC, the following cue should be given: "Implement the required actions for a loss of CC." If an AO is called to investigate the CC Pumps, inform examinee that CC Pump B is NOT running and smells of burnt insulation, CC Pump A is NOT running and appears normal.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
6	5	Y	

ELEMENT: IF loss of component cooling to either RXCP exceeds 2 minutes PERFORM the following:
Trip the reactor and turbine.

STANDARD: When the loss of component cooling to either RXCP exceeds 2 minutes (or examinee determines that CC cannot be restored), the reactor is manually tripped by depressing the manual reactor trip pushbutton.

CUE: **After the reactor is manually tripped, inform examinee that the BOP operator has verified the turbine trip and power to the safeguards buses.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
7	6	Y	

ELEMENT: STOP affected RXCP(s).

STANDARD: RXCP A and B control switches are placed to STOP, green light verified ON and red light OFF.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
8	7	N	

ELEMENT: Close PS-1A(B), Przr Spray, in affected loop.

STANDARD: PS-1A and PS-1B, Przr Spray controllers, are placed in MANUAL and CLOSED, green light verified ON and red light OFF.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
9	8	N	

ELEMENT: The Operator at the Controls informs the CRS that the actions for E-CC-31, Loss of Component Cooling, Rev. L (or ARP 47021-I or A-RC-36C) are complete.

STANDARD: The CRS is informed.

CUE: **The CRS acknowledges your report.**

COMMENTS:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

PERFORM ACTIONS NECESSARY FOR CONTROL ROOM EVACUATION (ESTABLISH LETDOWN)

K/A REFERENCE: 004.K1.01 (3.6/4.0)
(NUREG-1122) 004.K1.30 (2.9/3.1)
004.K4.04 (3.2/3.1)
004.K4.11 (3.1/3.6)

ALTERNATE PATH JPM __X__ YES _____ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: **E-0-06, Rev. O**

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH __X__ **DISCUSSION** ____ **PERFORM** ____ **IN-PLANT** __X__ **CONTROL ROOM** ____

VALIDATED TIME FOR COMPLETION: 25 **MINUTES**

PERFORM ACTIONS NECESSARY FOR CONTROL ROOM EVACUATION (ESTABLISH LETDOWN)

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

E-0-06, Fire In Alternate Fire Zone, Rev. O

TASK STANDARDS:

Letdown is established per step 29 of E-0-06.

SIMULATOR INFORMATION:

In-Plant JPM.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

The plant was at 100% power with fire in an Alternate Fire Zone.
You are Control Operator A.
E-0-06, Fire In Alternate Fire Zone, Rev. O has been completed through step 28.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to establish letdown per step 29 of E-0-06, Fire In Alternate Fire Zone, Rev. O.

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

START TIME _____ **STEP/SEQUENCE/CRITICAL** **SAT** _____
1 1 N **UNSAT** _____

ELEMENT: Refer to step 29 of E-0-06, Fire In Alternate Fire Zone, Rev. O.

STANDARD: Step 29 of E-0-06 is referenced.

CUE:

COMMENTS:

NOTE:

STEP/SEQUENCE/CRITICAL **SAT** _____
2 2 N **UNSAT** _____

ELEMENT: Verify Przr Cold Cal Level, >20%.

STANDARD: Przr Cold Cal Level >20 % is verified

CUE: **Przr Cold Cal Level (87227) indicates 30%.**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
3 2 Y **UNSAT** _____

ELEMENT: Adjust CC-302/CV-31100, Non-Rgn Hx Otlt Temp Cont. to 50% OPEN.

STANDARD: CC-302/CV-31100, Non-Rgn Hx Otlt Temp controller is verified in MANUAL OR the MANUAL pushbutton is DEPRESSED. The MANUAL control lever is THEN positioned to the right until a 50% demand (OUTPUT) is achieved. **NOTE: The "as-found" valve controller should indicate 0% Output (FULL OPEN), therefore the manual control lever must be moved to the RIGHT.**

CUE: **CC-302/CV-31100, Non-Rgn Hx Otlt Temp Cont, is 50% OPEN.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
4	2	Y	

ELEMENT: Adjust LD-10/CV-31099, Low Pressure Letdown Line PCV., to 50% OPEN.

