

DRAFT

Facility: **Vogtle Nuclear Plant** Date of Examination: **June 1-12, 2009**
 Exam Level (circle one): RO / SRO-I / SRO-U (see each JPM) Operating Test No.: **2009-301**

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
<p>a. Emergency Borate due to Rods below insertion limits (RIL)</p> <p>Description: RWST flow path required due to equipment failures. This JPM has been modified to require the student to determine if rods are below RIL by responding to a rod bank lo-lo limit alarm using the Core Operating Limits Report prior starting the emergency boration.</p> <p>(RO / SRO-I)</p> <p>K/A: 004A2.14 (3.8 / 3.9)</p>	M,A,S	1
<p>b. Transfer ECCS to Cold Leg Recirculation</p> <p>Description: Equipment failures will prevent cold leg recirculation. Required to identify a loss of emergency coolant recirculation. This JPM has been modified by adding a failure of an RWST suction valve to close.</p> <p>(RO / SRO-I / SRO-U)</p> <p>K/A: 006A4.05 (3.9 / 3.8)</p>	M,E,A,S,L EN	2
<p>c. Fill SI Accumulator at low RCS pressure</p> <p>Description: Required to use SI pump B. This requires a different alignment to prevent injecting into the RCS while at low RCS pressure. The SI pump common suction valve will be shut. The student will have to open this valve prior to starting the SI pump to prevent pump damage. This is based on recent plant operating experience.</p> <p>(RO / SRO-I)</p> <p>K/A: 006A1.13 (3.5 / 3.7)</p>	M,L,S	3
<p>d. Identify and Isolate Ruptured SG with Failures</p> <p>Description: MSIVs for ruptured SG fail to close requiring isolation of main steam loads from the ruptured SG. These include TDAFW steam supplies, condenser spargers, SJAE's, and steam dumps.</p> <p>(RO / SRO-I)</p> <p>K/A: 035A4.06 (4.5 / 4.6)</p>	D,P,E,L,A,S	4P
<p>e. Transfer CNMT Spray to Recirculation</p> <p>Description: Train A IRC suction valve fails to open requiring student to secure one train of CNMT spray to prevent damage to the ESF pump.</p> <p>(RO / SRO-I / SRO-U)</p> <p>K/A: 026A2.07 (3.6 / 3.9)</p>	D,A,S EN	5

<p>f. DG Parallel Operation with load potentiometer failure</p> <p>Description: DG load rises uncontrollably after paralleling with bus. This requires tripping either the DG engine or output breaker. These actions are to protect the diesel generator from damage from an electrical overload condition.</p> <p>(RO / SRO-I / SRO-U)</p> <p>K/A: 062A1.01 (3.4 / 3.8)</p>	<p>P,D,A,S</p> <p>EN</p>	<p>6</p>
<p>g. Place CR HVAC on Recirculation with High Radiation</p> <p>Description: CRI will fail to automatically or manually actuate. Students required to manually align dampers to isolate control room from high radiation.</p> <p>(RO / SRO-I)</p> <p>K/A: 072A3.01 (2.9 / 3.1)</p>	<p>N,A,S</p>	<p>7</p>
<p>h. Place CNMT Main Purge In-Service</p> <p>Description: Unit in mode 5. Student required to shutdown mini-purge system and then place main purge system in service with equipment hatch open. Main purge supply fan should not be placed in service.</p> <p>(RO)</p> <p>K/A: 029A2.03 (2.7 / 3.1)</p>	<p>N,S,L</p>	<p>8</p>



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JOB PERFORMANCE MEASURE

System JPM "a"

V-RQ-JP-13009-005

**EMERGENCY BORATE FROM THE RWST
RODS BELOW THE RIL (ROD BANK LO-LO LIMIT)
(Faulted JPM for HL-15 NRC exam)
This Is A Modified JPM**

Revision 0

April 6, 2009

Written By : Thad N. Thompson

Date: 4/06/09

Approved By : Dan Scukanec

Date: 4/20/2009

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 rapid downpower per AOP-18013-C, "Rapid Power Reduction" has just been performed by the operating crew. The plant is currently stable at 70% power.

Assigned Task: The SS has directed you to respond to annunciator window ALB-10, window D04.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Emergency Borate from the RWST

REVISION: 0 April 6, 2009

COMPLETION TIME: **12 minutes**

Application: RO/SRO

K/A Number: 004A2.14 RO: 3.8 SRO: 3.9

Evaluation Method Performed SimulatedEvaluation 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 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. 13009, CVCS Reactor Makeup Control System
 2. 17010, Window D04 for ROD BANK LO-LO LIMIT

- SIMULATOR SETUP:**
1. Reset to IC # 14 for HL-15 NRC Exam
 2. Place a Red Danger Tag on HS-0276A (Boric Acid Transfer # 1)

Simulator Setup From Scratch:

1. Reset to IC # 14 (100% MOL)
2. Insert the following overrides:
 - LV-112D closed
 - HS-276A stop
 - HS-276A green light – off
 - HS-276A Red Danger Tag on hand switch
 - HS-277A stop – on Trigger 1 (T1)
 - HS-277A amber light on – on Trigger 1 (T1)
 - ALB37 window D01 (BBD Trouble) on - on Trigger 1 (T1)
3. Select the following hand switch positions.
 - HS-277A auto
4. Place 75 gpm letdown in service and adjust charging flow as appropriate to maintain PRZR level stable.
5. Reduce reactor power to ~ 70% power and stabilize the plant, ensure that CBD rods are below the RIL to ensure ALB-10, D04 for ROD BANK LO-LO LIMIT is illuminated. (Recommend 5 to 10 steps below the RIL to ensure the alarm does not inadvertently clear, some patience is required to accomplish this (~ 106 steps on CBD should be pretty close).
6. Ack/Reset alarms
7. Freeze

Setup time: 10 minutes

INSTRUCTIONS TO EXAMINER

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 rapid downpower per AOP-18013-C, "Rapid Power Reduction" has just been performed by the operating crew. The plant is currently stable at 70% power.

ASSIGNED TASK: The SS has directed you to respond to annunciator window ALB-10, window D04.

JPM STEPS

START TIME: _____

STEP 1**CRITICAL (♦)**SAT UNSAT **Determine if Control Bank "D" is below the Rod Insertion Limits (RIL)**

- ♦ Determines CBD to be below the RIL referencing the COLR and Tech Spec 3.1.6.
- Determines a Shutdown Margin is required within 1 hour OR establishes Emergency Boration flow (# 1)

CUES: (# 1) "The SS directs you to initiate an Emergency Boration through either HV-8104 or the Normal Charging flow path."

STEP 2**CRITICAL (♦)**SAT UNSAT **Align RWST suction to CCP**

Note For Simbooth Operator: Trigger 1 to trip the BA Transfer Pump should be initiated when BA Flow is first observed or when HV-8104 is open.

- Start Boric Acid Transfer Pump # 2
- ♦ Place either 1-HV-8104 to OPEN, or place 1-HV-110A and 1HV-110B to OPEN
- ♦ Observes boric acid flow stops (or Boric Acid Transfer Pump has tripped). (# 1)

CUES: (# 1) "Establish Emergency Boration through any available flow path."

JPM STEPS

STEP 3**CRITICAL (♦)**SAT UNSAT **Align RWST suction to CCP****NOTE:** There are two flow paths the candidate may use to achieve Emergency Boration flow.

Flow path # 1 is from the RWST through the normal charging path at > 100gpm.

Flow path # 2 is from the RWST through the BIT (BIT flow + total seal injection – seal return > 87.5 gpm)

NOTE: Keep in mind 1-LV-112D is failed shut for this JPM.

- Verify one Charging Pump running
- ♦ Place 1-LV112E to OPEN position
- ♦ Place 1- LV-112B or 1-LV-112C to CLOSED position
- ♦ Place 1-LV-112A placed in HUT position

STEP 4**CRITICAL (♦)**SAT UNSAT **Ensure adequate charging flow****NOTE:** There are two flow paths the candidate may use to achieve Emergency Boration flow.

Flow path # 1 is from the RWST through the normal charging path at > 100gpm.

Flow path # 2 is from the RWST through the BIT (BIT flow + total seal injection – seal return > 87.5 gpm)

NOTE: Keep in mind 1-LV-112D is failed shut for this JPM.

- ♦ 1-FIC-121 adjusted to > 100 gpm charging flow

OR

- ♦ 1-HV-8801A and 1-HV-8801B open (BIT flow + total seal injection – seal return > 87.5 gpm)
- Seal injection maintained between 8 - 13 gpm per RCP using 1-HV-0182 as required

JPM STEPS

STEP 5

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.

- Place an additional letdown orifice in service (# 1)
- Pressurizer heaters operated as necessary to equalize boron (# 2)

CUES: (# 1) "The extra RO will address RCS inventory concerns and adjust letdown at a later time."
 (# 2) "The extra RO will monitor boron concentration and terminate emergency boration when appropriate."

STOP TIME: _____

STEP 6

SAT UNSAT **Report to SS**

- Emergency boration flow initiated (# 1)

CUES: (# 1) "The SS will have another operator complete the actions of the ARP".

