FINAL SUBMITTAL

VOGTLE EXAM
50-424, 425/2001-301

MAY 14 - 18 & 21 - 25, 2001

FINAL AS-GIVEN JPMs FOR EACH

WALK-THROUGH TEST

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

NRC EXAM HL-11

ESTABLISH REQUIRED SUBCOOLING FOR RCS DEPRESSURIZATION

Revision 1

April 24, 2001

Written By : Al Sweat **Date: 4/24/2001**

Approved By : **Date:**

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Establish Required Subcooling for RCS Depressurization

REVISION: 1 April, 2001

COMPLETION TIME: 11 minutes

Application: RO/SRO

Task Number:

K/A Number:

JPM INFORMATION

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION [ ] SATISFACTORY [ ] UNSATISFACTORY

Examiner Comments:

Examiner's Signature: _____

This JPM is based on 19030-C. Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS:

1. 19030-C, Steam Generator Tube Rupture Response

SIMULATOR SETUP:

1. Reset to IC14
2. Insert malfunction SG01A (B,C,or D) at 50%
3. Initiate manual Rx trip and SI
4. Throttle AFW flow to ≈ 200 gpm per SG
5. Verify ruptured SG level > 10%
6. Perform 19030 steps 3 through 5
7. Ensure ruptured SG pressure increases above 1100 psig
8. Block the Low Steam Line pressure SI/SLI (both trains)
9. Ensure the RCP are left in service to support the cooldown.
10. Ack/Reset alarms
11. Freeze simulator

Setup time: 8 minutes

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

INITIAL CONDITIONS: **A tube rupture has occurred on SG ___. The crew was transitioned from 19000 to 19030. Steps 1 through 5 of 19030 have been performed.**

ASSIGNED TASK: **The USS has directed you to "Cooldown the RCS to obtain the core exit temperature required for RCS depressurization using step 6 of 19030".**

TASK STANDARD: **Core exit thermocouple temperatures less than required for RCS depressurization.**

START TIME: _____

STEP 1

SAT ☐ UNSAT ☐

Determine required core exit temperature

☐ • Ruptured SG pressure between 1100 and 1200 psig

☐ • Required core exit temperature determined to be 518°F (530 too high) (Possibly a critical step if applicant chooses target temperature significantly lower than 518)

CUES:

STEP 2

CRITICAL (♦)

SAT ☐ UNSAT ☐

Initiate RCS cooldown
Note: When the operator to takes the steam dumps to the bypass interlock position the simulator operator will insert a C-9 failure. The operator must recognize the problem and continue RCS cooldown with the ARV's on the intact S/G's.

☐ • AFW flow increased to intact SGs
☐ ♦ HS-500C in STEAM PRESSURE
☐ ♦ HS-500A and HS-500B in BYP INTLK (required when RCS temp < 550 °F)
☐ ♦ With C-9 failure the Steam Dumps will not be available and the operator must cooldown using the intact S/G ARV's (1)

CUE:

(1) After the student establishes the cooldown using the ARV's inform them that the BOP will continue the cooldown per 19030-C step 6.

STOP TIME: _____

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

Initial Conditions:	**A tube rupture has occurred on SG ___. The crew was transitioned from 19000 to 19030. Steps 1 through 5 of 19030 have been performed.**
Assigned Task:	**The USS has directed you to "Cooldown the RCS to obtain the core exit temperature required for RCS depressurization using step 6 of 19030".**
Task Standard:	**Core exit thermocouple temperatures less than required for RCS depressurization.**

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-60301-007-01C

TRIP PROTECTION SYSTEM BISTABLES
PRESSURIZER PRESSURE CHANNEL

Revision 1

March 9, 1998

Written By : George Gunn Date: 3/9/98

Approved By : Leon Ray Date: 3/9/98

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Trip Protection System Bistables - Pressurizer Pressure Channel

REVISION: 1 March 9, 1998

COMPLETION TIME: 6 minutes

Application: RO/SRO
Task Number: 60029
K/A Number: 012000A404 RO: 3.3 SRO: 3.3
10CFR55.45 Ref.:

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION **[ ] SATISFACTORY** **[ ] UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 18001-C. Verify this JPM is in accord with the latest procedural revision prior to use. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS:
1. 18001-C
2. Process System Protection Cabinets Key

COMPONENT LOCATION: Main Control Room, 7300 Rx Protection Cabinets

CARD LOCATION REFERENCE:

3567	3557	3547	3537	3527	3517	3507	2496	2486	2476	2466	2456	2446	2436	2426	2416
						CARD SLOTS 21 thru 36									
						CARD SLOTS 41 thru 56									
						CARD SLOTS 61 thru 76									

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

REMEMBER: All steps required for this task are to be simulated.
Plant equipment is not to be operated.

INITIAL CONDITIONS: Unit __ Pressurizer pressure channel __ PT-455 has failed. The control room operators have stabilized the plant in accordance with the AOP.

ASSIGNED TASK: The USS has directed you to "Trip the Pressurizer pressure channel __ PT-455 bistables listed in Table C1 of 18001-C and place the associated Master Test Switch in TEST".

TASK STANDARD: The failed instrument channel placed in a tripped condition.

JPM STEPS

START TIME: _____

Permisssion should be obtained from the applicable Control Room staff in order to access the 7300 Protection Cabinet.

STEP 1
SAT ☐ UNSAT ☐

Locate protection cabinet

☐ • Protection Cabinet 1 located
☐ • Card Frame 8 located

STEP 2
CRITICAL (♦)
SAT ☐ UNSAT ☐

Place Bistables in a Tripped condition

☐ ♦ Card 46, B/S switches 1, 3, & 4 placed in TEST
☐ ♦ Card 22, B/S switches 3 & 4 placed in TEST

STEP 3
SAT ☐ UNSAT ☐

Place Master Test switch in TEST

☐ • Card 74, TEST switch 5 placed in TEST
☐ • Card 72, TEST switch 1 placed in TEST

STEP 4
SAT ☐ UNSAT ☐

Report to USS

☐ • Bistables are tripped and the Master test Switch is in TEST.

STOP TIME: _____

Field Notes

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

REMEMBER: All steps required for this task are to be simulated.
Plant equipment is not to be operated.

