Draft Submittal

VOGTLE MAY 2005 EXAM
50-424, 425/2005-301

MAY 17 - 25, 2005
MAY 27, 2005 (WRITTEN)

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

DRAFT

ES-301, Rev. 9 **Administrative Topics Outline** **Form ES-301-1**

Facility: Vogtle
Examination Level: RO

Date of Examination: May 2005
Operating Test Number: 2005-301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M	Title: Safety Function Status Checks Description: Perform Safety Function Status Checks without the aid of the computer. JPM constructed for at least one safety function not satisfied. K/A: G2.1.7 (3.7/4.0)
Conduct of Operations	M	Title: Shutdown Margin Calculation Description: Determine shutdown margin at zero power at 28 hours after a reactor trip, with RCS temperature at less than the hot zero power reference value. K/A: G2.1.7 (3.7/4.0)
Equipment Control	M	Title: Construct Tagout for Unit 2 #4 Nuclear Service Cooling Water Pump Description: Construct tagout without the use of pre-written tagouts from master tagouts or computerized tagging system. K/A: G2.2.13 (3.6/3.8)
Radiation Control	M	Title: Radiation Posting Requirements / Accumulated Dose Description: A point source is located a few feet from a door. A map of the room should be used to depict the point source and the location of the radiation posting. The applicant must calculate the dose rate at the door as being greater than 100 mrem/hr, thus requiring the door to be posted HIGH RAD AREA. The JPM will have the applicant determine the posting requirement for the room. K/A: 2.3.4 (2.5/3.1)
Emergency Plan	N/A	N/A

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

* Type Codes & Criteria:(C)ontrol room
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)
(S)imulator

DRAFT

ES-301, Rev. 9 **Administrative Topics Outline** **Form ES-301-1**

Facility: Vogtle
Examination Level: SRO

Date of Examination: May 2005
Operating Test Number: 2005-301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M	Title: Determine Mode Change Requirements Description: JPM will give a set of plant conditions, one of which will preclude making a mode change (I.E., Tech Spec that will not be met in next higher mode.) JPM will direct a determination of whether a mode change can be made and if not, what conditions are preventing the mode change. K/A: G2.1.10 (2.7/3.9)
Conduct of Operations	M	Title: Shutdown Margin Calculation Description: Determine shutdown margin at zero power at > 24 hours after a reactor trip, with RCS temperature at less than the hot zero power reference value. K/A: G2.1.7 (3.7/4.0)
Equipment Control	M	Title: Construct Tagout for Unit 2 #4 Nuclear Service Cooling Water Pump Description: Construct tagout without the use of pre-written tagouts from master tagouts or computerized tagging system. K/A: G2.2.13 (3.6/3.8)
Radiation Control	M	Title: Life Saving in Emergency Conditions Description: Perform dose calculation on a point source that will yield an accumulated dose of > 25 rem. Determine all individuals who must approve an entry to rescue an injured person and that the person making the entry must be a volunteer. Data Sheet 1 of 91301-C must be completed. K/A: G2.3.4 (2.5/3.1)
Emergency Plan	M	Title: Emergency Classification Description: Determine event classification of General Emergency with protective action recommendations. Plant conditions shall be different than previous bank JPMs. K/A: G2.4.29 (2.6/4.0)

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

* Type Codes & Criteria:(C)ontrol room
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)
(S)imulator

Facility: Vogtle Exam Level (circle one): RO / SRO-I / SRO-U (see each JPM)	Date of Examination: May 2005 Operating Test No.: 2005-301	
Control Room Systems@ (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. Start and load EDG to dead bus. Load increases uncontrollably. (RO / SRO-I / SRO-U) K/A: 062A1.01 (3.4/3.8)	M, A, S	6 (Electrical)
b. Depressurize RCS following SGTR in accordance with 19030-C, E-3, SGTR, Step 17. JPM will require use of auxiliary sprays. (RO / SRO-I / SRO-U) K/A: 038EA1.04 (4.3/4.1)	N, A, E, S	3 (Pressure Control)
c. Perform Immediate Operator Actions for Toxic Gas Release. Two components fail to reposition. (RO / SRO-I / SRO-U) K/A: 068G2.4.49 (Control Room Habitability / Evacuation – Safety Function 8) Facility JPM: RQ-JP-18035-001	M, A, E, S	8 (Service Sys)
d. Perform RCS cooldown using steam dumps following SGTR in accordance with 19030-C, E-3, SGTR, Step 7. (RO / SRO-I) K/A: 041A4.08 (3.0/3.1)	N, E, L, S	4 (Sec Heat Removal)
e. Manually makeup to VCT. Boric Acid transfer pump degrades and flow deviation alarms, but automatic actions fail to occur. (RO / SRO-I) K/A: 004A2.06 (4.2/4.3)	N, A, S	1 (Reactivity)
f. Shift operating Charging Pump from NCP to 'A' CCP. NCP has high vibrations and 'B' CCP is tagged out. (RO / SRO-I) K/A: 004A4.08 (3.8/3.4)	N, S	2 (Inventory Control)
g. Dilute Containment with Service Air in accordance with 19010-C, E-1, Loss of Reactor or Secondary Coolant, Step 19. (RO / SRO-I) K/A: 028A4.01 (4.0/4.0) Facility JPM: RQ-JP-13130-001	D, E, L, S	5 (Containment)
h. Place RHR Train in service and initiate a cooldown. (RO) K/A: 005A4.01 (3.6/3.4) Facility JPM: RQ-JP-13011-001	D, L, S	4 (Pri Heat Removal)

In-Plant Systems@ (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. Release Unit 2 WMT 010. RE-018 exceeds setpoint, but RV-018 fails to close. (RO / SRO-I / SRO-U) K/A: 068A2.04 (3.3/3.3) Facility JPM: RQ-JP-17213-001	M, A, R	9 (Radioactivity Release)
j. Locally operate Steam Generator ARV. (RO / SRO-I / SRO-U) K/A: 039G2.1.30(3.9/3.4) Facility JPM: RQ-JP-19030-006	D, E, L, R	4 (Sec Heat Removal)
k. Place a 1E 125 Vdc Battery Charger In Service (RO / SRO-I) K/A: 058AA1.03 (3.1/3.3) Facility JPM: RQ-JP-13405-001	D	6 (Electrical)

@ All control room (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

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JOB PERFORMANCE MEASURE

CLASSIFY AN EMERGENCY EVENT - GENERAL EMERGENCY

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Deleted: 40101-001-01I
Deleted: 91001-009
Deleted: Revision
Deleted: 0
Deleted: 1
Deleted: January 4, 1996
Deleted: December 12, 2000
Deleted: Written By :
Deleted: George Gunn
Deleted: M. C. Henry . Date: .
Deleted: 01
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Deleted: 04
Deleted: 12/
Deleted: 96
Deleted: 2000¶
Deleted: Approved By :
Deleted: Leon Ray
Deleted: xxxxxxxx
Deleted: R. D. Brigdon . Date: .
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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: Reactor trip and Safety Injection has been initiated due to LOCA
No CCPs or SIPs are running
Core exit T/C's reading 2400 degrees F
FRP 19221-C in progress
Crew is depressuring all SGs to 200 psig at the maximum rate possible
CNMT radiation monitors RE-005 & RE-006 are reading 3.2 E+9 mR/hr
SG NR levels are at 45%
CNMT pressure is 18.9 psig
Wind 280 degrees at 10 mph

Assigned Task: Evaluate plant conditions and determine appropriate emergency classification and protective action recommendations using 91001-C and 91305-C.

Task Standard: Emergency event classified and protective actions recommended.

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Deleted: With DG 1A tagged out, a fault in the low voltage switchyard resulted in the loss of both RATs and an overcurrent fault on 1BA03. During performance of the EOP a LOCA occured that resulted in core exit thermocouples exceeding 1200 °F ¶

¶

¶

Assigned Task: You have been directed to "Determine the HIGHEST emergency classification level based on events which are in progress, considering past events, and their impact on the current plant conditions".¶

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ____/____/____

JPM TITLE: Classify an Emergency Event - General Emergency with protective actions

COMPLETION TIME: 15 minutes

Application: **SRO ONLY**
Task Number: 40002 & 40005
K/A Number: G2.4.29 RO: 2.6 SRO: 4.0
10CFR55.45 Ref.: 11

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: _____

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Deleted: December 12, 2000¶ ¶
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INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 91001-C and 91305-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. 91001-C, Emergency Classification and Implementing Instructions
2. 91305-C, Protective Action Guidelines

SIMULATOR SETUP: None

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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:
- Reactor trip and Safety Injection has been initiated due to LOCA
- No CCPs or SIPs are running
- Core exit T/C's reading 2400 degrees F
- FRP 19221-C in progress
- Crew is depressuring all SGs to 200 psig at the maximum rate possible
- CNMT radiation monitors RE-005 & RE-006 are reading 3.2 E+9 mR/hr
- SG NR levels are at 45%
- CNMT pressure is 18.9 psig
- Wind 280 degrees at 10 mph

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ASSIGNED TASK: Evaluate plant conditions and determine appropriate emergency classification and protective action recommendations using 91001-C and 91305-C.

TASK STANDARD: Emergency event classified and protective action recommended.

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JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ UNSAT ☐

Classify the event

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☐ • Plant conditions evaluated
☐ ♦ Emergency event classified as a General Emergency
(failure of 2 barriers and potential failure of the 3rd barrier)
Fuel Cladding –Failed
Reactor Coolant System – Failed
Containment – Potential Failure

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STEP 2
CRITICAL (♦)
SAT ☐ UNSAT ☐

Recommend Protective Actions

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☐ ♦ Determines that PAR 2 is applicable
☐ ♦ Evacuate Zones: A, B-5, C-5, D-5, E-5, F-5, B-10, H-10, SRS to 10 miles.
☐ ♦ Shelter: Remainder of 10 mile EPZ

STOP TIME: _____

Field Notes

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JOB PERFORMANCE MEASURE

LIFE SAVING IN EMERGENCY CONDITIONS

Deleted: RQ-JP-19000-006¶
¶
EVALUATE ECCS TERMINATION CRITERIA - INJECTION FLOW REQUIRED

Deleted: Revision 1

Deleted: May 1, 2001

Deleted: Written By : M. C. Henry Date: 5/01/2001

Deleted: Approved By : R. D. Brigdon Date: 5/16/2001

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 radiological emergency is in progress on Unit 2. The ECCS has been placed in cold leg recirculation. A missing person has been located in the unit 2 BIT valve room. He is unconscious and is 3 feet from a very high point source. The point source reads Rem/Hr at 1 foot. This person must be moved outside the room in order to survive. The estimated time for a rescuer to remove this injured person is 30 minutes.

Data:
Emergency exposure # 1
Preparer & HP Supervisor: J. Smith
Rescuer name: John Doe
SSN: 123-45-6789
TLD # 12345
Exposure history: No previous emergency exposures

Assigned Task:
1. Calculate the projected dose to the rescuer.
2. Determine who must approve this emergency exposure
3. Determine the requirements the rescuer must satisfy for this planned emergency exposure
4. Given 91301-C Complete data sheet 1 for this exposure

Task Standard: Data sheet 1 of 91301-C properly completed

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Deleted: The USS has directed you to "Check if ECCS flow should be reduced using step 29 of 19000."

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Deleted: ECCS termination criteria monitored and evaluated.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Life Saving in Emergency Conditions

COMPLETION TIME: 25 minutes

Application: SRO
Task Number: 40005
K/A Number: G2.3.4 RO: 2.5 SRO: 3.1
10CFR55.45 Ref.: 10

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: _____

Deleted: Evaluate ECCS Termination Criteria - Injection Flow Required

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INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 91301-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. 91301-C, Emergency Exposure Guidelines
2. Calculator

SIMULATOR SETUP: None

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 radiological emergency is in progress on Unit 2. The ECCS has been placed in cold leg recirculation. A missing person has been located in the unit 2 BIT valve room. He is unconscious and is 3 feet from a very high point source. The point source reads 684 Rem/Hr at 1 foot. This person must be moved outside the room in order to survive. The estimated time for a rescuer to remove this injured person is 30 minutes.