Field Notes

**SOUTHERN
COMPANY**

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JOB PERFORMANCE MEASURE

V-RQ-JP-13009-004

EMERGENCY BORATE FROM THE RWST
(Faulted JPM for HL-14 Audit exam)
This Is A Modified JPM

Revision 0

June 20, 2007

Written By : Thad N. Thompson

Date: 6/20/07

Approved By : R. Lee Mansfield

Date: 6/22/07

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 reactor trip occurred and the plant has been stabilized in hot standby conditions. While in 19001-C, the crew determined 3 control rods failed to fully insert.

Assigned Task: The SS has directed you to "Initiate emergency boration of the RCS From the BAST through the Normal Charging Flow Path" per SOP-13009 section 4.9.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Emergency Borate from the RWST

REVISION: 0 June 20, 2007

COMPLETION TIME: **8 minutes** Time Critical ☉

Application: RO/SRO

K/A Number: 004A2.14 RO: 3.8 SRO: 3.9

Evaluation Method Performed SimulatedEvaluation 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 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. 13009, CVCS Reactor Makeup Control System

SIMULATOR SETUP: 1. Reset to IC # 121 for HL-14 Audit Exam
2. Place a Red Danger Tag on HS-0276A (Boric Acid Transfer # 1)

Simulator Setup From Scratch:

1. Reset to IC # 14 (100% MOL)
2. Insert the following overrides:
 - LV-112D closed
 - HS-276A stop
 - HS-276A green light – off
 - HS-276A Red Danger Tag on hand switch
 - HS-277A stop – on Trigger 1 (T1)
 - HS-277A amber light on – on Trigger 1 (T1)
 - ALB37 window D01 (BBD Trouble) on - on Trigger 1 (T1)
3. Insert the following malfunctions:
 - RD 17E 24 steps (final value)
 - RD 17H 12 steps
 - RD 17N 12 steps
4. Select the following hand switch positions.
 - HS-277A auto
5. Trip the RX
6. Stabilize plant conditions:
 - Trip both MFPs
 - Throttle AFW @ 200gpm
7. Ack/Reset alarms
8. Freeze

Setup time: 7 minutes

INSTRUCTIONS TO EXAMINER

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 reactor trip occurred and the plant has been stabilized in hot standby conditions. While in 19001-C, the crew determined 3 control rods failed to fully insert.

ASSIGNED TASK: The SS has directed you to an "Initiate emergency boration of the RCS from the BAST through the Normal Charging Flow Path per SOP-13009 section 4.9.

JPM STEPS

STEP 1**CRITICAL (♦)**SAT UNSAT

Align RWST suction to CCP

Note: Trigger 1 to trip the BA Transfer Pump should be initiated when BA Flow is first observed or when HV-8104 is open.

- Start Boric Acid Transfer Pump # 2
- ♦ Place either 1-HV-8104 to OPEN, or place 1-HV-110A and 1HV-110B to OPEN
- ♦ Observes boric acid flow stops (or Boric Acid Transfer Pump has tripped). (# 1)

CUES: (# 1) "Establish Emergency Boration through any available flow path."

NOTE: The start time for time critical will start when direction has been given to establish Emergency Boration through any available flow path.

START TIME: _____ **TIME CRITICAL 8 minutes**

STEP 2**CRITICAL (♦)**SAT UNSAT

Align RWST suction to CCP

NOTE: There are two flow paths the candidate may use to achieve Emergency Boration flow.

Flow path # 1 is from the RWST through the normal charging path at > 100gpm.

Flow path # 2 is from the RWST through the BIT (BIT flow + total seal injection – seal return > 87.5 gpm)

NOTE: Keep in mind 1-LV-112D is failed shut for this JPM.

- Verify one Charging Pump running
- ♦ Place 1-LV112E to OPEN position
- ♦ Place 1- LV-112B or 1-LV-112C to CLOSED position
- ♦ Place 1-LV-112A placed in HUT position

JPM STEPS

STEP 3

CRITICAL (♦)

SAT UNSAT **Ensure adequate charging flow****NOTE:** There are two flow paths the candidate may use to achieve Emergency Boration flow.

Flow path # 1 is from the RWST through the normal charging path at > 100gpm.

Flow path # 2 is from the RWST through the BIT (BIT flow + total seal injection – seal return > 87.5 gpm)

NOTE: Keep in mind 1-LV-112D is failed shut for this JPM. ♦ 1-FIC-121 adjusted to > 100 gpm charging flow

OR

 ♦ 1-HV-8801A and 1-HV-8801B open (BIT flow + total seal injection – seal return > 87.5 gpm) • Seal injection maintained between 8 - 13 gpm per RCP using 1-HV-0182 as requiredSTOP TIME: _____ **TIME CRITICAL 8 minutes**

STEP 4

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.

- Place an additional letdown orifice in service (# 1)
- Pressurizer heaters operated as necessary to equalize boron (# 2)

CUES: (# 1) "The extra RO will address RCS inventory concerns and adjust letdown at a later time."
 (# 2) "The extra RO will monitor boron concentration and terminate emergency boration when appropriate."

STEP 5

SAT UNSAT **Report to SS**

- Emergency boration flow initiated

Field Notes



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JOB PERFORMANCE MEASURE

System JPM "b"

RQ-JP-19013-003

**TRANSFER ECCS PUMPS TO COLD LEG RECIRCULATION
WITH FAILURE OF HV-8812A AND HV-8811B
(This is a MODIFIED JPM for the HL-15 NRC Exam)**

Revision 0

April 6, 2009

Written By : Thad N. Thompson

Date: 4/06/2009

Approved By : Dan Scukanec

Date: 4/20/2009

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 large break LOCA has occurred. While performing 19010, RWST level decreased below 29%. Transition to 19013 is required based on foldout page guidance.

Assigned Task: The SS has directed you to "Transfer the ECCS pumps to cold leg recirculation using 19013".

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Transfer ECCS Pumps to Cold Leg Recirculation
 With Failure of HV-8812A and HV-8811B

REVISION: 0 April 6, 2009

COMPLETION TIME: **11 minutes (6 minutes to stop RHR pumps) TIME CRITICAL ☺**
Note: This time limit is based on FSAR Table 6.3.2-7 as revised by REA 97-VAA673.

Application: RO/SRO
 Task Number: 37009
 K/A Number: 006A4.05 RO: 3.9 SRO: 3.8
 10CFR55.45 Ref.: 4, 6, 7

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

REQUIRED ITEMS: 1. 19013, Transfer to Cold Leg Recirculation

SIMULATOR SETUP: Snap to IC # 14 (HL-15 NRC Protected Snap) OR

1. Reset to IC14 (MOL 100%)
2. OVERRIDE HV-8812A TO THE **OPEN** POSITION.
3. Override HV-8811B TO THE **SHUT** Position
4. Insert malfunction RC03C AT 100% (DBA LOCA)
5. Trip all RCPs
6. Reset SI
7. After Cnmt Emergency Sump Levels are ≥ 14 inches, set RF: TK02 = 28% (RWST)
8. Ensure HV-8811A is FULL OPEN
9. Ack/Reset alarms
10. Freeze simulator

Setup time: 18 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 large break LOCA has occurred. While performing 19010, RWST level decreased below 29%. Transition to 19013 is required based on foldout page guidance.

ASSIGNED TASK: The SS has directed you to "Transfer the ECCS pumps to cold leg recirculation using 19013".

TASK STANDARD: ECCS pumps operating in the cold leg recirculation mode.

JPM STEPS

START TIME: _____ TIME CRITICAL ⌚

STEP 1

SAT UNSAT **Ensure SI Reset and CNMT Emergency Sump Levels Adequate**

- SI reset
- BPLP window 1:5 lit (Auto SI blocked)
- BPLP window 1:4 dark (SI actuated)
- CNMT Emergency Sump Level > or = 13.5 inches on LI-764
- CNMT Emergency Sump Level > or = 13.5 inches on LI-765
- Initiates Attachment A (# 1)

CUES:

(# 1) The SS will continue with step 4 while you perform Attachment A."

STEP 2

SAT UNSAT **Verify adequate RHR cooling**

- TWO CCW pumps in each train running
- CCW pump discharge pressures and flows above red indicator line
- TWO NSCW pumps in each train running
- FOUR NSCW fans in each train in auto

STEP 3

CRITICAL (♦)SAT UNSAT **Align RHR Pump A flow path**

- RHR pump A running
- HV-8811A OPEN
- Attempts to close HV-8812A RWST TO RHR PMP-A SUCTION
- ♦RNO - STOPS RHR pump A
- RNO - Goes to step 3

JPM STEPS

STEP 4**CRITICAL (♦)**SAT UNSAT **Align RHR Pump B flow path**

- Checks RHR pump B running
- Checks HV-8811B OPEN (**NOTE # 1**)
- ♦ RNO - STOPS RHR pump B
- RNO - Closes HV-8812B RWST TO RHR PMP-A SUCTION
- RNO - Attempts to open HV-8811B
- ♦ DOES NOT START RHR pump B (**NOTE # 2**)
- RNO - Goes to step 3d

(NOTE # 1) HV-8811B is closed and will not open.**(NOTE # 2)** RHR Pump does not have a suction source at this time, the pump should NOT be started.**STEP 5****CRITICAL (♦)**SAT UNSAT **Determines Cold Leg Recirculation is NOT available.**

- Checks RHR Heat Exchanger B flow indication FI-619A < 500 gpm
- ♦ RNO – Informs SS a procedure transition to 19111-C, ECA-1.1 Loss of Emergency Coolant Recirculation is required. (**# 1**)

CUES:

(# 1) The SS will initiate 19111-C, ECA-1.1 Loss of Emergency Coolant Recirculation". Another operator will take the actions of 19111-C, ECA-1.1 Loss of Emergency Coolant Recirculation.