STANDARD: LD-10/CV-31099, Low Pressure Letdown Line PCV controller is verified in MANUAL OR the MANUAL pushbutton is DEPRESSED. The MANUAL control lever is THEN positioned to the right until a 50% demand (OUTPUT) is achieved. **NOTE: The "as-found" valve controller should indicate 0% Output (FULL OPEN), therefore the manual control lever must be moved to the RIGHT.**

CUE: **LD-10/CV-31099, Low Pressure Letdown Line PCV, is 50% OPEN.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
5	2	N	

ELEMENT: Verify LD-27/CV-31096, Ltdn Flow to Hldup/VC Tank 3-way CV, in DIVERT.

STANDARD: LD-27/CV-31096, Ltdn Flow to Hldup/VC Tank 3-way CV is verified in DIVERT by red DIVERT indicating light being ON.

CUE: **LD-27/CV-31096, Ltdn Flow to Hldup/VC Tank 3-way CV red DIVERT indicating light is ON.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
6	2	N	

ELEMENT: Verify LD-14/CV-31098, Ltdn Flow to Demin/VC Tank 3-way CV , in V.C. TNK.

STANDARD: LD-14/CV-31098, Ltdn Flow to Demin/VC Tank 3-way CV, is verified in V.C. TNK by red V.C. TNK indicating light being ON.

CUE: **LD-14/CV-31098, Ltdn Flow to demin/VC Tank 3-way CV red V.C. TNK indicating light is ON.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
7	2	Y	

ELEMENT: Locally insert fuses in SD-101 FUG-7 and FUG-6 (for LD-3 and LD-6).

STANDARD: Proper location identified in photograph, fuses inserted in SD-101 FUG-7 and FUG-6.

CUE: **After proper location has been identified in photograph, the fuses have been inserted in SD-101 FUG-7 and FUG-6 (for LD-3 and LD-6) and the RED lights are ON for ckt 6 and 7 on SD-101.**

COMMENTS:

NOTE: **Fuses are obtained from the Appendix R Box. Digital photograph of inside SD-101 is included with this JPM.**

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
8	3	Y	

ELEMENT: Position LD-6/CV-31234, Letdown Flow to Ltdn Hx Isol CV, key switch to OPEN.

STANDARD: LD-6/CV-31234, Letdown Flow to Ltrdn Hx Isol CV key is INSERTED into key switch and positioned to OPEN, LD-6 red light ON, green light OFF.

CUE: **LD-6/CV-31234, Letdown Flow to Ltdn Hx Isol CV, key switch is in OPEN, red light ON, green light OFF.**

COMMENTS:

NOTE: **Key to operate LD-6 is located in Dedicated Shutdown fuse box #1.**

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
9	4	Y	

ELEMENT: Open LD-2/CV-31108, Ltdn Line From LP-B Cold Leg RCS Isol Vlv.

STANDARD: LD-2/CV31108,Ltdn Line From LP-B Cold Leg RCs Isol Vlv control switch is positioned to OPEN. LD-2 red light ON, green light OFF.

CUE: **LD-2/CV-31108, Ltdn Line From LP-B Cold Leg RCS Isol Vlv control switch is in OPEN, red light ON, green light OFF.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
10	5	Y	

ELEMENT: Position LD-3/CV-31104, Ltdn Line From LP-B Cold Leg RCS Isol Vlv, key switch to OPEN.

STANDARD: LD-3/CV-31104. Ltdn Line From LP-B Cold Leg RCS Isol Vlv. key is INSERTED into key switch and positioned to OPEN, LD-3 red light ON, green light OFF.

CUE: **LD-3/CV-31104, Ltdn Line From LP-B Cold Leg RCS Isol Vlv, key switch is in OPEN, red light ON, green light OFF.**

COMMENTS:

NOTE: **Key to operate LD-3 is located in Dedicated Shutdown fuse box #1.**

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
11	6	N	

ELEMENT: LD-4A/CV-31231 OR LD-4B/CV-31232, Regn Hx Ltdn Otltl Orif 1A/1B Isol CV are OPENED.

