

Facility: Indian Point Unit
2Task No: 2000660122Task Title: **Determine Reportability Requirements**K/A Reference: 2.1.18 Job Performance Measure SRO Admin
SRO 3.8 No: 1a

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance	<u>X</u>	Actual Performance	_____
Classroom	<u>X</u>	Simulator	_____
		Plant	_____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

In preparation for 2-PT-M048, 480 Volt Undervoltage Alarm, the following Tech Spec LCOs were not met:

- 3.3.5 Loss of Power Diesel Generator Start Condition G and H
- 3.8.1 AC Sources Operating Condition B
- Surveillance W-19 is complete

The following plant conditions exist:

- The unit is in Mode 3
- During the performance of 2-PT-M048 the normal feed breaker to bus 6A tripped.
- 21 and 22 EDGs started
- The normal supply breakers for 5A, 2A, and 3A tripped
- The Emergency Feed Breakers for safeguards busses 5A, 2A, and 3A closed and re-energized the buses.
- 21 AFW pumps started
- 21 and 22 CCW pump started
- 21 and 22 Service Water Pumps started

Initiating Cue: You are the FSS and the Shift Manager has directed you to determine any additional required Tech Spec actions and reportability requirements.

Required Materials: Unti 2 Technical Specifications
IP-SMM-LI-108, Event Notification and Reporting

General References: Unti 2 Technical Specifications
IP-SMM-LI-108, Event Notification and Reporting

Time Critical Task: No

Validation Time: 30 Minutes

Task Standard: Applicable Tech Specs and Reporting requirements identified

Performance Information

(Denote critical steps with a check mark √)

1. Performance Step:	Obtain Correct Procedures
Standard:	Obtains Technical Specifications and IP-SMM-LI-108.
Comment:	

2. Performance Step:	Reviews Technical Specifications
Standard:	Determine No additional Tech Spec actions are required
Comment:	

√ 3. Performance Step:	Determine Reportability using IP-SMM-LI-108
Standard:	Determines 8 hr report due to valid actuation of AFW Item 59 (See item 49 for explanation) 10CFR50.72(b)(3)(iv)(A)
Comment:	

√ 4. Performance Step:	Determine who must be notified
Standard:	Identifies: NRC Operations Center within 8 hours Corporate Duty Manager Public Service Commission (PSC)
Comment:	

Terminating Cue: JPM Complete

VERIFICATION OF COMPLETION

Job Performance Measure No.

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Initial Conditions:

In preparation for 2-PT-M048, 480 Volt Undervoltage Alarm, the following Tech Spec LCOs were not met:

- 3.3.5 Loss of Power Diesel Generator Start Condition G and H
- 3.8.1 AC Sources Operating Condition B
- Surveillance W-19 is complete

The following plant conditions exist:

- The unit is in Mode 3
- During the performance of 2-PT-M048 the normal feed breaker to bus 6A tripped.
- 21 and 22 EDGs started
- The normal supply breakers for 5A, 2A, and 3A tripped
- The Emergency Feed Breakers for safeguards busses 5A, 2A, and 3A closed and re-energized the buses.
- 21 AFW pumps started
- 21 and 22 CCW pump started
- 21 and 22 Service Water Pumps started

Initiating Cue: You are the FSS and the Shift Manager has directed you to determine any additional required Tech Spec actions and reportability requirements.

Indian Point Unit
Facility: 2

Task No: 2000070122

Task Title: **Review a Manual QPTR Calculation (4 Detectors 100%)**

K/A Reference: 2.1.37 Job Performance Measure
SRO 4.6 No: SRO Admin 1b

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance	_____	Actual Performance	<u>X</u>
Classroom	<u>X</u>	Simulator	_____
		Plant	_____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. Reactor power is stable at 100% power.
2. The RO has calculated a QPTR manually.
3. There is indication of a misaligned rod. The RO calculated a QPTR of 1.0638 and recommends a Power Reduction to $\leq 80.7\%$.
4. No Physics testing is in progress.

Initiating Cue: You are the CRS and the SM directed you to review the QPTR and sign as SM Designee and, approve any required actions by Tech Spec identified including maximum allowable power operation and time limits.

Required Materials: Calculator

General References: 3-SOP-15.3, Quadrant Power Tilt Calculation
DSR-4B Unit Two Quadrant Power Tilt Calculation Sheet

Time Critical Task: No

Validation Time: 20 Minutes

Task Standard: Calculation reviewed and errors corrected, identify incorrect TS actions.

Performance Information

(Denote critical steps with a check mark ✓)

EVALUATOR NOTE:

Give the examinee the attached Detector Current Data Sheet and a DSR-4B form that has the proper normalization factors recorded.

EVALUATOR NOTE:

A detector Current Data Sheet with ANRT/B and QPTT/B is provided for grading this JPM. Allow examinee to complete all calculations and determine appropriate Tech Spec actions. The examinee may use a calculator.

1. Performance Step: Obtain correct procedure and form DSR-4B.

Standard: SOP 15.3, "Quadrant Power Tilt Calculation"

Comment:

2. Performance Step: Check top and bottom detector currents recorded.

Standard: Checks Detector currents recorded from QPTR Data Sheet recorded

Comment: For this QPTR calculation, the values for N42 top and N42 bottom were incorrectly entered in the wrong location. The current value for N42 top was entered in N42 bottom and N42 bottom was entered in location for N42 top.

Candidate may identify error at this time.

Candidate may elect to calculate independently and compare results.