Initial Conditions: Unit __ Pressurizer pressure channel __ PT-455 has failed. The control room operators have stabilized the plant in accordance with the AOP.

Assigned Task: The USS has directed you to "Trip the Pressurizer pressure channel __ PT-455 bistables listed in Table C1 of 18001-C and place the associated Master Test Switch in TEST".

Task Standard: The failed instrument channel placed in a tripped condition.

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JOB PERFORMANCE MEASURE

RQ-JP-13435-001

MANUALLY RACK A 4160V CIRCUIT BREAKER

Revision 7

November 13, 2000

Written By : M. C. Henry Date: 11/13/2000

Approved By : R. D. Brigdon Date: 11/19/2000

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Manually Rack a 4160V Circuit Breaker

REVISION: 7 November 13, 2000

COMPLETION TIME: 5 minutes

Application: RO/SRO
Task Number: 01017
K/A Number: 062000A401 RO: 3.3 SRO: 3.1
10CFR55.45 Ref.:

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION **[ ] SATISFACTORY** **[ ] UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on 13435-C. Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to the examinee during the performance of this JPM. This JPM should be performed using the Training Switchgear in the Electrical Maintenance Lab. The examiner should not require the operator to locate the breaker in the plant. To access the Training Switchgear, contact the Electrical Maintenance Training Supervisor.

REQUIRED ITEMS:

1. 13435-C, Circuit Breaker Racking Procedure
2. Electrical Lab key
3. 4160V racking tool

COMPONENT LOCATION: To establish the proper switchgear setup, the following should be performed on the 4160V Training Switchgear breaker:

1. Ensure the Training Switchgear is Energized
2. Place the charging motor power control switch in OFF
3. Rack the breaker to the DISCONNECT position.
4. Remove the breaker from the cubicle enough to discharge the closing springs
5. Rack the breaker to the TEST position
6. Close the control power circuit breaker
7. Verify all switches in the rear of the breaker cabinet are aligned to the position highlighted in "black".

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

REMEMBER: All steps required for this task are to performed in the Maintenance Lab of the Training Center. **Plant equipment is not to be operated!**

INITIAL CONDITIONS: Electrical maintenance personnel have completed a routine PM on a 4160 breaker. The breaker has been restored to the TEST position.

ASSIGNED TASK: The USS has directed you to "Rack breaker 1AA02-07 to the CONNECT position using 13435-C."

TASK STANDARD: 4160V circuit breaker in the connect position and aligned for operation.

JPM STEPS

START TIME: _____

STEP 1
SAT ☐ UNSAT ☐

Prepare circuit breaker for racking

Note: The operator must open the cubicle doors to perform these steps.

- ☐ • 13435-C section 4.1.5 selected
- ☐ • Control Room directed to place the Maintenance control switch 1MS-1AA02 in MAINT *(1)*
- ☐ • Verify no clearances exist on breaker
- ☐ • Verify Charging Spring Motor Power control switch is OFF & closing springs DISCHARGED
- ☐ • Control Power circuit breaker OPEN
- ☐ • Mechanical breaker position indicator verified OPEN

CUES:

(1) "1MS-1AA02 is in MAINTENANCE."

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Engage racking crank

- ☐ ♦ Breaker cubicle door CLOSED
- ☐ • Cubicle sliding door OPEN
- ☐ ♦ Racking crank engaged
- ☐ • Unlocking lever rotated clockwise and held
- ☐ • Racking crank rotated clockwise ≥1/4 turn
- ☐ • Unlocking lever released

STEP 3
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Rack circuit breaker to the connect position

- ☐ ♦ Racking crank rotated clockwise until automatically stopped
- ☐ ♦ Breaker in CONNECT
- ☐ • Unlocking lever in the locked position

JPM STEPS

STEP 4
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Remove racking crank

☐ ♦Trip pushbutton verified FLUSH with breaker front
☐ • Racking crank disengaged and removed
☐ • Cubicle sliding door CLOSED

STEP 5
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Prepare circuit breaker for operation

☐ • Remote circuit breaker fuses verified installed
☐ ♦ Control Power circuit breaker CLOSED
☐ ♦ Charging Motor Power Control switch in ON
☐ ♦ Closing Springs CHARGED
☐ ♦ Cubicle doors CLOSED
☐ • TS-LR's green light lit
☐ ♦ Control Room directed to place bus maintenance switch 1MS-1AA02 in NORMAL ***(1)***

CUES:
(1) "1MS-1AA02 in NORMAL."

STEP 6
SAT ☐ UNSAT ☐

Report to USS

☐ • 1AA02-07 racked to CONNECT

STOP TIME: _____

Field Notes

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

REMEMBER: All steps required for this task are to performed in the Maintenance Lab of the Training Center. **Plant equipment is not to be operated!**

Initial Conditions: Electrical maintenance personnel have completed a routine PM on a 4160 breaker. The breaker has been restored to the TEST position.

Assigned Task: The USS has directed you to "Rack breaker 1AA02-07 to the CONNECT position using 13435-C".

Task Standard: 4160V circuit breaker in the connect position and aligned for operation.

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JOB PERFORMANCE MEASURE

RQ-JP-16401-003-01

RESPOND TO FAILURE OF RCP SEAL #1

Revision 17

July 3, 2000

Written By : *M. C. Henry* Date: 7/3/2000

Approved By : *Richard D. Brigdon* Date: 7/4/2000

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Respond to Failure of RCP Seal #1

REVISION: 17 July 3, 2000

COMPLETION TIME: **5 minutes TIME CRITICAL** ⏲

Application:	RO/SRO				
Task Number:	16008				
K/A Number:	00300A201	RO:	3.5	SRO:	3.9
10CFR55.45 Ref.:	3, 4, 6, 12				

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION **[ ] SATISFACTORY** **[ ] UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on 13003-1. Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS:

1. 13003-1, Reactor Coolant Pump Operation

SIMULATOR SETUP:

1. Reset to IC7
2. Ack/Reset alarms
3. Freeze simulator
4. Insert malfunction RP06A(B,C, or D) with a Final Value of 100% and a ramp time of 8 seconds

Setup time: 5 minutes

DIRECTIONS TO OPERATOR

INSTRUCTIONS TO EXAMINER

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

This is a TIME CRITICAL JPM

INITIAL CONDITIONS:	The plant is at 10% power. Preparations are underway to synch the generator to the grid.
ASSIGNED TASK:	You have been directed by the USS to "Assume the duties of the RO".
TASK STANDARD:	Plant conditions correctly diagnosed and corrective actions completed.

