**FINAL SUBMITTAL**

# SEQUOYAH RETAKE EXAM
# 50-327 & 50-328/2001-301

MARCH 14 & 15, 2001

FINAL SUBMITTAL

# CONTROL ROOM SYSTEMS & FACILITY WALK-THROUGH TEST OUTLINE (ES-301-2)
# &
# FINAL JPMS

ES-301 Control Room Systems and Facility Walk-Through Test Outline Form ES-301-2

Facility: Tennessee Valley Authority - Sequoyah Date of Examination: March 15, 2001
Exam Level (circle one): RO / SRO(I) / SRO(U) Operating Test No.: _____

B.1 Control Room Systems

| System / JPM Title | Type Code* | Safety Function |
|---|---|---|
| a. 128AP, Equipment Checks Following ESF Actuation | D, S, A | 5 |
| b. 063AP, SGTR, RCS Depressurization w/fail open sprays | D, S, A, L | 3 |
| c. 077, Perform D/G Load Test on 1B-B DG | D, S | 6 |
| d. 034, Loss of Secondary Heat Sink | D, S | 4P |
| e. 001AP, Emergency Boration (Stuck Rods) | D, S, A, L | 1 |
| f. NRC-2001-1, Steamline Pressure Transmitter Fails, PT-1-33 Fails Low | N, S | 7 |
| g. 115-2AP, Respond to ERCW Pump Trip | N, S, A | 8 |

B.2 Facility Walk-Through

| | | |
|---|---|---|
| a. 074, Operate the TDAFW Pump Locally | D, PRA | 4S |
| b. 080, Local Control of Charging Flow (FCV-62-93) | D, R | 2 |
| c. 098, Locally Align 1B-B CCS Pump to Supply B Train | D, R | 8 |

* 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

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 1-AP

## Emergency Boration (Stuck Rods)

Original Signatures on File

PREPARED/ REVISED BY: _____ Date/ 9/23/98

VALIDATED BY: * N/A per 11.3.6.8 Date/ _____

APPROVED BY: _____ Date/ 9/23/98
(Operations Training Manager)

CONCURRED: ** N/A per 11.3.6.8 Date/ _____
(Operations Representative)

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 8 | Transfer from WP. Minor enhancements. | N | 8/12/94 | All | HJ Birch |
| 9 | Boron Conc changes | N | 9/16/94 | All | HJ Birch |
| 10 | Chg due to Rev B procedure. | Y | 9/9/95 | All | HJ Birch |
| 11 | Incorp previous pen/inks: which corrected step 10 to continue with procedure instead of transition (JPM performance comment. Moved Tave cue from step 14 to 17 added step to determine fully inserted, 12 steps. Latest EA-68-4 & ES-0.1 Rev Chgd 'rods full out' to 'rods >12 steps', added step to use the computer to verify Rods position | N | 1/19/96 | 6 | HJ Birch |
| 12 | Major flow change for the start of EA-68-4 | Y | 2/2/98 | All | HJ Birch |
| 13 | Revision to ES-0.1 had no impact. Made step 28 a critical step. Revised K/A ratings. Reformatted critical steps. | N | 9/23/98 | All | JP Kearney |
| pen/ink | ES-0.1 procedure revision had no impact | N | 7/15/99 | All | S. R. Taylor |
| pen/ink | ES-0.1 procedure revision had no impact | N | 8/22/00 | 4 | S. R. Taylor |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**

Emergency Boration (Stuck Rods)

**Note: This JPM satisfies Simulator Manipulation "T".**

**JA/TA task # :** 0000980501 **(RO)**

**K/A Ratings:**

| | |
|---|---|
| 024AA1.17 (3.9/3.9) | 005AK3.01 (4.0/4.3) |
| 024AA1.18 (3.7/3.6) | 005AK3.06 (3.9/4.2) |
| 024AA1.15 (3.1/2.9) | 005AA2.03 (3.5/4.4) |

**Task Standard:**

≥ 5040 gallons of boric acid injected into the reactor coolant system using the normal boration path.

**Evaluation Method :** Simulator ___X_____ In-Plant _____

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**Performer:** _____ Start Time _____
NAME

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

_____

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Sequenced steps identified by an "s"
2. Any UNSAT requires comments
3. Initialize the simulator in IC-10. **Activate MF #RD13A & E,** insert override ZDIHS62138A close.
4. Initiate a reactor trip, Close TDAFW vlvs and freeze the simulator after you have acknowledged the control board alarms.
5. (May Use IC 55 if available, and add override)
6. The Console operator can be used to acknowledge alarms not associated with the JPM.
7. Insure operator performs the following required actions for **SELF-CHECKING;**
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR.** 30 mins **Local** _____

**Tools/Equipment/Procedures Needed:**

1. EA-68-4

**REFERENCES:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| A. | EA-68-4 | Emergency Boration | 6 |
| B. | ES-0.1 | Reactor Trip Response | 25 |

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**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. The reactor has tripped with no safety injection and the Immediate Actions of E-0, Reactor Trip or Safety Injection, were completed.
2. The transition was made to ES-0.1 "Reactor Trip Response".

**INITIATING CUES:**

1. You are directed to "Ensure all control rods fully inserted" per step 5 of ES-0.1.
2. Notify the US/SRO when you have completed the action(s) required and are ready to perform step 6 of ES-0.1.

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 1.: Obtain the appropriate procedure(s).<br><br>STANDARD: Operator obtains a copy of ES-0.1 (and EA-68-4 at step 3 of JPM) | ___ SAT<br>___ UNSAT<br>Start Time____ |
| **NOTE: The next two steps are from ES-0.1.**<br><br>STEP 2.: VERIFY control rods fully inserted:<br><br>STANDARD: Check rod bottom lights and rod position indicators for control rod positions, identifies control rods F8 and H14 indicating full out. (RPI high and rod bottom light off.) | ___ SAT<br>___ UNSAT<br><br>**Critical Step** |
| STEP 3.: IF two or more RPIs indicate greater than 12 steps, THEN EMERGENCY BORATED USING EA-68-4.<br><br>STANDARD: Operator transitions to EA-68-4. | ___ SAT<br>___ UNSAT |
| **NOTE: The following steps are from EA-68-4**<br><br>STEP 4.: IF entering this instruction for boration for any of the following: THEN GO TO Section 4.2 or 4.3.<br><br>STANDARD: Operator N/As this step. | ___ SAT<br>___ UNSAT |
| STEP 5.: IF entering this instruction from ES-0.1 due to T-avg less than 540°F, THEN....<br><br>STANDARD: Operator determines this step is not applicable and goes to next. | ___ SAT<br>___ UNSAT |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 6.: | IF entering this instruction from ES-0.1 due to two or more RPIs greater than 12 steps, **AND** two or more associated computer points indicate rods are greater than 12 steps, THEN. | ___ SAT<br>___ UNSAT |
| **NOTE:** | **The operator MUST check the computer to verify that two rods are stuck out.** | |
| STANDARD: | Operator determines two rods are stuck out greater Via **BOTH** RPI's and computer. | |
| STEP 7.: | Go to Section 4.2 if using the BAT | ___ SAT<br>___ UNSAT |
| **NOTE:** | **Since section 4.3 is an acceptable path, if the operator chooses this path give the following cue.** | |
| ***Cue:*** | ***If the operator chooses to go to section 4.3, play US and state that the preferred method is via the BAT.*** | |
| STANDARD: | Operator transitions to section 4.2. | |
| **NOTE:** | **The following steps are from Section 4.2.** | ___ SAT<br>___ UNSAT |
| STEP 8.: | PLACE boric acid transfer pumps to fast speed. | |
| ***Cue:*** | ***IF asked, BAT "A" is aligned to unit 1 via the 1A pump.*** | |
| **NOTE:** | **Standard 1 and 2 can be done in any order.** | |
| STANDARD: | 1) Pump(s) stopped. **Green** light on HS<br>2) Speed selector switch placed on "FAST" position<br>3) Pump(s) restarted, **Red** light on right comes on for fast speed.<br>4) **(Starting only 1A pump is acceptable)** | |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 9.: ADJUST emergency borate Valve FCV-62-138 to maintain flow between 35 and 150 gpm on FI-62-137A.<br>**NOTE: FCV-62-138 will not operate.**<br>STANDARD: Operator recognizes that FCV-62-138 will not operate. Operator continues with procedure. | ___ SAT<br>___ UNSAT |
| STEP 10.: IF boric acid flow less than 35 gpm THEN CLOSE recirc valve for BAT aligned to the blender:<br>1-FCV-62-237 for BAT A<br>**Operator may dispatch an AUO to check the 138 valve breaker**<br>***Cue: If asked, BAT A is aligned to unit 1.***<br>STANDARD: Operator determines there is no flow on FI-62-137A and may close 1-FCV-62-237 (this is not required since FCV-62-138 did not open). | ___ SAT<br>___ UNSAT |
| STEP 11.: IF emergency boration flow NOT established THEN: Ensure VCT outlet valves LCV-62-132 and LCV-62-133 open.<br>STANDARD: Control board positions indicator lights for LCV-62-132 and 133 indicates open by red lights. | ___ SAT<br>___ UNSAT |
| STEP 12.: ALIGN normal boration to VCT outlet: OPEN FCV-62-140 and FCV-62-144<br>STANDARD: Operator Ensures valves open and verifies control board indicator lights for FCV-62-140 and 144 indicate open by RED lights. | ___ SAT<br>___ UNSAT<br>**Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 13.: | CHECK boration flow greater than 35 gpm on FI-62-139. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| NOTE: | Flow should be kept on scale, less than or equal to 50 gpm, to allow calculation of total flow. | |
| STANDARD: | Operator ensures flow rate is greater than 35 gpm | |
| STEP 14.: | MAINTAIN boric acid flow between 35 and 150 gpm. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator monitors flow and ensures it remains between 35 and 50 gpm [Should not exceed full scale of indicator] | |
| STEP 15.: | MAINTAIN pressurizer level between 25% and 60%. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***If pzr level is not within this band, after operator makes adjustments to charging and letdown; cue them that level is within proper range.*** | |
| STANDARD: | Operator monitors pzr level to maintain 25% to 60%. | |
| STEP 16.: | CHECK T-avg stable or trending to program setpoint. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***If T-avg is dropping, CUE: T-avg is stable.*** | |
| STANDARD: | Operator checks T-avg stable or trending to program setpoint. | |
| STEP 17.: | IF FR-S.1 ATWS or FR-S.2 Loss of core Shutdown condition exists, THEN.... | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator will N/A this step. | |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 18.: | IF emergency boration required for RCS cooldown, Then DETERMIE required boric acid volume based on T-avg and RCP status: | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator N/As this step. | |
| STEP 19.: | IF 2 or more control rods NOT fully inserted, THEN DETERMINE boric acid volume as follows: | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator determines that 5040 gallons of boric acid are required. | |
| STEP 20.: | CALCULATE time to inject boric acid volume determined in step 8 or 9 at flow rate established in previous steps: | ___ SAT<br>___ UNSAT |
| **NOTE:** | **time = 5040 / (flow indicated by FI-62-139)** | **Critical Step** |
| STANDARD: | Operator determines the time required to inject 5040 gallons of boric acid based on the flow rate they establish. | |
| STEP 21.: | WHEN either of the following conditions exists:<br>Boration volume has been injected.<br>OR<br>US directs terminating boration. | ___ SAT<br>___ UNSAT |
| *Cue:* | ***When the operator determines the time, cue them that the time they calculated (use their number) has expired.***<br>***Play US and concur that boration can be terminated.*** | |
| STANDARD: | Operator notifies the US that boration can be terminated and continues to section 4.4 . | |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| **NOTE:** **The following steps are from Section 4.4**<br>STEP 22.: IF emergency boration was initiated by FR-S.1, THEN.....<br>STANDARD: Boration was not initiated by FR-S.1. Operator should N/A this step. | ___ SAT<br>___ UNSAT |
| STEP 23.: If emergency boration was initiated by FR-S.2, THEN<br>STANDARD: Operator should N/A this step. | ___ SAT<br>___ UNSAT |
| STEP 24.: IF CCPIT valves were opened by step 4.3.4, THEN ISOLATE....<br>STANDARD: These valves were not opened. Operator should N/A this step. | ___ SAT<br>___ UNSAT |
| STEP 25.: ENSURE boric acid transfer pumps to slow speed.<br>**NOTE:** **Standard 1 and 2 can be done in any order.**<br>STANDARD: 1) Pump(s) stopped, **Green** light on HS<br>2) Speed selector switch placed on "SLOW" position<br>3) Pump(s) restarted, **Red** light in center comes on for slow speed. | ___ SAT<br>___ UNSAT |
| STEP 26.: THROTTLE OPEN recirc valve for BAT aligned to the blender.<br>**NOTE:** **Repositioning of the valve is not required if not moved previously.**<br>STANDARD: Operator repositions BAT "A" recirculation valve 1-FCV-62-237 to the desired setting by dialing the controller. | ___ SAT<br>___ UNSAT |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 27.: | ENSURE emergency boration Valve FCV-62-138 CLOSED. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator ensures FCV-62-138 is closed by verifying the green light is on the HS with the red light off. | |
| STEP 28.: | ENSURE normal boration valves FCV-62-140 and FCV-62-144 in P-AUTO. | ___ SAT<br>___ UNSAT |
| NOTE: | Closing FCV-62-144 is the critical step. | **Critical Step** |
| STANDARD: | Operator places FCV-62-140 and 144 in P-AUTO. (should verify FCV-144 closed. FCV-140 will remain open in P-AUTO) | |
| STEP 29.: | IF manual emergency borate valve VLV-62-929 was opened.... | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator N/As this step since this valve was not opened. | |
| STEP 30.: | ESTABLISH VCT level between 20% and 60%. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***If VCT level is not within this band, cue them that level is within proper range.*** | |
| STANDARD: | Operator ensures VCT level is between 20% to 60%. | |
| STEP 31.: | Ensure VCT outlet valves ALIGNED.<br>LCV-62-132 OPEN with HS in PULL A-P AUTO and<br>LCV-62-133 OPEN with HS in PULL A-P AUTO. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator ensures the above open and HSs are pulled to A-P AUTO. | |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 32.: | Ensure RWST supply to CCP suction valves ALIGNED for normal operation.<br>LCV-62-135 CLOSED with HS-62-135 in PULL A-P AUTO and<br>LCV-62-136 CLOSED with HS-62-136 in PULL A-P AUTO | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator ensures the above closed and HSs are pulled to A-P AUTO. | |
| STEP 33.: | ENSURE VCT makeup control set for automatic operation. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator verifies HS-62-140B is in Auto and HS-62-140A has a red light. | |
| STEP 34.: | EQUALIZE RCS and pressurizer boron concentrations. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***The CRO will ensure RCS and Pzr boron equalization.*** | |
| STANDARD: | Operator addresses need to turn on a pzr heater to open sprays. | |
| STEP 35.: | Return to procedure in effect. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator transitions back to ES-0.1. | |
| STEP 36.: | Inform the US/SRO that boration is complete. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***Acknowledge the operators report.*** | Stop Time_____ |
| STANDARD: | Operator informs the US/SRO that 5040 gallons of boron has been added for the two stuck rods. | |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 34