STANDARD: LD-4A/CV-31231 AND LD-4B/CV-31232, Regen Hx Ltdn Otlt Orfi 1A/1B Isol CV control switches are positioned to OPEN.

CUE: **LD-4A/CV-31231 AND LD-4B/CV-31232, Regn Hx Ltdn Otltl Orif 1A/1B Isol CV, red light is OFF, green light ON.**

COMMENTS:

NOTE: **Intent of this step is that both LD-4A and LD-4B fail to open. (i.e., control switches are open with red lights OFF and green lights ON.)**

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
12	7	Y	

ELEMENT: Adjust Chg Pump 1C Speed Control to MINIMUM. When Pzr Cold Cal Level reaches 70%, OPEN LD-4C.

STANDARD: Chg Pump 1C hand controller is adjusted to MINIMUM (ZERO).
WHEN Pzr Cold Cal Level reaches 70 %, LD-4C control switch is positioned to OPEN, red light verified ON, green light OFF.

CUE: **Chg Pump 1C Speed Control is set to MINIMUM (ZERO).**
After Chg Pump speed is at MINIMUM, Pzr Cold Cal Level indicates 70%.
When LD-4C control switch is positioned to OPEN, red light is ON, green light OFF.

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
13	8	Y	

ELEMENT: Adjust LD-10 to maintain Ltdn Ht Xgh Otlt Press at 250 psig and position controller to AUTO.

STANDARD: LD-10 AUTO setpoint is adjusted using the setpoint control on the side of the meter to 250 psig (black/white indicator). MANUAL control lever is adjusted closed (to the RIGHT) based on pressure cue of 220 psig until actual pressure and the AUTO setpoint are matched (250 psig). The AUTO pushbutton is then DEPRESSED. LD-10 control is verified STABLE.

CUE **After manipulating the LD-10 Auto setpoint, the black/white indicator (Auto setpoint) is at 250 psig. Initial cue for indication of Letdown HX Outlet pressure is 220 psig (orange needle). After manipulating Manual control lever in the CLOSED direction (to the RIGHT), then indicate that the Orange needle is at 250 psig (both indicators matched). After depressing AUTO pushbutton, indicate that the controller is in AUTO (green light ON) and controlling properly at 250 psig.**

NOTE **(If examinee manipulates Manual control lever in the OPEN direction (to the Left), then pressure will lower.)**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
14	8	N	UNSAT

ELEMENT: Adjust CC-302 to maintain Ltdn Ht Xgh Otlt Temp at 120° – 140°F and position controller to AUTO.

STANDARD: CC-302 AUTO setpoint is adjusted using the setpoint control on the side of the meter to 120° – 140°F (black/white indicator). MANUAL control lever is adjusted CLOSED (to the RIGHT) based on temperature cue of 100°F until actual temperature and the AUTO setpoint are matched at 130°F. The AUTO pushbutton is then DEPRESSED. CC-302 control is verified STABLE.

CUE: **After manipulating the CC-302 AUTO setpoint, the black/white indicator (Auto setpoint) is at 130°F. Initial cue for indication of Letdown HX Outlet temperature is 100°F (orange needle). After manipulating Manual control lever in the CLOSED direction (to the RIGHT), then indicate that the Orange needle is at 130°F (both indicators matched). After depressing the AUTO pushbutton, indicate that the controller is in AUTO (green light ON) and controlling properly.**

NOTE **(If examinee manipulates Manual control lever in the OPEN direction (to the LEFT), then temperature will lower.)**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
15	9	N	UNSAT

ELEMENT: Request Control Operator B monitor CVC Holdup Tank on fill and ALIGN letdown to an empty tank when necessary.

STANDARD: Request is made to Control Operator B to monitor the CVC Holdup Tank on fill and ALIGN letdown to an empty tank when necessary.

CUE: **Control Operator B acknowledges your REQUEST and will monitor the CVC Holdup Tanks and shift tanks as necessary.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			
16	9	N	SAT _____
			UNSAT _____

ELEMENT: Adjust Charging Pup 1C Speed to maintain Pzr Cold Cal Level, 20-50%

STANDARD: Charging Pump 1C Speed is INCREASED using the manual speed control thumbwheel to obtain Pzr Cold Cal Level 20-50%.