STOP TIME: _____

Field Notes



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JOB PERFORMANCE MEASURE

System JPM "c"

LO-JP-13105-003

**INCREASE ACCUMULATOR LEVEL AT LOW RCS PRESSURE
This Is A Modified JPM For The HL-15 NRC Exam**

Revision 0

April 6th, 2009

Written By : Thad N. Thompson

Date: 04/06/2009

Approved By : Dan Scukanec

Date: 04/20/2009

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 in Mode 4 at 350 psig and stable.

Maintenance personnel have just reported a leak on Accumulator #2 has been repaired.

Assigned Task: The SS has directed you to "Restore level and pressure in Accumulator #2" using SOP-13105 section 4.4.1 to raise accumulator level to clear the level and pressure alarms.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Increase Accumulator Level

REVISION: 0 April 6th, 2009

COMPLETION TIME: 20 minutes

Application: RO/SRO This JPM is for the HL-15 NRC Exam

K/A Number: 006A1.13 RO: 3.5 SRO: 3.7

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 13105-1. 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. 13105, Safety Injection System

SIMULATOR SETUP: 1. Reset to IC # 3 for the HL-15 NRC Exam
2. Place SIP "A" in PTL with a Red Danger Tag on the hand switch.

Simulator Setup From Scratch

1. Reset to IC # 3 (Mode 4, 350 psig)
2. Insert malfunction SI02B with a Final Value of 100%
3. Verify Accum Tank 2 Hi / Lo Level annunciator alarms
4. Remove malfunction when level annunciator illuminates
5. Place SIP "A" in PTL with a Red Danger Tag on the hand switch
6. Close 1-HV-8821A, SIP "A" Discharge Isolation valve
7. Close 1-HV-8806, SIP Common Suction Valve
8. Place HV-8806 Lockout Switch to OFF
8. Ack/Reset alarms
9. Freeze simulator

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: The plant is in Mode 4 at 350 psig and stable.

Maintenance personnel have just reported a leak on Accumulator #2 has been repaired.

ASSIGNED TASK: The SS has directed you to "Restore level and pressure in Accumulator #2" using SOP-13105, section 4.4.1 to raise accumulator level to clear the level and pressure alarms.

JPM STEPS

START TIME: _____

STEP 1

SAT UNSAT **Select procedure and section** • 13105, section 4.4.1 selected

STEP 2

CRITICAL (◆)

SAT UNSAT **Isolates SIP "A" Injection Capability From The RCS**

- ◆ Places 1-HS-8835A Lockout Switch to ON (# 1)
- ◆ CLOSSES 1-HV-8835 CL INJ FROM SIS
- Places 1-HS-8835A Lockout Switch to LOCKOUT

CUE: (# 1) The SS has addressed the CAUTIONS prior to step 4.4.1 (IF, the candidate mentions the CAUTIONS)

STEP 3

NON-CRITICAL (●)

SAT UNSAT **Performs other steps to ensure SIP "A" Injection Capability is Isolated From The RCS**

- Checks 1-HV-8802A CLOSED
- Checks 1-HS-8802C in LOCKOUT
- Checks 1-HV-8802B CLOSED
- Checks 1-HV-8802D in LOCKOUT

STEP 4

CRITICAL (◆)

SAT UNSAT **Establishes Flow Path From SIP "B"**

- ◆ OPENS 1-HV-8821A SIP "A" Discharge
- Verifies 1-HV-8821B OPEN
- Requests documentation of alignment changes on controlling UOP (# 1)

CUE: (# 1) The SS will document the alignment changes in the UOP.

JPM STEPS

STEP 5**CRITICAL (◆)**SAT UNSAT **Aligns SI System and Initiates accumulator fill**

- ◆ Places 1-HV-8806A Lockout Switch to ON
- ◆ OPENS 1HV-8806 RWST To SI Pumps Isolation
- Checks 1-HV-8923 SI Pump B Suction Isolation OPEN
- Checks 1-HV-8813 SIP Common Mini Flow OPEN
- Checks 1-HV-8920 SIP "B" mini flow OPEN
- ◆ STARTS SIP "B" using 1-HS-0999A
- ◆ OPENS 1-HV-8888 Accum Fill
- ◆ OPENS 1-HV-8871 SIS Check Valve Test CNMT Iso
- ◆ OPENS 1-HV-8878B Accum Fill
- Monitors 1-LI-0952 / 1-LI-0953 Level Indication (# 1)
- ◆ CLOSSES 1-HV-8878B Accum Fill
- Independent verification requested (# 2)
- ◆ CLOSSES 1-HV-8871
- Independent verification requested (# 2)
- ◆ CLOSSES 1-HV-8888
- Independent verification requested (# 2)

NOTE: It will take approximately 7 to 8 minutes after fill initiation to clear the Accumulator Pressure alarm, it will take about 5 minutes after fill initiation to clear the Accumulator Hi / Lo Level alarm.

CUES: (# 1) Once the Accumulator Pressure alarm clears, inform the candidate the "SS has determined accumulator level and pressure are satisfactory".

(# 2) "The Unit Operator will perform the IV."

STEP 6**CRITICAL (◆)**SAT UNSAT **Stop the SI Pump**

- ◆ SIP "B" stopped
- SIP "B" handswitch 1-HS-0999A in AUTO (# 1)

CUES: (# 1) "The Unit Operator will relieve SI header pressure and complete the procedure".

JPM STEPS

STEP 7

SAT UNSAT

Report to SS

- Accumulator level raised to clear the level and pressure alarms.

STOP TIME: _____

Field Notes



Energy to Serve Your World™

PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

LO-JP-13105-003

**INCREASE ACCUMULATOR LEVEL AT LOW RCS PRESSURE
This Is A New JPM For The HL-14 Audit Exam
(This JPM Is For The RO's Only For This Exam)**

Revision 0

June 20th, 2007

Written By : Thad N. Thompson

Date: 06/20/2007

Approved By : R. Lee Mansfield

Date: 06/22/2007

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 in Mode 4 at 350 psig and stable.

Maintenance personnel have just reported a leak on Accumulator #2 has been repaired.

Assigned Task: The SS has directed you to "Restore level and pressure in Accumulator #2" using SOP-13105 section 4.4.1 to raise accumulator level to clear the level and pressure alarms.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Increase Accumulator Level

REVISION: 0 June 20th, 2007

COMPLETION TIME: 20 minutes

Application: RO/SRO **This JPM is for the HL-14 Initial License Audit Exam (RO only JPM)**

K/A Number: 006A4.07 RO: 4.4 SRO: 4.4

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 13105-1. 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. 13105, Safety Injection System

SIMULATOR SETUP: 1. Reset to IC # 123 for the HL-14 Audit Exam
2. Place SIP "A" in PTL with a Red Danger Tag on the hand switch.

Simulator Setup From Scratch

1. Reset to IC # 12 (Mode 4, 350 psig)
2. Insert malfunction SI02B with a Final Value of 100%
3. Verify Accum Tank 2 Hi / Lo Level annunciator alarms
4. Remove malfunction when level is < 17%
5. Place SIP "A" in PTL with a Red Danger Tag on the hand switch
6. Close 1-HV-8821A, SIP "A" Discharge Isolation valve
7. Ack/Reset alarms
8. Freeze simulator

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: The plant is in Mode 4 at 350 psig and stable.

Maintenance personnel have just reported a leak on Accumulator #2 has been repaired.

ASSIGNED TASK: The SS has directed you to "Restore level and pressure in Accumulator #2" using SOP-13105, section 4.4.1 to raise accumulator level to clear the level and pressure alarms.

JPM STEPS

START TIME: _____

STEP 1
 SAT UNSAT

Select procedure and section

• 13105, section 4.4.1 selected

STEP 2
 CRITICAL (♦)
 SAT UNSAT

Isolates SIP "A" Injection Capability From The RCS

- ♦ Places 1-HS-8835A Lockout Switch to ON (# 1)
- ♦ CLOSSES 1-HV-8835 CL INJ FROM SIS
- Places 1-HS-8835A Lockout Switch to LOCKOUT

CUE: (# 1) The SS has addressed the CAUTIONS prior to step 4.4.1 (IF, the candidate mentions the CAUTIONS)

STEP 3
 NON-CRITICAL (•)
 SAT UNSAT

Performs other step to ensure SIP "A" Injection Capability is Isolated From The RCS

- Checks 1-HV-8802A CLOSED
- Checks 1-HS-8802C in LOCKOUT
- Checks 1-HV-8802B CLOSED
- Checks 1-HV-8802D in LOCKOUT

STEP 4
 CRITICAL (♦)
 SAT UNSAT

Establishes Flow Path From SIP "B"

- ♦ OPENS 1-HV-8821A SIP "A" Discharge
- Verifies 1-HV-8821B OPEN
- Requests documentation of alignment changes on controlling UOP (# 1)

CUE: (# 1) The SS will document the alignment changes in the UOP.

