Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

DRAFT
ADMIN 1 - ALL

Title:		
CORRECT RWL INDICATORS FOR HIGH DRYWELL TEMPERATURES		
Author: Anthony Ball	**Media Number:** 2015-301 ADMIN 1	**Time:** 11.0 Minutes
Line Technical Review By (N/A for minor revisions)		**Date:**
Reviewed by Instructional Technologist or designee:		**Date:**
Approved By:		**Date:**

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Course Number	Program Name	Media Number
N/A	OPERATIONS TRAINING	2015-301 ADMIN 1

Rev. No.	Date	Reason for Revisions	Author's Initials	Sup's Initials
00		Modified from LR-JP-25101 for use on 2015-301 NRC Exam. After exam will be incorporated into JPM database and renumbered.	ARB	

Line Contributors

The following individuals contributed to the development of this lesson plan.

Rev. No.	List of Contributors

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**CORRECT RWL INDICATORS FOR HIGH DRYWELL TEMPERATURES**
JPM NUMBER:	2015-301 ADMIN-1
TASK STANDARD:	The task shall be completed when the operator has determined the corrected RWL for the specified instrumentation per 34AB-B21-002.
TASK NUMBER:	201.099
OBJECTIVE NUMBER:	201.099.B

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.57

SRO 3.83

STA 4.00

K/A CATALOG NUMBER: G2.1.35

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.90

SRO 4.20

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 1**	**Unit 2**
	34AB-B21-002-1 (current version)	34AB-B21-002-2 (current version)

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	34AB-B21-002-1 (current version)	34AB-B21-002-2 (current version)

APPROXIMATE COMPLETION TIME: 11.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. An event occurred resulting in a Reactor scram and then an Emergency Depressurization from high Drywell temperature.
2. The NPO has reported the following Reactor Water Levels (RWL):

   1B21-R606A, B and C (Narrow Range) is +8 inches

   1B21-R605, (Flood Up Range) is +28 inches
   1B21-R655, (Flood Up Range) is +28 inches

   1B21-R604A and 1B21-R623A (Wide Range) are +30 inches
   1B21-R604B and 1B21-R623B (Wide Range) are +35 inches

   1B21-R623A and 1B21-R623B (Fuel Zone) are indicating ****

3. NO erratic behavior for the specified instruments has been observed.

INITIATING CUES:

Determine which of these RWL indications are valid

And

Report the corrected RWL for EACH valid RWL instrument

And

Any recommendations concerning RWL.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	❑ Human performance tools, safety, PPE met (1), **AND** ❑ For initial trg **all** steps completed correctly OR ❑ For continuing trg, **critical** steps (if used) completed correctly	❑ Mark the JPM as a **PASS**
FAIL	❑ Above standards not met	❑ Mark the JPM as a **FAIL**

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. Reference: NMP-TR-111, "On-The-Job Training and Task Performance Evaluation".

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34AB-B21-002-1.	

NOTE: If the operator indicates that SPDS would be checked, give the operator Supplement 1.

PROMPT: **IF** the operator addresses Drywell temperature indications, **INDICATE** for the operator that temperature is greater than 150°F (Use Supplement 1 if SPDS is addressed).

2.	Determine if RWL corrections are required.	Using SPDS (or Drywell temp indications) the operator DETERMINES: Drywell temperature is greater than 150°F. RWL corrections **ARE** required.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	Review Caution 1 and Caution 2 on Attachment 1 of 34AB-B21-002-1.	The operator has REVIEWED Caution 1 and Caution 2 on Attachment 1 of 34AB-B21-002-1.	
4.	Confirm there is no indication of erratic instrument behavior.	The operator has VERIFIED, by observation or by addressing the panel operator, that the following RWL instruments show NO erratic instrument behavior: 1B21-R604A 1B21-R604B 1B21-R605, (Flood Up Range) 1B21-R655, (Flood Up Range) 1B21-R623A (Wide Range) 1B21-R623B (Wide Range) 1B21-R623A (Fuel Zone)	

PROMPT: **WHEN** the operator indicates use of the Diagnostic screen of SPDS, **GIVE** the operator Supplement 2.

5.	Determine highest temperature for RTD Group 1 and 2 (Maximum Run Temperature).	At SPDS panel, the operator has DETERMINED the following Maximum Run Temperatures: RTD Group 1 - 293°F RTD Group 2 - 290°F	

PROMPT: **IF** the operator addresses temperature indications on Panels P654 and P657; indications can be **SIMULATED** using the values from Supplement 2.

6.	Determine highest temperature for RTD Group 5 (Maximum Run Temperature).	At SPDS panel, the operator has DETERMINED the following Maximum Run Temperatures: RTD Group 5 - 263°F	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
	PROMPT: **IF** the operator addresses temperature indications on Panels P654 and P657; indications can be **SIMULATED** using the values from Supplement 2.		
**6.	Determine if the RWL instrument may be used by comparing the Minimum Indicated Level for the associated Maximum Run Temperature.	The operator has DETERMINED the following RWL instruments are **VALID**: 1B21-R606A (Narrow Range) 1B21-R606B (Narrow Range) 1B21-R606C (Narrow Range)	
**7.	Determine if the RWL instrument may be used by comparing the Minimum Indicated Level for the associated Maximum Run Temperature.	The operator has DETERMINED the following RWL instruments are **INVALID**: 1B21-R604A 1B21-R604B 1B21-R605, (Flood Up Range) 1B21-R655, (Flood Up Range) 1B21-R623A (Wide Range) 1B21-R623B (Wide Range)	
**8.	Determine correct RWL from the following; 1B21-R606A 1B21-R606B 1B21-R606C.	Using 34AB-B21-002-1, the operator has DETERMINED **Correct RWL** for 1B21-R606A, B & C (narrow range) is +8 inches (accept ±1 inch).	

END TIME:_____

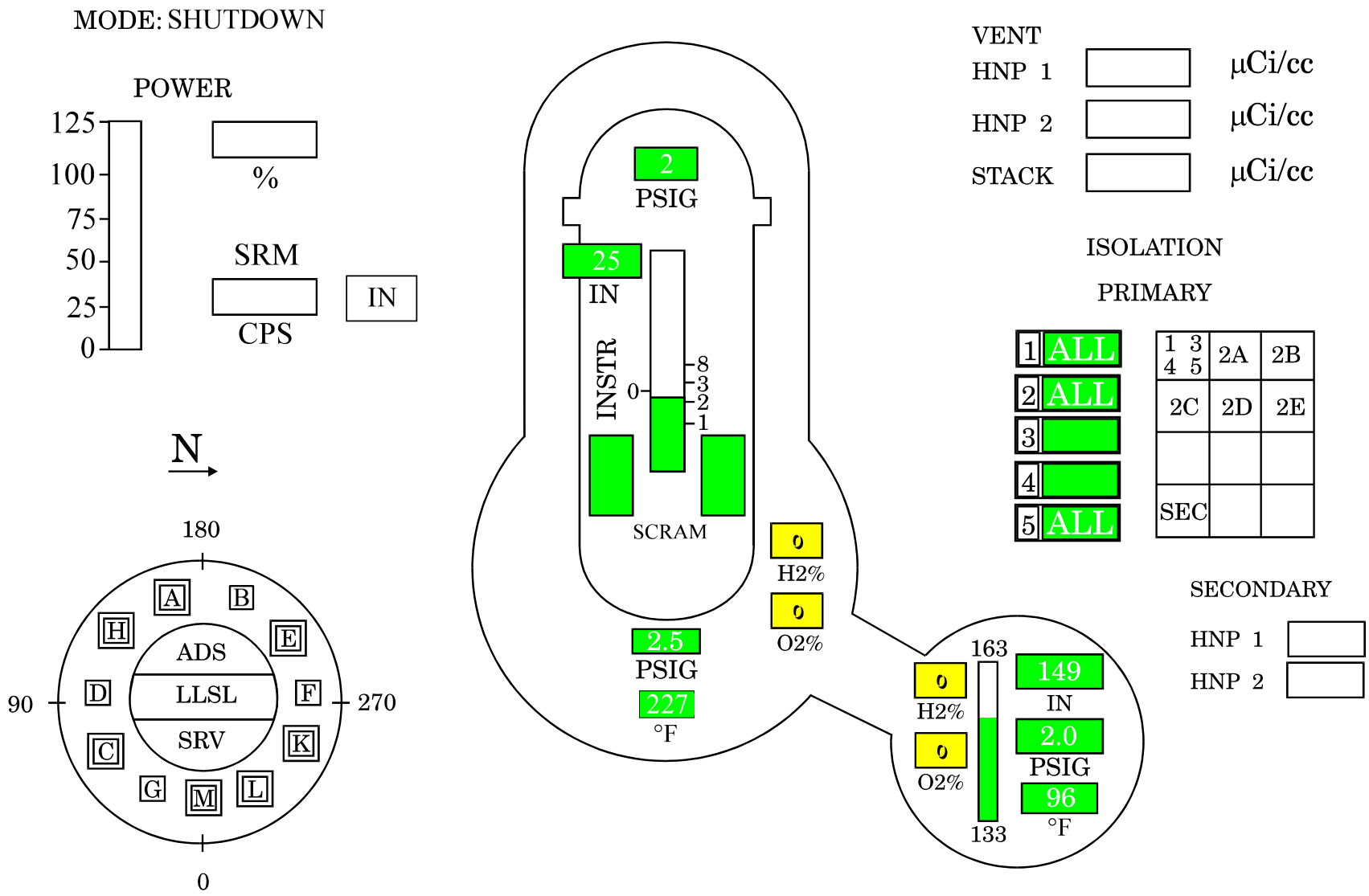
NOTE: The terminating cue shall be given to the Operator when:

- After JPM step #8 is complete.
- With NO reasonable progress, the Operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