DATA: EMERGENCY EXPOSURE # 1
PREPARER & HP SUPERVISOR: J. SMITH
RESCUER NAME: JOHN DOE
SSN: 123-45-6789
TLD # 12345
Exposure history: No previous emergency exposures

ASSIGNED TASK:
1. Calculate the projected dose to the rescuer.
2. Determine who must approve this emergency exposure
3. Determine the requirements the rescuer must satisfy for this planned emergency exposure
4. Given 91301-C Complete data sheet 1 for this exposure

TASK STANDARD: Data sheet 1 of 91301-C properly completed

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Deleted: 1. Reset to IC14 (MOL 100%)¶
2. Initiate manual SI¶
3. Initiate manual MSLI ¶
4. Throttle total AFW flow to stabilize RCS temperature¶
5. Insert malfunction PR01A at 10% severity and increase severity if required to ensure RCS pressure is slowly lowering¶
6. Ack/Reset alarms¶
7. Freeze simulator

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Deleted: The USS has directed you to "Check if ECCS flow should be reduced using step 29 of 19000."

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Deleted: ECCS termination criteria monitored and evaluated.

JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ UNSAT ☐

Calculate projected dose

☐ ♦ Dose projection = 684 Rem/hr x $(1/3)^2$ x 30 min x (1 hr / 60 min) = 38 Rem (>25 Rem & < 50 Rem)

STEP 2
CRITICAL (♦)
SAT ☐ UNSAT ☐

Approval Requirements Determined

☐ ♦ Emergency Director must approve this exposure since it exceeds 10CFR20 limits

STEP 3
CRITICAL (♦)
SAT ☐ UNSAT ☐

Determine requirements for rescuer

☐ ♦ Per 91301-C rescuer must be a volunteer
☐ • Familiar with the risks
☐ • Briefed on the emergency situation
☐ • Not a declared pregnant female
☐ • Limited to a one time occurance for > 25 Rem lifesaving

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Deleted: Verify adequate heat sink
Deleted: • Either of the following observed:¶
- AFW flow > 570 gpm¶
or¶
- NR level in at least one SG > 10%
Deleted: Determine RCS pressure response
Deleted: RCS pressure observed to be lowering

JPM STEPS

STEP 4
CRITICAL (♦)
SAT ☐ UNSAT ☐

91301-C data sheet 1 properly completed

Deleted: Report to USS

☐ • Exposure number #1 entered
☐ • Prepared by/date/time blocks completed
☐ ♦ Lifesaving block circled
☐ • Task description filled in
☐ • Dose limit: >25 Rem
☐ ♦ Projected dose: Calculated value from step 1 of JPM
☐ ♦ Rescuer name/SSN/signature ***(1)*** /TLD number entered on form

(1) CUE: After student identifies that the rescuer must sign the form state " the rescuer, John Doe, has signed the form".

☐ • Health Physics Supervisor signature
☐ ♦ ED approval signature or initials of person receiving verbal authorization for authorization to exceed 10CFR20 exposure limits.

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STOP TIME: _____

Field Notes

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DATA SHEET 1

PERMIT FOR EMERGENCY RADIATION EXPOSURE # 1

Prepared by: J. Smith Date: Time:

Task Type: (circle one) Protecting Valuable Property
Lifesaving or protection of large population

Task Description: Move injured person outside of room with high radiation field

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DOSE LIMITS: > 25 REM TEDE

ACKNOWLEDGMENT

For doses greater than 25 REM TEDE

1. I am a volunteer to receive a dose of greater than 25 REM TEDE.
2. I am fully aware of the risks involved in receiving the estimated dose of 38 REM TEDE.

NAME	SSN	SIGNATURE	TLD NUMBER
John Doe	123-45-6789	signature	12345

* Health Physics Supervisor Date Time

Authorization to exceed 10CFR20 exposure limits is granted.

* Signature or verbal authorization
Emergency Director Date Time

* Verbal authorization shall be noted by initials of person receiving verbal authorization from HP Supervisor or Emergency Director. Emergency Director signature to be obtained when time permits.

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JOB PERFORMANCE MEASURE

MONITOR / EVALUATE CSFSTs - SUBCRITICALITY

Deleted: RQ-JP-
Deleted: 37021-001-02A
Deleted: 19200-001
Deleted: CORE COOLING
Deleted: Revision
Deleted: 2
Deleted: 3¶
Deleted: February 10, 1998
Deleted: April 30, 2001¶
Deleted: Written By :
Deleted: George Gunn
Deleted: M. C. Henry Date:
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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:	Following a transition from 19000-C, the crew determined that Critical Safety Function monitoring should be implemented.
Assigned Task:	The SS has directed you to "Evaluate the CSFSTs and identify any required transition".

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Task Standard:	Appropriate FRP identified for existing CSF challenges.

JPM INFORMATION

Deleted: RQ-JP-
Deleted: 37021-001-02A
Deleted: 19200-001

OPERATOR'S NAME: _____

EVALUATION DATE: ____/____/____

JPM TITLE: Monitor / Evaluate CSFSTs - Subcriticality

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COMPLETION TIME: 12 minutes

Application: RO/SRO
Task Number: 37004
K/A Number: 000011EG12 RO: 4.0 SRO: 4.1
10CFR55.45 Ref.: 12

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Deleted: April 30, 2001¶
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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 19200-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. 19200-C, Critical Safety Function Status Trees
2. Plant Parameter datasheet from examiner
3. Steam Tables

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: Following a transition from 19000-C, the crew determined that Critical Safety Function monitoring should be implemented.

ASSIGNED TASK: The USS has directed you to "Evaluate the CSFSTs and identify any required transition".

TASK STANDARD: Appropriate FRP identified for existing CSF challenges.

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. 2. . Insert malfunction RC03A (DBA LOCA)¶

. 3. . Stop all RCPs

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. 4. . Throttle AFW to ≈ 200 gpm/SG.¶

. 5. . Set RF: ED02(TC > Sat) = 0.2

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. 6. . Set RF: ED01(O/R CETCs) = OVERRIDE¶

. 7. . Set RF: ED02

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Deleted: (TC > Sat) = (*725 - current CETC*)¶

. 8. . Set RF: ED04(Target RVLIS) = (current RVLIS FR value)¶

. 9. . Set RF: ED03(O/R RVLIS) = OVERRIDE¶

. 10. . Set RF: ED04(Target RVLIS) = 57¶

. 11. . Ack/Reset Alarms¶

. 12. . Freeze simulator¶

. 13. . **Turn off all IPC monitors (Ensure IPC in computer room is also . turned off)**¶

¶

Note: The simulator should remain in FREEZE for this JPM¶

Setup time:

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JPM STEPS

START TIME: ___

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine highest CSF challenge

☐ ♦ Subcriticality - ORANGE
☐ • Core Cooling - Green
☐ • Heat Sink - Yellow
☐ • Integrity - Orange
☐ • Containment - Green
☐ • Inventory - Yellow

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine appropriate FRP

☐ ♦ 19211-C selected

STEP 3
SAT ☐ UNSAT ☐

Report to USS

☐ • Transition to 19211 is required based on the CSFSTs.

STOP TIME: ___

Field Notes

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Plant Paramter Data

Parameter	Channel /Loop 1	Channel /Loop 2	Channel / Loop 3	Channel / Loop 4
PR NI	0%	0%	0%	0%
IR SUR	+0.1 DPM	+0.13 DPM		
IR NI	$3.0x10^{-4\%}$	$3.2x10^{-4\%}$		
SR SUR	0 DPM	0 DPM		
Core Exit T/C's	329 F			
RCP status	Off	Off	Off	Off
RVLIS Full Range	100%	100%	100%	100%
RVLIS Upper Head	100%	100%	100%	100%
SG NR Level	0%	0%	0%	0%
AFW flow	205 GPM	0 GPM	210 GPM	200 GPM
SG Pressure	950 psig	26 psig	973 psig	987 psig
RCS WR Cold Leg Temperature	540 F	261 F	538 F	541 F
RCS WR Pressure	1980 psig	2000 psig	1990 psig	2010 psig
CNMT Pressure	0 psig	0 psig	0 psig	0 psig
CNMT Emergency Sump Levels	0 inches	0 inches		
CNMT Radiation	24 mR / Hr	31 mR / Hr		
PRZR level	100%	100%	100%	

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

DETERMINE TAGGING REQUIREMENTS

Deleted: RQ-JP-19000-006¶
¶
EVALUATE ECCS TERMINATION CRITERIA - INJECTION FLOW REQUIRED

Deleted: Revision 1

Deleted: May 1, 2001

Deleted: Written By : M. C. Henry Date: 5/01/2001

Deleted: Approved By : R. D. Brigdon Date: 5/16/2001

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: NSCW pump #4 on Unit 2 needs to be danger tagged to perform pump bearing repairs.

Assigned Task: Determine the appropriate hold points and required positions of components to safely isolate NSCW pump 2-1202-P4-004. Identification of K-2 links to clear control room alarms is not necessary.

Task Standard: Tagout hold points and required postions listed

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Deleted: ECCS termination criteria monitored and evaluated.

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JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Determine Tagging Requirements

COMPLETION TIME: 30 minutes

Application: RO/SRO
Task Number: 63004
K/A Number: G2.2.13 RO: 3.6 SRO: 3.8
10CFR55.45 Ref.: 13

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: _____

Deleted: Evaluate ECCS Termination Criteria - Injection Flow Required

Deleted: REVISION: 1 May 1, 2001¶ ¶

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INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of NMP-AD-003. 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. Plant Drawings:
2X4DB133-1, 133-2, 134, 135-1, 135-2
2X3D-AA-D03A , DO3B
2X3D-BA-A01F
2X3D-BD-K04D, K04Y

2. NMP-AD-003, Equipment Clearance and Tagging

SIMULATOR SETUP: None

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: NSCW pump #4 on Unit 2 needs to be danger tagged to perform pump bearing repairs.

ASSIGNED TASK: Determine the appropriate hold points and required positions of components to safely isolate NSCW pump 2-1202-P4-004. Identification of K-2 links to clear control room alarms is not necessary.

TASK STANDARD: Tagout hold points and required postions listed.

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2. Initiate manual SI¶
3. Initiate manual MSLI ¶
. 4. . Throttle total AFW flow to stabilize RCS temperature¶
. 5. . Insert malfunction PR01A at 10% severity and increase severity if required to ensure RCS pressure is slowly lowering¶
. 6. . Ack/Reset alarms¶
. 7. . Freeze simulator

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Deleted: A steam dump header line break resulted in a low steamline pressure SI and main steamline isolation. The crew has completed 19000 through step 28.

Deleted: The USS has directed you to "Check if ECCS flow should be reduced using step 29 of 19000."

Deleted: ECCS termination criteria monitored and evaluated.

JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ UNSAT ☐

Determine Required Compnents & positions to safely tagout NSCW pump #4 on unit 2

☐ ♦ 2HS1635A, NSCW PUMP 4 HANDSWITCH, PULL-TO-LOCK

☐ ♦ 2BA03-11, NSCW PUMP 4 MOTOR SWITCHGEAR BREAKER, DISCONNECTED

☐ ♦ 2BBB-36, NSCW PUMP 4 DISCHARGE MOV BREAKER, OFF

☐ ♦ 2HV11613, NSCW PUMP 4 DISCHARGE MOV HANDWHEEL, CLOSE

☐ ♦ 2-1202-U4-A18, NSCW PUMP 4 DISCHARGE MOV BYPASS VALVE, UNLOCKED/SHUT

☐ • 2-1202-X4-847, NSCW PUMP 4 MOTOR COOLER VENT ISOLATION, UNCAPPED/OPEN

STOP TIME: _____

Field Notes

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SAT ☐ UNSAT ☐¶
¶
Verify adequate heat sink¶
_____
_____
_____¶
☐ • Either of the following observed:¶
- AFW flow > 570 gpm¶
or¶
- NR level in at least one SG > 10%¶
¶

STEP 3¶
CRITICAL (♦)¶
SAT ☐ UNSAT ☐¶
¶
Determine RCS pressure response¶
_____
_____
_____¶
☐ ♦ RCS pressure observed to be lowering¶
¶

STEP 4¶
CRITICAL (♦)¶
SAT ☐ UNSAT ☐¶
¶
Report to USS¶
_____
_____
_____¶
☐ ♦ ECCS should not be reduced¶
¶

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

DETERMINE RADIATION POSTING REQUIREMENTS

Deleted: RQ-JP-19000-006¶ ¶ EVALUATE ECCS TERMINATION CRITERIA - INJECTION FLOW REQUIRED

Deleted: Revision 1

Deleted: May 1, 2001

Deleted: Written By : M. C. Henry Date: 5/01/2001

Deleted: Approved By : R. D. Brigdon Date: 5/16/2001

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 point source reads as shown on the survey map provided. The entry point to the room is 3 feet from the radiation source.

Assigned Task: Using the room survey map provided, calculate the dose rate at the door and determine the appropriate minimum posting required at the entry door to the room indicated on the survey map.