## LOSS OF SECONDARY HEAT SINK

Original Signatures on File

PREPARED/ REVISED BY: H J Bush Date/ 9-15-95

VALIDATED BY: * [signature] Date/ 10-14-95

APPROVED BY: Walton Hunt Date/ 10/16/95
(Operations Training Manager)

CONCURRED: ** N/A Date/
(Operations Representative)

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 5 | Transfer from WP. Minor enhancements. | N | 8/19/94 | All | HJ Birch |
| 6 | Incorporate Rev B changes. Chgd performance time to 6 min based on validation time. | Y | 9/15/95 | All | HJ Birch |
| pen/ink | FR-H.1 Rev chg only | N | 1/16/96 | 4 | HJ Birch |
| pen/ink | FR-H.1 Rev chg which chgd criteria loss of heat sink. | N | 5/13/98 | 4 | HJ Birch |
| pen/ink | FR-H.1 Rev chg only | N | 8/22/00 | 4 | SR Taylor |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:** Loss of Secondary Heat Sink

**JA/TA task # :** 3110060601 **(RO)**
0100040101 **(RO)**

**K/A Ratings:**

194001 A1.02 (4.1 - 3.9)
000074 EA1.20 (4.2 - 4.2)
000074 EA1.27 (4.2 - 4.2)
000074 G12 (4.3 - 4.4)
194001 A1.13 (4.3 - 4.1)
000074 EA1.05 (3.9 - 4.1)
000074 G11 (4.5 - 4.6)

**Task Standard:**

Reactor Coolant System feed path established via ECCS injection and both pressurizer PORVs and BLOCK VALVES open to establish a bleed path.

**Evaluation Method :** Simulator ___X_____ In-Plant _____

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**Performer:** _____ Start Time _____
NAME

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Critical steps are identified within the step
2. Sequenced steps identified by an "s"
3. Any UNSAT requires comments
4. Acknowledge any associated alarms.
5. Initialize Simulator in IC: #9. (Use IC 70 if available) Activate **MFs FW07A, B, & C** to inop all AFW pumps
6. Activate **MF ED01**, to initiate a total loss of offsite power.
7. Activate **OVERRIDES ZAOLI343A 20 (and 56, 98, 111)** to hold wide range S/G level indicators at ~20%. **ZAOLR343[1] 20 (and [2], [3], [4])** to hold recorder at 20%.
8. Acknowledge alarms and FREEZE simulator until the operator has been briefed
9. Console operator will role play as CRO and acknowledge/clear alarms as needed.
10. Insure operator performs the following required actions for **SELF-CHECKING;**
    a. Identifies the correct unit, train, component, etc.
    b. Reviews the intended action and expected response.
    c. Compares the actual response to the expected response.

**Validation Time: CR.** 6 mins **Local** _____

**Tools/Equipment/Procedures Needed:**

FR-H.1, steps 5-23.

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 1. | FR-H.1 | Response to Loss of Secondary Heat Sink | 13 |

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**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. Unit 1 has experienced a Reactor Trip due to a total loss of offsite power.
2. A "red path" on "Heat Sink Critical Safety Function" has directed the crew to FR-H.1, "Response to Loss of Secondary Heat Sink".
3. All four S/G levels have been decreasing.
4. Flow to the S/Gs can NOT be established.

**INITIATING CUES:**

1. You are the OATC and the US directs you to reestablish RCS cooling.
2. Your are to perform FR-H.1 beginning at step 5 .
3. Inform the US when an RCS cooling method has been established.

| | |
|---|---|
| STEP 1: Obtain copy of the appropriate procedure.<br><br>STANDARD: Operator obtains a copy of FR-H.1 | ___ SAT<br>___ UNSAT<br>Start Time____ |
| STEP 2: MONITOR heat removal capability: At least two S/G wide range levels less than 25%. (or Pzr press less than 2335)<br><br>STANDARD: Operator checks LI-3-43, 56, 98 and/or LR-3-43 and determines that 1, 2, and 3 S/Gs are less than 25%. | ___ SAT<br>___ UNSAT |
| STEP 3: STOP RCPs.<br><br>STANDARD: Operator stops all 4 RCPs. | ___ SAT<br>___ UNSAT |
| STEP 4: GO TO Caution prior to Step 16.<br><br>STANDARD: Operator Goes to Caution prior to Step 16. | ___ SAT<br>___ UNSAT |
| STEP 5: ACTUATE SI.<br><br>STANDARD: Operator actuates the SI from HS-63-133B on M-4 OR HS-63-133A on M-6 | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 6: VERIFY RCS feed path: CHECK at least one CCP **OR** SI pump running.<br><br>STANDARD: Operator ensures at least one CCP as indicated by red light LIT on HS-62 108A or 104A (and amps indicated on EI-62-108A or 104A) **OR** at least one SI pump is running as indicated by red light LIT HS-63-10 or 15 (and amps indicated on EI-63-12 & 16). (not critical items) | ___ SAT<br>___ UNSAT |

| | |
|---|---|
| STEP 7: CHECK ECCS valves ALIGNED as appropriate:<br>REFER TO EA-68-5, ECCS Injection Mode Alignment.<br>REFER TO ES-1.3, Transfer to RHR Cntmt Sump.<br>REFER TO ES-1.4, Transfer to Hot Leg Recirc.<br><br>***Cue:*** ***The CRO has verified ECCS valve alignment.***<br><br>STANDARD: Operator identifies alignment should be verified via EA-63-5. | ___ SAT<br>___ UNSAT |
| **NOTE:** **The next steps ESTABLISH RCS Bleed path**<br><br>STEP 8: CHECK power to pressurizer PORV block valves AVAILABLE and block valves OPEN.<br><br>STANDARD: Operator verifies power is on Block Valves FCV-68-332 and FCV-68-333 and that both Block Valves OPEN as indicated by red lights ON | ___ SAT<br>___ UNSAT |
| STEP 9: OPEN pressurizer PORVs.<br><br>STANDARD: Operator ensures BOTH PZR PORVs FCV-68-340 & 334 OPEN by placing HSs, HS-68-340A & 334A in the open position and verifies red lights ON | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 10: CHECK RCS bleed path ADEQUATE:<br>Pzr PORVs OPEN<br>Pzr PORV block valves OPEN<br><br>STANDARD: Operator verifies the actions of the previous steps were completed. | ___ SAT<br>___ UNSAT |
| **NOTE:** **The following 2 steps may not be performed. The task has been met at this point.**<br><br>STEP 11: Perform Steps 1 through 12 of E-0, WHILE continuing with this procedure.<br><br>***Cue:*** ***The CRO will perform E-0 1st 12 steps.***<br><br>STANDARD: Operator notifies the US/SRO of the need to perform steps 1 thru 12 of E-0 while he/she continues with FR-H.1. | ___ SAT<br>___ UNSAT |

| | | |
|---|---|---|
| STEP 12: | MAINTAIN RCS heat removal:<br><br>STANDARD: Operator verifies flow thru the CCPIT on FI-63-170 and Pressurizer PORVs OPEN. | ___ SAT<br>___ UNSAT |
| STEP 13; | Inform the US/SRO when feed and bleed of the RCS has been established.<br><br>STANDARD: Operator informs the US/SRO when feed and bleed of the RCS has been established. | ___ SAT<br>___ UNSAT<br>Stop Time____ |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 63AP

## S/G Tube Rupture
## Depressurize the RCS

Original Signatures on File

PREPARED/
REVISED BY: H J Beck Date/ 9-16-95

VALIDATED BY: * [signature] Date/ 10-14-95

APPROVED BY: Walton W. Hunt Date/ 10/17/95
(Operations Training Manager)

CONCURRED: [signature] Date/ 10/21/95
(Operations Representative)

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 0 | Initial issue | Y | 9/16/95 | All | HJ Birch |
| pen/ink | Clarified Standard at step 9 per performance comments. | N | 10/25/99 | 7 | SR Taylor |
| pen/ink | Changed method of inserting PORV failure to manual from Event trigger since an appropriate event trigger is not available. | N | 09/14/00 | 4,7 | SR Taylor |
| pen/ink | Increased severity of Spray valve failure to 100%. | N | 10/04/00 | 4,5 | SR Taylor |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**
S/G Tube Rupture, Depressurize the RCS

**JA/TA task # :** 0100040101 **(RO)** 0000380501 **(RO)**
0100010101 **(RO)**

**K/A Ratings:**
000038 EA1.11 (3.8 - 3.9)
000038 EK3.01 (4.1 - 4.3)
000038 EA1.01 (4.5 - 4.4)
000038 EA2.15 (4.2 - 4.4)
000038 EK3.06 (4.2 - 4.5)

**Task Standard:**
RCS depressurized to the Ruptured S/G pressure in accordance with E-3. Stops RCP #1 to stop depressurization.

**Evaluation Method :** Simulator ___X_____ In-Plant _____

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**Performer:** _____
NAME

Start Time _____

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____

Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Sequenced steps identified by an "s"
2. Any UNSAT requires comments
3. Acknowledge any associated alarms.
4. Initialize Simulator in IC: #10 (Use IC-56 if available). Activate **MF #TH05C at 75%** severity.
5. **CONSOLE OPERATOR WILL ACTIVATE MF RC06B @ 100% AT JPM STEP 4 AFTER OPERATOR OPENS PCV-68-340D TO KEEP IT OPEN ONCE IT HAS BEEN OPENED.**
6. Take all actions of E-3 thru Step #16, have S/G #3 isolated and RCS cooled to target temperature. Ensure RCS press increases enough to get ≥ 60°F subcooled.
7. Console operator should acknowledge alarms not associated with JPM
8. Insure operator performs the following required actions for **SELF-CHECKING;**
   a Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR.** 6 mins **Local** _____

**Tools/Equipment/Procedures Needed:**
E-3, "Steam Generator Tube Rupture", step 17 thru 22

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 1. | E-3 | Steam Generator Tube Rupture | 11 |

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**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

Unit 1 has experienced a SGTR on #3 S/G.
The operators have transitioned from E-0 to E-3, "Steam Generator Tube Rupture".
#3 S/G has been isolated and RCS cooled to target T-hot per E-3.

**INITIATING CUES:**

You are the Unit 1 OATC and are to commence depressurization of the RCS in accordance with E-3 beginning at step 17.
Notify the Unit 1 SRO when RCS depressurization has been terminated.