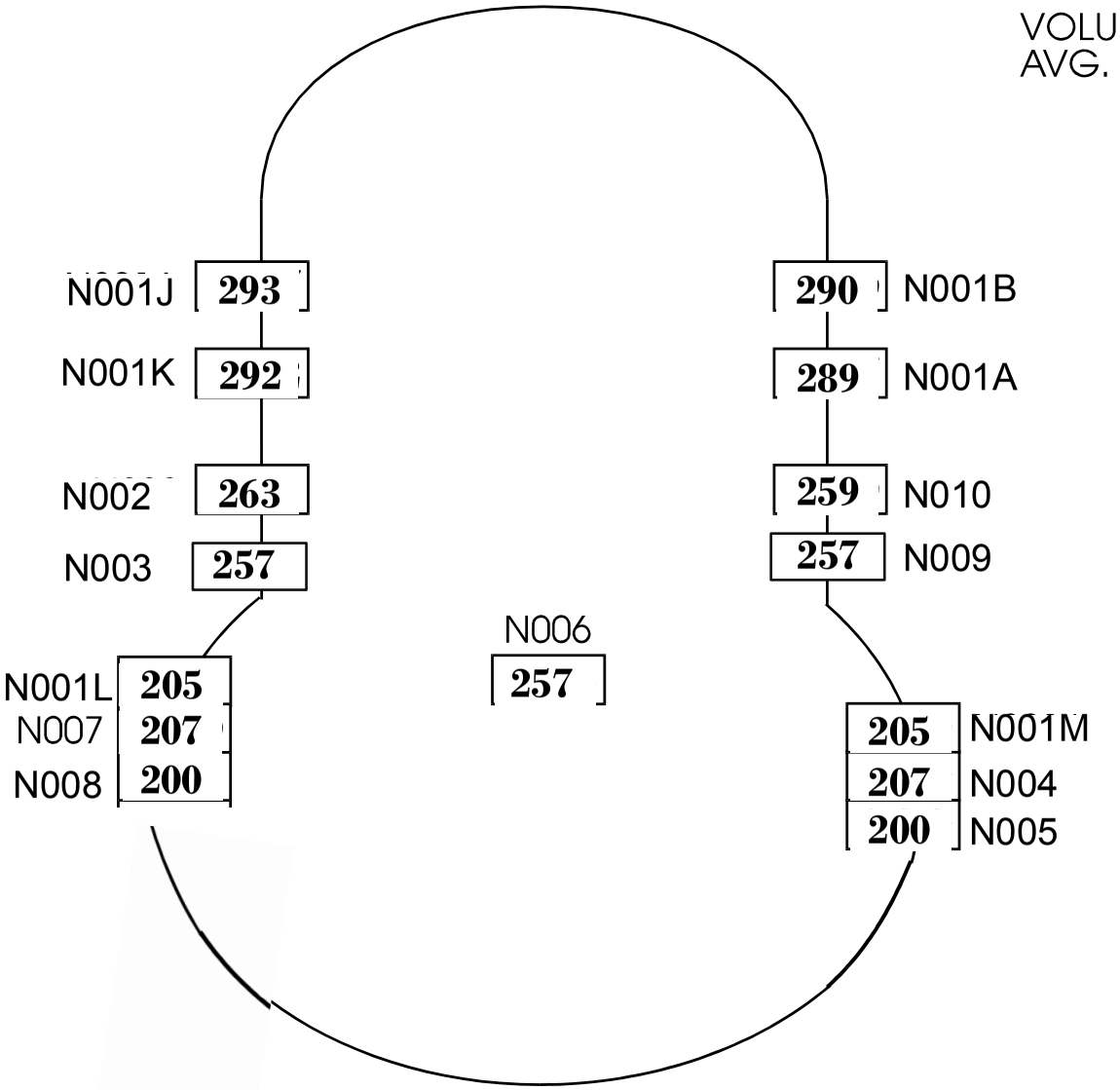
EVALUATOR – **PICK UP** the Initiating Cue sheet **AND** SUPPLEMENTAL 1 & 2.

(Indicates critical step)**



SUPPLEMENT 1

DRYWELL TEMPERATURE DIAGNOSTIC



SUPPLEMENT 2

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

DRAFT
ADMIN 2 - ALL

Title:		
IRM Alternate Power Checks Prior To Taking The Mode Switch To Run (Admin)		
Author: ANTHONY BALL	**Media Number:** 2015-301 ADMIN 2	**Time:** 15 Minutes
Line Technical Review By (N/A for minor revisions)		**Date:**
Reviewed by Instructional Technologist or designee:		**Date:**
Approved By (Training Program Supervisor, Lead Instructor or Line Supervisor)		**Date:**

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Course Number	Program Name	Media Number
N/A	OPERATIONS TRAINING	2015-301 ADMIN 2

Rev. No.	Date	Reason for Revisions	Author's Initials	Sup's Initials
01		Revised ILT-1 Admin JPM LR-JP-25047 to match updated 34GO-OPS-001. New IRM Multipliers are included. After 2015 NRC Exam will be re-numbered to LR-JP-25047.	ARB	

Line Contributors

The following individuals contributed to the development of this lesson plan.

Rev. No.	List of Contributors

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**IRM Alternate Power Checks Prior To Taking The Mode Switch To Run (Admin)**
JPM NUMBER:	2015-301 ADMIN 2
TASK STANDARD:	The task is complete when the IRM alternate power checks are performed and the Operator determines that Average % power calculated is higher then current APRM power readings and an evaluation of power level indication is required.

TASK NUMBER: xxx.xxx

OBJECTIVE NUMBER: xxx.xxx.x

PLANT HATCH JTA IMPORTANCE RATING:

RO x.xx

SRO x.xx

K/A CATALOG NUMBER: xxxxxxxxxxxxxx

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.3

SRO x.xx

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 1**	**Unit 2**
	34GO-OPS-001-1 Rev.41.3	N/A

REQUIRED MATERIALS:	**Unit 1**	**Unit 2**
	34GO-OPS-001-1 Rev.41.3 (Attachment 15 Rev. 41.3)	N/A

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: N/A

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Reactor Startup is in progress.
2. The crew is making preparations to startup the Steam Jet Air Ejector prior to securing the Mechanical Vacuum Pump.
3. All APRMs are currently reading 4% power.
4. Pre-Job Brief is NOT required.

INITIATING CUES:

IAW Step 7.3.24 of 34GO-OPS-001-1, perform Alternate Power Level check per Attachment 15.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	❑ Human performance tools, safety, PPE met (1), **AND** ❑ For initial trg **all** steps completed correctly OR ❑ For continuing trg, **critical** steps (if used) completed correctly	❑ Mark the JPM as a **PASS**
FAIL	❑ Above standards not met	❑ Mark the JPM as a **FAIL**

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME:_____

1.	Operator has DETERMINED the correct procedure section to use.	Operator has OBTAINS the correct procedure section to use starting at Attachment 15	

PROMPT: **AT** this time **GIVE** the operator **Attachment 1** (34GO-OPS-001-1, ATTACHMENT 15).

PROMPT: **AT** this time, **GIVE** the Operator **Attachment 2** of this JPM (IRM Data).

2.	The operator identifies where he will obtain IRM power and range information to record on Attachment 15.	The operator identifies where the IRM power information is obtained, At IH 11-P603.	

NOTE: ATTACHMENT 3 is the marked up answer key.

3.	The operator copies the IRM range and power level data onto the copy of 34GO-OPS-001-1 Attachment 15.	Using the copy of 34GO-OPS-001-1 Attachment 15 the data is recorded by operator.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**4.	The operator performs the calculation to the IRM data.	The operator uses the recorded IRM data and MULTIPLIES it by the correct constant of (0.212).	

PROMPT: **IF** the operator request that the Calculations be verified, **THEN** as another operator perform verification but **DO NOT** correct any errors.

**5.	The operator determines that Average % power is greater than APRM power settings.	Using the Average % power, the operator DETERMINES that APRMs readings are NOT greater than the Average IRM power.	

**6.	The operator determines an evaluation of power level is required.	The operator informs the Shift Supervisor that an evaluation of power level indication is required.	

END TIME:_____

NOTE: The terminating cue shall be given to the Operator when:

- After JPM step #6 is complete.
- With NO reasonable progress, the Operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – PICK UP the Initiating Cue sheet **AND ATTACHMENT 1& 2**.

(Indicates critical step)**

ATTACHENT 1

1.0 Record the IRM readings below AND estimate reactor power using one of the following formulas:

For IRM Ranges 7 AND 8:
% Power = (IRM Reading) x (.0212)

For IRM Ranges 9 AND 10:
% Power = (IRM Reading) x (.212)

IRM A RANGE _____ READING _____ % POWER _____

IRM C RANGE _____ READING _____ % POWER _____

IRM E RANGE _____ READING _____ % POWER _____

IRM G RANGE _____ READING _____ % POWER _____

IRM B RANGE _____ READING _____ % POWER _____

IRM D RANGE _____ READING _____ % POWER _____

IRM F RANGE _____ READING _____ % POWER _____

IRM H RANGE _____ READING _____ % POWER _____

AVERAGE % POWER = _____

Confirm that each APRM reading is greater than the average * IRM Reactor Power Value. _____

Calculations Verified _____

*IF any APRM reading is NOT greater than the average IRM power, perform an evaluation of power level indication to ensure that the APRM readings are conservative to actual reactor power.
The evaluation will be attached to this attachment.

ATTACHENT 2

IRM DATA

IRMS	RANGE	READING
A	9	18
C	9	20
E	9	20
G	10	20
B	9	18
D	9	22
F	10	20
H	9	18

ATTACHMENT 3
**** KEY ****
DO NOT give this to applicant

SNC PLANT E. I. HATCH		Pg 81 of 85
DOCUMENT TITLE: PLANT STARTUP	DOCUMENT NUMBER: 34GO-OPS-001-1	Ver No: 41.3
ATTACHMENT 15 TITLE: PRB RESTRAINTS FOR STARTUP		Attachment Page 1 of 1

1.0 Record the IRM readings below AND estimate reactor power using one of the following formulas:

For IRM Ranges 7 AND 8:
% Power = (IRM Reading) x (.0212)

For IRM Ranges 9 AND 10:
% Power = (IRM Reading) x (.212)

IRM A	RANGE	9	READING	18	% POWER	3.816
IRM C	RANGE	9	READING	20	% POWER	4.24
IRM E	RANGE	9	READING	20	% POWER	4.24
IRM G	RANGE	10	READING	20	% POWER	4.24
IRM B	RANGE	9	READING	18	% POWER	3.816
IRM D	RANGE	9	READING	22	% POWER	4.664
IRM F	RANGE	10	READING	20	% POWER	4.24
IRM H	RANGE	9	READING	18	% POWER	3.816

AVERAGE % POWER = 33.072 divided by 8 = 4.134

Confirm that each APRM reading is greater than the average * IRM Reactor Power Value. UNSAT

Calculations Verified LBJ

*IF any APRM reading is NOT greater than the average IRM power, perform an evaluation of power level indication to ensure that the APRM readings are conservative to actual reactor power.
The evaluation will be attached to this attachment.

