

Draft Submittal
WATTS BAR EXAM 2002-301

50-390
NOVEMBER 26 &
DECEMBER 9 - 13, 2002

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

| Facility: <u>Watts Bar</u> | | Date of Examination: <u>11/9-13/02</u> |
|-------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------|
| Examination Level (circle one): RO / SRO | | Operating Test Number: <u>1</u> |
| Administrative Topic/Subject Description | | Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions |
| A.1 | Conduct of Operations | a. Calculate the Estimated Critical Position (NEW) |
| | | b. Complete Shift Turn Over Checklist (NEW) |
| A.2 | Equipment Control | Complete Shift Daily Surveillance Log Mode One and Evaluate Surveillance Log. (NEW) |
| A.3 | Radiation Control | Access a High Radiation Area (NEW) |
| A.4 | Emergency Plan | Classify the Event per the REP (Security Event)–SRO (NRC-JPM-NEW) |
| | | Medical Emergency Response (RO) (NEW) |

A.1a Calculate Estimated Critical Position

Initial Conditions:

The unit is shutdown and maintenance has completed repairs. Plant management has approved recommendations to restart.

Referenced Documents:

1-SI-0-11, Estimated Critical Position

Task Standard:

Correctly perform a hand calculation of the estimated critical position (ECP) and determine the ECP to be within acceptance criteria.

Initiating Cues:

You have been tasked to perform a calculation of the estimated critical position using Previous At-Power Data. REACT and REACTIN software are not available for use.

Terminating Cues:

When the ECP has been calculated and acceptability has been determined.

NOTE:

Data for ECP should be provided. Reactor has operated at 100% for greater than 30 days. The ECP hand calculation should use Previous At-Power Data. Data from the Reactor Trip Data Book will need to be provided. Expected Core average temperature at startup and expected boron concentration at startup will also need to be provided. NuPOP ECP calculation worksheets Table 7-16 should be supplied.

A.1b Shift Turnover

Initial Conditions:

See below.

Referenced Documents:

OPDP-1, Conduct of Operations

Task Standard:

Correctly complete the shift turnover checklist.

Initiating Cues:

It is four hours into the shift. You as the Unit Operator At the Controls have been directed to be relieved the an extra qualified operator. You have been informed that you will be gone for the remainder of the shift.

Terminating Cues:

When the Shift turnover form is complete.

NOTE:

Provide an expected listing of abnormal equipment; surveillance tests; major activities and procedures in progress; radiological change that would be used to complete a shift turnover form.

A.2 Shift and Daily Surveillance Log Mode One and Evaluation of Surveillance Test Results

Initial Conditions:

Shift and Daily Surveillance Log Mode One has been not been completed.

Referenced Documents:

1-SI-0-2B-01, Shift and Daily Surveillance Log Mode One

Task Standard:

Correctly record data on data sheet 1 reference 11, 12, and 13 and review completed data sheets to determine the surveillance does not pass the acceptance criteria.

Initiating Cues:

You are the RO responsible to perform and review the Shift Daily Surveillance Log Mode 1. Portions of the log have been completed for you. You are to complete reference 11, 12, and 13 and verify all of acceptance criteria have been met for Shift Daily Surveillance Log Mode 1.

Terminating Cues:

When the data sheet 1 reference 11, 12, and 13 data has been collected and acceptability of Shift Daily Surveillance Log Mode 1 has been determined.

NOTE:

Data for all portions of the surveillance should be filled in with the exception of 11, 12, and 13. The results of the surveillance should contain some readings close to the acceptance criteria as well as at least one outside the criteria.

Surveillance dealing with 1-SI-0-2B-01, Shift Daily Surveillance Log Mode 1.

A.3 Access a High Radiation Area

Initial Conditions:

Unit requirements are such that you are directed to make all arrangements to enter a very high radiation area .

Referenced Documents:

Task Standard:

Correctly identify the actions necessary to enter a very high radiation area.

Initiating Cues:

Current unit conditions require you to enter a very high radiation area. Your estimated time in the very high radiation area will be 5 minutes. You are directed to make all arrangements to enter the very high radiation area.