JPM STEPS

STEP 1
SAT ☐ UNSAT ☐

Determine RCP seal abnormality

☐ • RCP Controlled Lkg Hi/Lo Flow annunciator in alarm 1A2-A05 (17008-1)
☐ • Seal leakoff flow indications increasing

STEP 2
SAT ☐ UNSAT ☐

Select procedure and section

☐ •13003, section 4.2.1 selected

STEP 3
CRITICAL (♦)
SAT ☐ UNSAT ☐

Evaluate RCP status
Note: RCP parameters may be monitored on IPC if available, but are not required for satisfactory performance.

☐ • Trend data listed in Table 2 of 13003. ***(1)***
☐ ♦ Determines #1 seal leakoff flow exceeds normal limits (> 5.5 gpm)

CUES:
(1) "The USS will ensure Table 2 data monitoring performed by BOP"

© Indicate the following; Seal injection flow is 9 gpm; Seal injection temperature is 105°F"; Seal leakoff flow is offscale high on the high range recorder.

START TIME: _____ **TIME CRITICAL** ⏲

STEP 4
CRITICAL (♦)
SAT ☐ UNSAT ☐

Stop the RCP
Note: RCP #2 and #3 have no associated spray valve and critical step would not apply

☐ • START oil lift pump
☐ • Initiate 18005-C, Partial Loss of Flow ***(1)***
☐ ♦ STOP affected RCP
☐ ♦ If RCP #1 or #4 was stopped, place associated spray valve in MANUAL and CLOSE.(PIC-455C or PIC-455B) *(See Note above for RCP #2 and #3.)*
☐ ♦ CLOSE HV-8141A(B,C, or D)
☐ • STOP oil lift pump

CUES:
(1) "The USS will initiate 18005-C."

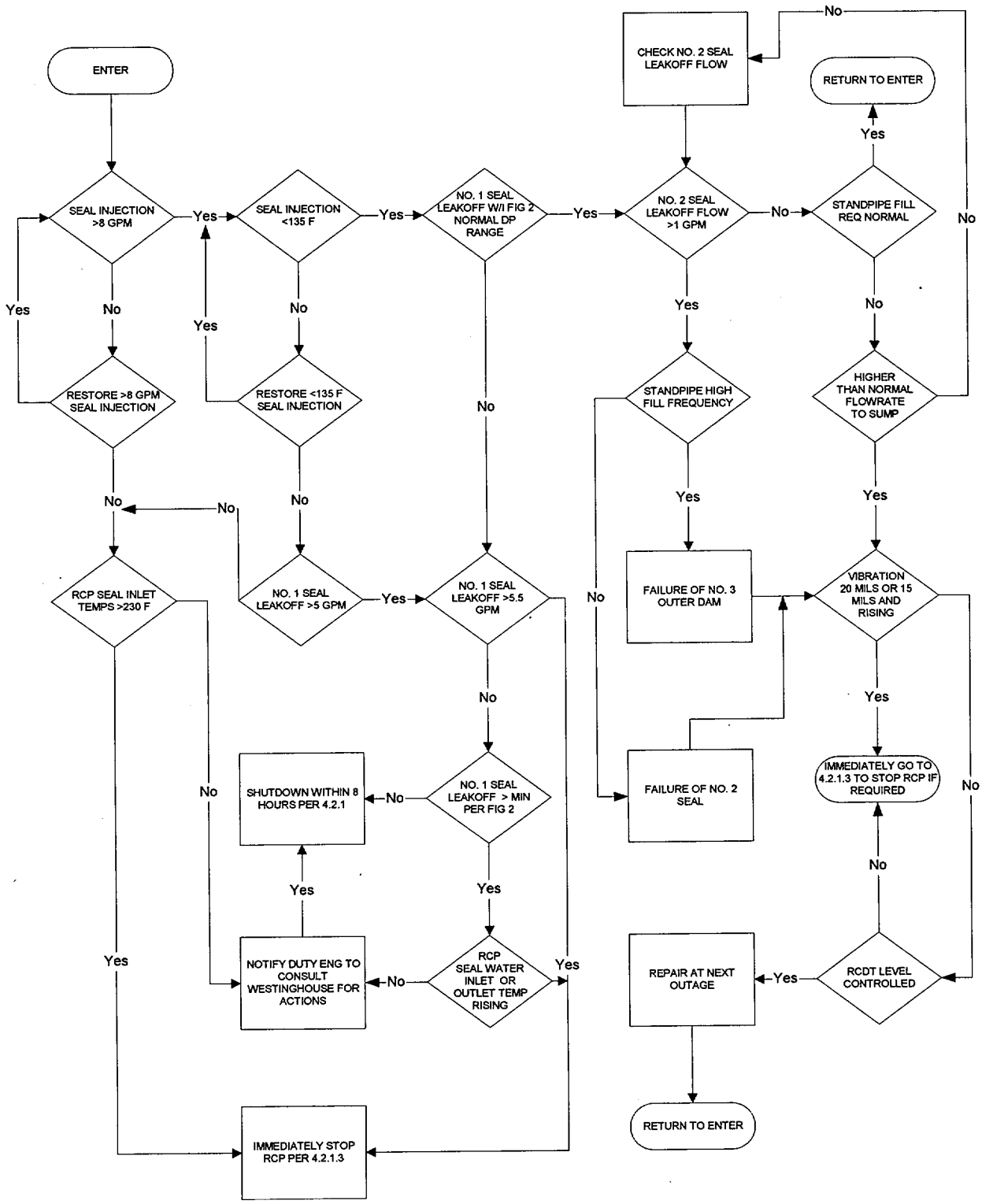
JPM STEPS

STOP TIME: _____

STEP 5 SAT ☐ UNSAT ☐ **Report to USS**
☐ • The affected RCP has been stopped

Field Notes

FIGURE 1 - RCP SEAL ABNORMALITIES DECISION TREE



DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

This is a TIME CRITICAL JPM

INITIAL CONDITIONS: The plant is at 10% power. Preparations are underway to synch the generator to the grid.