Performance Information

(Denote critical steps with a check mark ✓)

3. Performance Step: Record Date, Time and Average Reactor Power

Standard: Checks Current Date and Time and average Reactor Power of 100% recorded

Comment:

4. Performance Step: DIVIDE each detector output by corresponding normalization factor

Standard: Checks calculations:

- CALCULATES normalization ratio
- RECORDS on form DSR-4B

Comment: Candidate may identify error at this time. Candidate may elect to calculate independently and compare results.

[See Key for actual values]

5. Performance Step: If three detectors are to be used in the calculation, change denominator from 4 to 3

Standard: Checks "4" for denominator on top and bottom average equations recorded

Comment:

Performance Information

(Denote critical steps with a check mark ✓)

6. Performance Step: CALCULATE average normalized ratio for top and bottom

Standard:

Checks calculations:

- CALCULATES the top and bottom normalized averages
- RECORDS on form DSR-4B

Comment: **[See Key for actual values]**

7 Performance Step: CALCULATE Quadrant Power Tilt for top and bottom detectors

Standard:

Checks calculations:

- CALCULATES the top and bottom QPTR by using the highest top (bottom) and dividing by the top (bottom) average
- RECORDS on form DSR-4B

Comment: **[See Key for actual values]**

Performance Information

(Denote critical steps with a check mark ✓)

✓ 8. **Performance Step:** RECORD highest Quadrant Power Tilt and appropriate signatures.

Standard: If Candidate does not identify the error, the QPTR will appear correct.

Comment:

✓ 9. **Performance Step:** If quadrant power tilt exceeds 1.02 in either top or bottom of core, ensure requirements of Technical Specification 3.2.4, Quadrant Power Tilt Limits are met

Standard: PERFORMS both of the following:

- COMPARES the calculated QPTR to Tech Spec 3.2.4
- DETERMINES that the calculated QPTR is GREATER THAN the Tech Spec allowable value of 1.02

Comment: Due to error in data entry, the Calculated QPTR is 1.0638. This would result in a power reduction to <80.7%. This is a second error
The actual QPTR is 1.0753. This would result in a power reduction to ≤ 77.4%.

Performance Information

(Denote critical steps with a check mark ✓)

✓ 10. Performance Step: **DETERMINE Required Tech Spec Actions.**

Standard: **PERFORMS both of the following:**

- REFERS to Tech Spec action 3.2.4
- DETERMINES the following actions are required:
 1. Either QPTR is reduced below 1.02
OR
 2. Within 2 hours,
 - a. Reactor Power must be reduced to below 77.4% ($\pm 0.5\%$)

Comment: Additional Tech Spec actions will be required within 2 hours, however they are not part of the requirement for satisfactory completion of this JPM

✓ 11. Performance Step: **DETERMINES QPTR CALCULATION IS NOT CORRECT**

Standard: Determines correct value for QPTR 1.0753.
Determines correct maximum power level 77.4%

Comment:

Terminating Cue: JPM Complete

UNIT TWO QUADRANT POWER TILT CALCULATION SHEET

DSR-4B

Rev. 193

Previous SNSC #2545 11/5/98

(QT-20-31)

DATE: Today

SNSC REVIEW DATE

TIME: 30 minutes agoAVE REACTOR PWR: 100%

APPROVED (RE) DATE

USING DETECTOR OUTPUT CURRENT

APPROVED DATE

Answer Key Incorrectly Calculated Errors Identified .

* Current QT number and Normalization Factors provided by Reactor Engineer.

1. Determine normalized ratios by dividing indicated detector current by normalization factor as follows:

[ITS] Technical Requirements Manual 3.2.A:

Channel	Det Current	Nor Ratio	Channel	Det Current	Nor Ratio
41 Top = 41T =	139.7	/* 129.1 = 1.0821	41 Bottom = 41B =	128.7	/* 122.5 = 1.0506
42 Top = 42T =	145.3	/* 136.6 = 1.0637	42 Bottom = 42B =	120.4	/* 144.3 = .8344
43 Top = 43T =	122.9	/* 118.3 = 1.0389	43 Bottom = 43B =	124.2	/* 119.3 = 1.0411
44 Top = 44T =	89.4	/* 87.4 = 1.0229	44 Bottom = 44B =	109.7	/* 107.1 = 1.0243

Answer Key Incorrectly Calculated Errors Identified

2. Determine the average normalized ratio for the top and bottom.

$$\text{Average Normalized Ratio Top} = \text{ANRT} = \frac{41T + 42T + 43T + 44T}{4} = \frac{1.0519}{4}$$

$$\text{Average Normalized Ratio Bottom} = \text{ANRB} = \frac{41B + 42B + 43B + 44B}{4} = \frac{.9876}{4}$$

3. Determine The quadrant power tilt ratio for the top and bottom by dividing the highest normalized power ratio for the top and bottom respectively by their respective average normalized ratio.

[ITS] Technical Requirements Manual 3.2.A:

$$\text{Quadrant Power Tilt Top} = \text{QPTT} = \frac{\text{Highest value of 41T, 42T, 43T, or 44T}}{\text{ANRT}}$$

$$\text{QPTT} = \frac{\text{Value} = 1.0821}{\text{ANRT} = 1.0519} = 1.0287$$

$$\text{Quadrant Power Tilt Bottom} = \text{QPTB} = \frac{\text{Highest value of 41B, 42B, 43B, or 44B}}{\text{ANRB}}$$

$$\text{QPTB} = \frac{\text{Value} = 1.0506}{\text{ANRB} = .9876} = 1.0638$$

4. The higher of the two quadrant power tilts should be less than or equal to the Technical Specification Limit of 1.0200. [ITS] Technical Requirements Manual 3.2.A:

$$\text{Enter the Higher QPT(Top or Bottom)} = \frac{1.0638}{1.0200}$$

Answer Key Incorrectly Calculated Errors Identified

NOTES:

- If the quadrant power tilt exceeds the Tech. Spec. limits, the SM, OM, RE and GM-NPG shall be informed ASAP.
- If one detector is out of service, the three in service detectors will be used to compute the average normalized ratios (ensure denominators in step 2 are changed from 4 to 3).