Terminating Cues:

When all arrangements have been made to enter the very high radiation area.

NOTE:

Provide a list of forms, actions and keys necessary to complete this task.

A.4 RO Medical Emergency Response

Initial Conditions:

Normal plant operations is in progress.

Referenced Documents:

EPIP-10, Medical Emergency Response

Task Standard:

Correctly complete EPIP-10 Appendix A Control Room Operator Medical Response Checklist

Initiating Cues:

You as the Unit Operator in the control room receive a call notifying you of a medical emergency has occurred. As the Unit Operator in the control room complete any action required for this situation.

Terminating Cues:

When EPIP-10 Appendix A, Control Room Operator Medical Response Checklist is complete.

NOTE:

Provide the necessary information to complete the Medical Response checklist.

Facility: Watts Bar
Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: 12/9-13/02
Operating Test No.: 1

B.1 Control Room Systems

| System / JPM Title | Type Code* | Safety Function |
|-------------------------------------------------------------------------|------------|-----------------|
| a. Transfer a 6.9KV RCP Board (Alt to Normal) per SOI-202.01 (JPM #042) | DS | 6 |
| b. TRANSFER ECCS TO RHR CONTAINMENT SUMP PER ES-1.3 (JPM #069) | DAS | 3 |
| c. Depressurize the RCS Per ES-0.4 (JPM #126) | DAS | 2 |
| d. Respond to a High Containment Pressure | DS | 5 |
| e. Transfer Steam Dumps to Tavg Mode (NRC-JPM-New) | NS | 4S |
| f. Retrieve a Dropped Rod per AOI-2 (JPM #95A) | DAS | 1 |
| g. Remove SRM N132 from Service (NRC-JPM-New) | NLS | 7 |

B.2 Facility Walk-Through

| | | |
|--------------------------------------------------------------------------------------------|----|----|
| a. Respond to steam binding of 1A-A-AFW pump per SOI-3.02 (3-OT-JPMA065) | DR | 4S |
| b. Rolling 1b-b Diesel Generator for Water in Cylinders per SOI-82.02 (JPM #048) | D | 6 |
| c. Perform LOCAL restart of Control and Service Air compressors per AOI-10 (3-OT-JPMA001C) | DA | 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

WATTS BAR NUCLEAR PLANT
NRC-JPM-NEW

TITLE: TRANSFER STEAM DUMPS TO Tavg MODE PER GO-3

WRITTEN BY : _____

VALIDATED BY: _____

APPROVED BY: _____
(OPERATIONS TRAINING)

CONCURRENCE: _____
(OPERATIONS REPRESENTATIVE)

WATTS BAR NUCLEAR PLANT

NRC-JPM-NEW

EVALUATION SHEET

Task: Transfer Steam Dumps To Tavg Mode Per GO-3

Alternate Path: N/A

Facility JPM #:

K/A Rating(s): 041A4.03
G2.1.20

Task Standard: Steam Dump Valves have been transferred to the STEAM PRESSURE MODE, and controlling without inadvertent overcooling of the RCS (> 10°F).

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator In-Plant

Perform Simulate

References: GO-3 Unit Startup from less than 4% Reactor Power to 30% Reactor Power

Task Number::

APPLICABLE FOR: RO/SRO

10CFR55.45: 1, 2, 4, 5, 6, 7

Validation Time: . **Time Critical:** No

=====
Candidate: _____ **Time Start:** _____
NAME SSN **Time Finish:** _____

Performance Rating: SAT ___ UNSAT ___ **Performance Time** ___

Examiner: _____ / _____
NAME SIGNATURE DATE

=====
COMMENTS

WATTS BAR NUCLEAR PLANT

NRC-JPM-NEW

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to **IC #**

Acknowledge all alarms.

FREEZE the simulator till the performer indicates an understanding of the task.

5. **NOTE:** This JPM has been pre-shot in **IC #**. Should **IC #** be erased or fail to perform as expected then use the following set-up instructions:

Initialize the simulator in **IC #**

Permissive 66-E, C-7 LOSS OF LOAD STM DUMP INTERLOCK is LIT

Complete Actions of GO-3 up to section 5.4 step 2.