Task Standard: Proper minimum HP posting determined.

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JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Deterrmine Radiation Posting Requirements

COMPLETION TIME: 25 minutes

Application: RO
Task Number: 38002
K/A Number: G2.3.4 RO: 2.5 SRO: 3.1
10CFR55.45 Ref.: 10

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Deleted: REVISION: 1 May 1, 2001¶
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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: _____

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INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 19000-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. Survey Map
2. Calculator
3. 00930-C, Radiation and Contamination Control

SIMULATOR SETUP: None

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 point source reads as shown on the survey map provided. The entry point to the room is 3 feet from the radiation source.

ASSIGNED TASK: Using the room survey map provided, calculate the dose rate at the door and determine the appropriate minimum posting required at the entry door to the room indicated on the survey map.

TASK STANDARD: Proper minimum HP posting determined.

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. 2. . Initiate manual SI¶
. 3. . Initiate manual MSLI ¶
. 4. . Throttle total AFW flow to stabilize RCS temperature¶
. 5. . Insert malfunction PR01A at 10% severity and increase severity if required to ensure RCS pressure is slowly lowering¶
. 6. . Ack/Reset alarms¶
. 7. . Freeze simulator

Deleted: Setup time: 7 minutes¶

Deleted: A steam dump header line break resulted in a low steamline pressure SI and main steamline isolation. The crew has completed 19000 through step 28.

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Deleted: ECCS termination criteria monitored and evaluated.

JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Calculate dose rate at entry point into room.

☐ ♦ Dose rate at room entry = 545 Rem/hr x $(0.5/36)^2$ = 105 mRem/hr

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine Room entry posting requirements.

☐ ♦ Dose rate > 100 mrem/hr and < 1000 mrem/hr entrance to room should be posted as a high radiation area as a minimum. Note due to large point source student may select to post room as a locked high radiation area.

STOP TIME: _____

Field Notes

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Deleted: ♦ Subcooling determined to be > 24°F

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SAT ☐ UNSAT ☐¶
¶
Verify adequate heat sink¶
_____
_____
_____¶
☐ ♦ Either of the following observed:¶
- AFW flow > 570 gpm¶
or¶
- NR level in at least one SG > 10%¶
¶

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Deleted: Determine RCS pressure response

Deleted: RCS pressure observed to be lowering

Deleted: STEP 4¶
CRITICAL (♦)¶
SAT ☐ UNSAT ☐¶
¶
Report to USS¶
_____
_____
_____¶
☐ ♦ ECCS should not be reduced¶
¶

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JOB PERFORMANCE MEASURE

CALCULATE SHUTDOWN MARGIN

Deleted: RQ-JP-14005-002

Deleted: - SCENARIO 2

Deleted: Revision 9¶

Deleted: June 2, 2004¶

Deleted: Written By : S. N. Dyer . Date: . 6/2/2004¶
¶
¶
Approved By . : Richard Brigdon . Date: . 6/2/2004¶

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 reactor tripped from 100% power 28 hours ago.

Assigned Task: The SS has directed you to "Calculate Shutdown Margin taking credit for Xenon and Samarium using 14005".

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Deleted: shutdown to Mode 3 has been performed

Task Standard: Shutdown margin calculated (current).

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Calculate Shutdown Margin

REVISION:

COMPLETION TIME: 55 minutes

Application: RO/SRO
Task Number: 27003
K/A Number: 192002K1.13 RO: 3.5 SRO: 3.7
10CFR55.45 Ref.: 12

Deleted: - Scenario 2

Deleted: 9 June 2, 2004

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)
3. Plant shutdown data (provided by examiner)

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

This JPM is based on Unit 1 Cycle 12 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 reactor tripped from 100% power 28 hours ago.

ASSIGNED TASK: The USS has directed you to "Calculate Shutdown Margin taking credit for Xenon and Samarium using 14005".

TASK STANDARD: Shutdown margin calculated.(Current)

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Deleted: shutdown to Mode 3 has been performed

JPM STEPS

START TIME: .....

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Select appropriate Data Sheets

☐ ♦ Data Sheet 2 section E selected
☐ • Current conditions recorded *(1)*
☐ • C.4 Xenon power of 100%

CUES:

(1) If asked, "Xenon worth should be considered in the calculation".

STEP 2
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.

☐ • E.1 8534 pcm
☐ • E.2 887 ppm
☐ • E.3 9995 pcm
☐ • E.4 0.87476
☐ • E.5 2399 pcm
☐ • E.6 1037 pcm
☐ • E.7 3436 pcm
☐ • E.8 3006 pcm
☐ • E.9 1035 pcm
☐ • E.10 0 pcm
☐ • E.11 0 pcm
☐ • E.12 1545 pcm
☐ • E.13 1.545%
☐ • E.14 0.98479

STEP 3
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine Shutdown Margin

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

☐ ♦ E.13 Shutdown Margin of 1.545% + .2% calculated

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Deleted: 320
Deleted: c
Deleted: 3104
Deleted: 96111
Deleted: 3552
Deleted: 1037
Deleted: 4589
Deleted: 4411
Deleted: 1087
Deleted: 3266
Deleted: 4
Deleted: 0.968 3271 Keff (not required)

Deleted: = 3.266

STEP 4
SAT ☐ UNSAT ☐

Report to USS

☐ • Shutdown margin calculation complete

STOP TIME: _____

Field Notes

Plant Data

Power History	100% for 200 days
Cycle Burnup	16000 MWD/MTU
Boron Concentration	750 ppm
Tavg	400 °F
Current Rod Height	All Rods at Bottom
Axial Offset Correction	0 pcm

The plant tripped from 100% power 28 hours ago. All 4 RCPs are in service.

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Deleted: The reactor was declared shutdown 1 hour ago.

Deleted: The power history is as follows:¶

Time	Average Power¶
1 – 2 hours ago	33%¶
2 – 3 hours ago	66%¶
3 – 4 hours ago	100%¶
> 4 hours ago	100%

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JOB PERFORMANCE MEASURE

DETERMINE MODE CHANGE REQUIREMENTS

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Deleted: 37021-001-02A
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Deleted: MONITOR / EVALUATE CSFSTs - CORE COOLING
Deleted: Revision
Deleted: 2
Deleted: 3¶
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Deleted: April 30, 2001¶
Deleted: Written By :
Deleted: George Gunn
Deleted: M. C. Henry Date:
Deleted: 2
Deleted: 4/
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Deleted: 98
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Approved By :
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Deleted: XXXXXXXXXX
Deleted: R. D. Brigdon Date:
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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 is currently in mode 5, with loops filled, preparing for a post refueling start up with the following conditions:

RCS temperature 210 degrees F, loops filled
RCP's 1 & 4 are running
PZR level at 25%, with steam bubble established
RHR A in service for Decay Heat Removal
RHR B in standby for Decay Heat Removal
SG's NR level at 65%

Equipment OOS:

CCP-1A
NSCT fan #2
MDAFWP 1A
SG ARV loop 2
Both SI pumps in PTL
PZR level channel 461 failed low – B/S tripped
RE-2562A, CNMT process particulate radiation monitor

Assigned Task: Determine if requirements for mode entry 4 satisfied. If not, identify all restraints for mode 4 entry.

Task Standard: Appropriate mode 4 restraints, if any, identified.

Deleted: Following a transition from 19000-C, the crew determined that Critical Safety Function monitoring should be implemented.

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¶
Assigned Task: The USS has directed you to "Evaluate the CSFSTs and identify any required transition".¶

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Deleted: Appropriate FRP identified for existing CSF challenges

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___/___/___

JPM TITLE: Determine mode change requirments

COMPLETION TIME: 30 minutes

Application: RO/SRO
Task Number: 63013
K/A Number: G2.1.10 RO: 2.7 SRO: 3.9
10CFR55.45 Ref.: 13

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: _____

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Deleted: 37021-001-02A
Deleted: 19200-001
Deleted: Monitor / Evaluate CSFSTs - Core Cooling
Deleted: REVISION:
Deleted: 2
Deleted: 3
Deleted: February 10, 1995
Deleted: April 30, 2001¶
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Deleted: 37004
Deleted: 000011EG12
Deleted: 4.0
Deleted: 4.1
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INSTRUCTIONS TO EXAMINER

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. Technical Specifications and Bases
2. Technical Requirements Manual

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 is currently in mode 5, with loops filled, preparing for a post refueling start up with the following conditions:

RCS temperature 210 degrees F, loops filled
RCP's 1 & 4 are running
PZR level at 25%, with steam bubble established
RHR A in service for Decay Heat Removal
RHR B in standby for Decay Heat Removal
SG's NR level at 65%

Equipment OOS:

CCP-1A
NSCT fan #2
MDAFWP 1A
SG ARV loop 2
Both SI pumps in PTL
PZR level channel 461 failed low – B/S tripped
RE-2562A, CNMT process particulate radiation monitor

ASSIGNED TASK: Determine requirements for mode entry 4.

TASK STANDARD: Appropriate mode 4 restraints, if any, identified.

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Deleted: 19200-001
Deleted: This JPM is based on 19200-C.
Deleted: 19200-C, Critical Safety Function Status Trees
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. 2. . Insert malfunction RC03A (DBA LOCA)¶
. 3. Stop all RCPs
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. 4. . Throttle AFW to ≈ 200 gpm/SG.¶
. 5. . Set RF: ED02(TC > Sat) = 0.2
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. 6. . Set RF: ED01(O/R CETCs) = OVERRIDE¶
. 7. . Set RF: ED02
Deleted:
Deleted: (TC > Sat) = (*725 - current CETC*)¶
... [1]
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Deleted: Appropriate FRP identified for existing CSF ... [4]

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Deleted: 37021-001-02A
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START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine LCO's impacted

Deleted: highest CSF challenge
Deleted: ____

☐ ♦ NSCT fan #2
LCO 3.7.9 Ultimate Heat Sink (UHS), applies and condition B applicable

☐ • 1RE-2562A, CNMT process particulate radiation monitor
LCO 3.4.15 RCS Leakage Detection Instrumentation, applies but is still met (INFO LCO)

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☐ • CCP-1A
LCO 3.5.3 ECCS -- Shutdown, applies but is still met (INFO LOC)

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☐ • MDAFW Pump 1A
LCO 3.7.5 Auxiliary Feedwater (AFW) System, does not apply until mode 3

☐ • SG ARV loop 2
LCO 3.7.4 Atmospheric Relief Valves (ARVs), does not apply until mode 3

☐ • Both SI pumps in PTL
LCO 3.4.12 Cold Overpressure Protection Systems (COPS), applicable and met

☐ • PZR level transmitter 461 failed low – B/S tripped
LCO 3.3.1 Reactor Trip System (RTS) Instrumentation, Functional Unit 9,
does not apply until mode 1 > P-7

STEP 2
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Determine that Mode 4 entry is restrained

Deleted: Determine appropriate FRP
Deleted: ____
Deleted: 19222-C selected

☐ ♦ LCO 3.7.9 condition B applies to mode 4 and LCO 3.0.4 is applicable. This condition would NOT allow continued operation of the unit for an unlimited period of time.

JPM STEPS

Deleted: RQ-JP-

Deleted: 37021-001-02A

Deleted: 19200-001

STEP 3
SAT ☐ UNSAT ☐

Report to SS

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☐ • Mode 4 entry reviewed and is restrained by NSCT fan #2 being out of service

Deleted: Transition to 19222 is required based on the CSFSTs.

STOP TIME: _____

Field Notes

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Page 4: [1] Deleted Administrator 03/31/2005 9:49:00 AM

(TC > Sat) = {*725 - current CETC*}

8. Set RF: ED04(Target RVLIS) = {current RVLIS FR value}
9. Set RF: ED03(O/R RVLIS) = OVERRIDE
10. Set RF: ED04(Target RVLIS) = 57
11. Ack/Reset Alarms
12. Freeze simulator
13. **Turn off all IPC monitors (Ensure IPC in computer room is also turned off)**

Note: The simulator should remain in FREEZE for this JPM

Setup time:

Page 4: [2] Deleted Administrator 03/31/2005 10:20:00 AM

INITIAL CONDITIONS:	Following a transition from 19000-C, the crew determined that Critical Safety Function monitoring should be implemented.

Page 4: [3] Deleted Administrator 03/31/2005 10:19:00 AM

The USS has directed you to "Evaluate the CSFSTs and identify any required transition".

Page 4: [4] Deleted Administrator 03/31/2005 10:19:00 AM

Appropriate FRP identified for existing CSF challenges.