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

DRAFT
ADMIN 3 - ALL

Title:		
REVIEW OF RCIC PUMP OPERABILITY SURVEILLANCE		
Author: Anthony Ball	**Media Number:** 2015-301 ADMIN 3	**Time:** 15.0 Minutes
Line Technical Review By (N/A for minor revisions)		**Date:**
Reviewed by Instructional Technologist or designee:		**Date:**
Approved By:		**Date:**

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Course Number	Program Name	Media Number
N/A	OPERATIONS TRAINING	2015-301 ADMIN 3

Rev. No.	Date	Reason for Revisions	Author's Initials	Sup's Initials
00		Initial development.	ARB	

Line Contributors

The following individuals contributed to the development of this lesson plan.

Rev. No.	List of Contributors

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**REVIEW OF RCIC PUMP OPERABILITY SURVEILLANCE**
JPM NUMBER:	**2015-301 ADMIN-3**
TASK STANDARD:	The task shall be complete when the operator reviews the completed surveillance procedure, 34SV-E51-002-2, makes any required calculations and determines RCIC surveillance is unsat and RCIC is inoperable.
TASK NUMBER:	300.011
OBJECTIVE NUMBER:	300.011.O

K/A CATALOG NUMBER: Generic 2.2.12

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.7

SRO 4.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO) / Senior Reactor Operator (SRO)

GENERAL REFERENCES:	**Unit 2**
	34SV-E51-002-2 (current version)

REQUIRED MATERIALS:	**Unit 2**
	Completed surveillance package: 34SV-E51-002-2.

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is at 100% power.
2. A Normal RCIC Pump Quarterly Inservice Test (IST) Data Test has just been completed for the RCIC pump IAW 34SV-E51-002-2, "RCIC Pump Operability".
3. Unit 2 reactor pressure is 1043 psig.

INITIATING CUES:

Review Attachment 1 of 34SV-E51-002-2, "RCIC Pump Operability".

Complete any calculations required by the surveillance data sheets.

Using Attachment 1 of 34SV-E51-002-2 data COMPLETE Section 7.5 TEST RESULTS, step 7.5.1 through step 7.5.6.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	❑ Human performance tools, safety, PPE met (1), **AND** ❑ For initial trg **all** steps completed correctly OR ❑ For continuing trg, **critical** steps (if used) completed correctly	❑ Mark the JPM as a **PASS**
FAIL	❑ Above standards not met	❑ Mark the JPM as a **FAIL**

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. Reference: NMP-TR-111, "On-The-Job Training and Task Performance Evaluation".

START TIME:_____

PROMPT: **AT** this time, **GIVE** the Operator a complete copy of 34SV-E51-002-2, RCIC Pump Operability.

PROMPT: **AT** this time, **GIVE** the Operator **Attachment 2 of this JPM** (Data has been filled in for this JPM).

PROMPT: **IF** the Operator addresses the IST Book, **INFORM** the Operator that a supervisor has verified the reference data.

NOTE: JPM Steps 1 - 8 can be performed in any order.

1.	The Operator evaluates parameters on Attachment 1 and finds Turbine Speed N_r is acceptable.	On Attach. 1 of 34SV-E51-002-2, the Operator EVALUATES Turbine Speed N_r data is SATISFACTORY**. 3900 rpm** (Acceptable Range: 3861 (0.99) to 3939 (1.01) rpm)	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
2.	The Operator evaluates parameters on Attachment 1 and finds Inlet Pressure (Stopped) (P_i) is acceptable.	On Attach. 1 of 34SV-E51-002-2, the Operator EVALUATES Inlet Pressure (Still) (P_i) data is SATISFACTORY**. 34 psig** Acceptable Range: >7 psig.	
3.	The Operator evaluates parameters on Attachment 1 and finds Inlet Pressure (Running) (P_i) is acceptable.	On Attach. 1 of 34SV-E51-002-2, the Operator EVALUATES Inlet Pressure (Running) (P_i) data is SATISFACTORY**. 31 psig** Acceptable Range: >7 psig.	
4.	The Operator evaluates parameters on Attachment 1 and finds Outlet Pressure (Running) P_o is NOT acceptable.	At step 7.8.2.1.1 of 34SV-E51-002-2, the Operator EVALUATES Outlet Pressure data **IS NOT SATISFACTORY.** 1072 psig is NOT in the Acceptable Range of $\geq$ 1135 psig.	

NOTE: At this time, the Operator may elect to inform the Shift Supervisor that Outlet Pressure (Running) P_o is NOT acceptable and RCIC has failed the surveillance. This action **IS** acceptable.

It **IS** also acceptable for the Operator to complete the review before bringing this to the supervisor's attention.

PROMPT: **IF** the Operator addresses the out of spec. item(s), **DIRECT** the Operator to finish the data package review.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
5.	The Operator calculates and then evaluates on Attachment 1 and finds Differential Pressure (2) dPr is NOT acceptable.	On Attach. 1 of 34SV-E51-002-2, the Operator CALCULATES AND EVALUATES Differential Pressure (2) dP_r data **IS NOT SATISFACTORY. 0.88 dPr is NOT in the Acceptable Range of 0.90 to 1.10 dPr.**	

NOTE: Ratio Differential Pressure (2) dP_r is equal to the Test Value dP_r divided by the Reference Value dP_r. 1041/1183 = 0.88.

At this time, the Operator may elect to inform the Shift Supervisor that Differential Pressure (2) dPr is NOT acceptable and RCIC must be declared inoperable. This action **IS** acceptable.

It **IS** also acceptable for the Operator to complete the review before bringing this to the supervisor's attention.

PROMPT: **IF** the Operator addresses the out of spec. item(s), **DIRECT** the Operator to finish the data package review.

6.	The Operator evaluates parameters on Attachment 1 and finds Flowrate (4) (Q_r) is acceptable.	On Attach. 1 of 34SV-E51-002-2, the Operator EVALUATES Flowrate (4) (Q_r) data (**400 gpm**) is SATISFACTORY**.** Acceptable value is 400 gpm.	

PROMPT: **WHEN** the Operator addresses the Out of Spec readings, **INFORM** the Operator to finish the data package review.

7.	The Operator performs step 7.5.1 Reason for test:	The Operator places a check mark for "Norm. Surv." per the initial conditions.	
8.	The Operator performs step 7.5.2.1 RCIC pump delivers at least 400 gpm at a pump discharge pressure of greater than OR equal to 1135 psig with reactor pressure of > 920 psig AND < 1058 psig.	The Operator has determined RCIC pump Outlet Pressure (Running) P_o <1135 psig has failed to meet the acceptance criteria of step 7.5.2.1.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
9.	The Operator performs step 7.5.2.2 RCIC pump discharge lines up stream of valves 2E51-F013 AND F022 are filled.	The Operator has verified that RCIC pump discharge lines up stream of valves 2E51-F013 AND F022 are filled.	

PROMPT: **WHEN** the Operator addresses the RCIC pump discharge lines upstream of valves 2E51-F013 AND F022 are filled, **INFORM** the Operator that RCIC pump discharge lines up stream of valves 2E51-F013 AND F022 are filled.

10.	The Operator performs step 7.5.2.3 2T41-B004A AND 2T41-B004B, RCIC Pump Rm Cooling Fans, auto start, WHEN RCIC is started.	The Operator has verified that 2T41-B004A AND 2T41-B004B, RCIC Pump Rm Cooling Fans, auto start, WHEN RCIC started.	

PROMPT: **WHEN** the Operator addresses the 2T41-B004A AND 2T41-B004B, RCIC Pump Rm Cooling Fans, **INFORM** the Operator that 2T41-B004A AND 2T41-B004B, RCIC Pump Rm Cooling Fans, auto started.

11.	The Operator performs step 7.5.2.4 2P41-F040A AND 2P41-F040B, RCIC Pump Rm Cooler Valves, OPEN, WHEN cooler is running.	The Operator has verified that 2P41-F040A AND 2P41-F040B, RCIC Pump Rm Cooler Valves, OPEN, WHEN cooler is running.	

PROMPT: **WHEN** the Operator addresses the 2P41-F040A AND 2P41-F040B, RCIC Pump Rm Cooler Valves, open when RCIC is running, **INFORM** the Operator that 2P41-F040A AND 2P41-F040B, RCIC Pump Rm Cooler Valves, auto opened.

12.	The Operator performs step 7.5.2.5 Oil level AND pressure is observed.	The Operator has verified that Oil level AND pressure is observed.	

PROMPT: **WHEN** the Operator addresses the Oil level AND pressure is observed, **INFORM** the Operator that Oil level AND pressures were observed.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
13.	The Operator evaluates step 7.5.2.6.1 RCIC pump Outlet Pressure (Running) P_o data.	The Operator has determined that RCIC pump Outlet Pressure (Running) P_o has **FAILED** to meet the acceptance criteria of step 7.5.2.1.	

NOTE: At this time, the Operator may elect to inform the Shift Supervisor that Outlet Pressure (Running) P_o is NOT acceptable and RCIC has failed the surveillance. This action **IS** acceptable.

It **IS** also acceptable for the Operator to complete the review before bringing this to the supervisor's attention.

14.	The Operator evaluates step 7.5.2.6.2 RCIC pump dPr data.	The Operator has determined that Differential Pressure dP_r has **FAILED** to meet the acceptance criteria of step 7.5.2.6.2.	

NOTE: At this time, the Operator may elect to inform the Shift Supervisor that Differential Pressure (2) dPr is NOT acceptable. This action **IS** acceptable.

It **IS** also acceptable for the Operator to complete the review before bringing this to the supervisor's attention.

15.	The Operator evaluates step 7.5.2.6.2 Flowrate (4) (Q_r) data.	The Operator has determined that Flowrate (Q_r) data meets the acceptance criteria of step 7.5.2.6.2.	

16.	The Operator evaluates step 7.5.2.7 if Response Time Test was performed.	The Operator evaluates if Response Time Test was performed.	

PROMPT: **WHEN** the Operator addresses Response Time Test, **INFORM** the Operator that Response Time Test was NOT performed.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**17.	The Operator performs step 7.5.4 Test Result.	The Operator completes step 7.5.4 and marks the step **UNSAT**.	