Freeze simulator.

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

WATTS BAR NUCLEAR PLANT

NRC-JPM-NEW

Tools/Equipment/Procedures Needed:

Ensure a clean copy of GO-3 is on the Simulator Floor. Ensure all steps up to step 5.4.2 are signed off.

[COMMENT1]

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

The Unit is in startup between 20 and 24% reactor power.

Plant is at normal operating temperature and pressure via steam dumps.

You are the Control Room Operator.

INITIATING CUES:

You are directed by the Unit Supervisor to transfer the steam dump valves to Tavg MODE per the GO-3 Section 5.2 step 2.

You are to notify the Unit Supervisor when the transfer is complete.

WATTS BAR NUCLEAR PLANT

NRC – JPM - New

START TIME: _____

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <p>[COMMENT2] <u>STEP 1:</u> Obtain a copy of the appropriate instruction.</p> <p><u>STANDARD:</u> A copy of GO-3 has been obtained.</p> <p>EXAMINER'S CUE: <i>The evaluator to provide a copy of the instruction with steps signed off to 5.4.2.</i></p> <p>____ <u>COMMENTS:</u></p> | <p>___ SAT</p> <p>___ UNSAT</p> |
| <p><u>STEP 2:</u> Monitor the following:</p> <ul style="list-style-type: none"> • Tavg following Tref program • RCP seal flow between 8 and 13 gpm per pump • PZR level on program • All RPis, Step Counters, Loop ΔT, and NIS for correct power distribution, quadrant power tilts, rod insertion, rod misalignment, inoperable RPis, and inoperable rods. <p><u>STANDARD:</u> All parameters are within their program bands.</p> <p>____ <u>COMMENTS:</u></p> | <p>___ SAT</p> <p>___ UNSAT</p> |

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

WATTS BAR NUCLEAR PLANT**NRC - JPM - New**

STEP 3: Compare Tavg, ΔT , and NIS to verify indications are consistent with expected values.

STANDARD: Tavg, ΔT , and NIS are consistent with expected values.

COMMENTS:

**CRITICAL
STEP**

___ SAT

___ UNSAT

STEP 4: When Turbine load is greater than 15% Then

- Verify Permissive 66-A, C-5 LO TURB IMPULSE PRESS ROD BLOCK, is NOT LIT.
- If auto rod control is desired, THEN
Place rod control in AUTO per SOI-85.01.

CUE: *Auto Rod Control is not desired.*

STANDARD: Permissive 66-A, C-5 LO TURB IMPULSE PRESS ROD BLOCK, is NOT LIT. Rod Control left in manual.

COMMENTS:

___ SAT

___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

WATTS BAR NUCLEAR PLANT

NRC - JPM - New

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>STEP 5:</u> When steam dump demand (1-XI-1-33) reduces to zero, then transfer Steam Dumps to Tavg mode by performing the following:</p> <p><u>STANDARD:</u> Steam Dump demand indicator 1-XI-1-33 is verified to be reading zero prior to continuing.</p> <p><u>COMMENTS:</u></p> | <p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p> |
| <p><u>STEP 6:</u> [STEP 5a] PLACE steam dump controls OFF: 1-HS-1-103A, STM DUMP FSV "A". 1-HS-1-103B, STM DUMP FSV "B".</p> <p><u>STANDARD:</u> Steam Dump FSV "A" 1-HS-1-103A & FSV "B" 1-HS-1-103B are placed to the OFF position.</p> <p><u>COMMENTS:</u></p> | <p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p> |
| <p><u>STEP 7:</u> [Step 5b] Place 1-HS-1-103D, Steam Dump MODE to Tavg.</p> <p><u>STANDARD:</u> 1-HS-1-103D, Steam Dump MODE is selected to Tavg.</p> <p><u>COMMENTS:</u></p> | <p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p> |
| <p><u>STEP 8:</u>[STEP 5c] If Permissive 66-E, C-7 LOSS OF LOAD STM DUMP INTERLOCK, is LIT, THEN</p> | <p style="text-align: center;">CRITICAL STEP</p> |