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-17213-002

MANUALLY ISOLATE A LIQUID WASTE RELEASE

Revision 0

March 29, 2005

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Deleted: January 25, 2001

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

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

Initial Conditions: During the release of WMT #10 on UNIT 2, a high alarm was received on 2RE-0018, but 2RV-0018 failed to automatically isolate.

Assigned Task: The USS has directed you to "Locally isolate the release by closing WMT discharge isolation valves **2-1901-U4-175 and A-1901-U4-259".**

Task Standard: Liquid waste release locally isolated.

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OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE:	Manually Isolate a Liquid Waste Release
REVISION:	0 March 29, 2005
COMPLETION TIME:	**10 minutes** **TIME CRITICAL** ⏲ **Performance of this task must be initiated from the C & T Office**
Application:	RO/SRO
Task Number:	47002
K/A Number:	068000A204 RO: 3.3 SRO: 3.3
Safety Function:	9 – Radioactivity Release
10CFR55.45 Ref.:	6, 8, 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: _____

This JPM is based on the latest rev of 17213 & 17100. Verify this JPM is in accordance 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. RWP and associated dosimetry

COMPONENT LOCATION: Unit 2 Aux Bldg, Level D *(NOTE: Valve locations are not given in the 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.

****** This is a TIME CRITICAL JPM ******

INITIAL CONDITIONS: During the release of WMT #10 on UNIT 2, a high alarm was received on 2RE-0018, but 2RV-0018 failed to automatically isolate.

ASSIGNED TASK: The USS has directed you to "Locally isolate the release by closing WMT discharge isolation valves **2-1901-U4-175 and A-1901-U4-259**".

TASK STANDARD: Liquid waste release locally isolated.

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START TIME: _____ **TIME CRITICAL** ⏲

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Manually isolate liquid release

Note: During a release A-1901-U4-259 would be unlocked and open. The operator should not be required to obtain a key to close the valve.

☐ ♦ 2-1901-U4-175 located
☐ ♦ 2-1901-U4-175 closed
☐ ♦ A-1901-U4-259 located
☐ ♦ A-1901-U4-259 closed

STEP 2
SAT ☐ UNSAT ☐

Report to USS

☐ • Liquid release isolated

STOP TIME: _____

Field Notes:

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JOB PERFORMANCE MEASURE

RQ-JP-13405-001

PLACE A 1E 125VDC BATTERY CHARGER IN SERVICE

Revision 9

April 18, 2005

Deleted: 8

Deleted: August 16, 2001

Deleted: ¶
Written By : M. C. Henry Date: 8/16/2001¶
¶
¶
Approved By : R. D. Brigdon Date: 8/16/2001¶

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: A loss of 125VDC Bus _____D1 has occurred due to a fault on the battery bank, _____D1B. The plant has been stabilized in MODE 3, and the crew is responding per AOP 18034. The battery bank has been removed from service and the crew is preparing to re-energize the bus from a battery charger.

ASSIGNED TASK: The USS has directed you to " Place battery charger _____D1C_____ in service by initiating 13405-____."

TASK STANDARD: Battery charger in service, supplying 125VDC Swgr.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Place a 1E 125VDC Battery Charger in Service

REVISION: 09 April 18, 2005

COMPLETION TIME: 13 minutes

Application: RO/SRO
Task Number: LO-TA-60040
K/A Number: 058AA1.03 RO: 3.1 SRO: 3.3
10CFR55 Ref. 41.7 /45.5.6

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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 13405-1. 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: 13405-(1/2)

COMPONENT LOCATION: Locations are not given in the procedure.

Note to Examiner: ***Review the note accompanying Step 6 prior to administering this JPM.***

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: A loss of 125VDC Bus ____ D1 has occurred due to a fault on the battery bank, _____D1B. The plant has been stabilized in MODE 3, and the crew is responding per AOP 18034. The battery bank has been removed from service and the crew is preparing to re-energize the bus from a battery charger.

ASSIGNED TASK: The USS has directed you to " Place battery charger _____D1C ___ in service by initiating 13405-____."

TASK STANDARD: Battery charger in service, supplying 125VDC Swgr.

START TIME: _____

STEP 1
SAT ☐ UNSAT ☐

Select proper procedure and section

☐ • 13405-1/2, section (4.1.3, 4.1.4, 4.1.5, 4.1.6)

STEP 2
SAT ☐ UNSAT ☐

Verify Initial Prestart Conditions
Note: For local breaker indication, the mechanical flag indicators must be used, light indication is not available at this time.

☐ • 1(2)___D1-01 verified OPEN ***(1)***
☐ • AC input breaker on B/C verified OPEN ***(2)***
☐ • DC output breaker on B/C verified OPEN ***(2)***

CUES:

(1) Once identified, provide indication that 1(2)___D1-01 is open (green light &/or green flag). If examinee attempts to close the battery breaker, if requested, provide the indication that the breaker momentarily closed (red light only) but now indicates tripped (green & amber).

(2) Once identified, provide indication that breaker is open.

STEP 3
SAT ☐ UNSAT ☐

Verify associated 480VAC MCC is Energized and Supply Breaker Closed

☐ • Correct MCC and breaker selected and verified closed. ***(1)***

CUES:

(1) Once operator indicates correct MCC, "Control room operators report MCC 1(2)___B____-_____ is closed and energized."

STEP 4
CRITICAL (♦)
SAT ☐ UNSAT ☐

Place Battery Charger in FLOAT mode of Operation

☐ ♦ B/C Normal/Equalize switch placed in Normal and Equalize Timer set to zero.

STEP 5
SAT ☐ UNSAT ☐

Verify Associated Bus Voltage is ≤ 135 VDC

☐ • DC bus voltage verified ≤ 135 VDC *(1)*

CUES:

(1) Provide indication that bus voltage is 0 VDC or that bus potential lights are dark.

STEP 6
CRITICAL
SAT ☐ **UNSAT** ☐

Place Battery Charger in Operation

Note: If the B/C DC switchgear breaker is not closed in an expiditious manner after closure of the B/C DC output breaker an overvoltage trip of the B/C AC input breaker will occur in ≈ 5 - 10 seconds. Cue 2 should be provided to the operator promptly if step is performed correctly. If operator fails to demonstrate the need to close the B/C DC switchgear breaker quickly, provide audible indication or indicate 0 VDC on B/C volt meter for Cue 3. This step may still be performed satisfactorily if the step is repeated in its entirity. If step not repeated then performance is to be considered UNSAT.

The following actions must be performed in sequence

☐ • B/C 125 VDC switchgear breaker(1/2 ___D1-___) to battery charger OPEN *(1)*
☐ ♦ B/C DC output breaker CLOSED
☐ ♦ B/C AC input breaker CLOSED *(2)*
☐ ♦ B/C 125 VDC switchgear breaker(1/2___D1-_____)CLOSED *(3)*
☐ • Verify proper B/C operation *(4)*
☐ • Verify DC bus voltage *(4)*

CUES:

(1) If requested, provide indication that the breaker is open (mechanical flag is only indication).
(2) If performed correctly, provide indication that B/C voltage is ≥ 130 VDC & charging spring motor for B/C 125 VDC switchgear breaker stopped.
(3) If performed correctly, provide indication that the red light is illuminated.
(4) Provide indication that voltage is ≈ 135 VDC and if requested, "The CBO will perform the IV."

STOP TIME: _____

Field Notes:

SOUTHERN COMPANY

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-19030-006

LOCALLY OPERATE STEAM GENERATOR ARV

Revision 18

December 4, 2003

Written By: S. N. Dyer Date: 12/4/2003

Approved By: R. D. Brigdon Date: 5/14/2004

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

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

Initial Conditions: Complications from an electrical fault have resulted in a reactor trip and main steamline isolation on Unit ____. The crew has subsequently diagnosed a steam generator tube rupture. Due to the electrical fault, the crew has determined that local ARV operation will be required and has dispatched the ABO to open the breakers for the ARV hydraulic pumps.

Assigned Task: The USS has directed you to "Locally open __-PV-_____ (__MSVR) using 13601-__."

Task Standard: Steam Generator ARV locally opened.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Locally Operate Steam Generator ARV

REVISION: 18 December 4, 2003

COMPLETION TIME: **13 minutes** **TIME CRITICAL** ⏲

Note: Performance of this task should begin at Control Building Room 117, Unit 2 Control Room Access Point.

This time is based on FSAR Chapter 15, table 15.6.3-1, as ammended by REA 97-VAA600

Application: RO/SRO
Task Number: 21007
K/A Number: EPE038EA1.16 RO: 4.4 SRO: 4.3
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 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. 13601, Steam Generator and Main Steam System Operation

COMPONENT LOCATION:

SMSVR:	PV-3000	PV-3030
NMSVR:	PV-3010	PV-3020

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.

This is a TIME CRITICAL JPM

INITIAL CONDITIONS: Complications from an electrical fault have resulted in a reactor trip and main steamline isolation on Unit ___. The crew has subsequently diagnosed a steam generator tube rupture. Due to the electrical fault, the crew has determined that local ARV operation will be required and has dispatched the ABO to open the breakers for the ARV hydraulic pumps.

ASSIGNED TASK: The USS has directed you to "Locally open __-PV-_____ (__MSVR) using 13601-__."

TASK STANDARD: Steam Generator ARV locally opened.

START TIME: _____ **TIME CRITICAL** ⏲

STEP 1
SAT ☐ UNSAT ☐

Establish communications with Control Room

Note: Communications may be established using the sound powered phone system, plant P/A, telephone, or radio.
The breakers for the ARVs are: 1(2)PV-3000 - 1(2)ABB-25 1(2)PV-3010 - 1(2)BBB-25
1(2)PV-3020 - 1(2)BBB-26 1(2)PV-3030 - 1(2)ABB-26

☐ • Verify the hydraulic pump breaker is open ***(1)***
☐ • ARV Local Hand Pump station located
☐ • Communications established with Control Room ***(2)***

CUES:
(1) If requested, "The ABO reports that __-__BB-2__ is open." *(see note above)*
(2) Once demonstrated or discussed: "Communications have been established."

STEP 2
SAT ☐ UNSAT ☐

Align and verify proper operation of hand pump

☐ • Level verified in hydraulic fluid reservoir sightglass
☐ • Selector Valve 2 in NEUTRAL
☐ • Hand pump bleed off valve CLOSED
☐ • Hand pump stroked freely

STEP 3
CRITICAL (♦)
SAT ☐ UNSAT ☐

Depressurize ARV accumulator

☐ ♦ Reservoir Inlet valve 11A CLOSED.
☐ ♦ Accumulator Dump Pilot Supply valve 11B OPEN.
☐ ♦ Hand pump stroked to maintain fluid pressure ≥ 2000 psig for 1 minute.
☐ • Verify accumulator was fully dumped by observing reservoir oil level at top of scale or greater ***(1)***
☐ ♦ Reservoir inlet valve 11A OPEN.
☐ • Fluid pressure dropped to 0 psig.
☐ ♦ Accumulator dump pilot supply valve 11B CLOSED.
☐ • Reservoir inlet valve 11A CLOSED.

CUES:
(1) If the ARV oil reservoir is checked, state: "The ARV main oil reservoir level is at the top of scale."

STEP 4
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Open the ARV

☐ ♦ Selector Valve 2 in OPEN
☐ ♦ Hand pump stroked to OPEN selected ARV *(1)*
☐ • Selector Valve 2 in NEUTRAL

CUES:
(1) If requested: "The Control Room desires that the ARV be fully opened."

STOP TIME: _____

STEP 5
SAT ☐ UNSAT ☐

Report to USS

☐ • ARV is open.

Field Notes

SOUTHERN COMPANY

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

NRC-JP-18035-001

PERFORM CONTROL ROOM ISOLATION
FOR
TOXIC GAS RELEASE

Revision 0

March 29, 2005

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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.

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THIS IS A TIME CRITICAL JPM

Initial Conditions: The plant is at 100% power. You are the Balance of Plant operator. A transfer truck accident just outside the plant entrance has caused chlorine fumes to begin entering the Control Room.

Assigned Task: The USS has directed you to "Perform a Control Room Isolation due to a Toxic Gas Release".

Task Standard: Control Room Isolation correctly performed.