CUE: **Initial cue for Pzr Cold Cal Level is 15%. After raising Charging Pump speed, indicate that Pzr Cold Cal Level is slowly rising and is currently at 21%.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			
16	10	N	SAT _____
			UNSAT _____

ELEMENT: Control Operator A reports plant status to the CRS.

STANDARD: The CRS is informed that letdown is established in accordance with step 29 of E-0-06.

CUE: **The CRS acknowledges your report.**

COMMENTS:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

LOCALLY OPERATE THE S/G PORV

K/A REFERENCE: 039.K1.02 (3.3/3.3)
(NUREG-1122) 039.K4.03 (2.3/2.5)
039.A2.04 (3.4/3.7)
039.A4.07 (2.8/2.9)

ALTERNATE PATH JPM __X__ YES _____ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: **E-0-07, Rev. P**

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

_____ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH __X__ **DISCUSSION** ____ **PERFORM** ____ **IN-PLANT** __X__ **CONTROL ROOM** ____

VALIDATED TIME FOR COMPLETION: __10__ **MINUTES**

LOCALLY OPERATE THE S/G PORV

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

E-0-07, Fire in Dedicated Fire Zone, Rev. P

TASK STANDARDS:

Steam flow from S/G A is stopped by closing SD-2A, S/G A PORV Isolation Valve, per E-0-07.

SIMULATOR INFORMATION:

NONE - In-plant JPM.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

You are Control Operator B.
The plant tripped due to a Fire In The Dedicated Zone.
E-0-07, Fire In Dedicated Fire Zone, is being performed.

INITIATING CUES (IF APPLICABLE):

The CRS directs you to locally close SD-3A/CV-31170 S/G A PORV per step 11.h of E-0-07, Fire In Dedicated Fire Zone, Rev. P.
NOTE: E-0-07, has been completed through step 11.g.

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

START TIME _____ **STEP/SEQUENCE/CRITICAL** **SAT** _____
1 1 N **UNSAT** _____

ELEMENT: Refer to step 11.h of E-0-07, Fire In Dedicated Fire Zone, Rev. P.

STANDARD: Step 11.h of E-0-07 is referenced.

CUE: **As valve is approached, a considerable amount of steam flow noise can be heard.**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
2 2 N **UNSAT** _____

ELEMENT: INSERT pin to engage SD-3A handwheel.

STANDARD: Handwheel is rotated such that the hole is ALIGNED. Pin is then inserted to engage the SD-3A manual handwheel.

CUE: **Pin is inserted, handwheel is engaged.**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
3 3 N **UNSAT** _____

ELEMENT: OPEN SD-3A Diaphragm Bypass Valve.

STANDARD: Handwheel for SD-3A Diaphragm Bypass Valve positioned fully counter-clockwise to open valve.

CUE: **SD-3A Diaphragm Bypass Valve is fully counter-clockwise, there is no further valve movement.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
4	4	N	UNSAT

ELEMENT: Close NG-235, N_2 Supply to SD-3A.

STANDARD: Handwheel for NG-225, N_2 Supply to SD-3A, is positioned fully clock-wise to close valve.

CUE: **NG-235 is fully clock-wise, there is no further valve movement.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
5	5	N	UNSAT

ELEMENT: Close IA-470, IA to SD-3A.

STANDARD: Handwheel for IA-470, IA to SD-3A is positioned fully clock-wise to close valve.

CUE: **IA-470 is fully clock-wise, there is no further valve movement.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
6	6	Y	UNSAT

ELEMENT: Verify SD-3A CLOSED.

STANDARD: SD-3A stem indicator is checked to determine valve position OR handwheel is attempted to position fully clockwise.

CUE: **If checked, inform examinee that SD-3A position indicator indicates MID-POSITION. If valve handwheel is attempted to be rotated in the clockwise direction, there is no valve movement.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
7	8	Y	UNSAT

ELEMENT: Locally close SD-2A, S/G A PORV Isolation Valve.

STANDARD: SD-2A is located and its handwheel is rotated in the clockwise direction until no further valve movement can be obtained.