NOTE: JPM Steps 26 - 28 can be performed in any order.

**18.	The Operator performs step 7.5.5 for RCIC pump Outlet Pressure (Running) P_o <1135 psig has failed to meet the acceptance criteria of step 7.5.2.6.1.	The Operator lists in step 7.5.5 that RCIC pump Outlet Pressure (Running) P_o has **FAILED** to meet the acceptance criteria of step 7.5.2.1 & 7.5.2.6.1 (<1135 psig).	

**19.	The Operator performs step 7.5.5 RCIC Differential Pressure dP_r.	The Operator also lists in step 7.5.5 that RCIC Differential Pressure dP_r has **FAILED** to meet the acceptance criteria of step 7.5.2.6.1 (dP_r < 0.90).	

NOTE: If the Operator addresses writing a Condition Report (CR) based on this surveillance, inform the Operator that another operator will write the CR.

END TIME:_____

NOTE: The terminating cue shall be given to the Operator when:

- After JPM step #19 is complete.
- With NO reasonable progress, the Operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – PICK UP the Initiating Cue sheet.

(Indicates critical step)**

ATTACHMENT 1
**** KEY ****
DO NOT give this to applicant

Reference Data Changes:

Is reference data being changed? ( ) Yes (✓) No

IF YES, list justification for so doing: _____

(2E51-C001)

PARAMETER	INSTRU MPL NO.	REFERENCE VALUE	DATE REF VALUE TAKEN	TEST VALUE	ACCEPT. RANGE	ALERT RANGE	REQ'D ACTION RANGE (1)	RATIO (3)
Turbine Speed (N_r)	2E51-R610 OR, Calibrated Handheld Tachometer	***3900****	***01/18/12****	***3900****	0.99 to 1.01 RPM	N/A	N/A	N/A
Pump Suction Pressure (Still)	2E51-R604	N/A	N/A	***34****	≥7 PSIG	N/A	< 7 PSIG	N/A
Pump Suction Pressure (Running) (P_i)	2E51-R604	***31****	***01/18/12****	***31****	≥7 PSIG	N/A	< 7 PSIG	N/A
Outlet Pressure (P_o)	2E51-R601	***1215****	***01/18/12****	***1072****	N/A	N/A	N/A	N/A
Differential Pressure (2) (DP_r)	N/A	***1183****	***01/18/12****	***1041****	0.90 to 1.10 dPr	N/A	<0.90 or >1.10 dPr	***0.88****
Flowrate (4) (Q_r)	2E51-R612	400	N/A	***400****	N/A	N/A	N/A	1.0

(1) Pump declared inoperable according to 31GO-INS-001-0.

(2) Differential pressure must be calculated as: dP = Outlet Pressure (pump running) - Inlet Pressure (Pump running)

(3) Ratio = Test Value divided by Reference Value

(4) Test value must equal reference value. Ratio for flowrate must equal 1.0.

(Indicates critical step)**

7.5 TEST RESULTS

7.5.1 Reason for test: ( ) Norm. Surv. ( ) WO # _____

( ) Other _____

7.5.2 Acceptance Criteria

7.5.2.1 RCIC pump delivers at least 400 gpm at a pump discharge pressure of ≥1135 psig with reactor pressure between 920 and 1058 psig. *

7.5.2.2 RCIC Pump discharge lines up stream of valves 2E51-F013 and 2E51-F022 are filled.

7.5.2.3 2T41-B004A and 2T41-B004B, RCIC Pump Rm Cooler Fans, AUTO START WHEN RCIC is started.

7.5.2.4 2P41-F040A and 2P41-F040B, RCIC Pump Rm Cooler Valves, OPEN, WHEN cooler is running.

7.5.2.5 Oil levels observed in the normal range, OR LOR written.

7.5.2.6 IF the 92 day test or CPT was performed:

7.5.2.6.1 Steps 7.5.2.1 through 7.5.2.5 are acceptable.

7.5.2.6.2 RCIC pump data matches the reference data WITHIN the limits stated on Attachment 1, 5 or 6. *

7.5.2.7 IF Response Time Test was performed, RCIC Pump obtained rated flow and pressure in less than OR equal to 45 seconds.

ATTACHMENT 1
**** KEY ****
DO NOT give this to applicant

7.5.4 Test Result:

( ) Satisfactory (✓) Unsatisfactory

7.5.5 Unsatisfactory Conditions: **(1)** RCIC pump Outlet Pressure (Running) Po has FAILED to meet the acceptance criteria of step 7.5.2.1 (<1135 psig)

(2) RCIC Differential Pressure dPr has FAILED to meet the acceptance criteria of step 7.5.2.6.2

7.5.6 Comments/Corrective Actions: _____

7.5.7 Test completed and/or verified by:

_____ / _____ / _____
Print Name / Initial / Date

_____ / _____ / _____
Print Name / Initial / Date

_____ / _____ / _____
Print Name / Initial / Date

_____ / _____ / _____
Print Name / Initial / Date

Reference Data Changes:

Is reference data being changed? ( ) Yes (✓) No

IF YES, list justification for so doing: _____

(2E51-C001)

PARAMETER	INSTRU MPL NO.	REFERENCE VALUE	DATE REF VALUE TAKEN	TEST VALUE	ACCEPT. RANGE	ALERT RANGE	REQ'D ACTION RANGE (1)	RATIO (3)
Turbine Speed (N_r)	2E51-R610 OR, Calibrated Handheld Tachometer	*3900**	*01/18/12**	*3900**	0.99 to 1.01 RPM	N/A	N/A	N/A
Pump Suction Pressure (Still)	2E51-R604	N/A	N/A	*34**	≥7 PSIG	N/A	< 7 PSIG	N/A
Pump Suction Pressure (Running) (P_i)	2E51-R604	*31**	*01/18/12**	*31**	≥7 PSIG	N/A	< 7 PSIG	N/A
Outlet Pressure (P_o)	2E51-R601	*1215**	*01/18/12**	*1072**	N/A	N/A	N/A	N/A
Differential Pressure (2) (DP_r)	N/A	*1183**	*01/18/12**	*1041**	0.90 to 1.10 dPr	N/A	<0.90 or >1.10 dPr	
Flowrate (4) (Q_r)	2E51-R612	400	N/A	*400**	N/A	N/A	N/A	1.0

(1) Pump declared inoperable according to 31GO-INS-001-0.

(2) Differential pressure must be calculated as: dP = Outlet Pressure (pump running) - Inlet Pressure (Pump running)

(3) Ratio = Test Value divided by Reference Value

(4) Test value must equal reference value. Ratio for flowrate must equal 1.0.

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is at 100% power.
2. A Normal RCIC Pump Quarterly Inservice Test (IST) Data Test has just been completed for the RCIC pump IAW 34SV-E51-002-2, "RCIC Pump Operability".
3. Unit 2 reactor pressure is 1043 psig.

INITIATING CUES:

Review Attachment 1 of 34SV-E51-002-2, "RCIC Pump Operability".

Complete any calculations required by the surveillance data sheets.

Using Attachment 1 of 34SV-E51-002-2 data COMPLETE Section 7.5 TEST RESULTS, step 7.5.1 through step 7.5.6.

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

DRAFT
ADMIN 4 - RO ONLY

Title:		
DETERMINE THE EVACUATION ROUTE DURING AN EMERGENCY		
Author: **Anthony Ball**	**Media Number:** 2015-301 ADMIN 4	**Time:** 9.0 Minutes
Line Technical Review By (N/A for minor revisions)		**Date:**
Reviewed by Instructional Technologist or designee:		**Date:**
Approved By:		**Date:**

SOUTHERN COMPANY

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Course Number	Program Name	Media Number
N/A	OPERATIONS TRAINING	2015-301 ADMIN 4

Rev. No.	Date	Reason for Revisions	Author's Initials	Sup's Initials
17	5/26/11	Revise JPM LR-JP-20059, due to implementation of NMP-EP 110 and NMP-EP-111 and for NRC Exam 2011-3011.	ELJ	CME
17.1		Minor revision for procedure comparison and modified wind direction to obtain a different evacuation route. After 2015 NRC Exam will be incorporated into JPM Database with new media number.	ARB	

Line Contributors

The following individuals contributed to the development of this lesson plan.

Rev. No.	List of Contributors

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**DETERMINE THE EVACUATION ROUTE DURING AN EMERGENCY**
JPM NUMBER:	**2015-301 ADMIN** 4
TASK STANDARD:	The task shall be satisfactorily completed when the wind direction has been checked and the operator has determined that the evacuation route is THE ROAD BEHIND THE LOW LEVEL RADWASTE BUILDING and then SOUTH on US Highway 1, IAW NMP-EP-111-002.
TASK NUMBER:	200.059
OBJECTIVE NUMBER:	200.059.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.86

SRO 3.96

K/A CATALOG NUMBER: G2.4.39

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.9

SRO 3.80

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 1 & 2**
	NMP-EP-111-002 (current version)

REQUIRED MATERIALS:	**Unit 1 & 2**
	NMP-EP-111-002 (current version)

APPROXIMATE COMPLETION TIME: 9.0 Minutes

SIMULATOR SETUP: N/A

UNIT 1 & 2

READ TO THE CANDIDATE

INITIAL CONDITIONS:

1. A Reactor scram has occurred.
2. Plant conditions have resulted in an Elevated Radioactive release.
3. A Prompt Off-Site Dose Assessment calculation has been performed and an Offsite Release has been verified to be in progress.
4. Peak calculated TEDE is 100 mRem/hr.
5. The Emergency Director (ED) has declared a Site Area Emergency.
6. The ED has directed a PA announcement to be performed in accordance with NMP-EP-111.
7. SPDS is available.

INITIATING CUES:

Your task is to fill out the appropriate form required to make the PA announcement for this emergency IAW NMP-EP-111-002, "EMERGENCY NOTIFICATION NETWORK COMMUNICATOR INSTRUCTIONS – HATCH."

NOTE: Another operator will make the actual page announcement IAW NMP-EP-111 Checklist 1 "Page Announcements."

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	❑ Human performance tools, safety, PPE met (1), **AND** ❑ For initial trg **all** steps completed correctly OR ❑ For continuing trg, **critical** steps (if used) completed correctly	❑ Mark the JPM as a **PASS**
FAIL	❑ Above standards not met	❑ Mark the JPM as a **FAIL**

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. Reference: NMP-TR-111, "On-The-Job Training and Task Performance Evaluation".