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

WATTS BAR NUCLEAR PLANT

NRC – JPM - New

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <p style="text-align: center;">•Momentarily Place 1-HS-1-103D to RESET •Verify Permissive 66-E is NOT LIT</p> <p>STANDARD: 1-HS-1-103D is placed in reset and permissive 66-E is not lit.</p> <p>COMMENTS:</p> | <p>___ SAT</p> <p>___ UNSAT</p> |
| <p>STEP 9: [STEP 5d] ADJUST 1-PIC-1-33, STEAM DUMP PRESS CONTROL, to 84% and place in AUTO</p> <p>STANDARD: 1-PIC-1-33, STEAM DUMP PRESS CONTROL is adjusted to 84% and placed in AUTO.</p> <p>COMMENTS:</p> | <p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p> |
| <p>STEP 6: [STEP 5a] PLACE steam dump controls ON: 1-HS-1-103A, STM DUMP FSV "A". 1-HS-1-103B, STM DUMP FSV "B".</p> <p>STANDARD: Steam Dump FSV "A" 1-HS-1-103A & FSV "B" 1-HS-1-103B are placed to the ON position.</p> <p>COMMENTS:</p> | <p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p> |

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

WATTS BAR NUCLEAR PLANT**NRC – JPM - New**

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <p><u>STEP 10:</u> Notify the Unit Supervisor that the steam dump valves have been transferred to the Tavg mode.</p> <p><u>STANDARD:</u> The Unit Supervisor is notified that the steam dump valves have been transferred to the Tavg mode.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><u>END OF TASK</u></p> | <p>___ SAT</p> <p>___ UNSAT</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|

TIME STOP: _____

*****Italicized Cues Are To Be Used Only if JPM Performance Is Being Simulated.***

WATTS BAR NUCLEAR PLANT**CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)****DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

The Unit is in startup between 20 and 24% reactor power.

Plant is at normal operating temperature and pressure via steam dumps.

You are the Control Room Operator.

INITIATING CUES:

You are directed by the Unit Supervisor to transfer the steam dump valves to Tavg MODE per the GO-3 Section 5.2 step 2.

You are to notify the Unit Supervisor when the transfer is complete.

WATTS BAR NUCLEAR PLANT

TASK TITLE: RETURN SRM N132 TO SERVICE PER AOI-4

New


WRITTEN BY : _____

VALIDATED BY: _____

APPROVED BY: _____
(OPERATIONS TRAINING)

CONCURRENCE: _____
(OPERATIONS REPRESENTATIVE)

WATTS BAR NUCLEAR PLANT

REVISION LOG

| REVISION LOG | DATE | DESCRIPTION OF CHANGES | PAGES AFFECTED |
|--------------|----------|------------------------|----------------|
| 0 | 10/07/96 | INITIAL ISSUE | ALL |

WATTS BAR NUCLEAR PLANT

EVALUATION SHEET

TASK: RETURN SRM N132 TO SERVICE PER AOI-4

PERFORMER: _____ DATE: _____

SSN: _____

RESULT: SATISFACTORY _____ UNSATISFACTORY _____

NOTE: COMMENTS ARE MANDATORY FOR UNSATISFACTORY RESULTS

TASK NUMBER: AUO-092-AOI-4-001 APPLICABLE FOR: RO/SRO

K/A REFERENCE: 015020G009 (3.4/3.3) 015000A4.01 (3.6/3.6)

10CFR55.45: 4, 6, 12

ESTIMATED COMPLETION TIME: 7 min. ACTUAL COMPLETION TIME: ___ min.

EVALUATION METHOD : SIMULATOR: X INPLANT:

=====

COMMENTS:

EVALUATOR: _____ / _____
(SIGNATURE) (DATE)

WATTS BAR NUCLEAR PLANT

EVALUATOR INFORMATION SHEET

TASK TITLE: RETURN SRM N132 TO SERVICE PER AOI-4

SIMULATOR SET-UP INSTRUCTIONS

Initialize to IC #

Acknowledge all alarms

Freeze simulator until the performer indicates understanding of the task and time is allowed for control board familiarization.