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 1.: | Obtain a copy of the appropriate procedure. | ___ SAT<br>___ UNSAT<br>Start Time____ |
| STANDARD: | Operator obtains a copy of E-3, commences actions at step #17. | |
| STEP 2.: | CHECK ruptured S/G pressure stable or rising. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator monitors S/G pressure using PI's-1-20A & 20B (or Press Recorder), to ensure pressure is stable or rising. | |
| STEP 3.: | CHECK RCS subcooling based on core exit T/Cs greater than 60°F. | ___ SAT<br>___ UNSAT |
| NOTE: | **IF subcooling is less than 60°F when the operator checks Exo Sensor then CUE him/her that subcooling is 70°F.** | |
| STANDARD: | Operator monitors Exo Sensors to determine subcooling greater than 60°F. | |
| STEP 4.: | DEPRESSURIZE RCS to minimize break flow and refill pressurizer:<br>CHECK normal pressurizer spray available.<br>INITIATE maximum available pressurizer spray. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| NOTE: | **Console operator must insert malfunction MF RC06B @ 100% after operator opens PCV-68-340D to ensure it stays open.** | |
| STANDARD: | Operator opens PCV-68-340B and PCV-68-340D (red lights ON). (Should go to 100% open demand signal) | |
| STEP 5.: | CHECK depressurization rate ADEQUATE. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator will determine if depressurization rate is adequate. Operator may decide it is not and go to RNO column. | |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| **NOTE:** **If operator decides to go to the RNO column, then this step is required. If not, N/A this JPM step.**<br><br>STEP 6.: DEPRESSURIZE RCS USING one pressurizer PORV:<br>CHECK at least on pzr PORV AVAILABLE.<br>OPEN one pzr PORV<br><br>STANDARD: Operator verifies power on one PORV and its associated block valve open, Then opens ONE PORV. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 7.: CONTINUE depressurization UNTIL any of the following conditions SATISFIED:<br>**BOTH**<br>RCS pressure less than RUPTURED S/G pressure<br>**AND** Pzr level greater than 10%<br>**OR**<br>Pressurizer level greater than 65 %<br>**OR**<br>RCS subcooling based on core exit T/Cs less than 40°F.<br><br>STANDARD: Operator continues depressurization until any one of following conditions exist:<br>a) RCS pressure (PI-68-62, 66, 69) < rupture S/G pressure (PI-3-20A & B) **AND** Pzr level > 10%.<br>b) Pressurizer level (LI-68-320, 335, 339) > 65%.<br>c) RCS subcooling < 40°F (TI-94-101, 102 [Exo Sensors] or RCS temperature/pressure (using PAM instrument) | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 8.: CLOSE pressurizer PORV.<br><br>**NOTE:** **This step only required if PORV was opened.**<br><br>STANDARD: Operator closes any PORV opened in previous steps and verifies closed by green lights on HS ON. | ___ SAT<br>___ UNSAT<br>**Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 9.: | CLOSE spray valves: Normal and Auxiliary. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| **NOTE:** | **PCV-68-340D is failed open. Operator will go to RNO for this valve.** | |
| STANDARD: | Operator closes PCV-68-340B and verifies aux sprays closed by green light on handswitch. Operator recognizes the 340D did not close. | |
| STEP 10.: | STOP RCP supplying failed spray valve. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STANDARD: | Operator stops RCP #1 and verified stopped by green light on HS LIT. | |
| **NOTE:** | **This step only required if the PORV was opened.** | ___ SAT<br>___ UNSAT |
| STEP 11.: | CHECK RCS pressure RISING | |
| STANDARD: | Operator checks RCS pressure on Exo Sensor or Pam PIs and insures the depressurization has been stopped. | |
| STEP 12.: | Notify the US/SRO that depressurization has been terminated. | ___ SAT<br>___ UNSAT<br>Stop Time____ |
| STANDARD: | SAME | |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

# JPM # 74

## Operate the TDAFW pump Locally

Original Signatures on File

PREPARED/ REVISED BY: H J Bench Date/ 11-14-95

VALIDATED BY: * N/A Date/

APPROVED BY: Watkins (Operations Training Manager) Date/ 11-15-95

CONCURRED: ** N/A (Operations Representative) Date/

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 3 | Transfer from WP. Minor enhancements. | N | 8/24/94 | All | HJ Birch |
| 4 | SO-3-2 Rev change. Added step to ensure PCV-3-183 controlling. Minor enhancements. | N | 2/1/95 | 4,6 | HJ Birch |
| 5 | Incorporated previous pen/inks which chgd performance time from 5 to 16 min and cue that all prereqs are complete. SO-3-2 Rev chg to change operation of TDAFW LCVs. | N | 11/14/95 | 4,5 | HJ Birch |
| | Proceedure chg reworded step 4. Added cues to steps 5 & 6. | N | 3/7/96 | 4,5 | HJ Birch |
| pen/ink | O-3-2 Rev chg | N | 10/25/96 | 4 | HJ Birch |
| pen/ink | O-3-2 Rev chg | N | 12/13/96 | 4 | HJ Birch |
| pen/ink | O-3-2 Rev chg | N | 6/5/97 | 4 | HJ Birch |
| pen/ink | O-3-2 Rev chg. Chg range of ejector pressure. | N | 1/22/98 | 4,7 | HJ Birch |
| pen/ink | SO-3-2 revision had no impact. Revised K/A ratings. Reformatted critical steps. | N | 9/25/98 | All | JP Kearney |
| pen/ink | Revised Step 10 and added new step 11 to agree with 0-SO-3-2 Revision. Does not affect the flow of the JPM. | N | 10/14/99 | 2,4,7 | SR Taylor |
| pen/ink | Clarified Cue in step 5 based on performance feedback. | N | 10/25/99 | 6 | SR Taylor |
| pen/ink | Updated step 5 based on 1-SO-3-2 rev 24, correct UNID step 7. | N | 8/29/00 | 4,6,7 | SR Taylor |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**AUO/RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**
Operate the TDAFW Pump Locally

**JA/TA TASK #**: 0610060104 **(AUO)** 0000050504 **(AUO)**

**K/A Ratings:**
068AK3.03 (3.7/4.3) 068AA1.02 (4.3/4.5)
054AA1.02 (4.4/4.4)

**Task Standard:**
Locally start and control the Unit 1 TDAFW Pump per 1-SO-3-2 section 8.2.

**Evaluation Method** : Simulator _____ In-Plant ____X____

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**Performer:** _____ Start Time _____
NAME

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Sequenced steps identified by an "s"
2. Any UNSAT requires comments
3. Insure operator performs the following required actions for **SELF-CHECKING;**
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR.** _____ **Local** 16 minutes

**Tools/Equipment/Procedures Needed:**
1-SO-3-2 section 8.2

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 1. | 1-SO-3-2 | Auxiliary Feedwater System | 24 |

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**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All steps shall be simulated for this JPM. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. Unit 1 is in Mode 3 following a refueling outage, Reactor Trip breakers are open.
2. 1A-A motor-driven AFW pump is INOPERABLE at this time.
3. A fire in the main control room in panel M-4 required evacuation to the Aux Control Room.

**INITIATING CUES:**

1. The fire in the control room caused 1B-B motor-driven AFW pump to trip, it can not be restarted at this time.
2. The OATC/CRO has directed you, the Unit 1 Aux. Bldg. AUO to locally START the turbine-driven AFW pump and perform initial inspections per 1-SO-3-2 section 8.2.
3. The turbine-driven AFW pump is aligned for STANDBY.
4. The level control valves are to remain in CLOSED.
5. Inform the Unit 1 OATC/CRO when the turbine-driven AFW pump is in service.

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 1.: | Operator obtains a copy of the appropriate procedure. | ___ SAT<br>___ UNSAT<br>Start Time____ |
| *Cue:* | ***AS operator addresses prerequisites, inform them that each is complete.*** | |
| STANDARD: | Operator obtains a copy of 1-SO-3-2 section 8.2. | |
| STEP 2.: | Ensure AFW system is in STANDBY. | ___ SAT<br>___ UNSAT |
| **NOTE:** | **The AFW pump is in standby per the initiating cue.** | |
| STANDARD: | Operator addresses standby readiness of the TDAFW pump. | |
| STEP 3.: | Ensure by visual inspection that the pump is ready for operation. | ___ SAT<br>___ UNSAT |
| *Cue:* | ***- pump appearance is normal (seal leakoff, etc.)***<br>***- oil levels normal in bulbs and sumps***<br>***- FCV-51 is latched and the mechanical overspeed linkage is to the left with trip lever in the horizontal position.*** | |
| STANDARD: | TDAFW Pump should be checked as a minimum for the following:<br>Mech. Overspeed Reset<br>FCV-1-51 Latched<br>Lubrication<br>Pump appearance | |
| Step 4.: | Open 1-3-918 and 919 strainer blow off valves, when steam line is clear then CLOSE 1-3-918 and 919. | ___ SAT<br>___ UNSAT |
| NOTE: | If the operator questions the need for this step since this is a total loss of AFW, Inform them (as the SRO) that this step should be performed, if possible, to help ensure the pump starts without problems. | |
| *Cue:* | ***No moisture is coming from the steam line traps*** | |
| STANDARD: | Operator opens 1-3-918 & 919 to blow down moisture traps by turning HW CCW. When no moisture is observed, then closes the valves by turning HW CW. | |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 5.: | VERIFY TDAFW pump LCVs in the CLOSED position from MCR 1-XX-3-148 or locally at valve. | ___ SAT<br>___ UNSAT |
| *Cue:* | ***When operator checks from MCR or locally, all 4 LCVs are in the closed positon.*** | |
| STANDARD: | The TDAFW LCV's should be CLOSED position. | |
| STEP 6.:<br>**'S'** | Place XS-46-57 in AUXILIARY position. AFWP A-S Backup control Transfer Switch (located outside TDAFW Pump Room). | ___ SAT<br>___ UNSAT |
| *Cue:* | ***Switch is in the Auxiliary position.*** | **Critical Step** |
| STANDARD: | Operator places XS-46-57 in AUXILIARY position. | |
| STEP 7.:<br>**'S'** | Start the pump by pushing OPEN button on 1-HS-1-51B, located in TDAFW Pump Room | ___ SAT<br>___ UNSAT |
| *Cue:* | ***FCV-1-51 RED light ON, Green light off, pump speed starting to increase.*** | **Critical Step** |
| STANDARD: | Operator starts the TDAFW Pump by pushing the OPEN pushbutton on 1-HS-1-51B. | |
| STEP 8.: | Verify TDAFW Pump comes up to speed, ≈3970 rpm, on SI-46-56B (on L-381 cabinet). | ___ SAT<br>___ UNSAT |
| *Cue:* | ***SI-46-56B indicates 3970 rpm.*** | |
| STANDARD: | Operator verifies speed indicated on SI-46-56B. | |

Job Performance Checklist:

| | STEP/STANDARD | SAT/UNSAT |
|---|---|---|
| STEP 9.: | CONTROL S/G level as necessary by PLACING the applicable level control valve handswitches in the OPEN position until desired S/G level is achieved, THEN CLOSE. | ___ SAT<br>___ UNSAT |
| STANDARD: | The initiating cues requested that the LCVs be left closed. Operator ensures handswitches are in the closed position. | |
| STEP 10.: | If TDAFWP inlet steam supply pressure is ~1000 psig, **THEN VERIFY 1-PCV-3-183,** Ejector Pressure Control Valve is controlling pressure at approximately 120 psig as indicated on **1-PI-3-184** | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***TDAFWP Steam Inlet pressure is ~1000psig, 1-PI-3-184 is reading ~120 psig.*** | |
| STANDARD: | Operator verifies 1-PCV-3-183 is controlling pressure at ~120psig. | |
| STEP 11.: | **PERFORM** visual inspection to determine if steam is leaking down the turbine shaft through the gland steam seals. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***No steam is leaking down the turbine shaft.*** | |
| STANDARD: | Operator verifies no steam is leaking down the turbine shaft. | |
| STEP 12.: | Inform OATC/CRO that the pump is in service. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***Leave pump running.*** | Stop Time____ |
| STANDARD: | Operator informs OATC/CRO that the pump is in service. | |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 77

## Perform D/G Load Test on 1B-B D/G

**PREPARED/ REVISED BY:** _____ Date/ _____

**VALIDATED BY:** * _____ Date/ _____

**APPROVED BY:** _____ Date/ _____
(Operations Training Manager)

**CONCURRED:** ** _____ Date/ _____
(Operations Representative)

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 8 | Transfer from WP. Procedure change for manual start. | N | 8/6/94 | All | HJ Birch |
| 9 | Deleted shutdown of D/G. Used validation time of 77-AP. | N | 12/13/94 | All | HJ Birch |
| 10 | SI-7 Change to use stop watch instead of visicorder. | N | 5/15/95 | All | HJ Birch |
| 11 | SI-7B Rev chg. Incorp several minor pen/ink chgs including one to tie on at 12:00. Deleted stop watch timing and went to visicorder timing. | N | 11/20/97 | 4-8 | HJ Birch |
| pen/ink | SI-7B Rev chg. Chg Visicorder to D/G-DAQ. Add step to record dc amps. | N | 5/11/98 | 4 | HJ Birch |
| 12 | Revised DG limits in applicable steps due to SI-7B revision. No impact on JPM flow. Revised task numbers and K/A ratings. Reformatted critical steps. | N | 9/24/98 | All | JP Kearney |
| 13 | Revised to reflect revision changes in SI-7B, changed critical steps for consistency with JPM 77-5AP reviewed/approved 4/20/99, corrected typos and incorporated comments from 1999 cycle 5 requal performances of JPM 77-2AP | N | 10/14/99 | All | SR Taylor |
| pen/ink | minor change to step 6, and Revision update | N | 8/16/00 | 4,7 | SR Taylor |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**
Perform D/G Load Test on 1B-B D/G

**JA/TA task # :** 0640020101 0640040101 0640060101 **(RO)**

**K/A Ratings:**

| | |
|---|---|
| 064A4.01 (4.0/4.3) | 064A 2.09 (3.1/3.3) |
| 064A4.02 (3.3/3.4) | 064A 2.03(3.1/3.1) |
| 064A4.03 (3.2/3.3) | 064A2.05 (3.1/3.2) |

**Task Standard:**
Perform D/G Operability Test per 1-SI-OPS-082-007.B, specifically manually start and load the D/G and verify loading.