CUE: **Handwheel is rotating in the clockwise direction and steam flow noise is decreasing. Handwheel will no longer rotate in the clockwise direction and steam flow noise has stopped.**

COMMENTS:

NOTE:

STEP/SEQUENCE/CRITICAL			SAT
8	9	N	UNSAT

ELEMENT: Control Operator B informs Control Operator A/CRS of plant status.

STANDARD: The Control Operator A/CRS is informed that SD-3A/CV-31170, S/G A PORV was not able to be closed and that SD-2A, S/G A PORV Isolation Valve is SHUT per step 11.h of E-0-07.

CUE: **The Control Operator A/CRS acknowledges your report.**

COMMENTS:

NOTE:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____

OPERATE THE DIESEL GENERATOR (LOCALLY)

K/A REFERENCE: 064.A2.05 (3.1/3.2)
(NUREG-1122) 064.A4.06 (3.9/3.9)
064.A4.01 (4.0/4.3)

ALTERNATE PATH JPM _____ YES __X__ NO

PERFORMANCE CHECKLIST:

SATISFACTORY - Properly performed critical step(s) and/or in sequence (if applicable)

UNSATISFACTORY - Improperly performed critical step(s) and/or out of sequence (if applicable)

__X__ **Procedure adequately addresses task elements.**
Enter identifier here: **A-DGM-10A, Rev. C**

_____ **Other document adequately describes necessary task elements.**
Enter identifier here: _____

__X__ **Task elements described as attached.**

DESIRED MODE OF EVALUATION: **APPLICABLE EVALUATION SETTING:**

SIMULATE/WALKTHROUGH __X__ **DISCUSSION** ____ **PERFORM** ____ **IN-PLANT** __X__ **CONTROL ROOM** ____

VALIDATED TIME FOR COMPLETION: __30__ **MINUTES**

OPERATE THE DIESEL GENERATOR (LOCALLY)

EXAMINEE _____ **EVALUATOR** _____

START TIME _____ **FINISH TIME** _____

PERFORMANCE ☐ **SAT** ☐ **UNSAT**

JOB TITLE: ☐ **AOT** ☐ **COT** ☐ **SRO** ☐ **STA**

TOOLS/EQUIPMENT/REFERENCES:

A-DGM-10A, Abnormal Diesel Generator A Operation, Rev. C.

TASK STANDARDS:

D/G 1A is successfully started and loaded to Bus 5 per A-DGM-10A.

SIMULATOR INFORMATION:

In-Plant JPM.

NOTE: If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

READ AND PROVIDE TO THE EXAMINEE

****

THIS SECTION IS READ ONCE FOR THE ENTIRE PACKAGE OF JPMS. IT IS NOT REQUIRED TO REVIEW THIS SECTION FOR EVERY JPM BEING PERFORMED IN THE PACKAGE. THE INITIAL CONDITIONS AND INITIATING CUE(S)/TASKS TO BE PERFORMED SHOULD BE READ AND THEN PROVIDED TO THE EXAMINEE.

After I read you the initial conditions and initiating cue(s)/task to be performed for this JPM and provide you a copy of the same, you may review and begin. Once you have completed the task, indicate completion by handing back this form to the evaluator unless otherwise told.

You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.

EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.

For all two and three-way communications, make your report to me, the JPM evaluator. I will reply to your reports with the statement, "acknowledge." All actions in the plant are to be simulated and all actions in the simulator will be performed. Ensure you make it clear to me, the evaluator, of all actions you are taking so that credit may be given for completing each step of the task.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

****

INITIAL CONDITIONS:

The plant is in hot shutdown and has experienced a loss of off-site power as well as failure of Diesel Generator A to start. An attempt to manually start Diesel Generator A from the Control Room has been unsuccessful.

INITIATING CUES (IF APPLICABLE):

You are directed to locally start Diesel Generator A per Step 4.6 of A-DGM-10A, Abnormal Diesel Generator A Operation, Rev. C.

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

START TIME _____ **STEP/SEQUENCE/CRITICAL** **SAT** _____
1 1 N **UNSAT** _____

ELEMENT: Refer to Step 4.6 of A-DGM-10A, Abnormal Diesel Generator A Operation.

STANDARD: Step 4.6 of A-DGM-10A is referenced.