JPM STEPS

STEP 5**CRITICAL (◆)**SAT UNSAT **Initiates accumulator fill**

- Checks 1-HV-8813 SIP Common Mini Flow OPEN
- Checks 1-HV-8920 SIP "B" mini flow OPEN
- ◆ STARTS SIP "B" using 1-HS-0999A
- ◆ OPENS 1-HV-8888 Accum Fill
- ◆ OPENS 1-HV-8871 SIS Check Valve Test CNMT Iso
- ◆ OPENS 1-HV-8878B Accum Fill
- Monitors 1-LI-0952 / 1-LI-0953 Level Indication (# 1)
- ◆ CLOSES 1-HV-8878B Accum Fill
- Independent verification requested (# 2)
- ◆ CLOSES 1-HV-8871
- Independent verification requested (# 2)
- ◆ CLOSES 1-HV-8888
- Independent verification requested (# 2)

NOTE: It will take approximately 7 to 8 minutes after fill initiation to clear the Accumulator Pressure alarm, it will take about 5 minutes after fill initiation to clear the Accumulator Hi / Lo Level alarm.

CUES: (# 1) Once the Accumulator Pressure alarm clears, inform the candidate the "SS has determined accumulator level and pressure are satisfactory".

(# 2) "The BOP will perform the IV."

STEP 6**CRITICAL (◆)**SAT UNSAT **Stop the SI Pump**

- ◆ SIP "B" stopped
- SIP "B" handswitch 1-HS-0999A in AUTO

JPM STEPS

STEP 7
 NON-CRITICAL (•)
 SAT UNSAT
Relieve SI header pressure

• OPENS 1-HV-8871 and 1-HV-8823
 • CYCLES 1-HV-8964 (# 1)
 • 1-HV-8871 and 1-HV 8823 and 1-HV-8964 CLOSED
 • Independent verification requested (# 2) (# 3)

CUES: (# 1) "The SS has determined Safety Injection Header Pressure is adequate".
 (# 2) "The BOP will perform the IV."
 (# 3) "Another operator will complete the procedure".

STEP 8
 SAT UNSAT
Report to SS

• Accumulator level raised to clear the level and pressure alarms.

STOP TIME: _____

Field Notes



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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "d"

RQ-JP-19030-006

**ISOLATE A RUPTURED STEAM GENERATOR
WITH FAILURE OF TDAFW STEAM SUPPLY AND MSIV 3006A / B TO CLOSE
THIS IS A BANK JPM FOR THE HL-15 JPM EXAM
(FAULTED JPM – PREVIOUSLY USED ON HL-14 NRC EXAM)
(This JPM Was Randomly Selected)**

Revision 0

April 6th, 2009

Written By : Thad N. Thompson

Date: 4/06/2009

Approved By : Dan Scukanec

Date: 4/20/2009

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 turbine trip/reactor trip occurred from 100% power. While the crew was attempting to stabilize the plant, a low PRZR pressure SI occurred. The crew was transitioned from 19000, E-0 to 19030.

Assigned Task: The SS has directed you to "Isolate the ruptured SG using 19030 starting at step # 4."

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Isolate a Ruptured SG With Failure of TDAFW Steam & MSIV 3006A / B to Close

REVISION: 0 April 6, 2009

COMPLETION TIME: **12 minutes** **TIME CRITICAL** ☹*The time limit is based on FSAR Chapter 15, Table 15.6.3-1*

Application: RO/SRO

Task Number: 37011

K/A Number: 035A4.06 RO 4.5 SRO 4.6

10CFR55.45 Ref.: 9

Evaluation Method Performed SimulatedEvaluation 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 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 (IC 14 for HL-15 NRC Exam, pre-snapped)
 2. INSERT OVERRIDE ON 1HV-3006A TO OPEN
 3. INSERT OVERRIDE ON 1HV-3006A GREEN LIGHT TO OFF
 4. INSERT OVERRIDE ON 1HV-3006B TO OPEN
 5. INSERT OVERRIDE ON 1HV-3006B GREEN LIGHT TO OFF
 6. INSERT OVERRIDE ON 1HV-3009 TO OPEN
 7. Insert malfunction SG01A at 50% severity
 8. Initiate manual Rx trip and SI
 9. Throttle AFW flow to 200 gpm an **ALL** SGs
 10. Verify ruptured SG level > 10%
 11. Ack/Reset alarms
 12. 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.

☺ ***This is a TIME CRITICAL JPM*** ☺

INITIAL CONDITIONS: A turbine trip/reactor trip occurred from 100% power. While the crew was attempting to stabilize the plant, a low PRZR pressure SI occurred. The crew was transitioned from 19000, E-0 to 19030.

ASSIGNED TASK: The SS has directed you to "Isolate the ruptured SG using 19030 starting at step # 4."

JPM STEPS

STEP 1

SAT UNSAT **Checks if RCPs should be stopped.**

- Determines ECCS pumps – at least one running (CCP or SIP)
- Determines RCS pressure > 1375 psig
- Determines RCPs do NOT need to be stopped, goes to step # 5.

STEP 2

CRITICAL (◆)

SAT UNSAT **Identify ruptured steam generator by any of the following conditions.**

- ◆ SG # 1 identified as ruptured based on uncontrolled level rise ☉
- High radiation from any SG sample.
- High radiation from any SG steamline.
- High radiation from any SG blowdown line.

START TIME: _____ TIME CRITICAL ⌚

STEP 3

CRITICAL (◆)

SAT UNSAT **Isolate ruptured SG ARV(s).***Note: The ARV should be allowed to control pressure automatically. Placing the controller in Manual and closing the ARV is considered UNSAT.*

- ◆ ARV controller PIC-3000 in AUTO (see note above)
- ◆ Adjust PIC-3000 potentiometer at 7.73 (≈ 1160 psig)
- Check ARV PV-3000 closed

STEP 4

SAT UNSAT **Checks at least one MDAFW pump – RUNNING AND CAPABLE OF FEEDING SG(s) NEEDED FOR RCS COOLDOWN.**

- Checks at least one MDAFW pump running and capable of feeding SG(s) needed for cooldown.

JPM STEPS

STEP 5

CRITICAL (◆)

SAT UNSAT

Close affected TDAFW Pump Steam Supply Valve(s):

- ◆ TDAFW steam supply HV-3009A identified will **NOT** close
- Checks at least one MDAFW pump running
- ◆ Trips the TDADW Pump (**NOTE**)

NOTE: It is expected the candidate will take the T & T valve to the **CLOSE** position using HS-15111, however, if he does not use HS-15111 and attempts to use HV-5106 instead, it will not shut. The candidate may dispatch personnel to shut the manual isolations to the affected SG # 1. This would be acceptable.

STEP 6

SAT UNSAT

Verify SG Blowdown Isolation Valves – CLOSED WITH HANDSWITCHES IN CLOSE POSITION.

Note: Positioning the handswitch to CLOSE should be performed for satisfactory completion.

- Places SGBD isolations HV-7603A, B, C, D in close position (**NOTE**)

NOTE: The procedure does not delineate the handswitches to close.

STEP 7

CRITICAL (◆)

SAT UNSAT

Isolate flow from the ruptured SG(s) by closing its Main Steamline Isolation and Bypass Valves.

- ◆ MSIVs HV-3006A and HV-3006B will NOT close.
- MSBVs HV-13005A and HV-13005B shut

JPM STEPS

STEP 8**CRITICAL (♦)**SAT UNSAT

Performs the following (Step 10 RNO when MSIV for loop # 1 does not shut)

- ♦ Shuts all remaining MSIVs (HV-3016A & B, 3026A & B, 3036A & B) (**NOTE # 1**)
- ♦ Shuts all remaining MSBVs (HV-13006A & B, 13007A & B, 13008A & B) (**NOTE # 1**)
- ♦ Verifies shut all steam dump valves on ZLB-2 and closes dumps if not shut. (**NOTE # 2**)
- Verifies HV-6194A Aux and Main Steam Sparger valve is shut
- ♦ Shuts SJAE valves by selecting HS-4085A (HV-4085B closed by ZLB) to OFF (**NOTE # 3**) (**CUE # 1**)
- Verifies shut MSR A & C Reheat Steam Source Stop Valves (HS-6030 verified in CLOSE)
- Verifies shut MSR B & D Reheat Steam Source Stop Valves (HS-6015 verified in CLOSE)
- Use intact ARVs for steam dump (control of Tave)
- ♦ Goes to step # 11 of 19030-C, versus transition to 19131-C, SGTR with LOCA Subcooled Recovery

NOTE # 1 The candidate may close each of the steamline isolation and bypass valves individually OR he may perform a Steam Line Isolation using the SLI handswitches.

NOTE # 2 If Steams Dumps are open (expected), the operator can close by either:
 - Selecting OFF / RESET on handswitch to the OFF position, or
 - Selecting Steam Pressue Mode and using the 1PIC-507 controller and lowering demand until the green down arrow is lit.

NOTE # 3 Taking the SJAE HS-4085A (HV-4085B) to close will satisfy this step. The valves for this are long winded and the candidate does not have to wait for these to close to proceed as he has no further control over the valves from the QMCB.

CUE: # 1 If necessary, state "Another operator will verify the SJAE valves go fully shut".

STEP 9**CRITICAL (♦)**SAT UNSAT

Checks ruptures SG(s) level.