**Evaluation Method :** Simulator ___X_____ In-Plant _____

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**Performer:** _____ Start Time _____
NAME

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Sequenced steps identified by an "s"
2. Any UNSAT requires comments
3. Acknowledge any associated alarms.
4. Initialize Simulator in IC: #10. Lower 1B-B voltage using handswitch 82-42
5. **This JPM will require a console operator to reset 86 LOR**
6. Operator will need assistance during D/G start (at step 5), and loading (at step 18). An extra simulator operator or the console operator needs to be present to perform this timing.
7. Insure operator performs the following required actions for **SELF-CHECKING;**
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR** 33 minutes **Local** _____

**Tools/Equipment/Procedures Needed:**

1. 1-SI-OPS-082-007.B, Through Section 6.1 and Appendix "C".
2. "Signed off" copy of entire section 4.

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 1. | 1-SI-OPS-082-007.B | Electrical Power System Diesel Generator 1B-B | 23 |

## READ TO OPERATOR

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. Both units are at 100% RTP.
2. All systems are OPERABLE, except for the 1B-B D/G, 0-GO-16 has been completed on all the A Tr. equipment.
3. Maintenance has been completed on the 1B-B D/G and the clearance has been removed.
4. The D/G has been rolled and is in standby alignment using 0-SO-82-2.
5. The AUO at the D/G building has completed Appendix A of 1-SI-OPS-082-007.B and all parameters are within limits.
6. The U1 Control Room AUO has verified breaker 1934 is in the Disconnect position.
7. SI-166.36 is NOT required.
8. DG-DAQ has been installed per Appendix J
9. Room fire protection is in service.

**INITIATING CUES:**

1. The U1 US/SRO has reviewed the completed work package for the 1B-B D/G, all that remains is to perform 1-SI-OPS-082-007.B for the PMT.
2. You are an extra unit operator and have been assigned to perform the SI on 1B-B D/G.
3. The PMT requires the AMBIENT MANUAL START method for testing.
4. Notify the US when the test is complete.

Job Performance Checklist:

| | STEP/STANDARD | SAT/UNSAT |
|---|---|---|
| STEP 1.: | Operator obtains a copy of the appropriate procedure. | ___ SAT<br>___ UNSAT<br>Start Time____ |
| **NOTE:** | **Initial conditions cover steps up to transition to App "C".** | |
| STANDARD: | Operator obtains a copy of 1-SI-OPS-082-007.B. Performance of task will start with Appendix C. | |
| STEP 2.: | Ensure 0-HS-82-48 1B-B D/G mode selector switch in the UNIT position. | ___ SAT<br>___ UNSAT |
| STANDARD: | 0-HS-82-48 in UNIT position on O-M-26. Green light ON. | |
| STEP 3.: | Place 1-HS-57-74 D/G 1B-B Synchronize Switch in the SYN position. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| **NOTE:** | **0-EI-82-35 and 0-XI-82-33 will indicate running voltage & frequency.** | |
| STANDARD: | 1-HS-57-74 in "SYN" position on O-M-26 | |
| STEP 4. | **NOTIFY** D/G-DAQ Operator to **START** the D/G-DAQ | ___ SAT<br>___ UNSAT |
| **NOTE:** | **Operator should coordinate the start of the D/G-DAQ just prior to D/G start actuation.** | |
| ***Cue*** | ***Console operator Play role of D/G-DAQ operator: D/G-DAQ computer is running.*** | |
| STANDARD: | Operator notifies the ***D/G-DAQ*** operator to start the ***D/G-DAQ***. | |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 5.: | Proceed with the countdown: 3,2,1, start and **DEPRESS** 0-HS-82-46A DG 1B-B Emergency Start Switch. | ___ SAT<br>___ UNSAT |
| STANDARD: | 0-HS-82-46A momentarily depressed. Green light will go "out" and red light will come "on" above D/G mimic. [Not critical: D/G running alarm will ANN to indicate D/G > 40 rpm. Incoming voltage and frequency are verified on 0-EI-82-34 and 0-XI-82-32.] | **Critical Step** |
| STEP 6.: | ENSURE 1-FCV-67-67, ERCW cooling water supply valve is OPEN. | ___ SAT<br>___ UNSAT |
| STANDARD: | ERCW valve 1-FCV-67-67 red light comes "on" and green light goes "out" on 0-M-27A panel. | |
| STEP 7.: | **RECORD** the steady state values for the following:<br>0-EI-82-34, DG 1B-B incoming Voltage.<br>0-XI-82-32, DG 1B-B incoming Frequency. | ___ SAT<br>___ UNSAT |
| STANDARD: | D/G voltage (as indicated on INC Voltage Gen 1B-B 0-EI-34) is ≥ 6800 but ≤ 7260 volts and frequency (as indicated on INC Freq Gen 1B-B 0-XI-82-32) is ≥ 58.8 Hz and ≤ 61.2 Hz | |
| STEP 8.: | RECORD Voltage Regulator Control Current. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***Voltage Regulator Control Current is 1.8 dc amps.*** | |
| STANDARD: | Operator records Voltage Regulator Control Current. | |
| STEP 9.: | **ENSURE** D/G 1B-B **86 LOR** red light DARK, at D/G local relay panel. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***Role play as D/G operator - 86 LOR local red light is not illuminated.*** | |
| STANDARD | Operator verifies red light on 86 LOR at D/G is not illuminated. | |

Job Performance Checklist:

| | STEP/STANDARD | SAT/UNSAT |
|---|---|---|
| STEP 10.: | **RESET 86 LOR** lockout relay, on D/G local relay panel and **VERIFY** reset by amber light 0-XI-82-49 illuminated on 0-M-26. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | **When the D/G AUO is requested to reset 86LOR, the Console operator should insert MRF EGR08 RESET to reset 86LOR and then notify operator - 86 LOR is reset.** | **Critical Step** |
| STANDARD: | 86 LOR is reset and amber light on 0-M-26 is verified lit. | |
| STEP 11.: | **RECORD** from the ***D/G-DAQ*** computer the time required to achieve ≥ 58.8 HZ and ≥ 6800 Volts. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***Time was 9.5 seconds for D/G-DAQ.*** | |
| STANDARD: | Operator ensures the DG accelerates to at least 900 rpm and Voltage and Frequency are within limit within the required 10 seconds. (Evaluator can sign for Tech Support) | |
| STEP 12.: | Record start as ambient in 0-SI-OPS-082-007.M. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***U2 CRO will perform the logging.*** | |
| STANDARD: | Operator addresses logging the start in 0-SI-OPS-082-007.M. | |
| STEP 13.: | Return to Section 6.1, Step 9. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator returns to the appropriate section and step of the procedure. (Exits Appendix C) | |
| STEP 14.: | Place 0-HS-82-48 Mode Selector Switch in PARALLEL position. | ___ SAT<br>___ UNSAT |
| STANDARD: | 0-HS-82-48 rotated to the PARALLEL position. Red light "on" & green light "off". | **Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 15.: | Adjust 0-HS-82-43 DG 1B-B Speed Control Switch to obtain a synchroscope indication of slowly rotating in fast direction. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator adjusts speed control hand switch 0-HS-82-43 such that synchroscope (XI-82-31) is moving slowly in the fast direction (slowly clockwise). | **Critical Step** |
| STEP 16.: | Ensure 0-HS-82-42 DG 1B-B Voltage Regulator Low-Raise Switch in the PULL-P-AUTO position and match incoming voltage with running voltage. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator places HS-82-42 in PULL-P-AUTO and adjusts D/G voltage such that incoming voltage (EI-82-34) and running voltage (EI-82-35) are approximately equal. | **Critical Step** |
| STEP 17.: | Close breaker 1914 via 1-HS-57-73A, 1914 DG 1B-B to SD BD 1B-B, when synchroscope DG 1B-B 0-XI-82-31 indicates 12 O'clock position. | ___ SAT<br>___ UNSAT |
| STANDARD: | Breaker 1914 Closes and remains closed as indicated by red light "on" & green light "off' above 1-HS-57-73A.<br><br>(Operator should close D/G 1B-B breaker 1914 when synchroscope indicates 12:00 (o'clock) position) | **Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 18.: | Immediately load D/G to ≥ 1 MW.<br>a. Place 0-HS-82-43 in RAISE and obtain ≥ 1MW on 0-EI-82-40A.<br>b. Adjust 0-HS-82-42 to 0.75 MVARS outgoing as indicated on 0-EI-82-41A.<br>c. Ensure DG indications match the expected indications of Table in Note 4. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| **NOTE:** | **The operator will NOT be able to manipulate switches and stop watch alone, allow the console operator to time the loading of the D/G.** | |
| **NOTE:** | **SI steps 18 and 19 must be completed within 60 seconds to satisfy the SI acceptance criteria.** | |
| STANDARD: | Operator raises DG speed adjust and adjusts MVARS to achieve ≥ 1MW on 0-EI-82-40A and 0.75 MVARS outgoing as indicated on 0-EI-82-41A. Operator ensures Mv and amps are as expected for MW load per table in Note 4 of section 6.1 of 1-SI-OPS-082-007.B. | |
| STEP 19.: | Immediately load D/G to ≥ 3.96 and ≤ 4.4 MW.<br>a. Place 0-HS-82-43 in RAISE and obtain ≥ 3.96 and ≤ 4.4 MW within 60 seconds on 0-EI-82-40A.<br>b. Adjust 0-HS-82-42 to ≥ 0.75 MVARS and ∠ 2.37 MVARS outgoing as indicated on 0-EI-82-41A. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| **NOTE:** | **The operator will NOT be able to manipulate switches and stop watch alone, allow the console operator to time the loading of the D/G.** | |
| STANDARD: | Operator loads D/G to ≥ 3.96 MW in ≤ 60 seconds as indicated on EI-82-40A. Operator ensures MVARS and AMPS are as expected for MW load per table in Note 4 of section 6.1 of 1-SI-OPS-082-007.B. | |
| STEP 20.: | Record the following: A) loading time B) load achieved and C) time load achieved. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator records the required data. | |

Job Performance Checklist:

| | STEP/STANDARD | SAT/UNSAT |
|---|---|---|
| STEP 21.: | Notify the AUO at the D/G bldg to perform Appendix B AND Provide D/G Bldg AUO time D/G achieved final load. | ___ SAT<br>___ UNSAT |
| *Cue:* | ***Acknowledge load time. Inform UO that the first set of readings for Appendix B has been completed.*** | |
| STANDARD: | Operator contacts the AUO and instructs him/her to perform Appendix B of 1-SI-OPS-082-007.B. | |
| STEP 22.: | Maintain load at predetermines test value for ≥ 60 minutes by adjusting 0-HS-82-43, DG 1B-B Speed Control Switch as needed. | ___ SAT<br>___ UNSAT |
| *Cue:* | ***After the operator checks load stable state: The US informs you that the unit 2 CRO will shut down the D/G at the end of the 1 hour run.*** | Stop Time____ |
| STANDARD: | Operator checks load to ensure stable between 3.96 & 4.4 MW. | |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 80

## Local Control of Charging Flow
## (FCV-62-93)

Original Signatures on File

PREPARED/
REVISED BY: H J Burt Date/ 10-19-95

VALIDATED BY: * N/A Date/

APPROVED BY: Walter W. Hunt Date/ 10/19/95
(Operations Training Manager)