Note: This JPM has been preshot in IC #

The following is the setup instructions if needed:

Initialize to IC # conditions for (MODE 4)

Acknowledge all alarms

Ensure 1-NR-45 selected to SRM N131

Ensure Shutdown Monitor turned ON and reading countrate.

Start Audio Count Rate on SRM 131.

Freeze simulator until the performer indicates understanding of the task and time is allowed for control board familiarization.

CRITICAL STEPS IDENTIFIED WITH AN ASTERISK (*)

TIME CRITICAL TASK: NO

ALTERNATE PATH JPM: NO

TASK STANDARDS:

Source Range Monitor N132 has been taken out of service in accordance with AOI-4 Section 3.2.

REQUIRED MATERIALS:

None

SAFETY CONSIDERATIONS:

None

REFERENCES:

AOI-4, NUCLEAR INSTRUMENTATION MALFUNCTIONS, (Rev 20)

WATTS BAR NUCLEAR PLANT

PERFORMER INFORMATION SHEET

TASK TITLE: REMOVE SRM N132 FROM SERVICE PER AOI-4

READ THE FOLLOWING TO OPERATOR:

I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEP(S) TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING/OPERATING CUES.

WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

ENSURE THAT YOU INDICATE TO ME WHEN YOU FULLY UNDERSTAND YOUR TASK.

INITIAL CONDITIONS:

- Plant conditions, BOL, 400°F, 593 psig
- Unit Heat-Up in progress.
- You are the Reactor Operator

INITIATING CUES:

- The Unit Supervisor has directed you to remove SRM N132 from service
- You are to notify the US when the procedure has been completed.

WATTS BAR NUCLEAR PLANT

WORKSHEET

PERFORMANCE

STEP 1: Obtain the proper procedure.

(Cue: After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.)

STANDARD: A copy of AOI-4 has been obtained.

STEP EVALUATION: SAT ____ UNSAT ____

PERFORMANCE

STEP 2: (3.2.5) **Place** failed channel LEVEL TRIP switch to BYPASS (1-M-13).

STANDARD: The failed channel, N-132, LEVEL TRIP switch placed to BYPASS.

STEP EVALUATION: SAT ____ UNSAT ____

PERFORMANCE

STEP 3: (3.2.6) • **Place** failed channel HIGH FLUX AT SHUTDOWN switch to Block

STANDARD: channel HIGH FLUX AT SHUTDOWN switch to placed to block

STEP EVALUATION: SAT ____ UNSAT ____

PERFORMANCE

STEP 4: (3.2.7) • **Ensure** 1-NR-92-145 recording an operable source range channel

STANDARD: 1-NR-92-145 recording selected to an operable source range channel

STEP EVALUATION: SAT ____ UNSAT ____

PERFORMANCE

STEP 5: (3.2.8) • **IF** in MODE 3, 4, or 5, **THEN**
• CHECK audio count rate audible in control room.
• REFER TO the following Technical Specifications:
3.3.1, Reactor Trip System Instrumentation
3.3.3, PAM Instruments
3.3.4, Remote Shutdown System

(CUE: When the applicant states that he will review Tech Specs, inform him that Tech Specs will be reviewed by another. This ends the JPM)

STANDARD: Plant is in MODE 4. The audio count rate should be audible in the control room. Tech Specs will be reviewed by another.

STEP EVALUATION: SAT ____ UNSAT ____

WATTS BAR NUCLEAR PLANT

PERFORMER HANDOUT SHEET

THE EXAMINER WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEP(S) TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING/OPERATING CUES.

WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THE OBJECTIVE FOR THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

ENSURE THAT YOU INDICATE TO ME WHEN YOU FULLY UNDERSTAND YOUR TASK.

INITIAL CONDITIONS:

- Plant conditions, BOL, 400°F, 593 psig
- Unit Heat-Up in progress.
- You are the Reactor Operator

INITIATING CUES:

- The Unit Supervisor has directed you to remove SRM N132 from service.
- You are to notify the US when the procedure has been completed.