ASSIGNED TASK: You have been directed by the USS to "Assume the duties of the RO".

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-37031-001-01

LOCALLY ISOLATE RCP SEALS

Revision 12

May 19, 1997

Written By : *George Gunn* Date: 5/19/97

Approved By : *Leon Ray* Date: 5/19/97

ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
* 8. Check AC emergency busses status:	
a. At least one AC emergency bus - ENERGIZED.	a. Dispatch operator to restore AC emergency busses using 13427, 4160V AC ELECTRICAL DISTRIBUTION. UNIT 1 1AA02 (CB-A48) 1BA03 (CB-A50) UNIT 2 2AA02 (CB-A16) 2BA03 (CB-A15) WHEN one AC emergency bus is energized, THEN go to Step 26. Continue with Step 9.
b. Go to Step 26.	

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-40101-002-01A

MAKE EMERGENCY NOTIFICATIONS

Revision 2

June 1, 2000

Written By : *M. C. Henry* Date: 6/01/2000

Approved By : *R. D. Brigdon* Date: 6/13/2000

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Make Emergency Notifications

REVISION: 2 June 1, 2000

COMPLETION TIME: **15 minutes** **TIME CRITICAL** ◷

Application: RO / SRO
Task Number: 40003
K/A Number: 194001A1.16 RO: 3.1 SRO: 4.4
10CFR55.45 Ref.: 11

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room

Performance Time: _____minutes

OVERALL JPM EVALUATION **[ ] SATISFACTORY** **[ ] UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 91002-C. Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS:

1. Procedure 91002-C, Emergency Notifications, Checklist 2
2. VEGP Emergency Response Telephone Directory

SIMULATOR SETUP: Simulator not required for JPM performance

Notes to Examiner:

(1) Checklist 2, Sheet 2, Emergency Notification, should be completed with the exception of Steps 3, 4, and 6 prior to the start of this JPM. Step 1.A, THIS IS A DRILL, should always be recorded.

(2) Step 3 of the Emergency Notification form must be completed within 15 minutes of the time documented in Step 6.A. The start time of this JPM should be the time recorded in Step 6.A.

(3) ENSURE that the ENN telephone jack in the rear of the ENN telephone has the "Simulator" line installed.

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

This is a TIME CRITICAL JPM

INITIAL CONDITIONS: An emergency has been declared and the Shift Superintendent has assumed the duties of the Emergency Director.

ASSIGNED TASK: The Emergency Director has directed you to "Perform the duties of the ENN Communicator".

TASK STANDARD: Communications established and the Emergency Notification form transmitted to all State and Local authorities.

JPM STEPS

START TIME: _____ **TIME CRITICAL** ◷

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Initiate roll call

*Note: The Emergency Response Telephone Directory, or the dial code card, should be consulted as needed for requried ENN dial codes. The dial code, **, should be used initially to ring ALL required agencies.*

☐ ♦ Burke County notified *(1)*
☐ ♦ GEMA notified
☐ ♦ Aiken County notified
☐ ♦ SRS notified
☐ ♦ Allendale County notified
☐ ♦ State of South Carolina notified
☐ ♦ Barnwell County

CUES:

(1) When requested, provide cue that the emergency center hailed has responded.

STEP 2
SAT ☐ UNSAT ☐

Transmit fascimile

Note: On the Fax machine in the simulator, the pushbutton labelled "NOTIFY(Training)" should be depressed to simulate "NOTIFY", if necessary a cue to the examinee should be provided that for simulation purposes, the "NOTIFY (Training)" pushbutton should be used to transmit the fax.

☐ • Place message face down in transmit tray
☐ • NOTIFY(Training) pushbutton depressed

STEP 3
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Communicate notification via ENN

Note: Examiner should arbitrarily pick a number between 1 and 100 and verfiy that authentication code is correctly identified by examinee.

☐ • Lines 1 & 2 transmitted
☐ ♦ Examinee's name provided in Line 2, "Reported By"
☐ ♦ Line 3, Transmittal time & date completed *(1)*
☐ • Control Room confirmation phone number transmitted

CUES:

(1) After completion of ENN form line 3, "The State of South Carolina request that you authenticate number ___."

STOP TIME: _____

STEP 4
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Message authentication

Note: The authentication codes are located in the Emergency Response Telephone Directory. The codeword provided should match the number given in the cue of JPM Step 3.

☐ ♦ Authentication codeword correctly provided.

STEP 5
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Transmit classification data

☐ ♦ Emergency Classification
☐ ♦ Emergency declaration time and date
☐ • Emergency description

JPM STEPS

STEP 6
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Transmit current plant radiological conditions

- ☐ • Plant condition
- ☐ ♦ Emergency rad release status
- ☐ ♦ Current meteorological data
- ☐ • Recommended protective actions
- ☐ • ED approval,time, & date

STEP 7
SAT ☐ UNSAT ☐

Record Acknowledgements

- ☐ • Perform a second roll call and record names of individuals receiving the message *(1)*

CUES:
(1) Give names as appropriate for each agency

STEP 8
SAT ☐ UNSAT ☐

Notify ED

- ☐ • Initial Emergency Notification completed

Field Notes:

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

THIS IS A TIME CRITICAL JPM

Initial Conditions:	An emergency has been declared and the Shift Superintendent has assumed the duties of the Emergency Director.
Assigned Task:	The Emergency Director has directed you to "Perform the duties of the ENN Communicator".

Task Standard:	Communications established, and the Emergency Notification form transmitted, to all State and Local authorities.