RO: _____ SM: _____

UNIT TWO QUADRANT POWER TILT CALCULATION SHEET

DSR-4B
(QT-20-31)

Rev. 193

Previous SNSC #2545 11/5/98
SNSC REVIEW DATEDATE: TodayTIME: 30 minutes agoAVE REACTOR PWR: 1005

APPROVED (RE) DATE

USING DETECTOR OUTPUT CURRENT

APPROVED DATE

* Current QT number and Normalization Factors provided by Reactor Engineer.

1. Determine normalized ratios by dividing indicated detector current by normalization factor as follows:

[ITS] Technical Requirements Manual 3.2.A:

Answer Key Correctly Calculated

Channel	Det Current	Nor Ratio	Channel	Det Current	Nor Ratio
41 Top = 41T =	<u>139.7</u>	<u>/* 129.1 = 1.0821</u>	41 Bottom = 41B =	<u>128.7</u>	<u>/* 122.5 = 1.0506</u>
42 Top = 42T =	<u>120.4</u>	<u>/* 136.6 = .8814</u>	42 Bottom = 42B =	<u>145.3</u>	<u>/* 144.3 = 1.0069</u>
43 Top = 43T =	<u>122.9</u>	<u>/* 118.3 = 1.0389</u>	43 Bottom = 43B =	<u>124.2</u>	<u>/* 119.3 = 1.0411</u>
44 Top = 44T =	<u>89.4</u>	<u>/* 87.4 = 1.0229</u>	44 Bottom = 44B =	<u>109.7</u>	<u>/* 107.1 = 1.0243</u>

2. Determine the average normalized ratio for the top and bottom.

$$\text{Average Normalized Ratio Top} = \text{ANRT} = \frac{41T + 42T + 43T + 44T}{4} = \frac{1.0821 + .8814 + 1.0389 + 1.0229}{4} = 1.0063$$

$$\text{Average Normalized Ratio Bottom} = \text{ANRB} = \frac{41B + 42B + 43B + 44B}{4} = \frac{1.0506 + 1.0069 + 1.0411 + 1.0243}{4} = 1.0307$$

Answer Key Correctly Calculated

3. Determine The quadrant power tilt ratio for the top and bottom by dividing the highest normalized power ratio for the top and bottom respectively by their respective average normalized ratio.

[ITS] Technical Requirements Manual 3.2.A:

$$\text{Quadrant Power Tilt Top} = \text{QPTT} = \frac{\text{Highest value of 41T, 42T, 43T, or 44T}}{\text{ANRT}}$$

$$\text{QPTT} = \frac{\text{Value} = 1.0821}{\text{ANRT} = 1.0063} = 1.0753$$

$$\text{Quadrant Power Tilt Bottom} = \text{QPTB} = \frac{\text{Highest value of 41B, 42B, 43B, or 44B}}{\text{ANRB}}$$

$$\text{QPTB} = \frac{\text{Value} = 1.0506}{\text{ANRB} = 1.0307} = 1.0193$$

- 4.
- The higher of the two quadrant power tilts should be less than or equal to the Technical Specification Limit of 1.0200. [ITS] Technical Requirements Manual 3.2.A:

Answer Key Correctly Calculated

$$\text{Enter the Higher QPT(Top or Bottom)} = \frac{1.0753}{1.0200} = 1.0542$$

NOTES:

1. If the quadrant power tilt exceeds the Tech. Spec. limits, the SM, OM, RE and GM-NPG shall be informed ASAP.

Answer Key Correctly Calculated

2. If one detector is out of service, the three in service detectors will be used to compute the average normalized ratios (ensure denominators in step 2 are changed from 4 to 3).

RO: _____ SM: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Initial Conditions:

1. Reactor power is stable at 100% power.
2. The RO has calculated a QPTR manually.
3. There is indication of a misaligned rod. The RO calculated a QPTR of 1.0638 and recommends a Power Reduction to < 80.7%.
4. No Physics testing is in progress.

Initiating Cue:

You are the CRS and the SM directed you to review the QPTR and sign as SM Designee and, approve any required actions by Tech Spec identified including maximum allowable power operation and time limits.

UNIT TWO QUADRANT POWER TILT CALCULATION SHEET

DSR-4B

Rev. 193

Previous SNSC #2545 11/5/98
SNSC REVIEW DATE

(QT-20-31)

DATE: TodayTIME: 30 minutes agoAVE REACTOR PWR: 100%

APPROVED (RE) DATE

USING DETECTOR OUTPUT CURRENT

APPROVED DATE

* Current QT number and Normalization Factors provided by Reactor Engineer.