- Check ruptured SG # 2 NR level > 10%
- ♦ MDAFW throttle valve HV-5132 closed (**NOTE # 1**)
- TDAFW throttle valve HV-5125 closed
- AFW flow to ruptured SG at 0 gpm

NOTE: # 1 This is the stop time for time critical as there are no further valves required for isolation unless the student has missed performing a step or incorrectly performed a step. The valves and flow indicator are not delineated in the procedure step.

STOP TIME: _____

JPM STEPS

STEP 10

SAT UNSAT **Checks ruptured SG(s) isolated from intact SG(s).**

Either of the following conditions satisfied.

 • Ruptured SG(s), steamline(s), ISOLATED.

OR

 • Intact SG(s), to be used for RCS cooldown, steamline(s), ISOLATED. • Checks TDAFW Pump steam supply from ruptured SG(s) – CLOSED. (NOTE # 1) (CUE # 1)**NOTE # 1** – The Trip and Throttle valve was shut earlier in the procedure to isolate the TDAFW steam supply.**CUE #1** – When the candidate proceeds to step # 13, state: “**The SS will have another operator complete the procedure**”.

STEP 11

SAT UNSAT **Report to SS** • Ruptured SG isolated*Field Notes*



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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "e"

RQ-JP-19013-005

**TRANSFER CONTAINMENT SPRAY SYSTEM TO RECIRCULATION
(ALTERNATE PATH JPM FOR THE HL-15 NRC EXAM)
THIS IS A BANK JPM**

Revision 0

April 6, 2009

Written By : Thad N. Thompson

Date: 04/06/2009

Approved By : Dan Scukanec

Date: 04/20/2009

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 large break LOCA has occurred. The crew performed the cold leg recirculation lineup using 19013, and returned to 19010. After transitioning to 19010, RWST level decreased below 8%. The Auxiliary Building Operator is standing by the local Containment Spray suction and discharge pressure gauges.

Assigned Task: The SS has directed you to "Align Containment Spray for recirculation beginning with 19013, step # 17."

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Transfer Containment Spray System to Recirculation

REVISION: 0 April 6, 2009

COMPLETION TIME: 10 minutes

Application: RO/SRO
K/A Number: 026A2.07 RO: 3.6 SRO: 3.9Evaluation Method Performed SimulatedEvaluation Location Simulator Control Room Unit 1 Unit 2

Performance Time: _____minutes

OVERALL JPM EVALUATION SATISFACTORY UNSATISFACTORY

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

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

REQUIRED ITEMS: 1. 19013, Transfer to Cold Leg Recirculation

SIMULATOR SETUP: 1. Reset to IC # 14 for HL-15 NRC Exam

Simulator Setup from Scratch

1. Reset to IC # 14, MOL 100%
2. Insert malfunction RC03C (DBA LOCA)
3. Trip all RCPs
4. Throttle AFW flow to \approx 200 gpm/SG
5. When Containment Emergency Sump levels are \approx 15":
set RF: TK02 = 29% (RWST)
6. Perform 19013-C steps 1 thru 16
7. Set RF: TK02 = 8%
8. Use Panel Drawings to over ride HV-9002A to SHUT
9. Ack/Reset alarms
10. Freeze simulator

Setup time: 20 minutes

DIRECTIONS TO OPERATOR

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

INITIAL CONDITIONS: A large break LOCA has occurred. The crew performed the cold leg recirculation lineup using 19013, and returned to 19010. After transitioning to 19010, RWST level decreased below 8%. The Auxiliary Building Operator is standing by the local Containment Spray suction and discharge pressure gauges.

ASSIGNED TASK: The SS has directed you to "Align Containment Spray for recirculation beginning with 19013, step 17."

JPM STEPS

START TIME: _____

STEP 1**CRITICAL (◆)**SAT UNSAT **Reset containment spray**

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

STEP 2**CRITICAL (◆)**SAT UNSAT **Align Train A for recirculation**

- ◆ Sump suction HV-9002A determined to NOT open.
- ◆ Containment Spray pump "A" placed in STOP per RNO for step # 18
- Initiates performace of step # 19

STEP 3**CRITICAL (◆)**SAT UNSAT **Align Train B for recirculation**

- ◆ Sump suctions HV-9002B and HV-9003B open
- ◆ RWST suction HV-9017B closed
- Local gauges for pump suction and discharge pressure verified (# 1)
- CNMT pressure verified stable or decreasing (# 2)

CUES:

- (# 1) "Suction pressure (PI-972) is 18 psig; Discharge pressure (PI-974) is 204 psig".
- (# 2) Another operator will complete the procedure starting with step # 20.

JPM STEPS

STEP 4

SAT UNSAT

Report to SS

• Containment spray aligned for recirculation

STOP TIME: _____

Field Notes



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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

RQ-JP-19013-003

TRANSFER CONTAINMENT SPRAY SYSTEM TO RECIRCULATION

Revision 19

May 24, 2005

Written By : E.M. Thornton

Date: 05/24/2005

Approved By : R. D. Brigdon

Date: 06/01/2005

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

Assigned Task: The USS has directed you to "Align Containment Spray for recirculation beginning with 19013, step 11."

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

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Transfer Containment Spray System to Recirculation

REVISION: 19 May 24, 2005

COMPLETION TIME: 8 minutes

Application: RO/SRO

Task Number: 37009

K/A Number: 000011EA112 RO: 4.1 SRO: 4.4

10CFR55.45 Ref.: 6, 12

Evaluation Method Performed SimulatedEvaluation Location Simulator Control Room Unit 1 Unit 2

Performance Time: _____ minutes

OVERALL JPM EVALUATION SATISFACTORY UNSATISFACTORY

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

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

- REQUIRED ITEMS:** 1. 19013, Transfer to Cold Leg Recirculation
- SIMULATOR SETUP:**
1. Reset to IC14 (MOL 100%)
 2. Insert malfunction RC03C (DBA LOCA)
 3. Trip all RCPs
 4. Throttle AFW flow to \approx 200 gpm/SG
 5. When Containment Emergency Sump levels are \approx 15":
set RF: TK02 = 39% (RWST)
 6. Perform 19013-C steps 1 thru 6
 7. Set RF: TK02 = 10%
 8. Ack/Reset alarms
 9. Freeze simulator

Setup time: 20 minutes

DIRECTIONS TO OPERATOR

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

- INITIAL CONDITIONS:** A large break LOCA has occurred. The crew performed the cold leg recirculation lineup using 19013, and returned to 19010. After transitioning to 19010, RWST level decreased below 10%. The Auxiliary Building Operator is standing by the local Containment Spray suction and discharge pressure gauges.
- ASSIGNED TASK:** The USS has directed you to "Align Containment Spray for recirculation beginning with 19013, step 11."
- TASK STANDARD:** Containment spray system operating in the recirculation mode.

JPM STEPS

START TIME: _____

STEP 1**CRITICAL (♦)**SAT UNSAT **Reset containment spray**

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

STEP 2**CRITICAL (♦)**SAT UNSAT **Align Train A for recirculation**

- ♦ Sump suctions HV-9002A and HV-9003A open
- ♦ RWST suction HV-9017A closed
- Local gauges for pump suction and discharge pressure verified **(1)**
- CNMT pressure verified stable or decreasing

CUES:

(1) "Suction pressure (PI-972) is 18 psig; Discharge pressure (PI-974) is 204 psig".**STEP 3****CRITICAL (♦)**SAT UNSAT **Align Train B for recirculation**

- ♦ Sump suction HV-9002B and HV-9003B open
- ♦ RWST suction HV-9017B closed
- Local gauges for pump suction and discharge pressure verified **(1)**
- CNMT pressure verified stable or decreasing

CUES:

(1) "Suction pressure (PI-973) is 16 psig; Discharge pressure (PI-975) is 202 psig."

JPM STEPS

STEP 4

SAT UNSAT

Report to USS

• Containment spray aligned for recirculation

STOP TIME: _____

Field Notes



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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "f"

NRC-JP-13427-002

**D/G 1B PARALLEL OPERATION WITH FAILURE OF LOAD POT
(THIS JPM IS A BANK JPM FOR THE HL-15 NRC EXAM)
THIS JPM WAS ON THE HL-13 NRC EXAM
AS AN ALTERNATE PATH JPM AND WAS
RANDOMLY SELECTED FOR THE HL-15 NRC EXAM**

Written By : Thad N. Thompson

Date: 02/26/2009

Approved By : Dan Scukanec

Date: 4/20/2009

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. In accordance with procedure 13427B-1, parallel D/G 1B to 1BA03 and raise DG-1B load to 7000 kw per Section 4.2.1., starting with step 4.2.1.3.

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

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

Application: RO/SRO
K/A Number: 062A1.01 RO: 3.4 SRO: 3.8

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. 13427B-1 and 17038-1

SIMULATOR SETUP: 1. Reset to IC # 14 for HL-15 NRC Exam

Simulator Setup from Scratch

1. Reset to IC 14 (100% MOL)
2. Start D/G 1B allow it to run unloaded until all annunciators are clear
3. Set **Trigger 1** with the following overrides:
 - DG 1B (A) Load Pot to 100%**
 - 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)**
 - DG1B TRIP after 300 second time delay**
4. 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. In accordance with procedure 13427B-1, parallel D/G 1B to 1BA03 and raise DG-1B load to 7000 Kw per Section 4.2.1., starting with step 4.2.1.3.