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Assigned Task: . The USS has directed you to assume the

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¶

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Perform Control Room Isolation for Toxic Gas Release

REVISION: 0 March 29, 2005

COMPLETION TIME: 5 minutes **TIME CRITICAL** ①

Application: RO/SRO
Task Number: 60013
K/A Number: 068G2.4.49 RO: 4.0 SRO: 4.0
Safety Function: Service Systems
10CFR: 41.10/ 43.2/ 45.6

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: _____

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JPM INFORMATION

This JPM is based on the latest revisions of 18035-C and 13301-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. AOP 18035-C and SOP 13301

SIMULATOR SETUP:
1. Reset to IC14 (MOL 100%)
2. Insert Override - Switch HS 12195A to Normal (A Train Man Act)
3. Insert Override - Switch HS 12120 to STOP (CREF A)
4. Set Trigger 1 to the following Overrides:
   - Switch HS 12121 to STOP (CREF B)
   - Yellow Light for HS 12121 – ON
5. Freeze simulator
6. When directed, go to run.

Setup time: 3 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.

This is a TIME CRITICAL JPM

INITIAL CONDITIONS: The plant is at 100% power. You are the Balance of Plant operator. A transfer truck accident just outside the plant entrance has caused chlorine fumes to begin entering the Control Room.

Assigned Task: The USS has directed you to "Perform a Control Room Isolation due to a Toxic Gas Release".

Task Standard: Control Room Isolation properly aligned.

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Deleted: immediate
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JPM INFORMATION

START TIME: _____ TIME CRITICAL ⊙

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Initiate Control Room Isolation

☐ ♦ HS-12196A positioned to ACTUATE *(1)*

CUES:

(1) HS-12195A will not function.

© In the plant, if requested after simulated CRI actuation, provide feedback that the 'CR ISO' white indicator lights on HS-12125B and HS-12196B are lit.

STEP 2
CRITICAL (♦)
SAT ☐ UNSAT ☐

Shut Outside Air Supply Dampers
NOTE: Opposite unit dampers will be simulated in the Simulator

☐ ♦ -HS-12114 positioned to CLOSE
☐ ♦ -HS-12115 positioned to CLOSE
☐ ♦ -HS-12114 positioned to CLOSE*(1)*
☐ ♦ -HS-12115 positioned to CLOSE*(1)*

CUES:

(1) **(Simulator Only)** When requested, "The USS will ensure 2-HS 12114 and 2-HS-12115 are placed in the CLOSE position."

© In the plant, if requested after simulated operation, provide feedback that the CLOSE green indicator lights on HS-12114 and HS-12115 are lit.

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STEP 3
CRITICAL (♦)
SAT ☐ UNSAT ☐

Verification of Proper Control Room Isolation Alignment
(Per the direction of AOP 18035 step 2, the examinee may refer to 13301-C to verify proper CRI alignment)

☐ **♦ Identify the trip of the B CREF unit.**
☐ **♦ Starts the A train CREF unit. *(1)***

(1) **Sim Operator: Delete O/R on the A train CREF unit when it's HS is taken to START.**

STEP 4
SAT ☐ UNSAT ☐

Report to USS

☐ • Control Room Isolation completed

STOP TIME: _____

Field Notes

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CRITICAL (♦)¶
SAT ☐ UNSAT ☐ N/A ☐¶
¶
Verify both AC Emergency busses energizedShut Outside Air Supply Dampers on the other unit.¶
¶
☐ ♦ Identify the need to shut dampers on the other unit ¶
¶
CUES:¶
In the simulator, when requested, "The USS will ensure isolation of the other unit".¶
¶
☐ • 4160 1E busses AA02 and BA03 at 4100 to 4200 volts and/or Bus Potential lights litverified ENERGIZED¶ ... [19]
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Deleted: STEP 3B - In-Plant N/A if performed in the simula ... [20]
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Deleted: Immediate operator actions

Page 1: [1] Deleted Student 03/30/2005 1:10:00 AM

IMMEDIATE OPERATOR ACTIONS

Page 1: [2] Deleted EJKOZINS 07/22/2002 2:02:00 PM

FOLLOWING REACTOR TRIP

Page 1: [3] Formatted Student 03/29/2005 1:12:00 PM

Centered

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3

Approved By :

Page 1: [5] Deleted Student 03/29/2005 1:13:00 PM

R. D. Brigdon Date: 4/18

Page 4: [6] Deleted Student 03/29/2005 1:22:00 PM

Immediate operator actions performed correctly.

Page 5: [7] Deleted Student 04/05/2005 10:58:00 AM

All DRPI "Rod Bottom" lights

Page 5: [8] Deleted Student 04/05/2005 10:57:00 AM

- Second switch positioned to ACTUATE

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- RTA, RTB, and BYA

Page 5: [11] Deleted EJKOZINS 07/22/2002 2:07:00 PM

OPEN

- RTB observed

Page 5: [12] Deleted MCHENRY 10/30/2000 5:58:00 PM

- HS-40007 and HS-40002 positioned to TRIP

Page 5: [13] Deleted EJKOZINS 07/22/2002 2:07:00 PM

- Neutron flux observed

Page 5: [14] Deleted EJKOZINS 07/22/2002 2:07:00 PM

LOWERING

HS-40007 and HS-40002 positioned to TRIP

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Page 5: [15] Deleted **Student** **04/05/2005 11:00:00 AM**

Page 5: [15] Deleted **Student** **03/30/2005 9:50:00 AM**

Page 5: [16] Deleted **Student** **03/30/2005 9:52:00 AM**

Page 5: [16] Deleted **Student** **03/30/2005 9:51:00 AM**

Page 5: [16] Deleted **Student** **03/30/2005 9:50:00 AM**

Page 5: [17] Deleted **Student** **03/30/2005 9:52:00 AM**

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Page 5: [18] Deleted **Student** **04/05/2005 11:00:00 AM**

Page 6: [19] Deleted **sndyer** **04/18/2003 1:40:00 PM**

STEP 3A - Simulator N/A if performed In-plant
CRITICAL (♦)
SAT UNSAT N/A

Verify both AC Emergency busses energizedShut Outside Air Supply Dampers on the other unit.

♦ Identify the need to shut dampers on the other unit

CUES:

In the simulator, when requested, "The USS will ensure isolation of the other unit".

• 4160 1E busses AA02 and BA03 at 4100 to 4200 volts and/or Bus Potential lights litverified ENERGIZED

• All 480 1E busses verified ENERGIZED

Page 6: [20] Deleted **sndyer** **04/18/2003 1:40:00 PM**

STEP 3B - In-Plant NA if performed in the simulator
CRITICAL (◆)
SAT ☐ UNSAT ☐ N/A ☐

Shut Outside Air Supply Dampers on the other unit.

☐ ◆ HS-12114 positioned to CLOSE on opposite unit.
☐ ◆ HS-12115 positioned to CLOSE on opposite unit.)

CUES:
© In the plant, if requested after simulated operation, provide feedback that the CLOSE green indicator lights on HS-12114 and HS-12115 are lit.

STEP 4
SAT ☐ UNSAT ☐

Check if SI is actuated or required

Note: After IOAs of 19000-C is completed, provide following cue to examinee: ***"The USS will initiate 19001-C."***

☐ • SI annunciators darkNOT LIT
☐ • BPLBP window 1-4, "SI Actuated", darkNOT LIT
☐ • Verify PRZR pressure > **1870 psig**
☐ • Verify Steamline pressure > **585 psig**
☐ • Verify Containment pressure < **3.8 psig**
☐ • Verify **No NO alignment ALIGNMENT** of ECCS equipment to injection phase ***(1)***

CUES:
(1) After IOAs of 19000-C completed, cue the examinee "The USS will initiate 19001-C."

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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

NRC-JP-18007-001

RESPOND TO LOSS OF CHARGING FLOW

Revision 0

March 31, 2005

Written By : M. C. Henry Date: 1/24/2001¶

¶

¶

Approved By : R. D. Brigdon Date: 1/25/2001¶

Deleted: RQ

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Deleted: 4

Deleted: FAILURE OF PRZR LEVEL INSTRUMENT

Deleted: 14

Deleted: January 24, 2001

Deleted: ¶

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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 plant is at 100% power.
Assigned Task:	The USS has directed you to "Assume the duties of the Reactor Operator."

Task Standard:	Plant conditions correctly diagnosed and corrective actions completed.

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JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___/___/___

JPM TITLE: Respond to Loss of Charging Flow

Deleted: Failure of PRZR Level Instrument

REVISION: 0 March 31, 2005

Deleted: 14

COMPLETION TIME: 19 minutes

Deleted: January 24, 2001

Deleted: 6

Application: RO/SRO
Task Number: 60017

Deleted: 60030

K/A Number: 000028EA212 RO: 3.1 SRO: 3.5
10CFR55.45 Ref.: 3, 4, 5

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: _____

Deleted: RQ-JP-18001-004

INSTRUCTIONS TO EXAMINER

This JPM is based on 18007-C. Verify this JPM is in accordance 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.

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REQUIRED ITEMS:

1. 18007, Section B, Loss of Charging Flow

Deleted: 1

Deleted: Primary Systems Instrumentation Malfunction

SIMULATOR SETUP:

1. Reset to IC14 (MOL 100%)
2. Insert malfunction CV07 on Trigger 1.
3. Ack/Reset alarms
4. Freeze simulator

Deleted: PR03A

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Deleted: Ensure LI-459 is the controlling channel¶
. 4.

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Setup time: 3 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: The plant is at 100% power.

ASSIGNED TASK: The USS has directed you to "Assume the duties of the Reactor Operator."

TASK STANDARD: Plant conditions correctly diagnosed and corrective actions completed.

START TIME:

STEP 1
CRITICAL (♦)
SAT ☐ UNSAT ☐

Identify Charging Pump Trip and Perform Immediate Operator Action

☐ • Identify trip of Normal Charging Pump
☐ ♦ **Letdown manually isolated (IOA of 18007-C, Section B):**
- **Letdown Orifice Isolation valve closed (HV-8149A,B,orC)**
- **Letdown Isolation Valves closed (LV-459 and -LV-460)**

NOTES & CUES:

(1) With a loss of charging flow through the Regenerative Heat Exchanger, letdown flow should be promptly isolated to minimize the possibility of equipment damage. If the examinee refers to the AOP prior to taking this action, then the step is considered UNSAT.

STEP 2

SAT ☐ UNSAT ☐

Check Key Parameters on Plant Computer

☐ • Monitor and trend RCP parameters and refer to 13003, "RCP Operation" ***(1)***
☐ • Check for indications of gas binding/loss of suction to charging pump ***(2)***

NOTES & CUES:

(1) RCP parameters should be monitored due to the loss of RCP seal injection. ACCW is available to cool the thermal barrier, so no significant challenges to continued RCP operation will be present.

(2) No indications of gas binding (fluctuations in discharge pressure or flow, low VCT level, etc.) will be present. The examinee is expected to check for these indications on the IPC or chart trends. If IPC trend length is an issue due to simulator reset, a cue can be provided to let the examinee know that the trend indications prior to the pump trip were present for 30 minutes.

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Deleted: LT-459 instrument failure identified
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Deleted: CUES
Deleted: :
Deleted: ©. Provide indication that LI-459 is = 100% with PRZR level lowering on the other channels.
Deleted: CRITICAL (♦)¶
Deleted: Restore PRZR level to program
Deleted: ♦ Charging flow controller FIC-121 adjusted to increase charging flow¶
Deleted: ♦
Deleted: PRZR level restored between 56% and 60%¶
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Deleted: ☐ • Seal injection flow 8 to 13 gpm

STEP 3

SAT ☐ **UNSAT** ☐

Investigate Cause of Charging Loss

☐ • Verify no indications of leakage are present *(1)*

NOTES & CUES:

(1) No indications of leakage will be present, however the examinee may dispatch operators to the field to inspect the NCP and its breaker, as well as to look for any leakage indications.

If dispatched, report back from the field that 1NA05-08 has Overcurrent flags indicated on all three phases, and that there is a scorched smell in the pump room coming from the motor area. No leakage indications are present.

STEP 4

SAT ☐ UNSAT ☐

Verify ACCW System in Service

☐ • At least one ACCW pump verified running.

NOTE:

This action would most likely already be performed while checking RCP parameters.

STEP 5

SAT ☐ UNSAT ☐

Check if Charging Flow can be Re-established

☐ • Charging flowpath checked for indications of valve failure

☐ • Determines that charging and letdown flow can be restored per 13006-1 *(1)*

NOTES & CUES:

(1) If examinee informs SS that no indications are present that would prevent restoration of charging, then provide a cue that the SS desires that charging flow be returned to service if conditions permit.

Deleted: RQ-JP-18001-004

Deleted: CRITICAL (♦)

Deleted: Select valid input to PRZR Level Control and Recorder

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Deleted: PRZR level controller LS-459D in 461/460

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Deleted: ☐ • PRZR level recorder LS-459E in 461

Deleted: Restore PRZR level control to auto

Deleted: Note: Due to the reset time constants of the controller, this step does not have to be completed to be evaluated as SAT. If desired provide examinee with the cue given below.