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

NRC EXAM HL-11

CALCULATE WORKER STAYTIME TO PERFORM MAINTENANCE ON VALVE

Revision 1

April 24, 2001

Written By Al Sweat **Date:** 4/24/2001

Approved By : **Date:**

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: CALCULATE WORKER STAYTIME TO PERFORM MAINTENANCE ON VALVE

REVISION: 1 April, 2001

COMPLETION TIME: 20 minutes

Application: RO/SRO

Task Number:

K/A Number:

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____ minutes

OVERALL JPM EVALUATION [ ] SATISFACTORY [ ] UNSATISFACTORY

Examiner Comments:

Examiner's Signature: _____

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

INITIAL CONDITIONS: **After Unit One refueling outage the RCDT discharge header isolation from containment drain valve 1-1901-X4-028 has developed a bad packing leak which requires repair. The RCDT System has been tagged and drained to support the work by operations. Two mechanics have been assigned the task. Listed below is the workers accumulated yearly dose following the refueling outage.**

Worker #1	**4450 mrem**
Worker #2	**4375 mrem**

Assigned Task: **Using the Fuel Handling Building HP Room survey maps provided calculate how long each worker may remain in the area to perform the maintenance before reaching the administrative exposure limits for plant Vogtle.**

TASK STANDARD: **EACH MAINTENANCE WORKERS MAXIMUM STAY TIME CALCULATED.**

START TIME: _____

STEP 1

SAT ☐ ***UNSAT*** ☐

Worker #1 (4500- 4450 = 50 mrem) General radiation dose in area is 5 mrem/hr
50mren ÷ 5mrem/hr = 10 hours

Worker #2 (4500- 4375 = 125 mrem) General radiation dose in area is 5 mrem/hr
125mrem ÷ 5 mrem/hr = 25 hours

Stop Time _____

Field Notes

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

Initial Conditions:	**After Unit One refueling outage the RCDT discharge header isolation from containment drain valve 1-1901-X4-028 has developed a bad packing leak which requires repair. The RCDT System has been tagged and drained to support the work by operations. Two mechanics have been assigned the task. Listed below is the workers accumulated yearly dose following the refueling outage.** **Worker #1 4450 mrem** **Worker #2 4375 mrem**
Assigned Task:	**Using the Fuel Handling Building HP Room survey map provided calculate how long each worker may remain in the area to perform the maintenance before reaching the administrative exposure limits for plant Vogtle.**
TASK STANDARD:	**EACH MAINTENANCE WORKERS MAXIMUM STAY TIME CALCULATED.**

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

DETERMINE AXIAL FLUX DIFFERENCE

Revision 0

April 15, 2001

Written By : NRC Date: 4/15/01

Approved By : Date:

3.2 POWER DISTRIBUTION LIMITS

3.2.3 AXIAL FLUX DIFFERENCE (AFD) (Relaxed Axial Offset Control (RAOC) Methodology)

LCO 3.2.3 The AFD shall be maintained within the limits specified in the COLR.

---NOTE---
The AFD shall be considered outside limits when two or more OPERABLE excore channels indicate AFD to be outside limits.

APPLICABILITY: MODE 1 with THERMAL POWER ≥ 50% RTP.

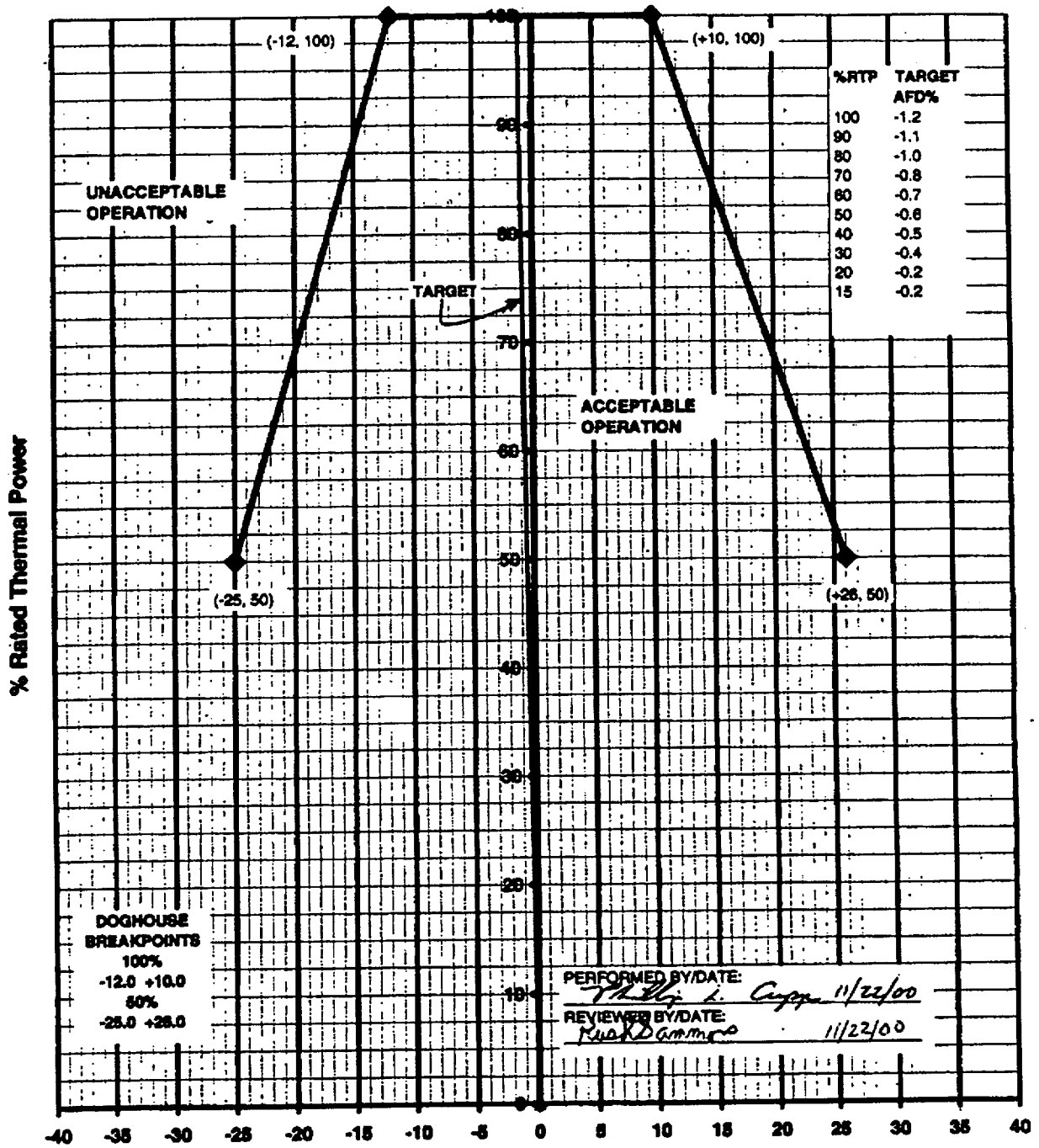
ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. AFD not within limits.	A.1 Reduce THERMAL POWER to < 50% RTP.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	Verify AFD within limits for each OPERABLE excore channel.	7 days AND Once within 1 hour and every 1 hour thereafter with the AFD monitor alarm inoperable