JPM STEPS

START TIME: _____

STEP 1SAT 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-4916 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
- CHECK 1BA03 bus voltage between 4025 and 4250 V
- 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.

JPM STEPS

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 CLOSSES

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:(NOTE: # 1)
 - OPEN the DG output breaker
 - or
 - TRIP the DG

(NOTE # 1) If the DG is not manually tripped within 5 minutes, the DG will automatically trip after the initiation of Trigger # 1. This would be **UNSATISFACTORY** performance of this JPM.

STOP TIME: _____



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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "g"

RQ-JP-13301-003

**MANUALLY ALIGN DAMPERS AND FANS FOR CRI
UPON RECEIPT OF HIGH RAD ON CONTROL ROOM AIR INTAKE RAD MONITORS
THIS IS A NEW JPM FOR THE HL-15 NRC EXAM**

Written By: **Thad N. Thompson**

Date: 04/06/2009

Approved By: **Dan Scukanec**

Date: 04/20/2009

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: You are the Unit Operator.

Assigned Task: The SS has directed you to "Monitor the Control Room and respond to plant conditions."

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Manually Align Dampers and Fans for CRI Upon Receipt of High Rad on Control Room Air Intake Radiation Monitors

REVISION: 0 April 6, 2009

COMPLETION TIME: 10 minutes

Application: RO/SRO

Task Number: 23005

K/A Number: 071A3.01 RO: 2.9 SRO: 3.1

10CFR55.45 Ref.:

Evaluation Method Performed

Simulated

Evaluation Location Simulator

Control Room

Unit 1

Unit 2

Performance Time: _____ minutes

OVERALL JPM EVALUATION

SATISFACTORY

UNSATISFACTORY

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 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. 13301, CBCR Normal HVAC and Emergency Filtration System

SIMULATOR SETUP:

1. Reset to IC14 (MOL 100%)
2. **INSERT MALFUNCTION ES04A (FAILURE OF TRAIN A CRI)**
3. Insert malfunction **ES04B** (Failure of Train B CRI)
4. Insert malfunctions for High Rad on RE-12116 and Re-12117 On Trigger 1.
5. Override BOTH SSMP TROUBLE alarms to OFF
6. Ack/Reset alarms
7. Freeze simulator

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: You are the Unit Operator.

ASSIGNED TASK: The SS has directed you to "Monitor the Control Room and respond to plant conditions".

JPM STEPS

START TIME: _____

STEP 1

SAT UNSAT **Select procedure and section****NOTE TO SIMBOOTH: Intiate Trigger 1 for High Rad on Control Room Air Intake Monitors**

NOTE: The operator may reference ARP 17102 for High Rad on SRDC Rad monitors RE-12116 and RE-12117 based on the annunciators. The ARP states "verify CRI". The operator may attempt to initiate CRI using the two CRI Actuate handswitches on the QHVC panel without reference to a procedure. However, when CRI fails to actuate, the expectation would be for him to pull SOP-13301 for guidance on manual system alignment.

- 17102, annunciator response for SRDC rad monitors RE-12116 or RE-12117 referenced.
- May attempt to actuate CRI from the QHVC handswitches (yellow).
- 13301, section 4.4.1 selected

STEP 2

SAT UNSAT **Manually attempts to actuate CRI**

- CRI actuation 1-HS-12195A or 1-HS-12196A in ACTUATE

NOTE: The actuation handswitches are failed and will not function, the candidate will probably attempt to use both handswitches to actuate the system.

STEP 3

CRITICAL (♦)SAT UNSAT **Start the lead Filter Unit fan.**

- ♦ Verify / starts Train B Filter Unit Supply Fan 1-1531-N7-002 (B10)
- Verify Train A Filter Unit Supply Fan 1-1531-N7-001 (B8) remains SHUTDOWN

STEP 4

CRITICAL (♦)SAT UNSAT **Check the Kitchen, Toilet, and Conference rooms isolated**

- ♦ Places Kit Toil & Conf Rm damper AHV-12162 (D6) in CLOSED position.
- ♦ Places Kit Toil & Conf Rm damper AHV-12163 (D7) in CLOSED position.

JPM STEPS

STEP 5

CRITICAL (♦)

SAT UNSAT **Check normal air supply and return dampers closed**

- ♦ Place Normal air supply damper 1-HV-12146 (C6) in CLOSED position.
- Place Normal air supply damper 1-HV-12147 (C7) in CLOSED position.
- ♦ Place Normal air return damper 1-HV-12149 (E6) in CLOSED position.
- Place Normal air return damper 1-HV-12148 (E7) in CLOSED position.

STEP 6

SAT UNSAT **Check Filter Unit dampers**

- Verify Filter Unit outlet damper 1-HV-12129 (C11) OPENS
- Verify Return fan inlet damper 1-HV-12131 (D10) OPENS

STEP 7

SAT UNSAT **Check outside air to normal HVAC fans isolated**

- Place Normal HVAC intake damper AHV-12152 (B7) in CLOSED position.

STEP 8

SAT UNSAT **Check normal HVAC fans shutdown****Note: AHS-12164 (located in shift clerk's office) is not simulated.**

- Verify Normal supply fan A-1531-A7-001 (C4) and A-1531-A7-002 (C5) SHUTDOWN
- Verify Normal exhaust fan A-1531-B7-009 (D4) and A-1531-B7-010 (D5) SHUTDOWN
- Verify Kit Toil & Conf Rm exhaust fan STOPPED (AHS-12164) (# 1)

CUES:**(# 1)** CBO reports "A-HS-12164's green light is lit and the fan has stopped."

JPM STEPS

STEP 9

SAT UNSAT **Isolate outside air to the control room****NOTE: (Not applicable for High Radiation). This step is expected to be N/A for this JPM.****NOTE: It is not expected the UO will manipulate these dampers for this JPM.**

- Place Outside air dampers 1-HV-12114 and 1-HV-12115 in the CLOSED position
- Place Outside air dampers 2-HV-12114 and 2-HV-12115 in the CLOSED position (# 1)

CUES:**(# 1) IF requested, "Unit 2 BOP will ensure proper alignment of the Unit 2 HVAC panel."**

STEP 10

SAT UNSAT **Report to SS**

- CRI equipment manually aligned
- Verify proper TSC Air Filtration System operation (# 1)
- Verify proper Essential Chiller operation (# 2)

CUES:

- (# 1)** "Another Operator will verify proper operation of the TSC Air Filtration System."
- (# 2)** "Another Operator will verify proper operation of the Chiller."

STOP TIME: _____

Field Notes



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PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "h"

LO-JP-13125-002

**PLACE CONTAINMENT MAIN PURGE IN SERVICE
WITH THE EQUIPMENT HATCH OPEN
THIS IS A NEW JPM FOR THE HL-15
NRC EXAM**

Written By : Thad N. Thompson

Date: 04/06/2009

Approved By : Dan Scukanec

Date: 04/20/2009

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 in Mode 5 with the Containment Equipment Hatch Open.

Assigned Task: The SS has authorized Gaseous Release Permits and has directed you to "Place Containment Main (Preaccess) Purge in service" using procedure 13125-1.

"Checklist 1 for Main Purge isolation dampers and valves has been performed".

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Place Containment Main (Preaccess) Purge In Service

REVISION: 0 April 06, 2009

COMPLETION TIME: 8 minutes **This JPM is a NEW JPM for the HL-15 NRC Exam.**

Application: RO/SRO

Task Number: 29006

K/A Number: 029A2.03 RO: 2.7 SRO: 3.1

10CFR55.45 Ref.:

Evaluation Method Performed Simulated

Evaluation Location Simulator Control Room Unit 1 Unit 2

Performance Time: _____ minutes

OVERALL JPM EVALUATION **SATISFACTORY** **UNSATISFACTORY**

Examiner Comments:

Examiner's Signature: _____

INSTRUCTIONS TO EXAMINER

This JPM is based on the latest rev of 13125-1. 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. 13125, Containment Purge System
- SIMULATOR SETUP:**
1. Reset to IC # 14 for HL-15 NRC Exam
 2. Place Mini-Purge **supply** fan in service per 13125 and ensure Containment Pressure is atmospheric.
 3. Turn on Power to the Containment Main Purge dampers using Remote Function
 4. Ack/Reset alarms
 5. 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: The Plant is in Mode 5 with the Containment Equipment Hatch Open.

ASSIGNED TASK: The SS has authorized Gaseous Release Permits and has directed you to "Place Containment Main (Preaccess) Purge in service" using procedure 13125-1.

"Checklist 1 for Main Purge isolation dampers and valves has been performed".

JPM STEPS

START TIME: _____

STEP 1

SAT UNSAT

Select procedure and section

- 13125 section 4.1.2 selected (# 1) (# 2) (# 3)
- Step 4.1.2.1 noted to run Exhaust fan only and supply fan off. (# 4)

CUES:

- (# 1) Chemistry has prepared the appropriate release permits, releases have been authorized."
- (# 2) The SS is aware of the seating requirements for the Main Purge valves.
- (# 3) The SS is aware of the radiation monitor requirements.
- (# 4) If asked, "Checklist 1 power restoration to Main Purge dampers and fans has been performed".