Deleted: ☐ • FIC-121 in AUTO ☐ • PRZR level maintained by FIC-121 *(1)*

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Deleted: *(1)* "The Extra RO will monitor Przr level and return the controller to automatic

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STEP 6
SAT ☐ UNSAT ☐
CRITICAL (♦)

Charging Flow Established

☐ • Charging flowpath aligned for start *(1)*
☐ ♦ Selected CCP started
☐ ♦ HC-182 adjusted to restore seal injection flow 8 to 13 gpm
☐ • FIC-121 adjusted to establish desired charging flow *(2)*
☐ • Initiate section 4.4.2 for letdown restoration *(3)*

CUE:

(1) SOP 13006-1, Section 4.4.2 will direct startup of charging pump per Section 4.4.13. Cue the examinee that BOL conditions are NOT present so flushing will not be required. Pre-start checks have been completed on both CCP's so either pump can be started.

(2) Charging flow will be raised to 80-90 gpm in Section 4.4.2.

(3) This JPM can be terminated at this time. Letdown restoration will require another 13 minutes, and is evaluated in a number of other settings. If desired, provide a cue to the examinee that:

"The extra operator will perform the remainder of 13006-1 to restore letdown flow."

STOP TIME:

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STEP 7
SAT ☐ UNSAT ☐

Letdown Flow Established

☐ ♦ Verify Pressurizer level is greater than 17%
☐ • PIC-131 adjusted to 50-75% to support letdown restoration
☐ • TIC-130 adjusted to approximately 50% to support letdown restoration *(1)*
☐ • Charging flow adjusted to 80-90 gpm to support letdown flow
☐ ♦ Letdown isolation valves opened
☐ ♦ Letdown orifice isolation valve opened
☐ • PIC-131 adjusted to establish letdown pressure of 360-380 psig and returned to Auto *(1)*
☐ • TIC-130 adjusted to maintain letdown temperature less than 115 0F and returned to Auto *(1)*
☐ • Monitor system parameters for proper response
☐ • Return Pressurizer level control system to Auto, when conditions permit *(3)*

CUE:

(1) This action may be necessary while opening the Letdown Orifice Isolation Valve.

(3) This JPM can be terminated at this time. Letdown restoration is evaluated in a number of other settings.

STEP 8
SAT ☐ UNSAT ☐

Initiate Tech Specs

☐ • Need for Tech Spec implementation identified *(1)*

CUES:

(1) When requested, "The USS will evaluate Tech Specs for applicability."

STEP 9
SAT ☐ UNSAT ☐

Report to USS

☐ • Operator actions completed

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Deleted: corrective actions

Deleted: *(2)*

Deleted: the need to bypass the affected channel

Deleted: *(2)* When requested, "The USS will notify I&C and ensure the associated Bistable Test/Master Test . . . switches are positioned to TEST."

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Field Notes

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

NRC-JP-13427-002

D/G 1B PARALLEL OPERATION
WITH FAILURE OF LOAD POT

Revision 0

March 30, 2005

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:	**Following a 7 day D/G 1B outage, Maintenance and Engineering Support are standing by for a D/G 1B test run. D/G 1B was just started, and is now operating unloaded with the D/G output breaker open. You are relieving the BOP, and will be performing the remainder of this test run. The outside area SO is stationed at the D/G to support the evolution.**
Assigned Task:	**The applicable portions of 13145-1 have been completed for starting DG-1B. After reviewing the Precautions and Limitations of 13427-1, parallel D/G 1B to 1BA03 and raise DG-1B load to 7000 kw per Section 4.2.1.**
Task Standard:	**DG-1B paralleled to 1BA03 per 13427-1**

JPM INFORMATION

OPERATOR'S NAME: .....

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: D/G 1B PARALLEL OPERATION WITH FAILURE OF LOAD POT

Application:	RO/SRO				
Task Number:	11021				
K/A Number:	062A1.01	RO:	3.4	SRO:	3.8
Safety Function:	6 - Electrical				
10CFR55.45 Ref.:	5				

REVISION: 0

COMPLETION TIME: 21 minutes

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 13427-1. Verify this JPM is in accordance 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. 13427-1 and 17038-1

SIMULATOR SETUP:

1. Reset to IC 14
2. Start D/G 1B allow it to run unloaded until all annunicators are clear
3. Set **Trigger 1** with the following overrides:
   DG 1B (A) Load Pot to 100% over 30 seconds
   ALB 38 E01 – ON (DG 1B Trouble)
   ALB 38 A04 – ON with a 10 sec time delay (LO outlet temp)
   ALB 38 C04 – ON with a 20 sec time delay (JW outlet temp)
4. Set **Trigger 2** with the following overrides:
   DG 1B kW meter from 7700 to 8100 over 30 seconds
5. Acknowledge alarms and freeze simulation

Setup time: 5 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: **Following a 7 day D/G 1B outage, Maintenance and Engineering Support are standing by for a D/G 1B test run. D/G 1B was just started, and is now operating unloaded with the D/G output breaker open. You are relieving the BOP, and will be performing the remainder of this test run. The outside area SO is stationed at the D/G to support the evolution.**

Assigned Task: **The applicable portions of 13145-1 have been completed for starting DG-1B. After reviewing the Precautions and Limitations of 13427-1, parallel D/G 1B to 1BA03 and raise DG-1B load to 7000 kw per Section 4.2.1.**

Task Standard: **DG-1B paralleled to 1BA03 and operated per 13427-1**

START TIME: _____

STEP 1

SAT ☐ ***UNSAT*** ☐

Paralleling Diesel Generator To 1BA03

☐ • ENSURE the Diesel Generator 1B Sync Mode Selector Switch TS-DG1B is in AUTO

☐ • ENSURE Breaker 1BA03-05 and 1BA03-01 Synchronization Switches are OFF

☐ ♦ PLACE the Breaker 1BA03-19 Synchronization Switch to ON

☐ ♦ VERIFY Diesel Generator is in the Parallel Mode by observing the blue DSL GEN 1B UNIT MODE/FAST START light is not illuminated.

☐ • SET the Diesel Generator Load Pot 1-SE-4915 to 1.00

STEP 2

CRITICAL (♦)

SAT ☐ **UNSAT** ☐

Adjust D/G 1B voltage and frequency

☐ • SELECT 1BA03 4160V Bus phase voltage of the highest value

☐ • SELECT the Diesel Generator 1B voltage of the lowest value

☐ • VERIFY Sync Scope Meter is rotating, Synchronizing Lights are bright at the 6 o'clock position, Synchronizing lights are dark at the 12 o'clock position, and the Red AUTO SYNC PERMISSIVE LIGHT comes on near the 12 o'clock position

☐ • ADJUST generator voltage to approximately 50V above the highest phase of the bus voltage

☐ ♦ ADJUST the generator speed until the Sync Scope needle is rotating slowly in the clockwise direction (fast)

NOTE: When the DG is paralleled to 1BA03 during the next step, the DG will uncontrollably pick up maximum load.

STEP 3

CRITICAL (♦)

SAT ☐ **UNSAT** ☐

Closing D/G 1B output breaker

☐ ♦ When the Sync Scope needle reaches the 11 o'clock position DEPRESS and HOLD the Diesel Generator 1B AUTO SYNC PERMISSIVE PUSHBUTTON PB-DG1B

☐ • VERIFY that the DG1B OUTPUT BRKR 1BA03-19 CLOSES

NOTE TO SIMULATOR INSTRUCTOR:

After the DG output breaker is closed, INSERT Trigger 1.

STEP 4

CRITICAL (♦)

SAT ☐ **UNSAT** ☐

Respond to Uncontrollable DG Load Increase

☐ ♦ Recognize that DG load is NOT stable at minimum load (700 kW), and that it is increasing uncontrollably.

☐ • Attempt to lower load using DG load pot

☐ ♦ Perform either of the following: *(1)*

- OPEN the DG output breaker
  or
- TRIP the DG

---

(1) If the DG is not manually tripped within 5 minutes, trip the DG due to a Lube Oil or Jacket Water trip.

STOP TIME: .....

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JOB PERFORMANCE MEASURE

NRC-JP-13009-001

PERFORM A MANUAL MAKEUP WITH A LOSS OF BORIC ACID FLOW

Revision 0 / NRC Exam 2005

March 29, 2005

Deleted: RQ

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Deleted: EMERGENCY BORATE FROM THE BAST

Deleted: 6

Deleted: December 3, 2003

Deleted: Written By : S. N. Dyer Date: 12/3/2003¶

¶

¶

Approved By : : R. D. Brigdon Date: 5/14/2004¶

¶

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: VCT level is 32%.

Assigned Task: The SS has directed you to perform a Manual Makeup per 13009-1 to raise VCT to 50%.

Task Standard: VCT level raised by correctly performing 13009.

Deleted: ⏲ *THIS IS A TIME CRITICAL JPM* ⏲¶

Deleted: A reactor trip has occurred and the plant has been stabilized in hot standby conditions. Per step 3 of 19001-C, the crew determined 3 control rods failed to fully insert.

Deleted: The USS has directed you to "Initiate emergency boration of the RCS per step 3 RNO of 19001-C."

Deleted: Emergency boration flow established

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JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Perform Manual Makeup with Loss of Boric Acid Flow

REVISION: 0 March 29, 2005

COMPLETION TIME: 19 minutes

Application: RO/SRO
Task Number: 090
K/A Number: APE024AA1.17 RO: 3.9 SRO: 3.9
Safety Function: 1 - Reactivity
10CFR55.45 Ref.: 6, 8, 12

Deleted: Emergency Borate from the BAST

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Comment [snd1]: Changed the K/A number from a knowledge K/A to an ability K/A number which changed the importance factor

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 13009-1. Verify this JPM is in accordance 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. 13009, CVCS Reactor Makeup Control System
2. Reactivity Briefing Sheet for BOL 100% conditions

SIMULATOR SETUP:
1. Reset to IC10 (BOL 100%)
2. Set Trigger 1 with RF CV 22 (1208-U4-292 closed over 5 seconds)

Setup time: 3 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: VCT level is 32%.

Assigned Task: The USS has directed you to perform a Manual Makeup per 13009-1 to raise VCT to 50%.

TASK STANDARD: VCT level raised by correctly performing 13009.

Deleted: RQ
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Deleted: 2. Insert the following overrides:¶ FI-183 0%¶ HS-112D CLOSE¶ HS-112E CLOSE¶ 3. Insert the following malfunctions:¶ RD 17E @ 12 steps (final value)¶ RD 17H @ 6 steps¶ RD 17N @ 6 steps¶ 4. Trip the RX¶ 5. Stabilize plant conditions:¶ Trip both MFPs¶ Throttle AFW @ 200gpm/SG¶ 6. Place **BOTH** boric acid pumps in **STOP**¶ 7. Ack/Reset alarms¶ 8. Freeze¶
Deleted: 7
Deleted: ***This is a TIME CRITICAL JPM***¶
Deleted: **INITIAL CONDITIONS:** A reactor trip has occurred and the plant has been stabilized in hot standby conditions. Per step 3 of 19001-C, the crew determined 3 control rods failed to fully insert. ¶ ¶ **ASSIGNED TASK:** The USS has directed you to "Initiate emergency boration of the RCS¶ per step 3 RNO of 19001-C".¶
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Deleted: Emergency boration flow established.
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START TIME: _____

STEP 1

SAT ☐ **UNSAT** ☐

Determine Boric Acid Flow Setting

☐ • DETERMINE the Boric Acid Blender Flow 1-FIC-0110 setting for the desired makeup boron concentration using PTDB Tab 2.2. *(1)*

NOTE:

(1) The Boric Acid Flow setting should be already properly set for automatic operation, however the RO would be expected to verify the setting is correct prior initiating a manual makeup.

STEP 2

CRITICAL (♦)

SAT ☐ UNSAT ☐

Align Reactor Makeup Controls for Manual Makeup

☐ • Place VCT Makeup Control 1HS-40001B in STOP.
☐ ♦ **PLACE VCT MAKEUP MODE SELECT 1-HS-40001A in MAN.**
☐ ♦ **ADJUST 1-FIC-0110 to the desired setting and ENSURE it is in AUTO.** *(1)*
☐ • PLACE TOTAL MAKEUP 1-FIC-0111 in AUTO.
☐ • RESET Boric Acid Blend Control 1-FQI-0110 and ADJUST it to desired amount of boric acid.
☐ • RESET Boric Acid Blend Control 1-FQI-0111 and ADJUST it to the desired amount of total makeup.