AXIAL FLUX DIFFERENCE LIMITS AS A FUNCTION OF RATED THERMAL POWER



JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Calculate AFD

REVISION: 0

COMPLETION TIME: 15 minutes
This JPM is to be used for Initial License Exam Only

Application: RO/SRO
Task Number:
K/A Number: 015000A105 RO: 3.7 SRO: 3.9
10CFR55.45 Ref.:

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION **[ ] SATISFACTORY** **[ ] UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 14915-1 . Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to examinee during performance of this JPM.

REQUIRED ITEMS:

1. 14915, Special Conditions Surveillance Logs
2. Plant Technical Data Book

SIMULATOR SETUP:

1. Reset to 74 % IC 92 power with NI 42C reads 69.5 .
2. AFD readings : 41C -15 42C -21
   43C -20 44C -15

The simulator should remain in FREEZE during the performance of this JPM.

Setup time: 3 minutes

This JPM is based on the Current Unit 1 Cycle.

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

Initial Conditions: Unit 1 has recently recovered from a load rejection. The unit is at 74% power. NI-42C has a failed detector , the channel has been BTI per 13509. Instrument power fuses are currently installed for troubleshooting and repair.

Assigned Task: I&C has reported that the AFD monitor alarm ALB10-F6 is inoperable. The USS has directed you to determine the required actions and perform any necessary surveillences for this condition.

TASK STANDARD: AFD calculated and LCO evaluatedoubleshooting per13509-C.

JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determines AFD must be determined for each OPERABLE excore channel within 1 hour using 14915-1 Tab 6.0 .

☐ • Reviews TS 3.2.3 and refers to 14915-1.

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine upper and lower limits of AFD from PTDB Tab 6.0

☐ • Upper and lower limits recorded

STEP 3
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine AFD

☐ • 1-NI-41C value recorded. -15
☐ • 1-NI-42C value recorded (Note: instrument is inoperable and reading -21)
☐ • 1-NI-43C value recorded -20
☐ • 1-NI-44C value recorded -15

Recognizes 1-NI-42C is not operable and records N/A on data sheet.

STEP 4
SAT ☐ UNSAT ☐

Verify AFD is within limits of PTDB 6.0

☐ *(♦)* AFD within limit of PTDB

STOP TIME: _____

JPM STEPS

Field Notes

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

Initial Conditions:	Unit 1 has recently recovered from a load rejection. The unit is at 74% power. NI-42C has a failed detector , the channel has been BTI per 13509. Instrument power fuses are currently installed for troulbleshooting and repair
Assigned Task:	I&C has reported that the AFD monitor alarm ALB10-F6 is inoperable. The USS has directed you to determine the required actions and perform any necessary surveillences for this condition.

Task Standard:	AFD calculated and LCO evaluated.

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

EVALUATE OPERATOR OVERTIME USAGE

Revision 0

April 15, 2001

Written By : NRC Date: 4/15/01

Approved By : Date:

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE:	Evaluate Operator Overtime Usage
REVISION:	0
COMPLETION TIME:	15 minutes
Application:	RO/SRO
Task Number:	
K/A Number:	G2.1.1 3.7/3.8
10CFR55.45 Ref.:	41.1/45.3

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION **[ ] SATISFACTORY** **[ ] UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

REQUIRED ITEMS:	TS 5.2.2
SIMULATOR SETUP:	N/A

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

INITIAL CONDITIONS:	The following is the schedule of 2 operators for a seven day period.
ASSIGNED TASK:	Using the attached schedule, determine whether overtime guidelines may have been violated. Consider each case seperately.
TASK STANDARD:	Overtime Usage Correctly Evaluated.

JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determies Overtime Limitations

☐ • Reviews TS 5.2.2

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Evaluates overtime usage of both opertors.

☐ • Determines hours worked each day for both operators.

STEP 3
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Evaluates hours worked against overtime limitations.

☐ (♦) Determines overtime usage in accordance with answer key. (4/5)

STOP TIME: _____

Field Notes

ANSWER KEY

Operator #1 (Dayshift)		Operator #2 (Dayshift)
Mon.	0600-1800 (12)	0600-1800 (12)
Tues.	0700-1900 (12) (came in late, holdover)	0600-1800 (12)
Wed.	0200-1800 (16) (called in early)	0600-1800 (12)
Thurs.	0600-1800 (12)	0600-1200 (6) (call out, day off)
Fri.	OFF	0600-1300 (7) (went home sick)
Sat.	0600-1800 (12)	0600-1800 (12)
Sun.	0600-1800 (12)	0600-1800 (12)
>72 hours in 7 days **< 8 hours rest Tuesday/Wednesday** **>24 hours in 48 hours** **Tues/Wed & Wed/Thur (2)**		**>72 hrs in 7 days**

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

Initial Conditions:	The following is the schedule of 2 operators for a seven day period.
Assigned Task:	Using the attached schedule, determine whether overtime guidelines may have been violated. Consider each case seperately .

Task Standard:	Use of Overtime evaluated.

Initial Conditions: The following is the schedule of 2 operators for a seven day period.

Initiating Cue: Using the attached schedule, determine whether overtime guidelines may have been violated. Consider each case seperately.