1. Determine normalized ratios by dividing indicated detector current by normalization factor as follows:
[ITS] Technical Requirements Manual 3.2.A:

Channel	Det Current	Nor Ratio	Channel	Det Current	Nor Ratio
41 Top = 41T =	<u>139.7</u>	<u>/* 129.1 = 1.0821</u>	41 Bottom = 41B =	<u>128.7</u>	<u>/* 122.5 = 1.0506</u>
42 Top = 42T =	<u>145.3</u>	<u>/* 136.6 = 1.0637</u>	42 Bottom = 42B =	<u>120.4</u>	<u>/* 144.3 = .8344</u>
43 Top = 43T =	<u>122.9</u>	<u>/* 118.3 = 1.0389</u>	43 Bottom = 43B =	<u>124.2</u>	<u>/* 119.3 = 1.0411</u>
44 Top = 44T =	<u>89.4</u>	<u>/* 87.4 = 1.0229</u>	44 Bottom = 44B =	<u>109.7</u>	<u>/* 107.1 = 1.0243</u>

2. Determine the average normalized ratio for the top and bottom.

$$\text{Average Normalized Ratio Top} = \text{ANRT} = \frac{41T + 42T + 43T + 44T}{4} = \frac{1.0519}{4}$$

$$\text{Average Normalized Ratio Bottom} = \text{ANRB} = \frac{41B + 42B + 43B + 44B}{4} = \frac{.9876}{4}$$

3. Determine The quadrant power tilt ratio for the top and bottom by dividing the highest normalized power ratio for the top and bottom respectively by their respective average normalized ratio.
[ITS] Technical Requirements Manual 3.2.A:

$$\text{Quadrant Power Tilt Top} = \text{QPTT} = \frac{\text{Highest value of 41T, 42T, 43T, or 44T}}{\text{ANRT}}$$

$$\text{QPTT} = \frac{\text{Value} = \frac{1.0821}{1.0519}}{1.0519} = 1.0287$$

$$\text{Quadrant Power Tilt Bottom} = \text{QPTB} = \frac{\text{Highest value of 41B, 42B, 43B, or 44B}}{\text{ANRB}}$$

$$\text{QPTB} = \frac{\text{Value} = \frac{1.0506}{.9876}}{.9876} = 1.0638$$

4. The higher of the two quadrant power tilts should be less than or equal to the Technical Specification Limit of 1.0200. [ITS] Technical Requirements Manual 3.2.A:

$$\text{Enter the Higher QPT(Top or Bottom)} = \frac{1.0638}{1.0200} = 1.0429$$

NOTES:

- If the quadrant power tilt exceeds the Tech. Spec. limits, the SM, OM, RE and GM-NPG shall be informed ASAP.
- If one detector is out of service, the three in service detectors will be used to compute the average normalized ratios (ensure denominators in step 2 are changed from 4 to 3).

RO: _____ SM: _____

Detector Current Data Sheet for QPTR Calculation

Average Reactor Power 100%

Excore Instrument	Detector "A"	Detector "B"
N-41	139.7	128.7
N-42	120.4	145.3
N-43	122.9	124.2
N-44	89.4	109.7

UNIT TWO QUADRANT POWER TILT CALCULATION SHEET

Previous SNSC #2545 11/5/98
SNSC REVIEW DATE

DSR-4B
(QT-20-31)

Rev. 193

DATE: Today
TIME: 30 minutes ago
AVE REACTOR PWR: 100%

APPROVED (RE) DATE

APPROVED DATE

USING DETECTOR OUTPUT CURRENT

* Current QT number and Normalization Factors provided by Reactor Engineer.

1. Determine normalized ratios by dividing indicated detector current by normalization factor as follows:
[ITS] Technical Requirements Manual 3.2.A:

Channel	Det Current	Nor Ratio	Channel	Det Current	Nor Ratio
41 Top = 41T = _____	/* <u>129.1</u> =	_____	41 Bottom = 41B = _____	/* <u>122.5</u> =	_____
42 Top = 42T = _____	/* <u>136.6</u> =	_____	42 Bottom = 42B = _____	/* <u>144.3</u> =	_____
43 Top = 43T = _____	/* <u>118.3</u> =	_____	43 Bottom = 43B = _____	/* <u>119.3</u> =	_____
44 Top = 44T = _____	/* <u>87.4</u> =	_____	44 Bottom = 44B = _____	/* <u>107.1</u> =	_____

2. Determine the average normalized ratio for the top and bottom.

$$\text{Average Normalized Ratio Top} = \text{ANRT} = \frac{41T + 42T + 43T + 44T}{4} = \underline{\hspace{2cm}}$$

$$\text{Average Normalized Ratio Bottom} = \text{ANRB} = \frac{41B + 42B + 43B + 44B}{4} = \underline{\hspace{2cm}}$$

3. Determine The quadrant power tilt ratio for the top and bottom by dividing the highest normalized power ratio for the top and bottom respectively by their respective average normalized ratio.
[ITS] Technical Requirements Manual 3.2.A:

$$\text{Quadrant Power Tilt Top} = \text{QPTT} = \frac{\text{Highest value of 41T, 42T, 43T, or 44T}}{\text{ANRT}}$$

$$\text{Value} = \underline{\hspace{2cm}}$$

$$\text{QPTT} = \text{ANRT} = 1.0519 = \underline{\hspace{2cm}}$$

$$\text{Quadrant Power Tilt Bottom} = \text{QPTB} = \frac{\text{Highest value of 41B, 42B, 43B, or 44B}}{\text{ANRB}}$$

$$\text{Value} = \underline{\hspace{2cm}}$$

$$\text{QPTB} = \text{ANRB} = .9876 = \underline{\hspace{2cm}}$$

4. The higher of the two quadrant power tilts should be less than or equal to the Technical Specification Limit of 1.0200. [ITS] Technical Requirements Manual 3.2.A:

$$\text{Enter the Higher QPT(Top or Bottom)} = \underline{\hspace{2cm}}$$

$$\text{Technical Specification Limit} = 1.0200$$

NOTES:

- If the quadrant power tilt exceeds the Tech. Spec. limits, the SM, OM, RE and GM-NPG shall be informed ASAP.
- If one detector is out of service, the three in service detectors will be used to compute the average normalized ratios (ensure denominators in step 2 are changed from 4 to 3).