START TIME:_____

NOTE: The candidate may review NMP-EP-111 Checklist 1 "Page Announcements".

PROMPT: **AT THIS TIME PROVIDE** the candidate with the following:

- NMP-EP-111-002, "EMERGENCY NOTIFICATION NETWORK COMMUNICATOR INSTRUCTIONS – HATCH."
  AND
- Also **PROVIDE** the attached SPDS Attachments.

1.	Select correct section of NMP-EP-111-002.	The candidate uses NMP-EP-111-002, Table of Contents and determines that Instruction 5 - Emergency Page Announcement Selection Guidance is the required section.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**2.	Select the correct form to use for a Site-Area Emergency announcement.	The candidate uses NMP-EP-111-002, Instruction 5 to determine that "IV. Standard Announcement For Notification Of Site-Area Or General Emergency" (see page 14) is the required form.	

NOTE: The candidate may review the NOTES at the top of NMP-EP-111-002, "IV. Standard Announcement For Notification Of SAE Or GE"

3.	IV. a. Refer to "Selection Guidance" information on page 11 to determine the applicable rally point, exit route and evacuation route. Record the applicable information.	The candidate determines that wind direction is required in order to select the correct evacuation route.	

NOTE: Only one indication must be checked to satisfactorily complete Step 4.

PROMPT: **IF** the Candidate addresses wind direction at panel 1H11-P689, Y33-S/ZR R604 (WIND SPEED/DIRECTION 23 METER ELEVATION), **INDICATE** for the Candidate that this recorder is **INOPERABLE**.

**4.	Check wind direction.	At panel 1H11-P690, wind direction checked on one of the following: SPDS MIDAS screen OR SPDS MET Data screen	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Determine the applicable rally point, exit route and evacuation route. Record the applicable information.	The candidate uses "Selection Guidance" information on page 11 to determine: Rally point: PESB Exit Route: Road behind Low Level Radwaste Building Evacuation Route: U.S. Highway 1 - South to Appling Co. High School/ Baxley The candidate then RECORDS the information in appropriate section of "IV. Standard Announcement For Notification Of Site-Area Or General Emergency."	

NOTE: If the operator uses the 10 Meter wind direction, the Site Exit route will (INCORRECTLY) state "Main Access Road."

NOTE: The candidate may select DRILL for item 1. This is ACCEPTABLE practice for the purpose of training evaluations at Hatch.

PROMPT: **IF** the Candidate addresses contacting Security to activate the PA system in the Simulator and Skills Buildings **INFORM** the Candidate that Security has been directed to activate the PA system in the Simulator and Skills Buildings

PROMPT: **IF** the Candidate addresses NMP-EP-111 Checklist 1 "Page Announcements," as the Shift Supervisor, **INFORM** the Candidate that this will performed by another Operator.

END TIME:_____

NOTE: The terminating cue shall be given to the Candidate when:

- With NO reasonable progress, the Candidate exceeds double the allotted time.
- Candidate states the task is complete.

TERMINATING CUE: We will stop here.

(Indicates critical step)**

EVALUATOR ANSWER KEY

IV. STANDARD ANNOUNCEMENT INSTRUCTIONS FOR SITE-AREA OR GENERAL EMERGENCY

NOTES:

- The appropriate emergency tone and announcement must be made as soon as possible, but not to exceed **15** minutes after the initial emergency declaration
- The person making this announcement is expected to announce all applicable information.

a. Refer to "Selection Guidance" information on page 11 to determine the applicable rally point, exit route and evacuation route. Record the applicable information below needed for this announcement.
b. Contact Security to direct activation of the Public Address system in the Simulator and Skills Buildings PRIOR to beginning the announcement.
c. Perform IAW NMP-EP-111 Checklist 1 "Page Announcements".

(Select one) ☒ **Site-Area Emergency** or ☐ **General Emergency**

1. **ATTENTION ALL PERSONNEL. THIS (☒ IS / ☐ IS NOT) A DRILL. A/AN** Site-Area Emergency **HAS BEEN DECLARED.**

2. (Select one): **A RADIOLOGICAL RELEASE (☒ IS / ☐ IS NOT) IN PROGRESS.**

3. **ALL EMERGENCY RESPONSE PERSONNEL ARE TO REPORT TO YOUR EMERGENCY RESPONSE FACILITY AND INITIATE EMERGENCY IMPLEMENTING PROCEDURES.**

NOTE:	Announcement of items 4 or 5 may be discontinued upon verification that non-essential personnel have left the plant site.

4. Use if a radiological release **is not** in progress

   ALL NON-ESSENTIAL PERSONNEL ARE TO EXIT THE PLANT SITE USING THE MAIN ACCESS ROAD. THE EVACUATION ROUTE IS EITHER DIRECTION ON U. S. HIGHWAY 1.

5. Use if a radiological release **is** in progress

   ALL NON-ESSENTIAL PERSONNEL ARE TO EXIT THE PLANT SITE USING (select one):

   ☐ **THE MAIN ACCESS ROAD,** ☒ **THE ROAD BEHIND THE LOW LEVEL RADWASTE BUILDING,** ☐ **OTHER** (specify another exit route) _____.

   AND

   THE EVACUATION ROUTE IS (Select one):

   ☐ **EITHER DIRECTION ON U.S. HIGHWAY 1. REPORT TO THE STATE RECEPTION CENTER AT EITHER TOOMBS CO. HIGH SCHOOL IN LYONS OR APPLING CO. HIGH SCHOOL IN BAXLEY.**

   ☒ **SOUTH ON U. S. HIGHWAY 1. REPORT TO THE STATE RECEPTION CENTER AT APPLING CO. HIGH SCHOOL IN BAXLEY.**

   ☐ **NORTH ON U. S. HIGHWAY 1. REPORT TO THE STATE RECEPTION CENTER AT TOOMBS CO. HIGH SCHOOL IN LYONS.**

EVALUATOR ANSWER KEY

SELECTION GUIDANCE FOR STANDARD ANNOUNCEMENT
RALLY POINT/SITE EXIT ROUTE/ EVACUATION ROUTE

Is a radiological release in progress? ☒ Yes ☐ No

IF **a. A radiological release Is Not in progress:**

THEN **b. The following rally point, site exit route, and evacuation route will be used:**

- Rally Point – Plant Entry & Security Building (PESB)
- Site Exit Route – Main Access Road
- Evacuation Route – Either direction on U. S. Hwy 1.

IF **c. A radiological release Is in progress:**

THEN Use the chart below to determine the rally point, site exit route, evacuation route and State Reception Center, based on wind direction.

Consult with Security to determine alternative(s) IF designated rally point and/or site exit route cannot be used. The use of an alternate rally point requires notifying Security and HP prior to making the announcement.

NOTE:	The 15 minute average wind direction information should be read using the meteorological instrumentation that corresponds to the primary release point.

Wind Direction From:	**Rally Point:**	**Site Exit Route:**	**Evacuation Route/State Reception Center**
340º - 60º	Gate 17	Main Access Road	U.S. Highway 1 - North to Toombs Co. High School/Lyons
61º - 110º	PESB	Road behind Low Level Radwaste Building	U.S. Highway 1 - South to Appling Co. High School/ Baxley
111º - 225º	PESB	Main Access Road	U.S. Highway 1 - South to Appling Co. High School/ Baxley
226º - 339º	PESB	Main Access Road	Either direction on U.S. Highway 1 to Toombs Co. High School/Lyons or Appling Co. High School/Baxley

MIDAS INFORMATION

METEOROLOGICAL

10M WIND SPD 1Y33-R601	100M WIND SPD 1Y33-R603	10M WIND DIR 1Y33-R601	100M WIND DIR 1Y33-R603
5.0	**4.0**	**115**	**65**

AMBIENT TEMP **(F) 10M**	DELTA T **60-10**	DELTA T **100-10**	RAINFALL **15 MIN. AVG**
55	**-0.5**	**-1.0**	**.000**

RADIOLOGICAL

MAIN STACK

NORMAL RANGE 1D11-K600A	KAMAN 1D11-R631
2.00E 01	5.02E-03

1D11-K600B
1.96E 01

STABILITY CLASS
D

U1 RX. BLDG. VENT

NORMAL RANGE 1D11-K619A	KAMAN 1D11-R631
6.70E 01	5.04E-03

1D11-K619B
6.67E 01

U2 RX. BLDG. VENT

NORMAL RANGE 2D11-K636A	KAMAN 2D11-R631
1.02E 06	5.00E-02

2D11-K636B
1.04E 06

METEROLOGICAL DATA

WIND	(DIRECTION FROM)	15-MIN. AVERAGE	STD-DEV	SPEED	15-MIN. AVERAGE
10 M ELEVATION	115 DEG	115 DEG	12 DEG	1 MPH	0 MPH
60 M ELEVATION	90 DEG	91 DEG	6 DEG	2 MPH	2 MPH
100 M ELEVATION	65 DEG	64 DEG	4 DEG	4 MPH	4 MPH
23 M ELEVATION - BACKUP	65 DEG	64 DEG	4 DEG	2 MPH	2 MPH

TEMPERATURE			15-MIN AVERAGE
10 M ELEVATION AMBIENT	-30 DEG F	FLOW*	----
10 M ELEVATION AMBIENT - BACKUP	74 DEG F	FLOW	----
10 M DEWPOINT	73 DEG F		----
60 M - 10 M DELTA TEMP.	-10 DEG F	FLOW	-4.1 DEG F
100 M - 10 M DELTA TEMP.	-10 DEG F	FLOW	-2.4 DEG F
45 M - 10 M DELTA TEMP. - BACKUP	1.5 DEG F	FLOW	2.4 DEG F

PERCIPITATION .00 INCHES SINCE MIDNIGHT

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

DRAFT
ADMIN 5 (SRO ONLY)
DO NOT GIVE AS A GROUP

Title:		
CONTROL HYDROGEN AND OXYGEN CONCENTRATIONS IN PRIMARY CONTAINMENT WHEN PRIMARY CONTAINMENT GAS CONTROL FLOWCHART IS ENTERED		
Author: Anthony Ball	**Media Number:** 2015-301 ADMIN 5	**Time:** 20.0 Minutes
Line Technical Review By (N/A for minor revisions)		**Date:**
Reviewed by Instructional Technologist or designee:		**Date:**
Approved By:		**Date:**

SOUTHERN COMPANY

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Course Number	Program Name	Media Number
N/A	OPERATIONS TRAINING	2015-301 ADMIN 5

Rev. No.	Date	Reason for Revisions	Author's Initials	Sup's Initials
00		Modified 2011-301 Admin 4 to use on ILT-9 NRC Exam 2015-301. After exam both JPMs will be renumbered and incorporated into JPM bank.	ARB	CME

Line Contributors

The following individuals contributed to the development of this lesson plan.