	Operator #1 (Dayshift)	Operator #2 (Dayshift)
Mon.	0600-1800	0600-1800
Tues.	0700-1900 (came in late, holdover)	0600-1800
Wed.	0200-1800 (called in early)	0600-1800
Thurs.	0600-1800	0600-1200 (call out, day off)
Fri.	OFF	0600-1300 (went home sick)
Sat.	0600-1800	0600-1800
Sun.	0600-1800	0600-1800

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JOB PERFORMANCE MEASURE

RQ-JP-37061-001-01

OPERATE CONTAINMENT HYDROGEN RECOMBINER

Revision 18

June 1, 2000

Written By : *M. C. Henry* Date: 6/01/2000

Approved By : T. A. Polito Date: 6/02/2000

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Operate Containment Hydrogen Recombiner

REVISION: 18 June 1, 2000

COMPLETION TIME: 7 minutes

Application: RO/SRO
Task Number: 29014
K/A Number: 028000A401 RO: 4.0 SRO: 4.0
10CFR55.45 Ref.: 6, 12

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION **[ ] SATISFACTORY** **[ ] UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on 13130-1. Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS:

1. 13130, Post Accident Hydrogen Control
2. PTDB Tab 13, H_2 Recombiner Reference Power
3. Calculator

COMPONENT LOCATION: Control Building 1E 480 VAC Swgr Rooms *(not provided in procedure)*

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

REMEMBER: All steps required for this task are to be simulated. Plant equipment is not to be operated.

INITIAL CONDITIONS: The crew has implemented 19251 following a large LOCA on Unit_____. The following containment parameters have been recorded:

H_2 concentration	-	5%
pre-LOCA temperature	-	90°F
post-LOCA pressure	-	8 psig.

ASSIGNED TASK: Per 19251-C, the USS has directed you to "Start Unit_____ Hydrogen Recombiner_____ by initiating 13130-__, Post Accident Hydrogen Control".

TASK STANDARD: Containment hydrogen recombiner operating at the post-LOCA power setting.

JPM STEPS

START TIME: _____

STEP 1
SAT ☐ UNSAT ☐

Determine recombiner pressure factor

☐ • Pressure factor of 1.35 to 1.38 determined using Figure 1

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Energize the hydrogen recombiner

☐ • Power Available light lit
☐ • Power Adjust Potentiometer at 0 demand
☐ ♦ Power Out switch in ON
☐ • Red power out light lit

STEP 3
SAT ☐ UNSAT ☐

Warm up hydrogen recombiner

☐ • Power Adjust potentiometer raised to attain: ***(1)***
4 to 6 KW for 10 minutes
9 to 11 KW for 10 minutes
18 to 22 KW for 5 minutes

CUES:
(1) At each level inform the operator the stated times have been attained.

STEP 4
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine recombiner post-LOCA setting
Note: Acceptable band for post-LOCA power setting is (1.35 x current RFP) to (1.38 x current RFP). Provide Reference Power values (per attachment) when requested.

☐ • Reference power setting determined using PTDB Tab 13
☐ ♦ Post-LOCA power setting determined within acceptable band

JPM STEPS

STEP 5
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Increase recombiner power to the post-LOCA setting

Note: H2 Recombiner Post-LOCA Settings: *1A: 54 – 55.2 kW* *1B: 58.3 - 59.6 kW* *2A: 60.8 – 62.1 kW* *2B: 58.2 – 59.5 kW*

☐ ♦ Power Adjust potentiometer raised to attain post-LOCA power setting
☐ • Requests containment hydrogen concentration sampling. ***(1)***

CUES:
(1) "The SSS is directing sampling per Sections 4.2.1 and 4.2.2."

STEP 6
SAT ☐ UNSAT ☐

Report to USS

☐ • Recombiner in service

STOP TIME: _____

Field Notes

From PTDB Tab 13

Unit 1 Train A: 40 KW

Unit 1 Train B: 43.2 KW

Unit 2 Train A: 45 KW

Unit 2 Train B 43.12 KW

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

REMEMBER: All steps required for this task are to be simulated.
Plant equipment is not to be operated.

Initial Conditions: The crew has implemented 19251 following a large LOCA on Unit_____ . The following containment parameters have been recorded:

H_2 concentration	-	5%
pre-LOCA temperature	-	90°F
post-LOCA pressure	-	8 psig.

Assigned Task: Per 19251-C, the USS has directed you to "Start Unit_____ Hydrogen Recombiner_____ by initiating 13130-___, Post Accident Hydrogen Control".

Task Standard: Containment hydrogen recombiner operating at the post-LOCA power setting.

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-37113-001-02

TRANSFER CONTAINMENT SPRAY SYSTEM TO RECIRCULATION (ALTERNATE PATH)

Revision 17

April 15, 2001

Written By : Date:

Approved By : Date:

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Transfer Containment Spray System to Recirculation

REVISION: 16 July 1, 1999

COMPLETION TIME: 8 minutes

Application: RO/SRO
Task Number: 37009
K/A Number: 000011EA112 RO: 4.1 SRO: 4.4
10CFR55.45 Ref.: 6, 12

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION [ ] SATISFACTORY [ ] UNSATISFACTORY

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 19013-C. Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS:

1. 19013, Transfer to Cold Leg Recirculation

SIMULATOR SETUP:

1. Reset to IC90 (MOL 100%)
2. Insert malfunction RC03C (DBA LOCA)
3. Trip all RCPs
4. Throttle AFW flow to ≈ 200 gpm/SG
5. When Containment Emergency Sump levels are ≈ 15": set RF: TK02 = 39% (RWST)
6. Perform 19013-C steps 1 thru 6
7. Set RF: TK02 = 10%
8. Close HV-9001B (Remove after CS is reset)
9. Ack/Reset alarms
10. Freeze simulator

NOTE: Simulator operator ramp containment pressure up when CS Pump A is secured in JPM step 2. (8# to 15 # over 20 minutes.)

Setup time: 20 minutes

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

INITIAL CONDITIONS: A large break LOCA has occured. The crew performed the cold leg recirculation lineup using 19013, and returned to 19010. After transitioning to 19010, RWST level decreased below 10%. The Auxiliary Building Operator is standing by the local Containment Spray suction and discharge pressure gauges with communications on line 1.

ASSIGNED TASK: The USS has directed you to "Align Containment Spray for recirculation beginning with 19013, step 8".

TASK STANDARD: Containment spray system operating in the recirculation mode.

JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Reset containment spray

☐ ♦ Cntmt Spray reset handswitches HS-40058 and HS-40059 in RESET
☐ • ALB 06 D06 clear (Cnmt spray actuation)

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Align Train A for recirculation

☐ ♦ Sump suctions HV-9002A and HV-9003A open **(HV-9003A fails to OPEN)**
☐ ♦ Stop CS Pump 1A
☐
☐

CUES:
(1) HV-9003 is inaccessable due to High Radiation levels.
If asked for:
(2) **"Suction pressure (PI-972) is 2 psig; Discharge pressure (PI-974) is 225 psig".**

STEP 3
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Align Train B for recirculation

☐ ♦ Sump suction HV-9002B and HV-9003B open
☐ ♦ RWST suction HV-9017B closed
☐ • Local gauges for pump suction and discharge pressure verified ***(1)***
☐ • CNMT pressure verified stable or decreasing **(Containment pressure increasing)**
☐ ♦ Verify Valve Alignment Correct. Opens HV-9001B

CUES: **If asked for:**
(1) **"Suction pressure (PI-973) is 16 psig; Discharge pressure (PI-975) is 250 psig."**

STEP 4
SAT ☐ UNSAT ☐

Report to USS

☐ • Containment spray Pump B aligned for recirculation

STOP TIME: _____

Field Notes

Initial Conditions:	A large break LOCA has occured. The crew performed the cold leg recirculation lineup using 19013, and returned to 19010. After transitioning to 19010, RWST level decreased below 10%. The Auxiliary Building Operator is standing by the local Containment Spray suction and discharge pressure gauges with communications on line 1.
Assigned Task:	The USS has directed you to "Align Containment Spray for recirculation beginning with 19013, step 8".

Task Standard:	Containment spray system operating in the recirculation mode.

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JOB PERFORMANCE MEASURE

NRC EXAM HL-11

CALCULATE SHUTDOWN MARGIN K_{EFF} DETERMINED TO BE UNSAT TO WITHDRAW SHUTDOWN BANKS

Revision 1

March 24, 2001

Written By : Al Sweat **Date: 4/24/2001**

Approved By : **Date:**

This information describes the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the task before beginning. You will be allowed access to any item normally used to perform this task.

INITIAL CONDITIONS:	**The crew is performing a reactor startup following a trip from 100% power, steady state conditions.**
ASSIGNED TASK:	**In accordance with UOP 12003, the USS has directed you to "Determine K_{eff} for withdrawal of the shutdown banks using 14005".**
TASK STANDARD:	**K_{eff} calculated for withdrawal of the Shutdown Banks.**

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: CALCULATE SHUTDOWN MARGIN K_{EFF} DETERMINED TO BE UNSAT TO WITHDRAW SHUTDOWN BANKS

REVISION: 1 April 24, 2001

COMPLETION TIME: 20 minutes

Application: RO/SRO

Task Number:

K/A Number:

Evaluation Method [ ] Performed [ ] Simulated

Evaluation Location [ ] Simulator [ ] Control Room [ ] Unit 1 [ ] Unit 2

Performance Time: _____ minutes

OVERALL JPM EVALUATION [ ] SATISFACTORY [ ] UNSATISFACTORY

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 14005-1. Verify this JPM is in accord with the latest procedural revision prior to use. Cues preceded by a "©..." are provided to enhance simulation of this JPM and should only be used when the simulator is unavailable. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS:

1. **14005, Shutdown Margin and Keff Calculations**
2. **Plant Technical Data Book (Unit 1)**

SIMULATOR SETUP: **Performance of this JPM does not require the simulator.**

This JPM is based on Unit 1 Cycle 10 data.

DIRECTIONS TO OPERATOR

You will be given information describing the Initial Conditions, Assigned Task, and the Task Standard. Please ensure you understand the assigned task before beginning. You will be allowed access to any item normally used to perform this task.

INITIAL CONDITIONS: **The crew is performing a reactor startup following a trip from 100% power, steady state conditions.**

ASSIGNED TASK: **In accordance with UOP 12003, the USS has directed you to "Determine K_{eff} for withdrawal of the shutdown banks using 14005".**

TASK STANDARD: **K_{eff} calculated for withdrawal of the Shutdown Banks.**

JPM STEPS

START TIME: _____

STEP 1

CRITICAL (♦)

SAT ☐ **UNSAT** ☐

Select appropriate Data Sheet

☐ ♦ **Data Sheet 3 selected**
☐ • **Current conditions recorded**

STEP 2

CRITICAL (♦)

SAT ☐ **UNSAT** ☐

Determine reactivity values using PTDB
Note: If a discrepency exist in the values of this JPM and the values calculated by the examinee, all work performed by the examinee should be collected and evaluated to determine where error exist. If the error is determined to be a math or interpolation error and the error does not affect the acceptance criteria, then the JPM should be considered as satisfactory If the error is due to improper usage of the procedure or the tables in the PTDB, then the JPM should be considered unsatisfactory.

☐ • **Xe/Sm free integral boron worth (J1) of 3857 pcm**
☐ • **Xe/Sm free critical boron worth (J2) of 688 ppm**
☐ • **Xe/Sm free integral boron worth (J3) of 6514 pcm**
☐ • **Boron correction factor (J4) of 0.91916**
☐ • **Corrected Xe/Sm worth (J6) of 3285 pcm**
☐ • **Shutdown reactivity (J8) of 628 pcm**

STEP 3

CRITICAL (♦)

SAT ☐✍ **UNSAT** ☐✍

Determine K_{eff}

Note: Interpolation and rounding may result in values slightly different from those provided.

✍☐ ♦ **K_{eff} of 0.994 calculated**

STEP 4

CRITICAL (♦)

SAT ☐✍ **UNSAT** ☐✍

Report to USS

✍☐ ♦ **Keff is NOT acceptable for SD bank withdrawal**

STOP TIME: _____

Field Notes

Power History	**100% for 410 days**
Cycle Burnup	**19,000 MWD/MTU**
Boron Concentration	**400 ppm**
Tavg	**557 °F**
Current Rod Height	**All rods are inserted**
Delta AO x Delta Bu	**0 % MWD/MTU**
Length of shutdown	**28 hours**
Boron-free Xenon plus Samarium Worth Obtained from Rx	**3574 pcm** (Engineering)

DIRECTIONS: **Following a reactor trip from 100% power, with Xenon and Samarium at equilibrium, a startup is in progress. In preparation for withdrawal of the shutdown banks, the USS has directed you to determine K_{eff} for the withdrawal of the shutdown banks.**