RO: _____ SM: _____

Facility: Indian Point Unit 2 Task No: 2000340122

Task Title: Identify Isolation Boundaries and Required Actions High Pressure Fire Protection

K/A Reference: 2.2.41 SRO - 3.9 Job Performance Measure No: SRO Admin 3

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance Classroom X Simulator Actual Performance Plant

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- The unit is operating at 100% power
Flushing of fire hydrants in the transformer yard is underway.
#25 HP Hydrant and its associated PIV cannot be closed
Water is not spraying on any electrical equipment.

Initiating Cue: You are the CRS and you have been directed to:
determine the valves that must be closed to isolate the leaking hydrant
identify affected components
determine compensatory actions.

Required Materials: None

General References: SAO-703, Fire Protection Impairment Criteria and Surveillance
9321-F-4006 Yard Fire Protection Piping
227551, Fire Protection System Diagram Details Sheet 1
227552, Fire Protection System Diagram Details Sheet 2
227553, Fire Protection System Diagram Details Sheet 3
227554, Fire Protection System Diagram Details Sheet 4

Time Critical Task: No

Validation Time: 45 Minutes

Task Standard: Identify isolation boundaries, affected components, Required Action and Completion Time for impaired condition.

Performance Information

(Denote critical steps with a check mark ✓)

1. Performance Step: Obtain SAO-703 and required prints.

Standard: Obtains procedure and prints

Comment: Location of procedure and prints is not required for this JPM. Hand candidate the procedure and prints

✓ 2. Performance Step: Identify Isolation Boundaries

Standard: Identifies the following valves to be isolated:

- FP-632 High Pressure Hydrant Header Stop
- FP-606 High Pressure Header Loop Isolation (In 138KV Yard North Manhole)
- FP-724 PAB Supply Stop (West of PAB)

Comment: *FP-616, Electric Tunnel Deluge Supply Stop (Southeast Corner Transformer Yard) may be identified. This is not required; however, it is not incorrect to isolate.*

✓ 3. Performance Step: Identifies affected equipment

Standard: Identifies the following affected equipment

- High Pressure Hydrants #23, #24, #25, #26
- Electrical Tunnel Deluge
- PAB Hose Station (Alternate supply will maintain hose pressure. This is not required for evaluation for compensatory actions)

Comment: The affected equipment is identified using print 9321-F-4006

Performance Information

(Denote critical steps with a check mark ✓)

✓ 4. Performance Step: Identifies Required Actions from SAO-703

Standard:

Identifies the following Required Actions

- 2.a.3 High-Pressure Water Fire Protection System (*Not Critical This is a routing statement. Candidate may go directly to 3.a.1 and 4.a and 4.b*)
- Table I-4 below

19	Yard Area	15"	Unit 2 intake structure	Hydrant 21HPH OR 22HPH and Hose Cabinet No. 5 (with fire hose and nozzles to serve the Unit 2 Intake area)*
20	Yard Area	18'-6"	Transformer yard, south of the ABFP Building	Hydrant 25HPH and Hose Cabinet No. 7 (with fire hose and nozzles to serve the ABFP Building)
21	Yard Area	70'	South of the EDG Building	Hydrant 27HPH and Hose Cabinet No. 12 (with fire hose and nozzles to serve the EDG Building)

- 3.a.1 Fire Protection Spray Systems
 - a.1 The Electrical Tunnel Fire Protection Water Spray System (EI-33 ft. Control Building to EI-68 ft. PAB Fire Zone 32A) shall be functional. Below are the Required Actions and Action Time

Required Action		Action Time
a.1	Additional fire hose(s) shall be provided and labled to serve the affected location(s) from an functional hose station(s) or hydrant(s). Refer to Note 2.3 for additional guidance AND	Within 1 hour
a.2	The impaired equipment shall be restored to functional status	Within 14 days
a.3	Verify additional compensatory fire hose is staged as required by a.1 above a.3	Every 90 ±7 days

Performance Information

(Denote critical steps with a check mark ✓).

✓ 4. Performance Step: Identifies Required Actions from SAO-703

- 4.a Fire Hose Stations and Hydrants shown on Table I-4 shall functional. Only hydrant #25 is listed in Table I-4. Following are the Required Actions and Action Time.

Required Action		Action Time
a.1	Additional fire hose(s) shall be provided and labled to serve the affected location(s) from an functional hose station(s) or hydrant(s). <i>Refer to Note 2.3 for additional guidance</i> AND	Within 1 hour
a.2	The impaired equipment shall be restored to functional status	Within 14 days
a.3	Verify additional compensatory fire hose is staged as required by a.1 above a.3	Every 90 ±7 days

Performance Information

(Denote critical steps with a check mark ✓)

✓ 4. Performance Step: Identifies Required Actions from SAO-703

○ 4.b Fire Hose Stations and Hydrants (Not #25)

Required Action		Action Time
b.1.a	Establish a 4-hour fire watch tour to inspect the affected fire zone(s).	Within 8 hour
	OR	
b.1.b	If the affected zone is equipped with a fire detection system (see Tables I-1 and I-2), verify that the fire detection equipment in the zone is functional.	
	OR	
b.1.c	Additional fire hose(s) shall be provided to serve the affected location(s) from a functional hose station(s) or hydrant(s). <i>Refer to Note 2.3 for additional guidance.</i>	
	AND	
b.2	The impaired equipment shall be restored to functional status	Within 30 days

Comment: When SAO-703 is entered. Addendum 1 contains Impairment Criteria and actions. Section 2 addresses High-Pressure Water Fire Protection. Section 2 Requirement a.3 directs operator to perform actions for specific hose /hydrants or fixed suppression system.