(1) The examinee would be expected to refer to the Reactivity Briefing sheet for this evolution.

STEP 3

SAT ☐ **UNSAT** ☐

Align Reactor Makeup Control Valves for Manual Makeup

☐ • Ensure BA TO BA BLENDER 1-HS-0110A in AUTO
☐ • Ensure RX MU WTR TO BA BLENDER 1-HS-0111A in AUTO
☐ • Ensure one Boric Acid Transfer Pump RUNNING or in AUTO
☐ • Ensure one Reactor Makeup Water Pump RUNNING or in AUTO

CUES:

© Provide cues as needed to indicate required valve positions.

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Deleted: Start at least one Boric Acid Transfer Pump
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Deleted: Note: The examinee may attempt to utilize other flowpaths, however, this flowpath is the only one in which FB Flow can be ¶ verified.¶
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STEP 4
CRITICAL (♦)
SAT ☐ UNSAT ☐

Align Discharge Flowpath

☐ ♦ OPEN:
- BLENDER OUTLET TO VCT 1-FV-0111B
or
- BLENDER OUTLET CHARGING PUMPS SUCTION 1-FV-0110B

CUES:
© Provide cues as needed to indicate required valve positions.

Deleted: Verify boration flow to the RCS

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Deleted: Charging flow 1-FIC-121 placed in manual and adjusted to maintain >42 gpm

STEP 5
CRITICAL (♦)
SAT ☐ UNSAT ☐

Start Manual Makeup

☐ ♦ PLACE VCT Makeup Mode Selector Switch 1-HS-40001A in MANUAL.
☐ ♦ PLACE VCT Makeup Control Switch 1-HS-40001B in START.

Deleted: ☐ ♦ Charging flow indicator 1-FI-121C > 42 gpm¶
☐ ♦ Boration flow indicator 1-FI-0110B > 30 gpm¶
☐ • If FI-0110B < 30gpm, start second boric acid transfer pump.¶

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STEP 6

SAT ☐ UNSAT ☐

Verify Proper Operation of Manual Makeup

☐ • VERIFY Boric Acid Transfer Pump RUNNING.
☐ • VERIFY Reactor Makeup Water Pump RUNNING.
☐ • VERIFY 1-FV-0110A throttles OPEN to provide desired flow.
☐ • VERIFY 1-FV-0111A throttles OPEN to provide desired flow.
☐ • MONITOR Boric Acid Blend Control 1-FQI-0110 and 1-FQI-0111.

Note: Shortly after the examinee verifies proper operation of the Manual Makeup, INSERT Trigger 1.

Boric acid flow will then lower to zero due to a clogged boric acid filter. This will cause a Boric Acid Flow deviation alarm after a 30 second time delay, but no isolation will occur due to the discharge valve being placed in the hard open position. Manual operator action will be required to stop a dilution event.

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STEP 7
CRITICAL (♦)
SAT ☐ UNSAT ☐

Stops Manual Makeup due to Loss of Boric Acid Flow

☐ ♦ **Determine that 1-FV-0110A is not providing desired boric acid flow.**
☐ ♦ **STOPS Manual Makeup by either:**

- **Closing 1-FV-0111B or 1-FV-0110B**

or

- **Placing VCT Makeup Control 1-HS-40001B in STOP.**

STEP 8

SAT ☐ UNSAT ☐

Report to USS

☐ • Manual Makeup terminated due to inadequate boric acid flow.

Field Notes

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STOP TIME: ¶
Page Break
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STEP 7¶
SAT ☐ UNSAT ☐¶
¶
Observe plant parameters¶
. Note: . This task is considered complete when boration flow has been initiated. After this has been accomplished, provide ¶
the cue given below to the operator.¶
¶
☐ . • Pressurizer heaters energized¶
☐ . • Determine the need to add 462 ppm of boron(1)¶
¶
CUES:¶
. (1) . "The extra RO will monitor boron concentration and terminate emergency boration when ¶
appropriate."¶
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Page 5: [1] Deleted	Student	03/29/2005 4:10:00 PM
✦ 1-FV-110A, BAST to BA Blender, OPEN		

Page 5: [2] Deleted	Student	03/29/2005 4:10:00 PM
✦ 1-FV-110B, Blender Outlet to Charging Pump Suction, OPEN		

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-19030-002

ESTABLISH REQUIRED SUBCOOLING FOR RCS DEPRESSURIZATION

Revision 12

April 5, 2005

Deleted: 1

Deleted: May 13, 2004

Deleted: Written By : S. N. Dyer Date: 5/13/2004¶
¶
¶
Approved By :R. D. Brigdon Date: 5/14/2004¶

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:	A tube rupture has occurred on SG _____. The crew has 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 starting with step 6 of 19030."

Task Standard:	Core exit thermocouple temperatures less than required for RCS depressurization.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Establish Required Subcooling for RCS Depressurization

REVISION: 12 April 5, 2005

COMPLETION TIME: **13 minutes** **TIME CRITICAL**

This time limit is based on FSAR Chapter 15, Table 15.6.3-1, as ammended per REA 97-VAA600.

Application: RO/SRO
Task Number: 37011
K/A Number: EPE038EA1.36 RO: 4.3 SRO: 4.5
Safety Function: Secondary Heat Removal
10CFR55.45 Ref.: 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: _____

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INSTRUCTIONS TO EXAMINER

This JPM is based on 19030-C. Verify this JPM is in accordance 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 1 through 5
7. Ensure ruptured SG pressure increases above 1100 psig
8. Lower RCS pressure to approx. 1850-1900 psig
9. Ack/Reset alarms
10. Freeze simulator

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Setup time: 12 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.

This is a TIME CRITICAL JPM

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 starting with step 6 of 19030."

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

START TIME: _____ **TIME CRITICAL** ⏲

STEP 1
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Block Low Steam Pressure SLI
Note: This step is CRITICAL only if not performed and a SLI occurs due to Low Steamline Pressure.

☐ • Check PRZR pressure < 2000 psig (P-11)
☐ • Verify High Steamline Pressure Rate alarms clear
☐ ♦ Place HS-40068 and HS-40069 in BLOCK (momentary)

STEP 2
SAT ☐ UNSAT ☐

Determine required core exit temperature

☐ • Ruptured SG pressure between 1100 and 1200 psig
☐ • Required core exit temperature determined to be 518°F

CUES:
© Provide indication Ruptured SG's steamline pressure = 1120 psig.

STEP 3
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Initiate RCS cooldown
Note: If a steamline isolation occurs, the operator should reestablish the cooldown using the intact SG's ARVs. Failure to resume the cooldown at the maximum rate is UNSAT.

☐ • AFW flow increased to intact SGs for cooldown
☐ ♦ Match demand on SG Header Pressure Controller PIC-507 and Steam Dump demand meter UI-500
☐ ♦ Place HS-500C in STEAM PRESSURE mode
☐ ♦ OPEN all available steam dumps by slowly raising demand on PIC-507
☐ • Check if auto steam dump isolation should be bypassed
☐ ♦ Place HS-500A and HS-500B in BYP INTLK *(If RCS Temp is above 550°F Holding bypass switches is required until temp is < 550°F)*
☐ ♦ Stm Dump Controller PIC-507 in MAN & adjusted to fully open PV-507A, B, & C *(see note above)*

CUES:
© Provide indication RCS NR Tavg = 545 °F

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STEP 4
SAT ☐ UNSAT ☐

Perform steps 8 through 13 as time permits

Note: These steps are not required to be performed to satisfy the task standard. These steps can be performed while the RCS cooldown is in progress.

- ☐ • Check intact S/G NR levels > 10%
- ☐ • Check NO SG levels rising in an uncontrolled manner
- ☐ • Control feed flow to maintain intact S/G NR levels between 10 – 65%
- ☐ • Check power available to PORV Block valves
- ☐ • Check PORVs shut
- ☐ • Check at least one PORV Block valve open
- ☐ • Reset SI
- ☐ • Reset CIA
- ☐ • Verify IA pressure > 100 psig
- ☐ • HS-9378A and HS-9378B placed in open until IA to CNMT valve HV-9378 will remain open
- ☐ • Check RCS pressure > 300 psig
- ☐ • Stop RHR pumps

STEP 5
CRITICAL (♦)
SAT ☐ UNSAT ☐

Stop RCS cooldown
Note: If used earlier, the ARVs should be adjusted to stop the cooldown and maintain temperatures.

- ☐ ♦ Core exit temperatures < 518°F
- ☐ ♦ PIC-507 adjusted to stop cooldown ***(see note above)***
- ☐ • PIC-507 adjusted to stabilize core exit temperatures **< 518°F**

CUES:
©. Provide indication as needed to indicate that CETC temperatures < stated temperature.

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STOP TIME: _____

STEP 6
SAT ☐ UNSAT ☐

Report to USS

- ☐ • Core exit thermocouples are < 518°F

Field Notes

SOUTHERN COMPANY

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-13130-001

DILUTE CONTAINMENT WITH SERVICE AIR

Revision 8

April 5, 2005

Deleted: 7

Deleted: December 3, 2003

Deleted: Written By: . S. N. Dyer . Date: . 12/3/2003¶
¶
¶
Approved By: Richard D. Brigdon . Date: . 5/14/2004¶

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 LOCA has occurred on Unit 1. The crew is performing step 19 of 19010-C. The TSC has requested that Service Air be aligned to Containment to reduce the hydrogen concentration of the Containment atmosphere.
Assigned Task:	The USS has directed you to "Dilute the Containment Hydrogen concentration using Service Air per 13130-1, "Post-Accident Hydrogen Control."

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Task Standard:	Service Air aligned to Containment atmosphere.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ____/____/____

JPM TITLE: Dilute Containment with Service Air

REVISION: 8 April 5, 2005

COMPLETION TIME: 8 minutes

Application: RO/SRO
Task Number: 29013
K/A Number: 028A4.01 RO: 4.0 SRO: 4.0
Safety Function: 5 - Containment
10CFR55 Ref.: 41.7 / 45.5 to 45.8

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Deleted: December 3, 2003

Comment [snd1]: Completion Time was changed due to increases in performance time. The increase is related to requirement for 3 way communications, place keeping, & peer checking.

Deleted: SF5

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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 accordance 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

SIMULATOR SETUP:

1. Reset to IC 14 (MOL 100%)
2. Insert malf. RC05C at 100% (Hot Leg Break)
3. Throttle AFW to 570 gpm
4. Use Remote Function ED08 to set CNMT H_2 at 8%
5. Use Remote Function ED07 to override CNMT H_2
6. Use Remote Function ED06 to set CNMT Pressure at 15#
7. Use Remote Function ED05 to override CNMT Pressure
8. Trip RCPs
9. Verify RCS pressure rising
10. Reset SI
11. Stop RHR pumps
12. Place both Ctmt H_2 Monitors in service per 13130
13. Ack/Reset alarms
14. Freeze simulator when Ctmt H_2 concentration stabilizes

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 LOCA has occurred on Unit 1. The crew is performing step 19 of 19010-C. The TSC has requested that Service Air be aligned to Containment to reduce the hydrogen concentration of the Containment atmosphere.

ASSIGNED TASK: The USS has directed you to "Dilute the Containment hydrogen concentration using Service Air per 13130-1, "Post-Accident Hydrogen Control."

TASK STANDARD: Service Air aligned to Containment atmosphere.

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JPM STEPS

START TIME: _____

STEP 1
SAT ☐ UNSAT ☐

Appropriate procedure selected

☐ • 13130, Section 4.4.2 selected

STEP 2
CRITICAL (♦)
SAT ☐ UNSAT ☐

Align Service Air to Containment

☐ • Verify containment pressure < 40 psig
☐ ♦ HS 40120 **and** 40122 positioned to RESET (CIA)
☐ ♦ HS 9385A positioned to OPEN
☐ ♦ HS 9385B held in OPEN position until HV 9385 fully OPENED

STEP 3
CRITICAL (♦)
SAT ☐ UNSAT ☐

Initiate Service Air Purge

NOTE: Use remote function ED06 to control containment pressure from 15 psig to 17 psig with a ramp time of 600 seconds once a 9380 valve is open. This will allow verification of air to containment. Use malfunction IA02 at 5% to simulate air flow out of service air system. Expect A/Cs in standby to start.

☐ ♦ HV 9380A or HV 9380B OPENED
☐ • Verify Service Air pressure > 80 psig
☐ • Monitor Ctmt H_2 concentration ***(1)*** ***(2)***
☐ • Verify Ctmt pressure remains < 40 psig ***(3)***

CUE:

(1) When requested, "The Extra RO will monitor H_2 concentration."
(2) When requested, "The USS will notify Chemistry to begin sampling."
(3) When requested, "The Extra RO will monitor containment pressure."