CONCURRED: ** N/A
(Operations Representative) Date/

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 4 | Transfer from WP. Add as AUO task. | N | 9/20/94 | All | HJ Birch |
| pen/ink | 1-SO-62-1 Rev Chg. Added date to cover sheet. Chgd performance time based on 6 performances. Deleted UO task, since it was a "Direct" task. | N | 10/19/95 | 3,4 | HJ Birch |
| pen/ink | 1-SO-62-1 Rev chg only | N | 11/17/95 | 4 | HJ Birch |
| pen/ink | 1-SO-62-1 Rev chg only | N | 10/25/96 | 4 | HJ Birch |
| pen/ink | Added cue to step 6. | N | 1/13/97 | 6 | HJ Birch |
| | 1-SO-62-1 Rev chg only | N | 8/11/97 | 4 | HJ Birch |
| | 1-SO-62-1 Rev chg only. | N | 5/12/98 | 4 | HJ Birch |
| pen/ink | 1-SO-62-1, revision 19 had no impact. Revised K/A ratings. Reformatted critical steps. | N | 8/18/98 | All | JP Kearney |
| pen/ink | 1-SO-62-1 rev update only | N | 10/16/98 | 4 | JP Kearney |
| pen/ink | 1-SO-62-1 rev update only | N | 8/17/00 | 4 | SR Taylor |
| pen/ink | 1-SO-62-1 rev update only | N | 12/22/00 | 4 | W. R. Ramsey |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**AUO/RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**
Local Control of Charging Flow (FCV-62-93)

**JA/TA TASK #:**
0040390104 (**AUO**)

**K/A Ratings:**
011A4.04 (3.2/2.9)
028AA1.07 (3.3/3.3)

**Task Standard:**
FCV-62-93 placed in local manual control and charging/seal flow has been adjusted to nominal values.

**Evaluation Method** : Simulator _____ In-Plant _____X_____

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**Performer:** _____ Start Time _____
NAME

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Sequenced steps identified by an "s"
2. Any UNSAT requires comments
3. Insure operator performs the following required actions for **SELF-CHECKING;**
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR.** _____ **Local** 9 minutes

**Tools/Equipment/Procedures Needed:**
1-SO-62-1, section 8.4

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 1. | 1-SO-62-1 | CVCS | 24 |

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**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All steps shall be simulated for this JPM. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. Unit 1 is in Mode 1, 100% RTP
2. Pressurizer Level is 60% and on program.
3. Normal letdown and charging is in service with 1A-A CCP running
4. Plant conditions require local control of 1-FCV-62-93 (charging) for maintenance on the normal controller.

**INITIATING CUES:**

1. 1-HIC-62-93 charging flow controller is failing to properly control pressurizer level in automatic.
2. Troubleshooting has revealed that the flow modifier (1-FM-62-93B) must be replaced/repaired.
3. You are the unit 1 Aux Bldg AUO and are to establish local control of 1-FCV-62-93.

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 1.: | Obtain a copy of the appropriate procedure. | ___ SAT<br>___ UNSAT<br>Start Time____ |
| STANDARD: | Operator obtains a copy of 1-SO-62-1 section 8.4. | |
| STEP 2.: | OBTAIN permission from the U-1 SRO. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***SRO grants permission for local control.*** | |
| STANDARD: | Operator request permission from U-1 SRO to operate 1-FCV-62-93 locally. | |
| STEP 3.: | ESTABLISH communications between the local operator at panel 1-L-112A and the UO in the MCR. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator calls the MCR and establishes communications with the OATC. | **Critical Step** |
| STEP 4.: | ENSURE that a CCP is in service and that 1-FCV-62-98 & 99 are OPEN. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***1A-A CCP is running, status lights on M-6 indicate FCV-62-98 & 99 are open.*** | |
| STANDARD: | Operator request UO to verify pump on and valves open. | |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 5.: | MATCH the setpoint (red pen) and actual reading (black pen) using 1-HIC-62-93B. | ___ SAT<br>___ UNSAT |
| NOTE: | **Turning knob clockwise will raise setpoint. (Direction to turn during JPM depends on "as found" position of red pen in relation to black pen)** | **Critical Step** |
| *Cue:* | ***If operator turns knob in wrong direction, Cue that setpoint is decreasing.***<br>***If turned in correct direction, Cue red and black pens are matched.*** | |
| STANDARD: | Operator matches red with black pen on 1-HIC-62-93B by rotating "increase" knob. | |
| STEP 6.: | PLACE 1-HIC-62-93B in MANUAL. | ___ SAT<br>___ UNSAT |
| *Cue:* | ***1-HIC-62-93B is in the manual position.*** | **Critical Step** |
| STANDARD: | Operator rotates HIC-62-93B to the MANUAL position. | |
| STEP 7.: | VERIFY 1-XI-62-93 on panel 1-M-5 is illuminated. | ___ SAT<br>___ UNSAT |
| *Cue:* | ***UO informs operator that the light is ON.*** | |
| STANDARD: | Communicates with the OATC to verify light is ON. | |
| STEP 8.: | ADJUST charging flow as necessary to meet requirements of UO in the MCR. | ___ SAT<br>___ UNSAT |
| Note: | Charging flow can be monitored on 1-FI-62-93B (pnl 1-L-112A). | Stop Time____ |
| *Cue:* | ***Charging flow is ≈87 gpm. No further adjustments will be needed at this time.*** | |
| STANDARD: | Operator adjusts charging flow as necessary via communication with the UO in the MCR to establish/maintain pressurizer level on program. | |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| **End of JPM** | |

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 98

## Align Component Cooling Water Pump 1B-B to Supply the B Train Header

Original Signatures on File

PREPARED/ REVISED BY: _____ Date/ 3-12-96

VALIDATED BY: * N/A Date/ _____

APPROVED BY: _____ Date/ 3/12/96
(Operations Training Manager)

CONCURRED: ** N/A Date/ _____
(Operations Representative)

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 6 | Incorp previous pen/inks which: added cue for Power Lit on bkr. Change Bkr OPEN to OFF to match bkr indicator. New SO-70-1 rev added returning nor/aux switch to normal. | N | 3/12/96 | 4,9 | HJ Birch |
| Pen/ink | SO rev added step to ensure FCV handswitch is in normal. | N | 10/17/96 | 9 | HJ Birch |
| pen/ink | Incorp comments from requal. Chg init cues to switches nor (was pwr removed). Clarify step 2 cue. Chg step 7 to XS (not FCV) | N | 1/23/97 | 4,5,6 | HJ Birch |
| pen/ink | SO rev chg. Minor wording changes to match procedure. | N | 5/27/97 | 4,5,6 | HJ Birch |
| | SO Rev Chg only | N | 2/2/98 | 4 | HJ Birch |
| pen/ink | SO-70-1 revision had no impact. Revised K/A ratings. Reformatted critical steps. | N | 9/25/98 | All | JP Kearney |
| pen/ink | SO-70-1 revision update only | N | 10/16/98 | 4 | JP Kearney |
| pen/ink | SO-70-1 revision update only | N | 9/21/99 | 4 | SR Taylor |
| pen/ink | SO-70-1 revision update. Correct PI UNID in step 11. | N | 8/29/00 | 4 | SR Taylor |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**AUO/RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**
Align Component Cooling Water Pump 1B-B to Supply the B Train Header

**JA/TA TASK #:** 0080060101 **(RO)**
0080020104 **(AUO)**

**K/A Ratings:**
008A2.01 (3.3/3.6)
008A4.04 (2.6/2.6)
008A3.01 (3.2/3.0)
008A3.05 (3.0/3.5)

**Task Standard:**
Align the 1B-B CCS pump to supply the B train CCS header.

**Evaluation Method :** Simulator _____ In-Plant ____X____

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**Performer:** _____ Start Time _____
NAME

**Performance Rating :** SAT _____ UNSAT _____ Performance Time ____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Sequenced steps identified by an "s"
2. Any UNSAT requires comments
3. Do NOT use in conjunction with JPM #99.
4. Insure operator performs the following required actions for **SELF-CHECKING;**
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR.** _____ **Local** 23 min.

**Tools/Equipment/Procedures Needed:**
O-SO-70-1, section 8.3

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 1. | 0-SO-70-1 | Component Cooling Water System B Train | 17 |

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**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All steps shall be simulated for this JPM. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. Both units are operating at full power.
2. The C-S CCS pump tripped on over current, WCG has been notified to initiate maintenance.
3. 1B-B CCS pump is aligned for standby operation.

**INITIATING CUES:**

1. You are an extra operator, the US/SRO has instructed you to align the 1B-B CCS pump to supply the B train header.
2. You are to operate the Appendix R valves, you can use an AUO for any other valve manipulations.
3. When 1B-B CCS pump is in service and all switch positions have been returned to their normal position, inform the US/SRO.
4. The Aux Bldg AUO has been dispatched to manipulate the manual valves.

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 1.: | Operator obtains copy of the procedure. | ___ SAT<br>___ UNSAT<br>Start Time____ |
| STANDARD: | Operator obtains a copy of O-SO-70-1 Section 8.3. | |
| STEP 2.: | Verify SRO has evaluated LCOs mentioned. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***When the Operator checks with the SRO: Inform him/her that all LCOs have been evaluated.*** | |
| STANDARD: | Operator ensures SRO has addressed Tech Spec LCOs | |
| STEP 3.: | If CCS Htx 1A1 and 1A2 is in service, then verify CCS Pump 1A-A running. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***When the Operator calls the MCR inform him/her CCS Htx 1A1 and 1A2 are in service. CCS Pmp 1A-A has red light lit.*** | |
| STANDARD: | Operator ensures the 1A-A CCS pump is running by red light on 1-HS-70-46A. | |
| STEP 4.: | Ensure CCS pump 1B-B is STOPPED. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***When the Operator calls the MCR inform him/her The green light is on.*** | |
| STANDARD: | Operator ensures the 1B-B CCS pump is not running by green light on 1-HS-70-38A. | |
| STEP 5.: | IF U1 is supplying CCS to SFP HXs: THEN... | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***When operator checks with MCR. State SFP Htx are align to Unit 2.*** | |
| STANDARD: | Operator verifies SFP Htx aligned to U-2. | |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 6. Perform the following to align CCS pumps 1B-B and C-S in parallel:<br><br>CLOSE the following breakers on 480V RMOV Bd 1B2-B:<br>0-FCV-70-34 COMPT 11C (Red Lit ON)<br>1-FCV-70-64 COMPT 10E (Green lit ON)<br>1-FCV-70-74 COMPT 14A (Green lit ON)<br>1-FCV-70-26 COMPT 13B (Green lit ON)<br>1-FCV-70-27 COMPT 13C (Green lit ON)<br><br>***Cue:*** ***As each breakers is addressed, state breaker is closed. Light indicated above is ON.***<br><br>STANDARD: Operator goes to the 480V Rx MOV Bd 1B2-B, Aux. Bldg. elev 749 and closes the breakers. | ___ SAT<br>___ UNSAT<br><br>**Critical Step** |
| STEP 7.: Place the following transfer switches (located on 480V MOV Bd 1B2-B) to the Aux position.<br><br>0-XS-70-34 COMPT 11C<br>1-XS-70-64 COMPT 10E<br>1-XS-70-74 COMPT 14A<br>1-XS-70-26 COMPT 13B<br>1-XS-70-27 COMPT 13C<br><br>***Cue:*** ***As each "normal/alternate" switch is addressed, state HS is in the Aux position.***<br><br>STANDARD: Prior to operating the FCV in the following step each 'norm/alt" switch must be turned to the Aux position. | ___ SAT<br>___ UNSAT<br><br>**Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 8.: | Place the following in the required positions:<br><br>0-FCV-70-34 CLOSED<br>**1-70-507 CLOSED<br>1-FCV-70-64 OPEN<br>1-FCV-70-74 OPEN<br>1-FCV-70-26 OPEN<br>1-FCV-70-27 OPEN<br>**1-70-503B OPEN<br>**1-70-505B OPEN<br><br>***Cue:*** ***When AUO is contacted, state 1-70-507 is closed. 1-70-503B, 1-70-505B are open.***<br><br>***Cue:*** ***As each FCV HS is addressed as being placed in the proper position, state green light on (for closed valves) or red light on (for open valves). (If "power on" light is addressed, state light is on during valve travel).***<br><br>STANDARD: Operator places the FCV control switches at the Rx MOV Bd in the closed position and verifies the green light ON for FCV-70-34. Verifies the red lights are on for FCVs-70-64, 74, 26, & 27. **Notifies the AUO who was dispatched earlier to locally close 1-70-507, located on mezzanine above pumps on elev 690 in Aux. Bldg. (Also has AUO verify CCS Pump 1B-B suction and discharge valves open, 1-70-503B and 1-70-505B)(not critical) | ___ SAT<br>___ UNSAT<br><br>**Critical Step** |
| STEP 9.: | START 1B-B CCS pump with 1-HS-70-38A and verify switch returns to A-AUTO.<br><br>***Cue:*** ***Play CRO: Red light is on, pressure and flow are increasing, the HS is in the A-AUTO position***<br><br>STANDARD: Operator contacts the U2 CRO and request him/her to start the 1B-B CCS pump by placing 1-HS-70-38A to the START position, verifies red light on, and switch returns to the A-AUTO position. | ___ SAT<br>___ UNSAT<br><br>**Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 10.: | If the C-S CCS pump is to be removed from service then stop CCS pump C-S with appropriate switch. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***1-HS-70-51A and 2-HS-70-51A are in the PTL position and NO lights are on.*** | |
| STANDARD: | Operator contacts U-2 CRO and verifies 1-HS-70-51A and 2-HS-70-51A are in the pull-to-lock positions and NO lights on | |
| STEP 11.: | Perform the following to ensure running pump's developed head is within required range.<br><br>Discharge _____ - Suction _____ = Developed _____<br>Pressure 0-PI-70-36 Pressure 1-PI-70-37 Head<br><br>Ensure developed head is>76 psig, but ≤100 psig. | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***AUO reports pressures on 1B-B at 15 psig suction and 108 psig discharge.*** | |
| STANDARD: | Operator dispatches an AUO to take local readings of 1B-B pump suction and discharge pressures, calculates developed head at 93 psig. | |
| STEP 12.: | Open the following breakers on 480V Rx MOV Bd 1B2-B (Appendix R valves): | ___ SAT<br>___ UNSAT |
| ***Cue:*** | ***ABCs are OFF position.*** | |
| STANDARD: | Operator goes to Rx MOV Bd 1B2-B and OPENs the following ABCs:<br>0-FCV-70-34 Rx MOV Bd 1 B2-B Comp 11C<br>1-FCV-70-64 Rx MOV Bd 1 B2-B Comp 10E<br>1-FCV-70-74 Rx MOV Bd 1 B2-B Comp 14A<br>1-FCV-70-26 Rx MOV Bd 1 B2-B Comp 13B<br>1-FCV-70-27 Rx MOV Bd 1 B2-B Comp 13C | |