Terminating Cue: JPM Complete

**ADDENDUM I
FP/ASSS EQUIPMENT IMPAIRMENT CRITERIA
Page 2 of 23**

**SAO-703
REV 34**

DESCRIPTION	REQUIREMENT	APPLICABILITY	IMPAIRED CONDITION	REQUIRED ACTION	ACTION TIME!		
2. High-Pressure Water Fire Protection System Impaired conditions 2.a.1.a and 2.a.2 may exist concurrently, Impaired conditions 2.a.1.b and 2.a.2 may exist concurrently, Impaired conditions 2.a.1.c and 2.a.2 may exist concurrently Refer to Note 2.0 for additional guidance	a.1	BOTH motor-driven fire main booster pumps (11FMBP and 12FMBP) AND diesel-driven fire pump (DFP) functional and properly aligned to the high-pressure fire header. Refer to Notes 2.2.a and 2.2.c for additional guidance.	a.1	At all times.	a.1.a One or both motor driven fire main booster pumps (11FMBP and/or 12FMBP) out of service OR a.1.b The diesel-driven pump (DFP) out of service. OR a.1.c As determined by FP Engineering. Refer to Note 2.2.a for guidance.	a.1.a Restore to functional status. a.1.b a.1.c	a.1.a Within 7 days. a.1.b a.1.c
	a.2	A minimum available water volume of 360,000 gallons contained in the City Water Tank and 300,000 gallons contained in the Fire Water Storage Tank for fire protection purposes. Refer to Note 2.2.b for additional guidance.	a.2	At all times.	a.2 One water supply out of service. Refer to Note 2.2.b for guidance when the FWST level instrument channel or tank refill capability is impaired.	a.2 Restore to functional status.	a.2 Within 7 days.
	a.3	All piping and valves necessary for proper functioning of any portion of the system required for protection of safety-related or safe-shutdown systems functional. Refer to Note 2.2.c for additional guidance.	a.3	At all times.	a.3 Any valve or pipe necessary to supply fixed automatic suppression systems or hose stations/hydrants protecting safety-related or safe-shutdown related areas out of service.	a.3 See Required Action for specific fixed automatic suppression system or hose stations/hydrants served by the portion of the system that is impaired.	a.3 See corresponding Action Time.
	b.	High-pressure water fire protection system functional as required by 2.a.1 and 2.a.2. NOTE: Expiration of the Action Time for Items 2.a.1 and 2.a.2 does NOT require entry into item 2.b.	b.	At all times.	b.1 With the high-pressure water fire protection system impaired in a manner other than permitted by 2.a.1 or 2.a.2. b.2 Required Action and associated Action Time of Impaired Condition b.1 not met.	b.1 An alternate fire protection system shall be established. b.2.a Be in MODE 3. AND b.2.b Be in MODE 5.	b.1 Within 24 hours. b.2.a Within 30 hours. b.2.b Within 72 hours.

Note: The provisions of paragraph 4.6 SHALL be followed if the specified "Action Time" for ANY Item in the Table is exceeded.

**ADDENDUM I
FP/ASSS EQUIPMENT IMPAIRMENT CRITERIA
Page 3 of 23**

**SAO-703
REV 34**

DESCRIPTION	REQUIREMENT	APPLICABILITY	IMPAIRED CONDITION	REQUIRED ACTION	ACTION TIME!					
3. Fire Protection Spray Systems (includes sprinkler systems and deluge systems) <i>Refer to Note 2.0 for additional guidance</i>	a.1	The Electrical Tunnel Fire Protection Water Spray System (E1-33 ft. Control Building to E1-68 ft. PAB - Fire Zone 32A) shall be functional	a.	Whenever safety-related or safe-shutdown related equipment in the area is required to be operable.	a.	Any spray system impaired.	a.1	Additional fire hose(s) shall be provided and labled to serve the affected location(s) from a functional hose station(s) or hydrant(s). Refer to Note 2.3 for additional guidance. AND	a.1	Within 1 hour.
	a.2	The Diesel Generator Building Water Spray System (in EDG Building - Fire Zone 10) shall be functional.					a.2	The impaired spray system(s) shall be restored to functional status.	a.2	Within 14 days.
							a.3	Verify additional compensatory fire hose is staged as required by a.1 above	a.3	Every 90 = 7 days
	b.	The spray systems listed on Table I-3 shall be functional.	b.	Whenever equipment in the area is required to be operable.	b.	Any spray system impaired.	b.1.a	Establish a 4-hour fire watch tour to inspect the affected fire zone(s). OR	b.1	Within 8 hours.
							b.1.b	If the affected zone is equipped with a fire detection system (see Table I-3), verify that the fire detection equipment in the zone is functional. OR		
							b.1.c	Additional fire hose(s) shall be provided to serve the affected location(s) from a functional hose station(s) or hydrant(s). Refer to Note 2.3 for additional guidance. AND		
						b.2	Restore to functional status.	b.2	Within 30 days.	