STEP 4
SAT ☐ UNSAT ☐

Report to USS

☐ • Service Air aligned to Ctmt atmosphere

STOP TIME: _____

Field Notes

SOUTHERN COMPANY

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-13011-001

PLACE RHR IN SERVICE

Revision 15

April 5, 2005

Deleted: 4

Deleted: December 3, 2003

Deleted: ¶
Written By: . S. N. Dyer . Date: . 12/3/2003¶
¶
¶
Approved By: . R. D. Brigdon Date: . 5/14/2004¶

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 plant cooldown from Mode 4 to Mode 5 is in progress in accordance with UOP 12006-C, Section C. In addition, power has been restored to loop suctions HV-8701A/B and HV-8702A/B per 13011.
Assigned Task:	The USS has directed you to "Place RHR Train_____ in service and establish a 50°F/hr cooldown rate using 13011."

Task Standard:	RHR in service with a cooldown established.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Place RHR In Service

REVISION: 15 April 5, 2005

COMPLETION TIME: 20 minutes

Application: RO/SRO
Task Number: 12004
K/A Number: SF4005A4.01 RO: 3.6 SRO: 3.4
Safety Function: Primary Heat Removal
10CFR55.45 Ref.: 4, 6, 7

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Deleted: December 3, 2003

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 13011-1. Verify this JPM is in accordance 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. 13011, Residual Heat Removal System

SIMULATOR SETUP:

1. Reset to IC3 (BOL mode 4)
2. Ensure both trains of CCW in service
3. Trip RCPs 02 and 03
4. Power HV 8701A/B OR 8702A/B (selected train)
5. Adjust ARV setpoints to est a 10°F/hr cooldown rate
6. Ensure RCS pressure stable at approx. 350 psig.
7. Activate RF: RH2(RH3) to align letdown from desired train
8. Verify Hi Flux at Shutdown Alarm Reset
9. Ack/Reset alarms
10. Place SIP HS's in PTL and tag
11. Freeze simulator

NOTE TO SIMULATOR INSTRUCTOR: **Ensure IPC Indications (Mode Dependent Alarming) for Reactivity is indicating properly.**

Setup time: 15 minutes

Deleted: Stop the RHR Pump¶
5. Close

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Deleted: Open 606/607 and Close 615/619¶
7. Open 8716A/B and 8812A/B¶
8. Momentarily start RHRP A to lower temp on TR-612¶
9.

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11.

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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 plant cooldown from Mode 4 to Mode 5 is in progress in accordance with UOP 12006-C, Section C. In addition, power has been restored to the ____ train loop suctions per 13011.

Deleted: HV-8701A/B and HV-8702A/B

ASSIGNED TASK: The USS has directed you to "Place RHR Train____ in service and establish a 50°F/hr cooldown rate using 13011."

TASK STANDARD: RHR in service with a cooldown established.

JPM STEPS

START TIME: _____

STEP 1
CRITICAL (♦)
SEQ 1
SAT ☐ **UNSAT** ☐

Align RHR for operation

- ☐ • Section 4.3(4.4) selected
- ☐ • Notify HP that RHR system startup could change rad levels ***(1)***
- ☐ • RHR crossconnects HV-8716A(B) CLOSED
- ☐ ♦ RHR HX outlets HV-606(607) CLOSED
- ☐ • RHR HX bypasses FV-618(619) CLOSED
- ☐ • RHR to cold legs HV-8809A(B) OPEN
- ☐ • Independent verification requested ***(2)***
- ☐ ♦ RHR pump A(B) in PTL
- ☐ ♦ RWST to RHR HV-8812A(B) CLOSED
- ☐ ♦ Hot leg suctions HV-8701B(8702B) and HV-8701A(8702A) OPEN
- ☐ ♦ RHR pump A(B) in AUTO ***(3)***

CUES:

(1) "The USS will notify HP"
(2) "The BOP will perform the IV."
(3) When requested, "Step 4.3.4(4.4.4) has been performed."

Deleted: *Note: This JPM only evaluates the selected train. Alignment of BOTH trains would violate procedure and JPM should be considered UNSAT.*

STEP 2
CRITICAL (♦)
SEQ 2
SAT ☐ **UNSAT** ☐

Startup RHR system

- ☐ • Ensure CCW in service
- ☐ • RHR pump miniflow FV-610(611) OPEN
- ☐ ♦ RHR pump A(B) STARTED

STEP 3
SAT ☐ UNSAT ☐

Establish RHR letdown per section 4.5
Note: Valves 021 (022) were opened during simulator setup using remote functions RH2 (RH3)

- ☐ • RHR letdown controller HC-128 at 0% demand
- ☐ • Operator directed to OPEN 1205-U4-021(022) ***(1)***
- ☐ • Independent verification requested ***(2)***
- ☐ • HC-128 adjusted to establish letdown flow ***(3)***
- ☐ • Letdown pressure controller PIC-131 and/or HC-128 to obtain 60 to 90 gpm letdown

CUES: ***(1)*** "The ABO reports that 1205-U4-021(022) is open."
(2) "The CBO will perform the IV."
(3) If requested, "Establish 75 gpm letdown flow."

STEP 4
SAT ☐ UNSAT ☐

Warmup RHR system
Note: The miniflow valve opens at appr. 750 gpm and closes at ≈ 1400 gpm.

- ☐ • RHR inlet temperature indications verified stable ***(1)***
- ☐ • RHR HX bypass controller FIC-618(619) raised until miniflow FV-610(611) CLOSES
- ☐ • RHR inlet temperature indications verified stable

CUES:
(1) After short time period, if needed, provide indication that RHR inlet temperature has stabilized at 190°F.
© RHR flow indicates ≈ 800 gpm and inlet temperatures indicate ≈ 190°F for 5 mins.
© After opening the FV-618(9), indicate "RHR flow is ≈ 1000 gpm and inlet temperature has indicated ≈ 350°F for 5 minutes."

STEP 5
CRITICAL (♦)
SAT ☐ UNSAT ☐

Initiate RHR cooldown
Note: Establishing a specific cooldown rate is extremely time intensive. Because of this time factor, establishing a cooldown will satisfy the requirements of this JPM.

- ☐ ♦ FIC-618(619) adjusted to attain ≥ 3000 gpm (indicated flow needs to be 3200gpm)
- ☐ • FV-610(611) CLOSED
- ☐ • FIC-618(619) in AUTO with a potentiometer setting ≥ 3.6, if desired
- ☐ • PIC-131 adjusted as required to maintain desired letdown flow
- ☐ ♦ HC-606(607) adjusted to establish cooldown rate ***(1)***

CUES:
(1) After cooldown initiated, "The Extra RO will maintain the cooldown rate ≤ 50 °F/hr."

JPM STEPS

STEP 6
SAT ☐ UNSAT ☐

Report to USS

☐ • RHR in service with a cooldown established

STOP TIME: .....

Field Notes

SOUTHERN COMPANY

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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

NRC-JP-19030-001

DEPRESSURIZE RCS USING AUX SPRAY TO REDUCE BREAK FLOW TO RUPTURED STEAM GENERATOR
(PRESSURIZER SPRAYS AND PORV'S NOT AVAILABLE)

Revision 0

March 29, 2005

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Deleted: April 10, 2001

Deleted: Written By : M. C. Henry Date: 4/10/2001¶

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Approved By : R. D. Brigdon Date: 7/16/2001¶

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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 has transitioned from 19000 to 19030. Steps 1 through 16 of 19030 have been performed.

Assigned Task: The USS has directed you to "Depressurize the RCS beginning with step 17 of 19030, until any one of the conditions for stopping the depressurization is satisfied."

Task Standard: RCS depressurized and break flow reduced.

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JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___/___/____

JPM TITLE: Depressurize RCS Using Aux Spray to Reduce Break Flow to Ruptured Steam Generator (Pressurizer Sprays and PORV's Not Available)

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REVISION: 0 March 29, 2005

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COMPLETION TIME: 22 minutes

Deleted: April 10, 2001

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Application:	RO/SRO
Task Number:	37011
K/A Number:	000038EA104 RO: 4.3 SRO: 4.1
Safety Function	3 – Pressure Control
10CFR55.45 Ref.:	6, 7, 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 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

SIMULATOR SETUP:

1. Reset to IC14 (MOL 100%)
2. Override PZR SPRAYS shut: SWITCH 455B & 455C to "CNT DN"
3. Override PZR PORVS shut: SWITCH 455A & 456A to "CLOSE"
4. Insert malfunction SG01A (B,C,or D) at 50%
5. Initiate manual Rx Trip and SI
6. Throttle AFW flow to ≈ 200 gpm per SG
7. Verify ruptured SG level > 10% NR
8. Perform 19030 steps 1 through 18a
9. Ack/Reset alarms
10. Freeze simulator

Setup time: 10 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 tube rupture has occurred on SG ____. The crew has transitioned from 19000 to 19030. Steps 1 through 16 of 19030 have been performed.

ASSIGNED TASK: The USS has directed you to "Depressurize the RCS beginning with step 17 of 19030, until any one of the conditions for stopping the depressurization is satisfied."

TASK STANDARD: RCS depressurized and break flow reduced.

START TIME: _____

STEP 1
CRITICAL (♦)
SAT ☐ UNSAT ☐

Evaluate RCS Depressurization Capability

- ☐ • Spray controllers PIC-455B and PIC-455C determined to be UNAVAILABLE
- ☐ • ARM one train of COPS using HS-8000G **or** HS-8000H
- ☐ • Verify PRZR PORV block valve HV-8000A **or** HV-8000B comes OPEN
- ☐ • Places PRZR PORV PV-455A **or** PV-456A to OPEN
- ☐ • PORV's PV-455A and PV-456A determined to be UNAVAILABLE
- ☐ **♦Recognizes requirement to establish AUX SPRAY for RCS depressurization**

CUES:

© Provide cues as needed to indicate PZR spray valves are not functional.
© Provide cues as needed to indicate PZR PORV's are not functional.
© Indicate following conditions: RCS pressure is 1535 psig; Ruptured SG pressure is 1120 psig, PRZR level is 28%; RCS subcooling is 85°F".

STEP 2
CRITICAL (♦)
SAT ☐ UNSAT ☐

Establish Support Conditions for Aux Spray Operation

- ☐ • Verifies at least one SI pump running
- ☐ • Stops PZR heaters. (Heaters should have tripped off due to PZR level <17%)
- ☐ • Verify at least one CCP running
- ☐ **♦ Shuts BIT discharge isolation valves HV-8801A & B**

CUES:

© Provide cues as needed to indicate at least one SI pump and one CCP are running.
© Provide cues as needed to indicate that the BIT isolation valves are closed.

STEP 3
CRITICAL (♦)
SAT ☐ UNSAT ☐

Depressurize RCS

☐ • Adjust Seal Flow Control valve HC-182 to maximum seal flow
☐ **♦ Open Charging to RCS Isolation valves HV-8105 and HV-8106**
☐ **♦ Open PZR Aux Spray valve HV-8145**
☐ **♦ Close Charging Isolation valves HV-8146 and HV-8147**
☐ • Verify PZR Normal Spray valves closed
☐ • Adjust Seal Flow Control valve HC-182 to obtain 8-13 gpm RCP seal injection flow
☐ **♦ Adjust Charging Flow Control FIC-121 as necessary to initiate RCS depressurization**

CUES:
Note: Simulator operator needs to ensure that RCS temperature is maintained <518 F (or target temperature determined).

© Provide cues as needed to indicate required valve positions.

STEP 4
CRITICAL (♦)
SAT ☐ UNSAT ☐

Determine RCS depressurization should be stopped
*(Note: **Subcooling** is not expected to decrease to < 24°F during depressurization.)*

☐ **♦ Either of the following established:**

- **RCS pressure < Ruptured SG pressure AND PRZR level >9%**
  or
- **PRZR level >75%**

CUES:
© Provide cues to indicate that RCS pressure is ≤ Ruptured SG pressure and PZR level is 15%.

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STEP 5
CRITICAL (♦)
SAT ☐ **UNSAT** ☐

Stop depressurization

☐ • Open a Charging Isolation valve HV-8146 or HV-8147
☐ ♦ Shut PZR Aux Spray valve HV-8145
☐ • Check RCS pressure STABLE OR RISING

CUES:
© Provide cues as needed to indicate required valve positions.

STEP 6
SAT ☐ UNSAT ☐

Report to USS

☐ • RCS depressurized and break flow reduced

STOP TIME: _____

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