Job Performance Checklist:

| | STEP/STANDARD | SAT/UNSAT |
|---|---|---|
| STEP 13.: | Place the following transfer switches to the NORMAL position:<br><br>0-XS-70-34 COMPT 11C<br>1-XS-70-64 COMPT 10E<br>1-XS-70-74 COMPT 14A<br>1-XS-70-26 COMPT 13B<br>1-XS-70-27 COMPT 13C<br><br>***Cue:*** ***As each "transfer" switch is addressed, state HS is in the Normal position.***<br><br>STANDARD: Each "norm/alt" transfer switch in placed back to the Normal position. | ___ SAT<br>___ UNSAT<br><br>**Critical Step** |
| STEP 14.: | ENSURE the following hand switches to the NORMAL position:<br><br>0-HS-70-34C COMPT 11C<br>1-HS-70-64C COMPT 10E<br>1-HS-70-74C COMPT 14A<br>1-HS-70-26C COMPT 13B<br>1-HS-70-27C COMPT 13C<br><br>***Cue:*** ***As each "hand" switch is addressed, state HS is in the Normal position.***<br><br>STANDARD: Each "norm/alt" transfer switch in placed back to the Normal position. | ___ SAT<br>___ UNSAT<br><br>**Critical Step** |
| STEP 15.: | Inform the US/SRO that the 1B-B CCS pump is aligned to supply the B train CCS header (in parallel with the C-S pump).<br><br>STANDARD: Operator informs the US/SRO that the 1B-B CCS pump is aligned to supply the B train CCS header (in parallel with the C-S pump). | ___ SAT<br>___ UNSAT<br><br>Stop Time____ |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 115-2AP

Respond To ERCW Pump trip per AOP-M.01

Original Signatures on File

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 0 | New JPM for NRC Exam | V | 2/7/01 | all | GS Poteet |

V - Specify if the JPM change will require another Validation (Y or N). See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**

Respond To ERCW Pump trip

**Note: This JPM satisfies Simulator Manipulation "L".**

**JA/TA task # :** 0000620501 **(RO)**

**K/A Ratings:**

| | | | |
|---|---|---|---|
| 076000A2.01 | [3.5/3.7] | 076000GA 14 | [2.9/3.1] |
| 076000A4.01 | [2.9/2.9] | 076000A2.02 | [2.7/3.1] |
| 000062GA6 | [3.4/3.6] | 000062GA11 | [3.4/3.7] |

**Task Standard:**

STANDBY A TRAIN ERCW Pump has been started and the auto start selection switch is selected away from Q-A ERCW Pump position. ERCW Header leak has been isolated.

**Evaluation Method :** Simulator ___X_____ In-Plant _____

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**Performer:** _____ Start Time _____
NAME

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

_____

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Critical steps are identified within the step
2. Sequenced steps identified by an "s"
3. Any UNSAT requires comments
4. Initialize the simulator in IC #10. Ensure Q-A ERCW pump is in service and the selector switch is selected for Q-A.
5. Activate MF #RWO1G (Trips Q-A ERCW Pump)
6. Freeze the simulator until the operator has been briefed and is ready to perform task.
7. Insure operator performs the following required actions for **SELF-CHECKING;**
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR.** 15 mins **Local** _____

**Tools/Equipment/Procedures Needed:**

AOP-M.01, Section 2 and 2.1, 2.10

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| A. | AOP-M.01 | Loss of ERCW | 3 |

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**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. Unit is in mode 1 at 100% power
2. Your US is assisting in tagging the unit 1 125V spare charger.

**INITIATING CUES:**

1. You are the CRO and are to monitor the board and respond, as a reader/doer, to any event that may occur.
2. Inform SM when any required action(s) associated with the failure have been completed.

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| **Examiner NOTE:** Candidate may perform the ARP actions. They are identical to procedure steps<br>STEP 1.: Obtain a copy of the appropriate procedure.<br>***Cue:*** ***The SM will evaluate Tech Specs and the REP***<br>STANDARD: A copy of the AOP-M.01 has been obtained and goes to section 2.1. | ___ SAT<br>___ UNSAT<br>Start Time____ |
| STEP 2.: IDENTIFY and LOCKOUT failed ERCW pump<br>STANDARD: ERCW pump QA HAND SWITCH has been placed in the PULL TO LOCK position. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 3.: START additional ERCW pumps as required to maintain header pressure between 78 psig and 124 psig..<br>STANDARD: Operator starts another A (JA) Train ERCW pump. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 4.: CHECK two A Train ERCW Pumps AVAILABLE.<br>STANDARD: Operator verifies at least 2, A train ERCW pumps available | ___ SAT<br>___ UNSAT |
| STEP 5. DISPATCH personnel to inspect failed pump, and determine cause for failure.<br>***Cue:*** ***The common US reports that the 51 relay has a flag picked up. The AUO reports no apparent reason for the trip locally.***<br>STANDARD: The Common US or AUO has been notified to inspect the breaker and an AUO has been dispatched to the pump. | ___ SAT<br>___ UNSAT |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 6.: CHECK 1A and 2A ERCW supply Header pressures [between 78 psig and 124 psig]:<br>1-PI-67-493A<br>2-PI-67-493A<br><br>STANDARD: Operator ensures header pressures are between 78 and 124 psig on both A Train indicators. | ___ SAT<br>___ UNSAT |
| STEP 7.: CHECK 1A and 2A ERCW supply Header flows [expected value].<br>1-FI-67-61<br>2-FI-67-61<br><br>STANDARD: Operator ensures there is flow on the A train supply header as indicated on both indicators. | ___ SAT<br>___ UNSAT |
| **Console operator insert MFI RW13B 90% prior to checking header flows** | |
| STEP 8.: CHECK 1B and 2B ERCW supply Header pressures [between 78 psig and 124 psig]:<br>1-PI-67-488A<br>2-PI-67-488A<br><br>STANDARD: Operator checks header pressures are between 78 and 124 psig on both B Train indicators. Flows are abnormal transitions to section 2.10 | ___ SAT<br>___ UNSAT |
| The following steps are from section 2.10<br><br>STEP 9.: Stop and Lockout All Train B ERCW Pumps<br><br>STANDARD: Operator places all running B train ERCW pumps in pull-to-lock position | ___ SAT<br>___ UNSAT<br>**Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 10.: Dispatch with radios to perform the following:<br>• PERFORM Appendix F, ERCW Rx MOV Board Appendix R Valves.<br>• PERFORM Appendix G, ERCW MCC Appendix R Valves.<br>• ENSURE all pumping station watertight doors are CLOSED.<br>***Cue:*** ***Play role of AUO and acknowledge the request.***<br>STANDARD: Operator dispatches operators to perform the required appendices and actions | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 11.: Ensure 1A and 2A CCPs RUNNING.<br>***Cue:*** ***Play role of U2 CRO and start 2A CCP***<br>STANDARD: Operator starts 1 additional charging pump. | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 12.: Start additional Lower Compartment Cooling Fans and CRDM Fans as required to maintain containment temperature.<br>STANDARD: Operator checks containment temperature and starts fans if needed.<br>NOTE: This step may be critical based upon temperature and candidate pace. | ___ SAT<br>___ UNSAT |
| STEP 13.: STOP and LOCK OUT the following:<br>• 1B CCP<br>• 2B CCP<br>• 1B SI Pump<br>• 2B SI Pump<br>• B Aux Control Air Compressor<br>***Cue:*** ***Play role of AUO and acknowledge the request.***<br>***Cue:*** ***Play role of U2 CRO and Stop/Lockout associated pumps***<br>STANDARD: Operator secures the running pumps in the control room and dispatches an AUO to lockout the Aux Air Compressor | ___ SAT<br>___ UNSAT<br>**Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 14.: DIRECT an operator to OPEN alternate ERCW supply if DG's start:<br>• 1-FCV-67-65 (1B DG)<br>• 2-FCV-67-65 (2B DG)<br>***Cue:*** ***Play role of CRO and acknowledge the request.***<br>STANDARD: Operator directs an AUO to perform this step | ___ SAT<br>___ UNSAT |
| STEP 15.: ISOLATE B Train ERCW Header rupture:<br>• CLOSE 1-FCV-67-489, Header 1B Isol Before Strainer [ERCW MCC 1BB c/3C].<br>• CLOSE 2-FCV-67-489, Header 2B Isol Before Strainer [ERCW MCC 2BB c/3C].<br>***Cue:*** ***Play role of AUO and acknowledge the request.***<br>STANDARD: Operator notifies an AUO to close the valves to isolate the B ERCW header.<br>**Console Operator perform the following to isolate the leak**<br>MRF RWRV489 0%<br>MRF RWR2V489 0%<br>**Examiner Note: RCP Temperature alarms may come in depending on pace** | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 16.: OPERATE available A Train ERCW Pumps to maintain pressure between 78 psig and 124 psig.<br>STANDARD: Operator will start an additional A train pump<br>**Examiner Note: This step may not be necessary until after the next step** | ___ SAT<br>___ UNSAT<br>**Critical Step** |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 17.: ALIGN A Train ERCW to supply B Train:<br>• OPEN 1-FCV-67-147, Hdr 1A to Hdr 2B Isol Valve.<br>• OPEN 1-FCV-67-424, Hdr 1B to Hdr 2A CCS HX Isol Valve<br>• ENSURE 1-FCV-67-223, Hdr 1B to Hdr 2A Isol Valve is OPEN.<br>• ENSURE 2-FCV-67-223, Hdr 2A to Hdr 1B Isol Valve is OPEN.<br>• ENSURE 2-FCV-67-147, Hdr 2B to Hdr 1A Isol Valve is OPEN.<br>STANDARD: Operator dispatches an AUO to open 1-FCV-67-147 and 1-FCV-67-424, and ensures that 1-FCV-67-223, 2-FCV-67-223, 2-FCV-67-147 are open | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 18.: **CHECK** 1A and 2A ERCW header pressures and flows NORMAL.<br>• 1-FI-67-61 and 2-FI-67-61,at expected value<br>• PI-67-433 OR PI-67-437,between 78 psig and 124 psig<br>• PI-67-461 OR PI-67-465,between 78 psig and 124 psig<br>***CUE*: *If operator questions flow to SRO, inform him that flow is as expected***<br>STANDARD: Operator checks above indicators and observes parameters are normal | ___ SAT<br>___ UNSAT |
| STEP 19.: **RESTORE** the following:<br>• 1B CCP to A-AUTO<br>• 2B CCP to A-AUTO<br>• 1B SI Pump to A-AUTO<br>• 2B SI Pump to A-AUTO<br>• B Aux. Control Air Compressor to AUTO<br>STANDARD: Operator restores B Train components to service | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 20.: EVALUATE isolation of non-essential A Train CCS heat loads USING Appendix E, CCS Heat Load Reduction.<br>***Cue: SM will perform the evaluation***<br>STANDARD: Operator evaluates Appendix E | ___ SAT<br>___ UNSAT |

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 21.: ENSURE all ACBs reopened USING the following appendixes:<br>• Appendix F, ERCW Rx MOV Board Appendix R Valves<br>• Appendix G, ERCW MCC Appendix R Valves<br>STANDARD: Operator dispatches an AUO to perform the appendices | ___ SAT<br>___ UNSAT |
| STEP 22.: CHECK all CCS heat exchangers OPERABLE.<br>STANDARD: Operator Checks CCS Heat Exchanges for operable conditions | ___ SAT<br>___ UNSAT |
| STEP 23.: Inform SM of failure of ERCW pump and header and performance of AOP-M.01<br>STANDARD: SM is informed of pump and header failure and that AOP-M.01 has been performed | ___ SAT<br>___ UNSAT<br>Stop Time____ |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # 128-AP2

## Equipment Checks Following ESF Actuation (EA-0-1)

EGTS valves fail to auto position, CREV Press fans don't auto start.