Note: The provisions of paragraph 4.6 SHALL be followed if the specified "Action Time" for ANY Item in the Table is exceeded.

**ADDENDUM I
FP/ASSS EQUIPMENT IMPAIRMENT CRITERIA
Page 4 of 23**

**SAO-703
REV 34**

DESCRIPTION	REQUIREMENT	APPLICABILITY	IMPAIRED CONDITION	REQUIRED ACTION	ACTION TIME!
4. Fire Hose Stations and Hydrants <i>Refer to Note 2.0 for additional guidance</i>	a. Fire hose stations and hydrants shown on Table I-4 shall be functional.	a. Whenever safety-related or safe-shutdown related equipment in the areas protected by the hose stations and hydrants is required to be operable.	a. Any fire hose station or hydrant listed on Table I-4 is impaired.	a.1 Additional fire hose(s) shall be provided and labled to serve the affected location(s) from an functional hose station(s) or hydrant(s). <i>Refer to Note 2.3 for additional guidance.</i> AND	a.1 Within 1 hour.
				a.2 The impaired equipment shall be restored to functional status.	a.2 Within 14 days.
				a.3 Verify additional compensatory fire hose is staged as required by a.1 above	a.3 Every 90 = 7 days
	b. Fire hose stations and hydrants on the high-pressure fire loop <u>other</u> than those shown on Table I-4 shall be functional. NOTE: The hose station on the roof of the FSB and the low-pressure hydrants in the City Water System are NOT INCLUDED in this functionality requirement.	b. Whenever equipment protected by the hose stations and hydrants in the area is required to be operable.	b. Any high-pressure fire hose station or hydrant <u>other</u> than those listed on Table I-4 is impaired.	b.1.a Establish a 4-hour fire watch tour to inspect the affected fire zone(s). CR	b.1 Within 8 hours.
				b.1.b If the affected zone is equipped with a fire detection system (see Tables I-1 and I-2), verify that the fire detection equipment in the zone is functional. CR	
				b.1.c Additional fire hose(s) shall be provided to serve the affected location(s) from a functional hose station(s) or hydrant(s). <i>Refer to Note 2.3 for additional guidance.</i> AND	
b.2 The impaired equipment shall be restored to functional status.	b.2 Within 30 days.				

Note: The provisions of paragraph 4.6 SHALL be followed if the specified "Action Time" for ANY Item in the Table is exceeded.

VERIFICATION OF COMPLETION

Job Performance Measure No.

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Initial Conditions:

- The unit is operating at 100% power
- Flushing of fire hydrants in the transformer yard is underway.
- #25 HP Hydrant and its associated PIV cannot be closed
- Water is not spraying on any electrical equipment.

Initiating Cue: You are the CRS and you have been directed to:

- determine the valves that must be closed to isolate the leaking hydrant
- identify affected components
- determine compensatory actions.

Facility: Indian Point Unit
2Task No: 2000240122Task Title: **Review a Liquid Radioactive Release for #13 Liquid Waste
Distillate Storage Tank**K/A Reference: 2.3.6
SRO 3.8Job Performance Measure
No: Admin 4

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X
Classroom X Simulator _____ Plant _____**READ TO THE EXAMINEE**

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- The Unit is operating at 100% power.
- Liquid Waste Distillate Storage Tank #13 is to be discharged, tank level, as reported by the NPO, is 97 inches.
- LWDST has been isolated.
- R-54 source check failed.
- 6 Circulating Water Pumps are operating at slow speed.
- No dilution flow is borrowed from Unit 3.
- A Manual Radioactive Liquid Release Permit was prepared.
- Additional Data:

Permit Number	070300
Tank ID	13 WDST
Initial Tank Level	97
Pre-release volume	22972
Recirculation Rate	150 gpm
Recirc Start-	Today 01:00
Recirc Stop	Today 05:45
Chem Sample Number	4807
Sample Date/Time	Today 05:30
Total Gamma Activity	4.0E-5
ADC	5.31E-7
ppm Boron in tank	849

Initiating Cue: You are the CRS and the SM has directed you to review the Manual Liquid Release Permit for 13 WDST in accordance with 2-SOP-5.1.5, Calculation and Recording of Radioactive Liquid Releases

Required Materials: Calculator

General References: 2-SOP-5.1.5, Calculation and Recording of Radioactive Liquid Releases

Time Critical Task: No

Validation Time: 30

Task Standard: Reviews manual calculation and identifies errors. Does not approve release.

Performance Information

(Denote critical steps with a check mark ✓)

1. Performance Step: Obtain Correct Procedure

Standard: Obtain 2-SOP-5.1.5, Calculation and Recording of Radioactive Liquid Releases

Comment: Give the candidate the procedure.

2. Performance Step: Review Precautions and Limitations

Standard: Reviews Precautions and Limitations

Comment:

✓ 3. Performance Step: Record the following

Standard: Permit Number
Tank to be released
Conservative estimate of volume to be released
Recirculation rate and date/time of recirculation start/stop
Radiochemistry analytical results
Sample Number
Sample Date/Time
Total Gamma Activity in $\mu\text{Ci/ml}$
Allowed Diluted Concentration
ppm Boron in the tank

Comment: Observing the NOTE before step 4.3.2.4 the candidate should determine that the tank has not been recirculated for adequate time. The tank should be recirculated for 306 minutes. It has only been recirculated for 285 minutes. The candidate must identify that the tank needs to be recirculate for an additional 21 minutes.

Performance Information

(Denote critical steps with a check mark \checkmark)

4. Performance Step: Verify from Chemistry the total gamma activity WITHOUT noble gas is less than $5.0E-5$ $\mu\text{Ci/ml}$.