Rev. No.	List of Contributors

UNIT 1 ( ) UNIT 2 (X)

TASK TITLE:	**CONTROL HYDROGEN AND OXYGEN CONCENTRATIONS IN PRIMARY CONTAINMENT WHEN PRIMARY CONTAINMENT GAS CONTROL FLOWCHART IS ENTERED**
JPM NUMBER:	**2015-301 ADMIN-5**
TASK STANDARD:	The task shall be complete when the operator has directed the required actions per 31EO-PCG-001-2, Primary Containment Gas Control.

TASK NUMBER: 201.072

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.57

SRO 3.88

K/A CATALOG NUMBER: G2.3.11

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.80

SRO 3.70

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	**Unit 2**
	31EO-PCG-001-2

REQUIRED MATERIALS:	**Unit 2**
	31EO-PCG-001-2

APPROXIMATE COMPLETION TIME: 20 Minutes

SIMULATOR SETUP: N/A

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. You are the SS on Unit 2
2. A reactor scram occurred due to a LOCA
3. An Emergency Depressurization has been performed
4. RWL is stable at -150 inches, using all available Core Spray and RHR pumps
5. Torus water level is stable at 250 inches
6. NO Primary Containment Venting is in progress
7. NO Primary Containment Purging is in progress
8. Estimated Offsite Dose has been calculated at 300 mR/hr
9. A Projected Offsite Dose has been calculated at 400 mR/hr

INITIATING CUES:

Evaluate the **PCG** EOP flowchart, "31EO-PCG-001-2" **ONLY**.

IAW the PCG flowchart, address and state **ALL** steps, actions, and orders that are to be directed, due to these plant conditions.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	❑ Human performance tools, safety, PPE met (1), **AND** ❑ For initial trg **all** steps completed correctly OR ❑ For continuing trg, **critical** steps (if used) completed correctly	❑ Mark the JPM as a **PASS**
FAIL	❑ Above standards not met	❑ Mark the JPM as a **FAIL**

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. Reference: NMP-TR-111, "On-The-Job Training and Task Performance Evaluation".

START TIME:_____

PROMPT: At this time **PROVIDE ALL ATTACHMENTS** to the student.

**1.	Enters the PCG flowchart.	The operator ENTERS 31EO-PCG-001 flowchart.	
2.	Confirm the H_2O_2 analyzers are in service.	The operator DETEMINES that the the H_2O_2 analyzers are in service by checking 2H11-P700 or SPDS.	
**3.	Evaluate the override at C-5.	The operator DETERMINES that path G-2 Point "S" is to be entered.	
4.	At D-6 on path G-2, determine if Projected TEDE is >1000 mr/hr.	The operator DETERMINES Projected TEDE is <1000 mr/hr based on Initial conditions.	
5.	At D-6 on path G-2, determine if there is detectable Hydrogen in drywell or torus.	The operator DETERMINES there is Hydrogen in drywell or torus based on Initial conditions.	
6.	Determines Estimated Offsite Dose.	The operator DETERMINES and RECORDS at E-7 the Estimated Offsite Dose to be 300 mr/hr based on Initial conditions.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
7.	Determines Projected Offsite Dose.	The operator DETERMINES and RECORDS at E-7 the Projected Offsite Dose to be 400 mr/hr based on Initial conditions.	
8.	Determines the TOTAL Estimated and Projected Peak TEDE.	The operator DETERMINES and RECORDS at F-7 the TOTAL Estimated and Projected Peak TEDE to be 700 mr/hr (300 + 400 = 700).	
****9.**	Uses step at J-5 on path G-2, to direct an NPO to start Drywell Cooling Fans and Return Fans.	The operator DIRECTS an NPO to start Drywell Cooling Fans and Return Fans.	

PROMPT: **WHEN** the operator directs the starting of DW Cooling Fans and Return Fans, **INFORM** the operator that DW Cooling Fans and Return Fans are running.

10.	Evaluates decision step at G-7, on path G-2, to determine whether Torus Water level is below 300 inches.	The operator DETERMINES that Torus level is below 300 inches. (Chooses YES, proceeds to the right to vent the Torus).	
****11.**	Using step at H-7, on path G-2, directs Vent torus per 31EO-EOP-104-2. If necessary, defeat isolation interlocks.	The operator DIRECTS an NPO to Vent torus per 31EO-EOP-104-2. If necessary, defeat isolation interlocks.	

PROMPT: **WHEN** directed to initiate venting of the Torus, **INFORM** the operator that, using Time Compression, Torus venting is in progress.

PROMPT: **IF ASKED** whether the DW is being vented throught the Torus, **INFORM** the operator the indications are DW pressure and Torus pressure are both slowly decreasing.

****12.**	Using step at J-7, on path G-2, directs Initiate and maximize drywell nitrogen purge flow per 31EO-EOP-104-2.	The operator DIRECTS an NPO to Initiate and maximize primary containment purge flow per 31EO-EOP-104-2.	

PROMPT: **WHEN** directed to initiate Primary Containment Purge flow, **INFORM** the operator that, using Time Compression, Primary Containment purge flow has been initiated and maximized.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: **AFTER** operator is informed that Primary Containment purge flow has been initiated and maximized, **INFORMS** the operator that Projected Offsite Dose is now 1100 mr/hr.

**13.	Evaluates the override at D-6 on path G-2, to determine if Projected TEDE is >1000 mr/hr.	The operator DETERMINES Projected TEDE is >1000 mr/hr (1100 mr/hr).	
14.	Evaluates the override at D-6 on path G-2, to determine if adequate core cooling is assured.	The operator DETERMINES adequate core cooling is assured based on Initial conditions.	

PROMPT: **WHEN** the operator addresses RWL, **INFORM** the operator that RWL is stable at -150 inches, using all available Core Spray and RHR pumps.

**15.	Using step at D-6, on path G-2, directs torus venting secured.	The operator DIRECTS an NPO to secure torus venting.	

PROMPT: **WHEN** the operator addresses securing torus venting, **INFORM** the operator that torus venting has been secured.

**16.	Using step at D-6, on path G-2, directs nitrogen purge flow secured.	The operator DIRECTS an NPO to secure nitrogen purge flow.	

PROMPT: **WHEN** the operator addresses securing torus venting, **INFORM** the operator that nitrogen purge flow has been secured.

END TIME:_____

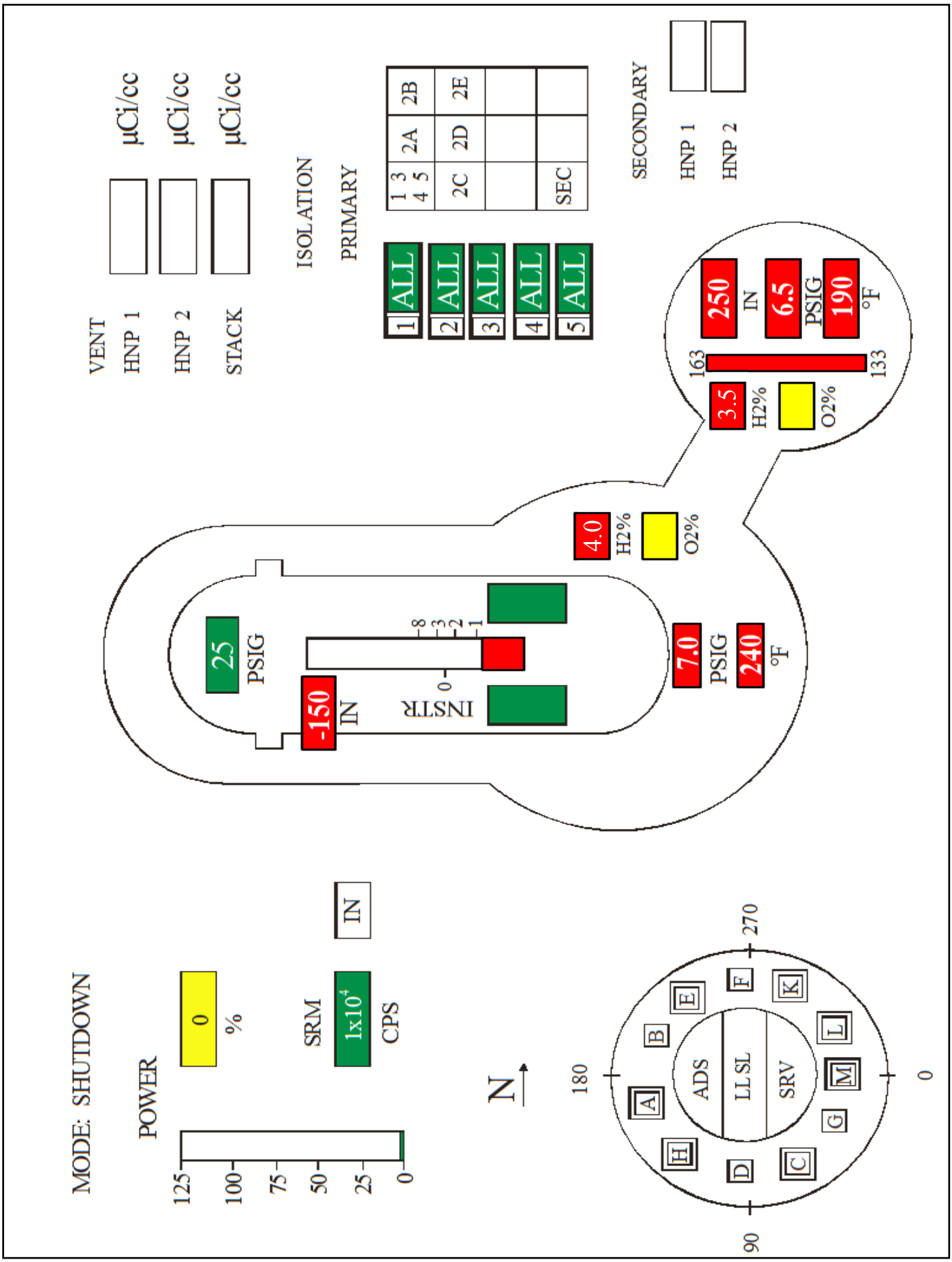
NOTE: The terminating cue shall be given to the operator when:

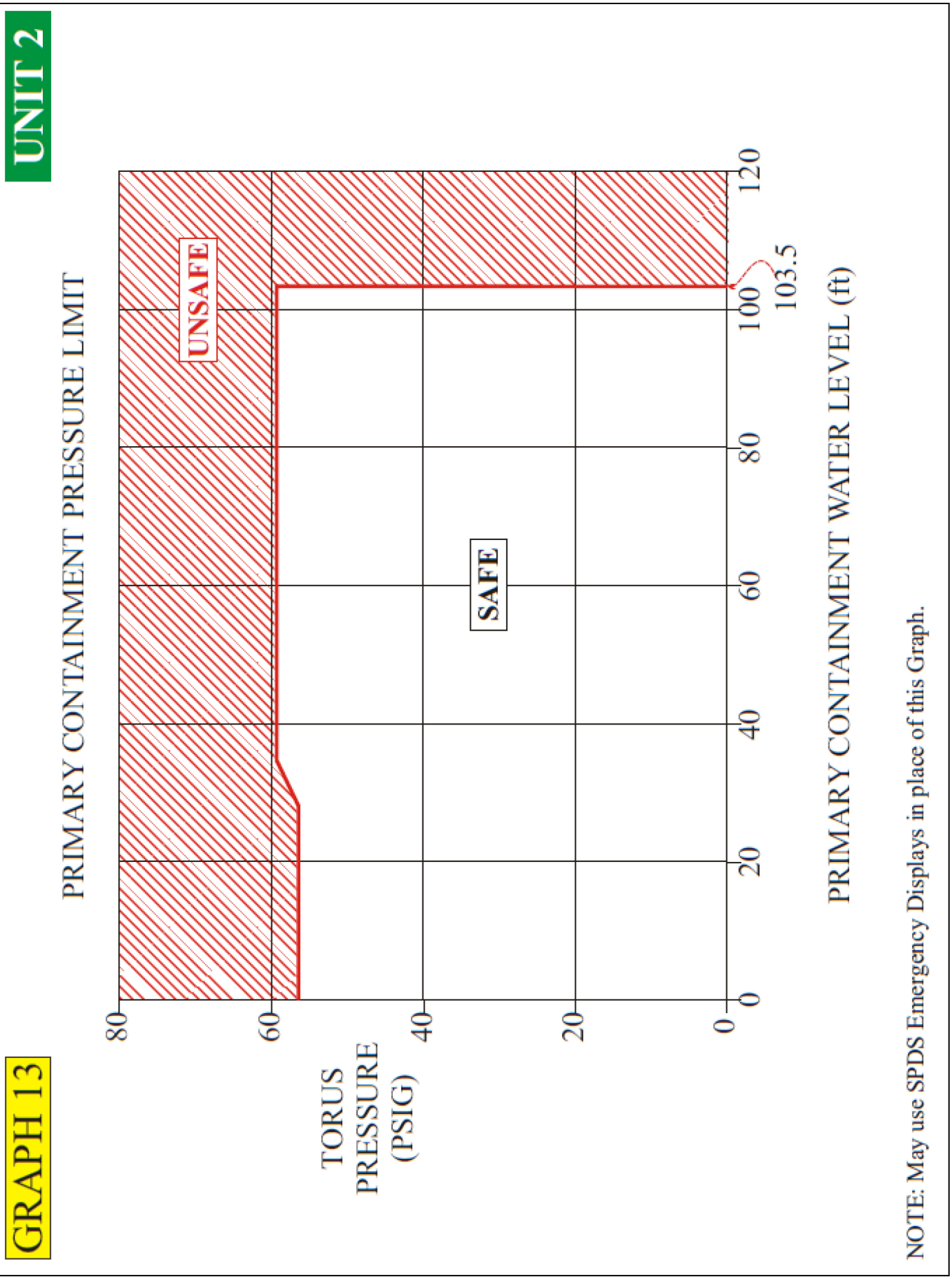
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

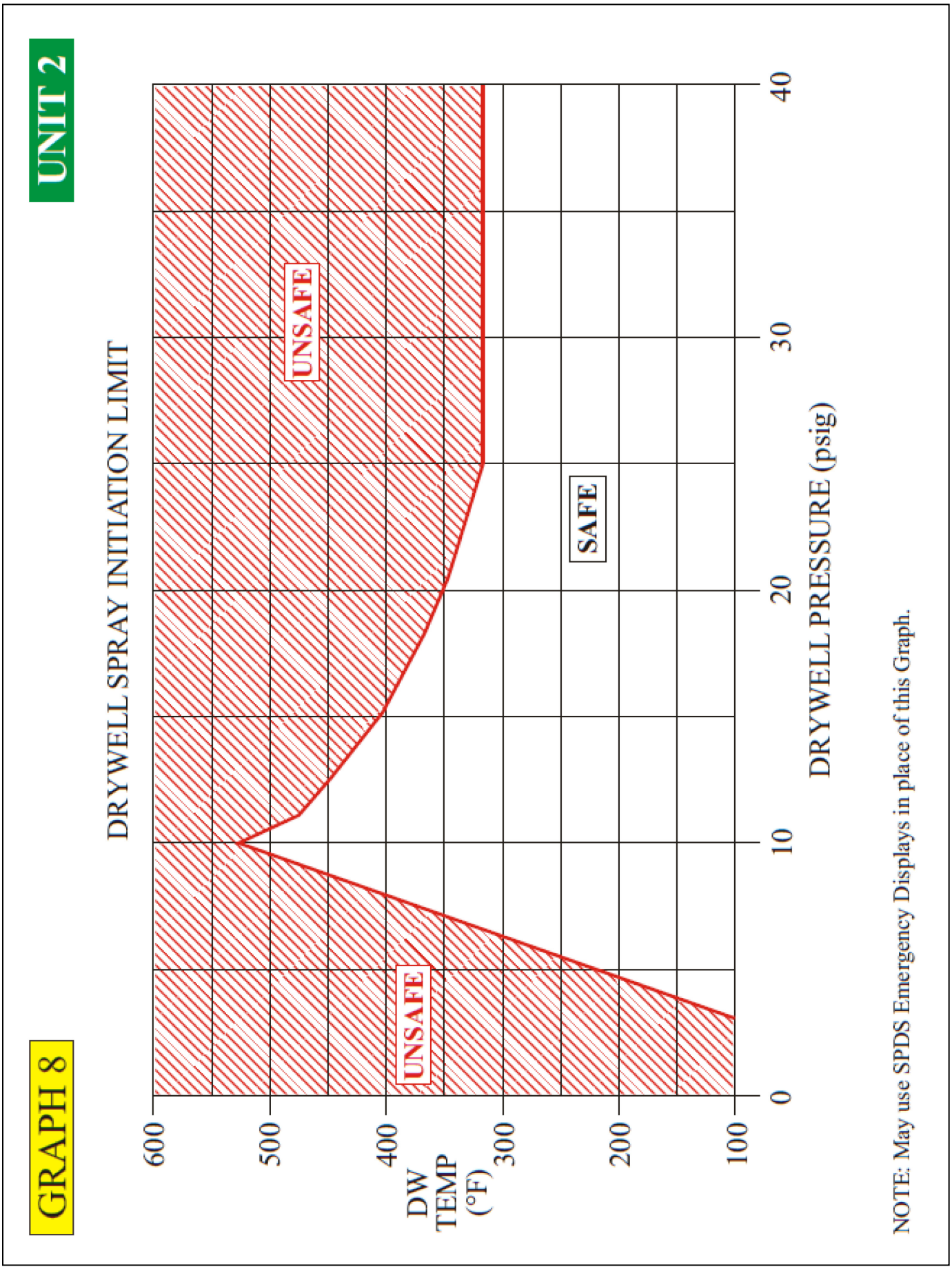
TERMINATING CUE: We will stop here.

(Indicates critical step)**

Attachment 1




UNIT 2
GRAPH 13
PRIMARY CONTAINMENT PRESSURE LIMIT
UNSAFE
SAFE
TORUS PRESSURE (PSIG)
80
60
40
20
0
0
20
40
60
80
100
120
103.5
PRIMARY CONTAINMENT WATER LEVEL (ft)
NOTE: May use SPDS Emergency Displays in place of this Graph.


UNIT 2
GRAPH 8
DRYWELL SPRAY INITIATION LIMIT
UNSAFE
UNSAFE
SAFE
DW TEMP (°F)
600
500
400
300
200
100
0
10
20
30
40
DRYWELL PRESSURE (psig)
NOTE: May use SPDS Emergency Displays in place of this Graph.

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

DRAFT
ADMIN 6 SRO ONLY

Title:		
Emergency Classification - Complete NMP-EP-110 Checklist 1		
Author: Anthony Ball	**Media Number:** 2015-301 ADMIN 6	**Time Critical:** 15 Minutes
Line Technical Review By (N/A for minor revisions)		**Date:**
Reviewed by Instructional Technologist or designee:		**Date:**
Approved By:		**Date:**

SOUTHERN COMPANY

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Course Number	Program Name	Media Number
N/A	OPERATIONS TRAINING	2015-301 ADMIN 6

Rev. No.	Date	Reason for Revisions	Author's Initials	Sup's Initials
00	8/23/11	Initial Development	SDH	DNM
01	10/15/13	Made left hand column match procedure steps. Ensured each critical step only has one action. ADDED Checklist 1 answer key.	MMG	ALS
1.1		Updated to latest procedure revision and will be used on ILT-9 NRC Exam. After exam will be renamed back to original JPM Title (LR-JP-25071-01).	ARB	

Line Contributors

The following individuals contributed to the development of this lesson plan.

Rev. No.	List of Contributors

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	**Emergency Classification - Complete NMP-EP-110 Checklist 1**
JPM NUMBER:	2015-301 ADMIN 6
TASK STANDARD:	The task shall be completed when the event has been classified and NMP-EP-110 Checklist 1 is completed through step 6.