Original Signatures on File

| | | |
|---|---|---|
| PREPARED/ REVISED BY: | | Date/ 9-18-95 |
| VALIDATED BY: * | | Date/ 10/23/95 |
| APPROVED BY: | (Operations Training Manager) | Date/ 10/31/95 |
| CONCURRED: ** | N/A (Operations Representative) | Date/ |

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 0 | Initial JPM - Modified 128-AP1 | Y | 8/16/94 | All | HJ Birch |
| 1 | Incorporate Rev B changes. Deleted ERCW pmp failure since EA no longer checks pmps. Added CREV Press fan fail auto start from JPM 128-ap3. Chgd performance time based on validation. | Y | 9/18/95 | All | HJ Birch |
| pen/ink | EA-0-1 Rev chg. Deleted non-action steps that referenced AR entry. | N | 1/29/97 | 4,5,15 | HJ Birch |
| pen/ink | Updated References | N | 03/12/01 | 4 | GS Poteet |

V - Specify if the JPM change will require another Validation (Y or N).
Validation criteria on cover sheet.

**SEQUOYAH NUCLEAR PLANT**
**RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:**
Equipment Checks Following ESF Actuation (EA-0-1)

**JA/TA task # :** 3010010601 **(RO)**

**K/A Ratings:**

| | |
|---|---|
| 013000 K1.01 (4.2/4.4) | 013000 A1.02 (3.9/4.2) |
| 013000 K1.13 (2.8/3.1) | 013000 A4.01 (4.5/4.8) |
| 013000 A4.03 (4.5/4.7) | |

**Task Standard:**
ESF actuated Equipment is verified to be in the proper configuration. Corrections made or US notified of failures.

**Evaluation Method :** Simulator ___X_____ In-Plant _____

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**Performer:** _____
NAME Start Time _____

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish Time _____

**Evaluator:** _____/_____
SIGNATURE DATE

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**COMMENTS**

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**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Critical steps identified by an asterisk (*)
2. Sequenced steps identified by an "s"
3. Any UNSAT requires comments
4. Initialize the simulator in IC-10.
   **Insert malfunction RP16K612A.**
   **Insert override IOR YPC:HS31108A LOSSPWR** and place tag on 1A emerg press fan.
   **Insert malfunction RP16K622B.**
   **Insert malfunction RP16K608B.**
   **Initiate a Safety Injection, Ensure all pumps start, then freeze the simulator.**
5. Insure operator performs the following required actions for **SELF-CHECKING;**
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.
6. **If this is used as part of AUO training, they must inform the SRO of all failures. They will not be required to make any manipulations.**

**Validation Time: CR.** 14 minutes **Local** _____

**Tools/Equipment/Procedures Needed:**
EA-0-1

**References:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 1. | EA-0-1 | Equipment Checks Following an ESF Actuation | 5 |

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**READ TO OPERATOR**

**DIRECTIONS TO THE TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

Unit 1 has experienced a reactor trip and safety injection from 100% power. The operating crew has entered E-0. Unit 2 is in mode 5 preparing to start up to mode 4.

**INITIATING CUES:**

You are the Unit 1 CRO and are directed to ensure operation of ESF actuated components by referring to EA-0.1.

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 1.: **OBTAIN** the appropriate procedure.<br><br>STANDARD: Operator obtains a copy of EA-0-1. | ___ SAT<br>___ UNSAT<br>Start Time____ |
| STEP 2.: PERFORM Section 4.2 through 4.5<br><br>STANDARD: Operator goes to section 4.2. | ___ SAT<br>___ UNSAT |
| **NOTE: The following steps are from section 4.2**<br><br>STEP 3.: ENSURE EGTS fans RUNNING:<br>EGTS Fan A____<br>EGTS Fan B____<br><br>STANDARD: Operator verifies A and B EGTS fans running by RED light lit on HS-65-23A and HS-65-42A. | ___ SAT<br>___ UNSAT |
| STEP 4.: IF Unit 1 has had an ESF actuation, THEN ENSURE Unit 1 annulus vacuum vans stopped:<br>Annulus Vacuum Fan 1A____ *<br>Annulus Vacuum Fan 1B____<br><br>**NOTE: Annulus Vacuum Fan 1A did not stop. Ann Vac fan 1A will not remain off with HS is auto. (FCO-65-52 does not auto close. Operator may close the valve manually.)**<br><br>STANDARD: Operator inform the SRO of the inability to stop annulus vacuum fan 1A or dispatches an AUO to open breaker. | ___ SAT<br>___ UNSAT<br>**Critical Step** |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 5.: **CHECK** EGTS filter differential press between 1 and 7 inches of water<br>0-PDI-65-21 EGTS filter A delta P.____<br>0-PDI-65-40 EGTS filter B delta P.____<br><br>**NOTE:** **FCO-65-10, 81, 86 have failed to auto open.**<br><br>STANDARD: Operator observes delta P is not between 1 and 7 inches of water. **Operator, as a minimum must tell SRO of problem. (Should open FCV-65-10 and PCV-65 86/81 or 87/83.)**<br>Operator recognizes failures and Places 1-HS-65-10 (or 1-HS-65-8) to OPEN position and verifies RED light lit on HS.<br>Opens 1-PCV-65-86 & 81 (or verifies open 1-PCV-65-87 & 83) and verifies delta P increasing.<br><br>***CUE:*** ***If SRO asked about flowpath, Inform the operator to establish a flowpath*** | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 6.: CHECK affected unit annulus differential pressure more negative than - 0.5 inches of water:<br>1-PDI-30-126A____<br><br>STANDARD: Operator verifies annulus delta P is more negative than -0.5 inches of water | ___ SAT<br>___ UNSAT |
| STEP 7.: IF unit 1 has had an ESF actuation, ENSURE the following Unit 2 EGTS dampers closed:<br>2-FCV-65-29 CLOSED ____<br>2-FCV-65-9 CLOSED ____<br>2-FCV-65-81/86 CLOSED ____<br>2-FCV-65-83/87 CLOSED ____<br><br>***CUE:*** ***All unit 2 valves are closed with green lights "on" and red lights "off".***<br><br>STANDARD: Operator verifies opposite unit EGTS dampers closed by green light "on" and red light "off." | ___ SAT<br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| NOTE: | **The following steps are from section 4.3** | ___ SAT<br>___ UNSAT |
| STEP 8.: | **NOTIFY** opposite unit to shutdown containment purge. | |
| *Cue:* | ***Unit 2 is not purging.*** | |
| STANDARD: | Unit 2 operator is informed of requirement to shutdown containment purge. | |
| STEP 9.: | a. **Record** containment pressure (indicators located on M-6)<br>PDI-30-45, P = _____ psig.<br>PDI-30-44, P = _____ psig. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator records containment pressure using indicators listed. | |
| STEP 10.: | **ENSURE** containment purge air supply and exhaust fans STOPPED. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator ensures containment purge air supply and exhaust fans stopped by both green lights "ON" and both red lights "OFF" on HS-30-1A, and 4A. | |
| STEP 11.: | **ENSURE** incore instrument room purge supply and exhaust fans STOPPED. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator ensures incore instrument room purge supply and exhaust fans stopped by both green lights "ON" and both red lights "OFF" on HS-30-11A. | |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 12.: **IF** containment pressure greater than 1.5 psig, THEN **ENSURE** the following Cntmt Vac Relief Valves indicate closed.<br><br>FCV-30-46, Cntmt Vac Relief A Sol. ____<br>FCV-30-47, Cntmt Vac Relief A Sol. ____<br>FCV-30-48, Cntmt Vac Relief A Sol. ____<br><br>STANDARD: Operator verifies Containment Vacuum Relief Valves are closed by green lights "ON" and red lights "OFF" on above handswitches. | ___ SAT<br>___ UNSAT |
| **NOTE: The following steps are from section 4.4**<br><br>STEP 13.: **ENSURE** Aux Bldg supply fans STOPPED<br><br>Aux Bldg Gen Supply Fan 1A ____<br>Aux Bldg Gen Supply Fan 1B ____<br>Aux Bldg Gen Supply Fan 2A ____<br>Aux Bldg Gen Supply Fan 2B ____<br><br>STANDARD: Operator verifies Aux Bldg supply fans are stopped with green lights "ON," red lights "OFF" on respective handswitches. | ___ SAT<br>___ UNSAT |
| STEP 14.: **ENSURE** Aux Bldg exhaust fans STOPPED<br><br>Aux Bldg Gen Exhaust Fan 1A ____<br>Aux Bldg Gen Exhaust Fan 1B ____<br>Aux Bldg Gen Exhaust Fan 2A ____<br>Aux Bldg Gen Exhaust Fan 2B ____<br><br>STANDARD: Operator verifies Aux Bldg exhaust fans are stopped with green lights "ON," red lights "OFF" on respective handswitches. | ___ SAT<br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 15.: **ENSURE** the following Unit 1 Dampers CLOSED:<br><br>1-FCV-30-106, U1 Gen Supply Fan Outlet Isol ____<br>1-FCV-30-86, Aux Bldg Gen Spaces Isol ____<br>1-FCV-30-107, U1 Gen Supply Fan Outlet Isol ____<br>1-FCV-30-87, Aux Bldg Gen Spaces Isol ____<br>1-FCV-30-160, Aux Bldg Gen Exh Fan 1A Suct Isol ____<br>1-FCV-30-166, Aux Bldg Gen Exh 1B Suct Isol ____<br>1-FCV-30-161, Aux Bldg Gen Exh Fan 1A Suct Isol ____<br>1-FCV-30-167, Aux Bldg Gen Exh 1B Suct Isol ____<br><br>STANDARD: Operator verifies all associated dampers closed with green lights "ON" and red lights "OFF" on respective handswitches. | ___ SAT<br><br>___ UNSAT |
| STEP 16.: **ENSURE** the following Unit 2 dampers CLOSED:<br><br>2-FCV-30-108, U2 Aux Bldg Gen Supply Outlet Isol ____<br>2-FCV-30-21, Aux Bldg Gen Spaces Isol ____<br>2-FCV-30-109, U2 Aux Bldg Gen Supply Outlet Isol ____<br>2-FCV-30-22, Aux Bldg Gen Spaces Isol ____<br>2-FCV-30-271, Aux Bldg Gen Exh Fan 2A Suct Isol ____<br>2-FCV-30-275, Aux Bldg Gen Exh 2B Suct Isol ____<br>2-FCV-30-272, Aux Bldg Gen Exh Fan 2A Suct Isol ____<br>2-FCV-30-276, Aux Bldg Gen Exh 2B Suct Isol ____<br><br>STANDARD: Operator verifies all associated dampers closed with green lights "ON" and red lights "OFF" on respective handswitches. | ___ SAT<br><br>___ UNSAT |
| STEP 17.: **ENSURE** fuel cask area vent dampers CLOSED;<br><br>0-HS-30-129, Cask Loading Area Inlet Isol ____<br>0-HS-30-130, Cask Loading Area Inlet Isol ____<br>0-HS-30-122, Cask Loading Area Outlet Isol ____<br>0-HS-30-123, Cask Loading Area Outlet Isol ____<br><br>STANDARD: Operator verifies all associated dampers closed with green lights "ON" and red lights "OFF" on respective handswitches. | ___ SAT<br><br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 18.: **ENSURE** fuel handling exhaust fans STOPPED;<br><br>Fuel Handling Exhaust Fan A ____<br>Fuel Handling Exhaust Fan B ____<br><br>STANDARD: Operator verifies Fuel Handling Exhaust Fans stopped by green lights "ON," red lights "OFF" on respective handswitches. | ___ SAT<br>___ UNSAT |
| STEP 19.: **ENSURE** fuel handling exhaust dampers CLOSED;<br><br>0-FCV-30-137, Fuel Handling Exh Fan A Disch Isol ____<br>0-FCV-30-138, Fuel Handling Exh Fan A Disch Isol ____<br>0-FCV-30-140, Fuel Handling Exh Fan B Disch Isol ____<br>0-FCV-30-141, Fuel Handling Exh Fan B Disch Isol ____<br><br>STANDARD: Operator verifies all associated dampers closed with green lights "ON" and red lights "OFF" on respective handswitches. | ___ SAT<br>___ UNSAT |
| STEP 20.: **ENSURE** Aux Bldg Gas Treatment Fans RUNNING;<br><br>Aux Bldg Gas Trtmt Fan A ____<br>Aux Bldg Gas Trtmt Fan B ____<br><br>STANDARD: Operator verifies Aux Bldg Gas Treatment Fans running by green lights "OFF" and red lights "ON" on respective handswitches. | ___ SAT<br>___ UNSAT |
| STEP 21.: **CHECK** Aux Bldg gas treatment dampers OPEN;<br><br>FCO-30-146A, ABGTS A Exhaust ____<br>FCO-30-146B, ABGTS A Suction ____<br>FCO-30-157A, ABGTS B Exhaust ____<br>FCO-30-157B, ABGTS B Suction ____<br>0-FCV-30-279, ABGTS B Outside Air Supply Isol ____<br>0-FCV-30-280, ABGTS A Outside Air Supply Isol ____<br><br>STANDARD: Operator verifies all associated dampers open with green lights "OFF" and red lights "ON" on respective handswitches and damper position indicators. | ___ SAT<br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| **NOTE:** **The following steps are from section 4.5**<br><br>STEP 22.: ENSURE either Control Building A/C AHU RUNNING AND associated AHU inlet OPEN:<br><br>Cntrl Bldg A/C AHU A Running ____,<br>and<br>0-FCO-311-20 OPEN ____<br><br>**OR**<br><br>Cntrl Bldg A/C AHU B Running ____,<br>and<br>0-FCO-311-23 OPEN ____<br><br>STANDARD: Operator verifies at least one MCR AHU running and its associated damper open by red lights "ON" and green lights "OFF" on associated handswitches and damper position indicators. | ___ SAT<br>___ UNSAT |
| STEP 23.: IF Control Building A/C AHUs stopped THEN open doors.<br>Mechanical Equipment Room door C-39.<br>MCR door C-48 or C-56.<br><br>STANDARD: Operator N/As this step since one CB A/C AHU is in service. | ___ SAT<br>___ UNSAT |
| STEP 24.: **ENSURE** either Elect Bd Room Chiller Running and associated AHU inlet OPEN:<br><br>ELECT Bd Room A/C AHU A Running ____,<br>and<br>0-FCO-311-27 OPEN ____<br><br>**OR**<br><br>Elect Bd Room A/C AHU B Running ____,<br>and<br>0-FCO-311-28 OPEN ____<br><br>STANDARD: Operator verifies at least one electrical Bd room AHU running and its associated damper open by red lights "ON" and green lights "OFF" on associated handswitches and damper position indicators. | ___ SAT<br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 25.: **ENSURE** either Control Building emergency air cleanup fan RUNNING AND associated fan inlet OPEN:<br><br>Cntrl Bldg. Emer Air Clean UP Fan A Running ____,<br>and<br>0-FCO-311-9 OPEN ____<br><br>**OR**<br><br>Cntrl Bldg Emer Air Clean UP Fan B Running ____,<br>and<br>0-FCO-311-11 OPEN ____<br><br>STANDARD: Operator verifies Emergency Air Cleanup fans in service with dampers open by red lights "ON" and green lights "OFF" on associated handswitches and damper position indicators. | ___ SAT<br><br>___ UNSAT |
| STEP 26.: **ENSURE** at least one emergency air press fan RUNNING and associated fan inlet OPEN:<br><br>Cntrl Bldg Emerg Press Fan A Running ____,<br>and<br>0-FCO-311-108 OPEN ____<br><br>**OR**<br><br>Cntrl Bldg Emerg Press Fan B Running ____,<br>and<br>0-FCO-311-109 OPEN ____<br><br>NOTE: **A-A Emergency Pressurization fan is tagged. Operator will have to manually start B-B.**<br><br>STANDARD: Operator manually starts B-B Cntrl Bldg Emergency Press fan and verifies damper open by red lights "ON" and green lights "OFF" on associated handswitch and damper position indicator. | ___ SAT<br><br>___ UNSAT<br><br>**Critical Step** |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 27.: **ENSURE** MCR & spreading rm fresh air fans STOPPED;<br><br>Spreading Room Supply Fan ____<br>Spreading Room Exhaust Fan A ____<br>Spreading Room Exhaust Fan B ____<br><br>STANDARD: Operator verifies MCR & spreading rm fresh air fans stopped by green lights "ON," red lights "OFF" on respective handswitches. | ___ SAT<br>___ UNSAT |
| STEP 28.: **CHECK** MCR & spreading rm fresh air dampers CLOSED;<br><br>0-FCV-311-105A, MCR Fresh Air ____<br>0-FCV-311-106A, MCR Fresh Air ____<br>0-FCV-311-105B, Spdr Rm Fresh Air ____<br>0-FCV-311-106B, Spdr RM Fresh Air ____<br>0-FCO-311-79, Spdr Rm Exh Fan A Out ____<br>0-FCO-311-80, Spdr Rm Exh Fan B Out ____<br>0-FCO-311-17, Spdr Rm Sup Disch ____<br>0-FCO-311-102, Spdr Rm Sup Disch ____<br><br>***Note:*** ***102 does not close due to failure of relay K608B.***<br><br>***Operator may dispatch an AUO.***<br><br>STANDARD: Operator verifies all associated dampers, except 102, closed with green lights "ON" and red lights "OFF" on respective damper position indicators. Informs SRO that FCV-311-102 did not close. | ___ SAT<br>___ UNSAT |
| STEP 29.: a. **ENSURE** Locker Rm exhaust fan STOPPED ____<br><br>b. **CHECK** Locker Rm Exh dampers CLOSED;<br><br>0-FCO-311-103, T&L Rm Exh Fan Disch ____<br>0-FCO-311-104, T&L Rm Exh Fan Disch ____<br><br>***Note:*** ***104 does not close due to failure of relay K608B.***<br><br>***Operator may dispatch an AUO.***<br><br>STANDARD: Operator verifies locker Rm fan stopped and all associated dampers, except 104, closed with green lights "ON" and red lights "OFF" on respective handswitch and damper position indicators. Informs SRO that FCV-311-104 did not close. | ___ SAT<br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 30.: **IF** one Elect Bd Rm AHU is in service THEN **ENSURE** one battery room exhaust fan RUNNING;<br>• Battery Room Exh Fan A _____<br>• Battery Room Exh Fan B _____<br>• Battery Room Exh Fan C _____<br>STANDARD: Operator verified both Elect Bd Rm AHU were in service in a previous step. They should verify one of the battery Room Exh Fan running by red light "ON" and green light "OFF" on respective handswitch. | ___ SAT<br>___ UNSAT |
| STEP 31.: IF electrical board room AHUs stopped, THEN STOP battery room exhaust fans.<br>STANDARD: Operator N/As this step since the previous step verified one was running. | ___ SAT<br>___ UNSAT |
| STEP 32.: IF battery Room Exh Fans OFF **AND** either elect Bd rm AHU RUNNING, THEN PERFORM the following:<br>**DISPATCH** personnel to CLOSE damper 31A-157 (located above Unit 1 Aux Inst Rm access door).____<br>• **NOTIFY** TSC fans are off. ____<br>**NOTE:** **Battery room exhaust fans are started and stopped via their respective breakers on the 480V C&A Vent Boards.**<br>STANDARD: Operator verified in previous step that one battery room exhaust fan was running and N/As this step. | ___ SAT<br>___ UNSAT |
| STEP 33.: **ENSURE** Shutdown Bd Room Pressurizing Fans A and B STOPPED;<br>0-HS-313-383A, Press Fan 1A-A ____<br>0-HS-313-384A, Press Fan 2A-A ____<br>0-HS-313-391A, Press Fan 1B-B ____<br>0-HS-313-392A, Press Fan 2B-B ____<br>STANDARD: Operator verifies Shutdown Board Room Pressurizing Fans stopped by green lights "on" and red lights "off" on respective handswitches. | ___ SAT<br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 34.: GO TO Section 4.1, step in effect.<br><br>STANDARD: Operator goes to section 4.1. | ___ SAT<br>___ UNSAT |