STEP 2

CRITICAL (♦)

SEQ 1

SAT UNSAT

Shuts down Mini-Purge System per Section 4.3.2

- Notify Chemistry that containment purge will be shifted from Mini-Purge to Main Purge. (# 1)
- ♦ STOPS the CTB Mini-Purge Exh Fan using 1-HS-2631B (D34)
- ♦ CLOSSES CTB Mini-Purge Exh ORC Isol Vlv-Mini 1-HV-2629B (B34)
- ♦ CLOSSES CTB Norm Purge ORC Iso Vlv-Mini 1-HV-2628B (A34)
- ♦ CLOSSES CTB Mini-Purge Exh Dmpr 1-HV-12592 (C34)
- Logs Containment Mini-Purge termination time and date on release permit. (# 2)
- ♦ CLOSSES CTB Preaccess Purge Sply Unit Inlet Dmpr 1-HV-2593 (A31)
- Notifies Chemistry Containment Mini-Purge has been terminated. (# 3)
- Verifies Mini-Purge valve status per Checklist 3. (# 4)

CUES:

- (# 1) "The SS has notified Chemistry Mini-Purge will be shifted to Main Purge."
- (# 2) "The SS will ensure termination time and date are logged on the release permit".
- (# 3) "The SS will notify Chemistry of Mini-Purge termination and release permit closure, the SS will also document the person contacted in the Unit Control Log".
- (# 4) "The SS will have another operator perform the IV."

JPM STEPS

STEP 3

CRITICAL (♦)

SEQ 2

SAT UNSAT

Place containment Main-purge exhaust fan ONLY in service

- Verifies release conditions are met. (# 1)
- ♦ Places 1-HS-2632A (C33) CTB Preaccess Purge Exh Dmpr in AUTO
- ♦ OPENS 1-HV-2593 (A31) CTB Preaccess Purge Sply Unit Inlet Dmpr
- ♦ OPENS 1-HV-2629A (B33) CTB Norm Purge Exh ORC Iso Vlv-Main
- ♦ OPENS 1-HV-2628A (A33) CTB Norm Purge Exh IRC Iso Vlv-Main
- ♦ STARTS 1-HS-2631A (D33) CTB Preaccess Purge Exh Fan
- Logs release start time and date on Chemistry data sheet. (# 2)
- Verifies release flow rate on Comm Console. (# 3)
- ♦ Does NOT initiate Main Purge Supply fan flow with Containment Equipment Hatch open.

(Note: Placing Main Purge Supply fan in service would be a failure of the JPM, opening the Main Purge Supply dampers without starting the fan would NOT be a failure)

- Notes and logs flow rates, notifies Chemistry Main Purge is operating. (# 4)

CUES:

- (# 1) The SS has verified the release permit conitions are met, permits obtained, and all required radiation monitors are OPERABLE.
- (# 2) The SS will ensure the release start and date are logged.
- (# 3) Flow rate on the Comms Console is within allowable values.
- (# 4) Flow rate is within allowable values, the SS will ensure log entries are made and will notify Chemistry of Main Purge initiation".

JPM STEPS

STEP 3

SAT UNSAT

Report to SS

- Containment Main Purge is in service with only the exhaust fan operating.

STOP TIME: _____

Field Notes

In-Plant Systems [@] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
<p>i. Establish RWST Gravity Drain through SI Pumps to RCS Cold Legs</p> <p>Description: Use attachment B of AOP 18019-C (Loss of RHR cooling) to establish gravity drain during mid-loop operations to restore temporary core cooling.</p> <p>(RO / SRO-I / SRO-U)</p> <p>K/A: 025AK1.01 (3.9 / 4.3)</p>	D,E,L,R	4P
<p>j. Shutdown 120V AC 1E Inverter During Loss of All AC Power</p> <p>Description: Battery voltage less than 105 VDC on loss of all AC power. Requires student to shutdown AC inverter to prevent equipment damage.</p> <p>(RO / SRO-I)</p> <p>K/A: 055EK3.02 (4.3 / 4.6)</p>	P,D,E,L,R	6
<p>k. Bypass CNMT HI-1 Bistables Following Loss of Heat Sink</p> <p>Description: Bistables must be bypassed using the BTI equipment in order to align a feedwater flow path to the SGs during a loss of secondary heat sink. This will also require knowledge of how / where to obtain multiple BTI keys to bypass 2 trains of equipment</p> <p>(RO / SRO-I / SRO-U)</p> <p>K/A: 012A4.03 (3.6 / 3.6)</p>	D,C,E,L	7
<p>@ 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.</p>		
* 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	
(EN)gineered Safety Feature	- / - / > 1 (control room system)	
(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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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "i"

RQ-JP-18019-005

**ESTABLISH RWST GRAVITY DRAIN THROUGH SI PUMPS TO COLD LEGS
THIS IS A BANK JPM FOR THE HL-15 NRC EXAM
(THIS JPM REQUIRES AN RCS ENTRY)**

Revision 0

March 2nd, 2009

Written By : **Thad N. Thompson**

Date: 3/2/2009

Approved By : **Dan Scukanec**

Date: 4/20/2009

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: During midloop operations, Unit _____ experienced a loss of all AC power to the 1E buses. The crew is performing step B15 attempting to a restore RCS level to greater than or equal to 188 feet.

Assigned Task: The SS has directed you to perform step B15 of 18019-C, "Loss of RHR – Mode 5 or 6 Below PRZR IR Or SG Nozzel Dams Installed":

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Establish RWST Gravity Drain Through SI Pumps to Cold Legs

REVISION: 0 March 2, 2009

COMPLETION TIME: 15 minutes

Application: RO/SRO

Task Number: 60025

K/A Number: 025AK1.01 RO: 3.9 SRO: 4.3

10CFR55.45 Ref.:

Evaluation Method Performed SimulatedEvaluation 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 18019-C. Verify this JPM is in accord with the latest procedural revision prior to use. Cues designated by (#) are to be provided to the examinee during the performance of this JPM.

REQUIRED ITEMS: 1. RWP and associated dosimetry

COMPONENT LOCATION: UNIT 1: HV-8821A (AB-B15); HV-8821B (AB-B19)

UNIT 2: HV-8821A (AB-B119); HV-8821B (AB-B117)

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: During midloop operations, Unit _____ experienced a loss of all AC power to the 1E buses. The crew is performing step B15 attempting to restore RCS level to greater than or equal to 188 feet.

ASSIGNED TASK: The SS has directed you to perform step B15 of 18019-C, "Loss of RHR – Mode 5 or 6 Below PRZR IR Or SG Nozzel Dams Installed":

NOTE: THE FOLLOWING VALVE LOCATIONS ARE FOR EXAMINER REFERENCE ONLY. THESE ARE NOT TO BE PROVIDED TO THE CANDIDATE. THE VALVE LOCATIONS ARE LISTED IN ATTACHEMENT A OF 18019-C.

- _____-HV-8821A(_____) and
- _____-HV-8821B(_____)".

JPM STEPS

START TIME: _____

STEP 1**CRITICAL (♦)**SAT UNSAT **Checks RHR Pumps NOT available and selects Attachment A, Section B**

- Step B15a, check RHR pumps – AVAILABLE (NOTE: # 1)
- Performs RNO of Step 15a (# 1)
- ♦ Selects Attachment A, Section B of 18019-C (NOTE: # 2)

CUES: (#1) The SS reports the RHR flow paths to the Cold Legs are not available at this time.**NOTE: (# 1)** RHR pumps are NOT available at this time due to Loss of All AC Power.**NOTE: (# 2)** Provide candidate with Attachment A at this time. Performance of Section A, C, or D of Attachment A would be improper performance of the procedure and would constitute a failure of this JPM. This is NOT the order of preferability as stated in the NOTE prior to step B15.**STEP 2****CRITICAL (♦)**SAT UNSAT **Checks RCP Pressure, RCS vent paths, and Selects Section "B" of Attachment A**

- Checks RCS pressure – LESS THAN 35 psig. (# 1)
- Verify at least one RCS Vent paths. (# 2)
- ♦ Selects Attachment A, Section B of 18019-C (NOTE: # 1)

CUES: (# 1) The SS reports, "RCS pressure is at atmospheric pressure."**(# 2)** The SS reports, "RCS vent paths are adequate".**NOTE: (# 1)** Performance of Section A, C, or D of Attachment A would be improper performance of the Procedure and would constitute a failure of this JPM. This is NOT the order of preferability as stated in the NOTE prior to step B15.

JPM STEPS

STEP 3
CRITICAL (♦)
SAT UNSAT

Align SIP A for RWST gravity drain

• Verifies HV-8835 – OPEN (# 1)
 ♦ SIP A to Cold Leg isolation HV-8821A located
 ♦ HV-8821A OPEN

CUES: (# 1) "The SS reports that HV-8835 is OPEN".

STEP 4
CRITICAL (♦)
SAT UNSAT

Align SIP B for RWST gravity drain

♦ SIP B to Cold Leg isolation HV-8821B located
 ♦ HV-8821B OPEN

STEP 5
SAT UNSAT

Report to SS

• SI system aligned for gravity drain

STOP TIME: _____

Field Notes



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CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "j"

RQ-JP-13431-001

**SHUTDOWN 120V AC 1E VITAL INVERTER DURING LOSS OF ALL AC
THIS IS A BANK JPM FOR THE HL-15 NRC EXAM
(THIS JPM WAS ON THE HL-14 NRC EXAM AND WAS
RANDOMLY SELECTED)
(THIS JPM REQUIRES AN RCA ENTRY)**

Revision 1

March 2nd, 2009

Written By : Thad N. Thompson

Date: 3/02/2009

Approved By : Dan Scukanec

Date: 4/20/2009

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

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

Initial Conditions: Unit 1 control room has experienced a prolonged Loss of All AC Power, 125V 1E DC Bus 1BD1 voltage is currently reading 103V DC.