TASK NUMBER: 200.052

OBJECTIVE NUMBER: 200.052.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.67

SRO 4.04

K/A CATALOG NUMBER: Generic 2.4.41

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.30

SRO 4.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	**Unit 1 & 2**
	NMP-EP-110 (current version)

REQUIRED MATERIALS:	**Unit 1 & 2**
	NMP-EP-110 (current version)

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: NA

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. You are the On Shift Shift Manager.
2. **Units 1** and **2** are operating at 100% power. The FAA Atlanta calls Plant Hatch control room on the telephone. A NPO answers the phone. The following information is rapidly confirmed with the NRC Operations Center using the Emergency Notification System (ENS) phone.
3. The NRC Operations Center confirms:
   - One (1) hour ago, a DC 10, Delta Flight D-1492, took off from Atlanta, headed for Houston Texas.
   - The plane has inexplicably changed course, is now headed east, and is 20 miles west of Macon, Georgia.
   - Atlanta Flight Control has tried all available methods to communicate with the flights' crew, but has been unsuccessful.
   - Based on the planes flight path and rate of descent, it appears that Plant Hatch is in the flight path of a Track of Interest (TOI).

   The flight will reach Plant Hatch, by best estimate, in 29 minutes.
4. The Control Room has contacted the NRC and NRC has confirmed the information.
5. NO Peer Check is available.

INITIATING CUES:

Classify the Event by Completing NMP-EP-110 Checklist 1,

Steps 1 through 6.

AND

Communicate the **Emergency Classification AND** the **IC#** the

Emergency Classification is based on to the Operating Crew

(Crew Update)

This JPM is **TIME CRITICAL.**

Current time is: _____

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	❑ Human performance tools, safety, PPE met (1), **AND** ❑ For initial trg **all** steps completed correctly OR ❑ For continuing trg, **critical** steps (if used) completed correctly	❑ Mark the JPM as a **PASS**
FAIL	❑ Above standards not met	❑ Mark the JPM as a **FAIL**

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

NOTE: The **CLASSIFICATION** must be made within 15 minutes of the initial prompt and the Student states they understand the initial conditions.

NOTE: The Student is expected to obtain a copy of Checklist 1 if the Initiating Cue is given in the Simulator or Control Room.

START TIME:_____

1.	Operator identifies the procedure needed to perform the task.	The operator has OBTAINED Check List 1, which is contained in NMP-EP-110.	
2.	Checklist 1, Step 1. **Determine** the appropriate Initiating Condition Matrix for classification of the event based on the current operating mode: HOT IC/EAL Matrix Eval Chart COLD IC/EAL Matrix Eval Chart Both HOT & COLD IC/EAL Matrix	On Checklist 1, Step 1, The operator has selected **HOT IC/EAL** Matrix Evaluation Chart	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	Checklist 1, Step 2. **Evaluate** the status of the fission product barrier using Figure 1, Fission Product Barrier Evaluation. **Select** the condition of each fission product barrier: Fuel Cladding Integrity ********** **********	On Checklist 1, Step 2.a, The operator has selected **INTACT** for Fuel Cladding Integrity.	
4.	Checklist 1, Step 2. **Evaluate** the status of the fission product barrier using Figure 1, Fission Product Barrier Evaluation. **Select** the condition of each fission product barrier: ********** Reactor Coolant System **********	On Checklist 1, Step 2.a, The operator has selected **INTACT** for Reactor Cooling System.	
5.	Checklist 1, Step 2. **Evaluate** the status of the fission product barrier using Figure 1, Fission Product Barrier Evaluation. **Select** the condition of each fission product barrier: ********** ********** Containment Integrity	On Checklist 1, Step 2.a, The operator has selected **INTACT** for Containment Integrity.	
6.	Checklist 1, Step 2.b. **Determine** the highest applicable fission product barrier Initiating Condition (IC).	On Checklist 1, Step 2.b, The operator has selected **NONE**	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
7.	Checklist 1, Step 3. **Evaluate** AND **determine** the highest applicable IC/EAL using the Matrix Evaluation Chart(s) identified in step 1 THEN **Go To** step **4**.	On Checklist 1, Step 3. The operator has identified **HA4**	
8.	Checklist 1, Step 4. **Check** the highest emergency classification level identified from either step 2b or 3: **Classification** **********	On Checklist 1, Step 4. The operator has selected **ALERT** as the Classification.	
****9.**	Checklist 1, Step 4. **Check** the highest emergency classification level identified from either step 2b or 3: ********** **Based on IC #**	On Checklist 1, Step 4. The operator has selected **HA4** for the Based on IC#.	

NOTE: **It is expected that the IC# be filled in on Checklist 1 (in the above step). Credit for this step will be given if the proper IC# is announced during the Crew Update announcing the classification to the crew.**

10.	Checklist 1, Step 4. Remarks (**Identify** the specific EAL, as needed).	On Checklist 1, Step 4. The operator has written **A validated notification from NRC of an airliner attack threat less than 30 minutes away** in the space provided.	

NOTE: If follow-up questioning reveals that a classification was declared and based on another IC #, the classification should be evaluated for validity.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
11.	Checklist 1, Step 5. **Declare** the event by approving the Emergency Classification.	On Checklist 1, Step 5. The operator has **signed their name** as the Emergency Director in the space provided.	
12.	Checklist 1, Step 5. Fill in the Date in the space provided.	On Checklist 1, Step 5. The operator has entered the **current Date** in the space provided.	
13.	Checklist 1, Step 5. Fill in the Time in the space provided.	On Checklist 1, Step 5. The operator has entered the **current Time** in the space provided. **Time Critical Stop Time:** _____. NOTE: For this step to be completed considered SAT, the time entered must be within 15 minutes of the time recorded on the Initial Conditions sheet provided to the operator.	

PROMPT: **WHEN** the operator enquires about meteorological conditions, **GIVE** the operator the MIDAS Information Sheet if not given earlier when performing a Group JPM.

14.	On Checklist 1, Step 6. **Obtain** Meteorological Data (not required prior to event declaration).	The operator has obtained Meteorological Data (i.e. MIDAS Information Sheet).	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**15.	On Checklist 1, Step 6. Record the following: Wind Direction (from) ********** ********** *********	On Checklist 1, Step 6. The operator has entered **130** in the space provided for **Wind Direction (from).**	
**16.	On Checklist 1, Step 6. Record the following: ********** Wind Speed ********** **********	On Checklist 1, Step 6. The operator has entered **5** in the space provided for **Wind Speed**.	
17.	On Checklist 1, Step 6. Record the following: ********** ********** Stability Class **********	On Checklist 1, Step 6. The operator has entered **D** in the space provided for **Stability Class**.	
18.	On Checklist 1, Step 6. Record the following: ********** ********** ********** Precipitation	On Checklist 1, Step 6. The operator has entered **0** in the space provided for **Precipitation**.	
19.	Classification is announced to the crew.	Operator performs a "Crew Update" and announces what the Classification is and the IC# the classification is based on.	

PROMPT: If the IC# is NOT filled in on Checklist 1 or announced during a Crew Update, **TELL** the operator to review the Initiating Cue.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)

PROMPT: If the operator addresses performance of Checklist 1 Step 7 Initiate Checklist 2, Emergency Plan Initiation, **INFORM** the operator that another operator will Initiate Checklist 2.

END TIME:_____

NOTE: The terminating cue shall be given to the operator when:

- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

INSTRUCTOR ANSWER KEY

Checklist 1 - Classification Determination

NOTE

Key Parameters should be allowed to stabilize to accurately represent plant conditions prior to classifying an event

Initial Actions Completed by

1. **Determine** the appropriate Initiating Condition Matrix for classification of the event based on the current operating mode: Student
   - ✹ HOT IC/EAL Matrix Evaluation Chart (**Go To** Step **2)** to evaluate the Barriers)
   - ☐ COLD IC/EAL Matrix Evaluation Chart (**Go To** Step **3**)
   - ☐ Both HOT & COLD IC/EAL Matrix Evaluation Chart apply (**Go To** Step **2)**
2. **Evaluate** the status of the fission product barrier using Figure 1, Fission Product Barrier Evaluation.
   a. **Select** the condition of each fission product barrier: Student

	LOSS	POTENTIAL LOSS	INTACT
Fuel Cladding Integrity	☐	☐	✹
Reactor Coolant System	☐	☐	✹
Containment Integrity	☐	☐	✹

   b. **Determine** the highest applicable fission product barrier Initiating Condition (IC): Student

   (select one) ☐ FG1 ☐ FS1 ☐ FA1 ☐ FU1 ✹None
3. **Evaluate** AND **determine** the highest applicable IC/EAL using the Matrix Evaluation Chart(s) identified in step 1 THEN **Go To** step **4**.

   Hot IC# **HA4** Unit **1/2** and/or Cold IC# _____ Unit___ or ☐ None Student
4. **Check** the highest emergency classification level identified from either step 2b or 3: Student

Classification	Based on IC#	Classification	Based on IC#
☐ General		✹ Alert	HA4
☐ Site-Area		☐ NOUE	
		☐ None	N/A

Remarks (**Identify** the specific EAL, as needed): **A validated notification from NRC of an airliner attack threat less than 30 minutes away**

5. **Declare** the event by approving the Emergency Classification.

   _____Student_____Date: __***** / ***** / ****_Time: __******__ Student
   Emergency Director
6. **Obtain** Meteorological Data (not required prior to event declaration):

Wind Direction (from) **130** Wind Speed **5** Stability Class **D** Precipitation **0** Student

7. **Initiate** Attachment 2, Checklist 2 - Emergency Plan Initiation. _____

(Indicates critical step)**

MIDAS INFORMATION

METEOROLOGICAL

10M WIND SPD	100M WIND SPD	10M WIND DIR	100M WIND DIR
1Y33-R601	1Y33-R603	1Y33-R601	1Y33-R603
5.0	5.0	130	130

AMBIENT TEMP	DELTA T	DELTA T	RAINFALL
(F) 10M	60-10	100-10	15 MIN. AVG
54	-1.6	-2.9	.000

RADIOLOGICAL

MAIN STACK		U1 RX. BLDG. VENT		U2 RX. BLDG. VENT	
NORMAL RANGE	KAMAN	NORMAL RANGE	KAMAN	NORMAL RANGE	KAMAN
1D11-K600A	1D11-R631	1D11-K619A	1D11-R631	2D11-K636A	2D11-R631
2.00E 01		5.04E 01		4.00E 01	
1D11-K600B		1D11-K619B		2D11-K636B	
2.00E 01				4.00E 01	

STABILITY CLASS
D