Job Performance Checklist

| STEP/STANDARD | | SAT/UNSAT |
|---|---|---|
| STEP 35.: | Inform US of completion of checklist and any discrepancy or any actions that were required. | ___ SAT<br>___ UNSAT |
| STANDARD: | Operator informs US of completion of checklist and actions that were required to complete the checklist. | Stop Time____ |

**End of JPM**

# SEQUOYAH NUCLEAR PLANT
# JOB PERFORMANCE MEASURE

## JPM # NRC-2001-1

## Steamline Pressure Transmitter Fails Low

**PREPARED/ REVISED BY:** GS Poteet _____ Date: 2/1/01/

**VALIDATED BY:** * _____ Date/

**APPROVED BY:** _____ Date/
(Operations Training Manager)

**CONCURRED:** ** _____ Date/
(Operations Representative)

* Validation not required for minor enhancements, procedure Rev changes that do not affect the JPM, or individual step changes that do not affect the flow of the JPM.
** Operations Concurrence required for new JPMs and changes that affect the flow of the JPM (if not driven by a procedure revision).

**NUCLEAR TRAINING**

**REVISION/USAGE LOG**

| REVISION NUMBER | DESCRIPTION OF REVISION | V | DATE | PAGES AFFECTED | PREPARED/ REVISED BY: |
|---|---|---|---|---|---|
| 0 | New JPM for MRC Exam 2001 | Y | 2/1/01 | All | GS Poteet |

V - Specify if the JPM change will require another Validation (Y or N).
See cover sheet for criteria.

**SEQUOYAH NUCLEAR PLANT**
**RO/SRO**
**JOB PERFORMANCE MEASURE**

**Task:** Respond to a Loss of Main Feedwater **JA/TA task # :** 0000540501

**K/A Ratings:**

| | |
|---|---|
| 054 AK2.07 2.1/2.2 | 059 K4.08 2.5/2.7 |
| 054 AK3.02 3.4*/3.7* | 059 K5.08 2.4/2.6 |
| 054 AK3.04 4.4/4.6 | 059 A1.04 2.2*/2.2* |

**Task Standard:** S/G levels returned to the program band and steady state conditions established IAW AOP-S.01.

**Evaluation Method :** Simulator __X_____ In-Plant _____

==========

**Performer:** _____
NAME Start time _____

**Performance Rating :** SAT _____ UNSAT _____ Performance Time _____ Finish time _____

**Evaluator:** _____/_____
SIGNATURE DATE

==========

**COMMENTS**

_____

_____

_____

_____

_____

_____

_____

**SPECIAL INSTRUCTIONS TO EVALUATOR:**

1. Critical steps are identified within the step
2. Sequenced steps identified by an "s"
3. Any UNSAT requires comments
4. Task should begin in the simulator.
5. Reset the simulator to IC-10.
6. Acknowledge alarms.
7. After operator assumes the shift and at examiner direction Insert **MFI RX21 (PT-1-33 fails Low)**
8. Insure operator performs the following required actions for **SELF-CHECKING**;
   a. Identifies the correct unit, train, component, etc.
   b. Reviews the intended action and expected response.
   c. Compares the actual response to the expected response.

**Validation Time: CR** 10 mins **Local** _____

**Tools/Equipment/Procedures Needed:**

**REFERENCES:**

| | Reference | Title | Rev No. |
|---|---|---|---|
| 131 6. | AOP-S.01 | Loss of Normal Feedwater | 2 |

| Task Number | Task Title | Cont TRN |
|---|---|---|
| 0000540501 | Respond to Loss of main feedwater | Y |

==========

**READ TO OPERATOR**

**Directions to Trainee:**

I will explain the initial conditions, and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. All steps shall be simulated for this task When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. The plant is operating at 100% power
2. Steady state conditions
3. No equipment is out of service

**INITIATING CUES:**

1. You are the CRO and are to monitor the board and respond, as a reader/doer, to any event that may occur.

2. Inform SM when any required action(s) associated with the failure have been completed.

Job Performance Checklist:

| STEP/STANDARD | SAT/UNSAT |
|---|---|
| STEP 1.: DIAGNOSE the failure and obtain a copy of the appropriate procedure.<br><br>STANDARD: A copy of AOP-S.01 has been obtained and goes to section 2.2. | ___ SAT<br>___ UNSAT |
| **NOTE** Appendix A may be used to determine the program feedwater D/P for current power.<br><br>**NOTE** Candidate may restore feed flow and stabilize the plant, then refer to the AOP. | |
| STEP 2.: MAINTAIN feedwater pressure on program:<br><br>Place affected MFP speed controller(s) in MANUAL:<br>• PC-46-20, MFPT 1A(2A) & 1B(2B) Speed Control.<br>• SIC-46-20A, MFPT 1A(2A) Speed Controller<br>• SIC-46-20B, MFPT 1B(2B) Speed Controller<br><br>STANDARD: Operator controls speed on affected MFP(s) to restore feedwater pressure to program | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 3.: MAINTAIN steam generator level(s) on program.<br><br>STANDARD: Operator maintains S/G levels within the program band | ___ SAT<br>___ UNSAT<br>**Critical Step** |
| STEP 4.: INITIATE repairs on failed equipment.<br><br>***Cue:*** ***SM will contact maintenance***<br><br>STANDARD: Operator informs the SM of the failure of PT-1-33 | ___ SAT<br>___ UNSAT |

**End of JPM**