Assigned Task: You have been directed by the SS to perform step 28 of 19100-C, "Loss of All AC Power".

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___ / ___ / ___

JPM TITLE: Shutdown 120V AC 1E Vital Inverter During A Loss of All AC Power

REVISION: 1 March 2, 2009

COMPLETION TIME: 20 minutes

Application: RO/SRO
K/A Number: 055EK3.02 RO: 4.3 SRO: 4.6Evaluation Method Performed SimulatedEvaluation 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 13431-1. 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:

1. 19100-C, Loss of All AC Power
2. 13431-1, 120V AC 1E Vital Instrument Distribution System
3. EDRD Dosimetry

COMPONENT LOCATION: Unit 1 Train B: Level B Control Building (Battery Breaker & Switchgear)
Unit 1 Train B: Level 1 Auxiliary Building (Inverter) – RWP required.

DIRECTIONS TO OPERATOR

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

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

INITIAL CONDITIONS: Unit 1 control room has experienced a prolonged Loss of All AC Power. 125V DC 1E Bus 1BD1 voltage is currently reading 103V DC.

ASSIGNED TASK: You have been directed by the SS to perform step # 28 of 19100-C, "Loss of All AC Power".

JPM STEPS

START TIME: _____

STEP 1

SAT UNSAT

Checks DC Bus Loads, and initiates the RNO per 19100-C step # 28a.

NOTE: If the candidate does not perform the RNO and proceeds to step # 28b, this would be an unsatisfactory performance of this JPM.

- Determines RNO of 19100 step 28 to be performed as DC Loads < 105V DC.
- Determines associated Inverter(s) to be shutdown per 13431-1. (# 1)

NOTE: There are two inverters powered from 1BD1 (1BD1I2 and 1BD1I12).

CUE: (# 1) After candidate references 13431-1 section 4.3.2 and determines there are two inverters on 1BD1, "You are directed to secure 1BD1I12, another operator will secure 1BD1I2".

STEP 1

SAT UNSAT **1BD1I12 Inverter Shutdown**

NOTE: This step is located in Control Building Level B.

- Selects section 4.3.2 of SOP-13431-1 for 1BD1I12 Inverter Shutdown.
- Verifies closed the applicable Battery Breaker BD1-01. (# 1)

CUE: (# 1) The breaker red light is illuminated OR the breaker position indicator flag is red and reads CLOSED if the candidate indicates he used the actual indicator on the breaker.

NOTE: Performance of step 4.3.2.2 would be an **IMPROPER** action since a Loss of All AC Power is in progress. There would **NOT** be an alternate source for transfer of the instrument distribution panel. This step should be marked as **N/A** by the candidate.

JPM STEPS

STEP 3

CRITICAL (♦)

SAT UNSAT

Opens the INVERTER OUTPUT Breaker

NOTE: This is located in the Auxiliary Building Level 1 and will require an RWP for entry.

♦ Inverter 1BD1112 INVERTER OUTPUT Breaker OPEN. (# 1)

CUE: (# 1) Give indication the toggle switch is showing open after the candidate indicates he would open the breaker. (The switch would be pointing down when open)

STEP 4

CRITICAL (♦)

SAT UNSAT

Opens the Inverter DC INPUT Breaker

♦ Inverter 1BD1112 DC INPUT Breaker OPEN. (# 1)

CUE: (# 1) Give indication the toggle switch is showing open after the candidate indicates he would open the breaker. (The switch would be pointing down when open)

STEP 5

SAT UNSAT

Check Inverter completely shutdown.

• Observes zero volts showing on the Inverter AC OUTPUT Voltmeter. (# 1)

CUES: (# 1) Indicate the AC output voltmeter is ZERO V DC. (This meter is located on top right side of inverter)

JPM STEPS

STEP 6

CRITICAL

SAT UNSAT

Opens Inverter DC Supply Breaker at 125V DC Switchgear 1BD1.

NOTE: This is located in Control Building Level B.

♦ Inverter DC Supply Breaker 1BD1-04 handswitch taken to Open or Trip push button depressed.

CUES: (# 1) Indicate the DC supply breaker 1BD1-04 open by hand switch green light lit, red extinguished OR by breaker flag showing green and reading OPEN.

STEP 7

CRITICAL (♦)

SAT UNSAT

Opens 1BD1 Battery Breaker

NOTE: This is directed by step 28a (2) RNO of 19100-C

♦ Panel 1BD1 Battery Breaker 1BD1-01 hand switch taken to Open or Trip button depressed. (#1) (# 2)
(# 3)

CUES: (# 1) IF, the candidate asks whether to continue and open the battery breaker, state: "The SS would like you to continue with the procedure".

(# 2) Indicate the DC supply breaker 1BD1-01 open by hand switch green light lit, red extinguished OR by breaker flag showing green and reading OPEN.

(# 3) Once the battery breaker is open state "The SS will have another operator continue the procedure".

STEP 8

SAT UNSAT

Report to SS

• Inverter 1BD1112 has been shutdown and 1BD1 Battery Breaker has been opened.

STOP TIME: _____

Field Notes



Energy to Serve Your World™

PLANT VOGTLE

CONTROL ROOM OPERATOR

JOB PERFORMANCE MEASURE

System JPM "k"

RQ-JP-13509-001

**BYPASS CONTAINMENT HI-1 FOLLOWING A LOSS OF HEAT SINK
(THIS IS A BANK JPM FOR THE HL-15 NRC EXAM)
(This JPM Will Be Performed In The Main Control Room)**

Revision 6

March 2nd, 2009

Written By : Thad N. Thompson

Date: 3/02/2009

Approved By : Dan Scukanec

Date: 4/20/2009

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: While responding to a Loss of Heat Sink on Unit ____, Containment pressure reached the Hi-1 setpoint. The crew is preparing to establish feedwater flow in accordance with step 19 of 19231-C.

Assigned Task: The SS has directed you to "Bypass Containment Hi-1 pressure channels ____ - PB936B and ____ - PB935B by initiating 13509-C."

JPM INFORMATION

OPERATOR'S NAME: _____

EVALUATION DATE: ___/___/___

JPM TITLE: Bypass Containment Hi-1 Following a Loss of Heat Sink

REVISION: 6 March 2, 2009

COMPLETION TIME: 10 minutes

Application: RO/SRO

Task Number: 37051

K/A Number: 012A4.03 RO: 3.6 SRO: 3.6

10CFR55.45 Ref.: 6

Evaluation Method Performed SimulatedEvaluation 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 13509-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. 13509-C, BTI Panel Operation
2. Two (2) BTI panel keys

COMPONENT LOCATION: Main Control Room

Note to Examiner: *Permission from the SS must be obtained to open the Protection Cabinet doors. A BTI key may be obtained from the SS.*

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: While responding to a Loss of Heat Sink on Unit ____, Containment pressure reached the Hi-1 setpoint. The crew is preparing to establish feedwater flow in accordance with step 19 of 19231-C.

ASSIGNED TASK: The SS has directed you to "Bypass Containment Hi-1 pressure channels ____ - PB936B and ____ - PB935B by initiating 13509-C."

JPM STEPS

START TIME: _____

STEP 1

SAT UNSAT **Verify initial conditions**

Note: Permission from the appropriate SS will be required to open the Protection Cabinet doors to access the BTI panels.. Discussion of the requirements to obtain 2 BTI panel keys will satisfy performance of the step.

- Checklist 2 & 3 bistables circled (13509-C)
- Obtain BTI Enable keys (*reference above note*)
- Verify all bypass switches on selected panel positioned in NORMAL
- Verify circuit breaker is ON
- Verify red power available LED illuminated

STEP 2

CRITICAL (♦)SAT UNSAT **Bypass NSSS Channel II Hi-1 bistable, 936B**

- ♦ BTI Enable Key inserted into keylock
- ♦ Keylock switch positioned to BYPASS ENABLE & Verify LED illuminates
- Verify ALB05B02 illuminated
- ♦ PB936B BTI switch #34 positioned to BYPASS
- Verify 936B LED illuminated
- Verify TSLB extinguished

STEP 3

CRITICAL (♦)SAT UNSAT **Bypass NSSS Channel III Hi-1 bistable, 935B**

- Verify all bypass switches on selected panel positioned in normal
- Verify circuit breaker is ON
- Verify red power available LED illuminated
- ♦ BTI Enable Key inserted into keylock
- ♦ Keylock switch positioned to BYPASS ENABLE & Verify LED illuminates
- Verify ALB05C02 illuminated
- ♦ PB935B BTI switch #34 positioned to BYPASS
- Verify 935B LED illuminated
- Verify TSLB extinguished

JPM STEPS

STEP 4

SAT UNSAT

Report to SS

• Containment Hi-1 Channels 936 and 935 are bypassed

STOP TIME: _____

Field Notes