CUE:

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
2 2 N **UNSAT** _____

ELEMENT: Verify BRA-104 (Circuit 10) Control Power to Diesel Engine Control Panel is ON.

STANDARD: Inside the Battery Room, BRA-104 (Circuit 10) Control Power to Diesel Engine Control Panel is located and breaker is verified in or positioned to the ON position.

CUE: **BRA-104 (Circuit 10) is in the ON position.**

COMMENTS:

STEP/SEQUENCE/CRITICAL **SAT** _____
3 2 N **UNSAT** _____

ELEMENT: Verify BRA-104 (Circuit 7) Control Power to Bus 5 is ON.

STANDARD: Inside the Battery Room, BRA-104 (Circuit 7) Control Power to Bus 5 is located and breaker is verified in or positioned to the ON position.

CUE: **BRA-104 (Circuit 7) is in the ON position.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
4	3	Y	

ELEMENT: Behind DR panels, position the Diesel Engine and Governor Local/Remote switch to LOCAL.

STANDARD: Diesel Engine and Governor Local/Remote switch is located and positioned to LOCAL.

CUE: **The Diesel Engine and Governor Local/Remote switch is in LOCAL.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
5	3	Y	

ELEMENT: At Diesel Generator Control & Excitation Cabinet, position the Diesel Generator Voltage Control Local/Remote switch to LOCAL.

STANDARD: Diesel Generator Voltage Control Local/Remote switch is located and positioned to LOCAL.

CUE: **Diesel Generator Voltage Control Local/Remote switch is in LOCAL.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT / UNSAT
6	4	N	

ELEMENT: At Diesel Engine Control Panel, verify control power available.

STANDARD: Diesel Engine Control Panel "Power On" green light is verified ON.

CUE: **Diesel Engine Control Panel green "Power On" light is lit.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL				
7	5	N	SAT	
			UNSAT	

ELEMENT: Verify Overspeed Trip is reset.

STANDARD: Overspeed trip mechanism is checked to determine if reset is required, reset is NOT required.

CUE: **The Overspeed trip mechanism is rotated down and is in contact with the limit switch.**

COMMENTS:

NOTE:

STEP/SEQUENCE/CRITICAL				
8	6	Y	SAT	
			UNSAT	

ELEMENT: At Diesel Engine Control Panel, depress the Failure Reset pushbutton.

STANDARD: Failure reset pushbutton is depressed and alarms checked clear.

CUE: **All alarms are clear.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT
9	7	Y	UNSAT

ELEMENT: At Bus 5, open the following breakers using the Breaker Control Switch on front of the breaker cubicle door:

- 1-511, Main Aux Transformer.
- 1-510, Bus Tie Breaker to 1-602.
- 1-509, Diesel Gen 1-A.
- 1-508, Safety Injection Pump 1-A.
- 1-507 **OR** 1-506, Service Water Pump 1A2 **OR** 1A1.
- 1-504, Aux Feedwater Pump A1.
- 1-503, Reserve Aux Transformer.
- 1-502, Residual Heat Removal Pump 1-A.
- 1-501, Tertiary Aux Transformer.

STANDARD: Green light verified ON, red light OFF, for breakers listed above **or** control switch positioned as necessary to obtain open indication.

CUE: **Green light is ON, red light is OFF for all breakers (Bkr 1-507 OR 1-506 is required to be OPEN).**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
10	8	N	UNSAT

ELEMENT: Verify closing spring is charged for the following breakers:

- 1-509.
- 1-507.
- 1-506.
- 1-505, Station Service Transf 1-51, 1-52.

STANDARD: Breakers located, white light verified LIT above the "Closing Springs Charged" label on breakers. **NOTE: If examinee attempts to open breaker door to check indication, indicate that the breaker door cannot be opened. DO NOT ALLOW EXAMINEE TO OPEN CUBICLE DOORS).**

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
11	9	N	UNSAT

ELEMENT: Verify the following breakers CLOSED:
- 1-506 **OR** 1-507.
- 1-505.

STANDARD: Green light verified OFF, red light ON, for breakers listed above.

CUE: **Green light is OFF, red light is ON for above listed breakers..**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
12	10	Y	UNSAT

ELEMENT: Position breaker 1-509 Local/Remote switch to LOCAL.

STANDARD: Breaker 1-509 Local/Remote switch is positioned to LOCAL.

CUE: **Breaker 1-509 Local/Remote switch is in LOCAL and all diesel alarms are clear.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
13	11	N	UNSAT

ELEMENT: Announce starting of Diesel Generator A.

STANDARD: Announcement made using the plant Gaitronics that Diesel Generator A will be started.

CUE:

COMMENTS:

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT _____
14	12	Y	UNSAT _____

ELEMENT: At Diesel Engine Control Panel, start Diesel Generator A.

STANDARD: Diesel Generator A is started by positioning the 1A Diesel Engine Control Switch to START.

CUE: **Diesel Engine 1A Control Switch is in START, engine start noise is heard, engine RPM is rising.**

COMMENTS:

NOTE: **Regarding the note concerning Service Water Cooling prior to this step – breaker 1-509 (Diesel Generator A to Bus 5) must be closed within 3 minutes of Diesel start. TIME: _____**

STEP/SEQUENCE/CRITICAL			SAT _____
15	13	N	UNSAT _____

ELEMENT: At Diesel Engine Control Panel, adjust Governor Control Switch to obtain 890-910 rpm.

STANDARD: Diesel Engine rpm is checked, Governor Control Switch adjusted as necessary to raise or lower rpm.

CUE: **Diesel Engine A is at 900 rpm.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT _____
16	13	N	UNSAT _____

ELEMENT: At Diesel Generator Control & Excitation Cabinet, adjust the Voltage Control Switch to obtain 4160V.

STANDARD: Diesel Voltage is checked. Voltage Control Switch is adjusted as necessary to raise or lower voltage.

CUE: **Diesel Engine A is at 4160V.**

COMMENTS:

PERFORMANCE INFORMATION

NOTE: ***CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.***

STEP/SEQUENCE/CRITICAL			SAT
17	13	N	UNSAT

ELEMENT: At Diesel Generator Control & Excitation Cabinet, adjust Governor to obtain 60 Hz.

STANDARD: Diesel frequency is checked. Governor is adjusted as necessary to raise or lower frequency.

CUE: **Diesel Engine A is at 60 Hz.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
18	14	Y	UNSAT

ELEMENT: Close breaker 1-509.

STANDARD: At breaker 1-509 cubicle, the Breaker Control Switch is positioned to CLOSE, RED light ON, GREEN light OFF.

CUE: **The red light is ON, green light is OFF for breaker 1-509.**

COMMENTS:

NOTE: **Breaker 1-509 must be closed within 3 minutes of Diesel start. TIME:** _____

PERFORMANCE INFORMATION

NOTE: CRITICAL STEPS ARE DENOTED WITH A "Y". FAILURE TO MEET THE STANDARDS FOR THIS ITEM CONSTITUTES FAILURE.

STEP/SEQUENCE/CRITICAL			SAT
19	15	N	UNSAT

ELEMENT: Verify Service Water Cooling to Diesel Engine by checking Service Water Pump running, Service Water Valve from Diesel is OPEN, and Diesel water temperature is in the normal range.

STANDARD:
- Ammeter for Service Water Pump breaker 1-506, Service Water Pump 1A1 is checked for amperage (ammeter on breaker cubicle door).
- SW-301A/CV-31088, Service Water from Diesel Generator A Heat Exchanger, is locally checked OPEN by observing valve indicator.
- Diesel Engine water temperature is checked in the normal operating range (160-190°F).

CUE:
- **Breaker 1-506 ammeter is indicating approximately 35 amps.**
- **SW-301A valve position indication indicates open and service water flow can be heard.**
- **Diesel Engine water temperature indicates 170°F.**

COMMENTS:

STEP/SEQUENCE/CRITICAL			SAT
20	16	N	UNSAT

ELEMENT: Notify NCO that Diesel Generator A is available to be loaded from the Control Room or locally if switchgear control power is OFF.

STANDARD: NCO is notified that Diesel Generator A is available.

CUE: **The NCO acknowledges your report.**

COMMENTS:

TERMINATION CUE: THIS COMPLETES THIS JPM. **COMPLETION TIME:** _____