Standard: Observes the value is $4.0E-5$ given in initial conditions

Comment:

5. Performance Step: Record the pre-determined dilution flow rate (B) for this release in gpm, from Step 4.1.5.

Standard: Records 504,000 based on 6 Circulator at low speed given in initial conditions.

Comment:

6. Performance Step: Calculate the pounds of Boron in tank AND Maximum Allowable Chemical Release Rate (Rc)

Standard: Determines 162.5 ± 0.5 is correct

Comment:

7 Performance Step: Calculate the Permissible Radioactive Release Rate (Rr)

Standard: Determines 6691 is correct

Comment:

Performance Information

(Denote critical steps with a check mark ✓)

8. Performance Step: Determine the most restrictive release rate

Standard: Determines 250 is correct

Comment:

✓ 9. Performance Step: Determine alarm settings if effluent radiation monitor is in service.

Standard: Determine effluent monitor is INOPERABLE per ODCM surveillance requirement 3.3.1.3.

Comment:

✓ 10. Performance Step: Does not approve release permit

Standard:

Comment:

Performance Information

(Denote critical steps with a check mark √)

√ 11. Performance Step: **Make recommendations**

Standard:

Tank must be recirculated for an additional 21 minutes to satisfy 306 minutes.

Verify compensatory actions for inoperable radiation monitor

- **Two grab samples must be obtained after required recirc time**
- **Two double verified valve line ups SHALL be documented on photocopy of this Section AND photocopy of Section 4.12(2-SOP-5.1.3) to be forwarded to CCR for attachment to Liquid Radioactive Release Permit for this release.**
- **Double verify release calculation**
- **An NPO SHOULD be present on the Support Facility Nuclear Side throughout the discharge**

Comment: **The first three compensatory actions are required. The third action is a "should" perform thus not required and NOT critical.**

Terminating Cue: JPM Complete

CALCULATION AND RECORDING OR RADIOACTIVE LIQUID RELEASES

No: 2-SOP-5.1.5

Rev: 38

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ATTACHMENT 1 EXAMPLE RADIOACTIVE LIQUID RELEASE PERMIT (Page 1 of 1)

PERMIT # 07300 TANK ID 13 WDST INITIAL Tank Level: 97 (Inches) 22972 Volume (V), gal

RECIRC RATE: 150 gpm Recirc Start: Today (Date) 01:00 (Time)
 Recirc Stop: Today (Date) 05:45 (Time)

Chemistry Sample No. 4807 Sample Collection: Today (Date) 05:30 (Time)

Gamma Activity without Gas and Tritium is less than the admin limit of SMM-CY-001: Yes / No

Total Gamma Activity 4.0E-5 µCi/ml Allowed Diluted Concentration (ADC) 5.31E-7 µCi/ml

TOTAL DILUTION FLOW (T) 504,000 (GPM) From: 6 Unit 2 Circulators
0 Unit 3 Circulators
0 Service Water Pumps

BORON: $\frac{849}{\text{ppm B}} \times \frac{22972}{\text{tank vol (V), gal}} \times 8.33\text{E-6} = \underline{162.5 \pm .5}$ pounds

Maximum Chemical Release Rate (Rc) = $(\frac{504,000}{\text{Avail Dil Flow (B), gpm}} \times 1 \text{ ppm}) \div \frac{849}{\text{ppm B}} = \underline{593.6 \pm .5}$ gpm

Radioactive Release Rate: $(R_r) = (\frac{504,000}{\text{Avail Dil Flow (B), gpm}} \times \frac{5.31 \text{ E-7}}{\text{ADC, uCi/ml}}) + \frac{4.0\text{E-5}}{\text{Gamma Act (C), uCi/ml}} = \underline{6691}$ gpm

Most Restrictive Release Rate (R) = 250 gpm (pump capacity most limiting)

Rad Monitor # 54 SOURCE CHECKED X OPERABLE X YES NO (IF NO, COMPLETE ATT 3)

Maximum Alarm Setpoint = $(\frac{504,000}{\text{Avail Dil Flow (B), gpm}} \times \frac{5.31 \text{ E-7}}{\text{ADC, uCi/ml}}) + \frac{250}{\text{Most Restrictive Release Rate (R), gpm}} = \underline{1.07\text{E-3}}$ uCi/ml

Actual Alarm Setpoint = 4.0E-5 uCi/ml Warn Setpoint = 3.0E-5

DISCHARGE FLOW METER & RECORDER OPERABLE X YES NO (IF NO, COMPLETE ATTACHMENT 3)

Release Authorized By: _____ (I) _____ (T)
 RELEASE INITIATED: _____ (Date) _____ (Time)
 RELEASE TERMINATED: _____ (Date) _____ (Time)

FINAL TK LEVEL: _____ (Inches) _____ gal TOTAL VOLUME RELEASED _____ gal

Remarks:

Recirc time is inadequate it should be 306 minutes (5 hours and 6 minutes) Sample time too early

The initial conditions identified R-54 source check failure i.e., INOPERABLE Also need Attachment 3

VERIFICATION OF COMPLETION

Job Performance Measure No.

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Initial Conditions:

- The Unit is operating at 100% power.
- Liquid Waste Distillate Storage Tank #13 is to be discharged, tank level, as reported by the NPO, is 97 inches.
- LW DST has been isolated.
- R-54 source check failed.
- 6 Circulating Water Pumps are operating at slow speed.
- No dilution flow is borrowed from Unit 3.
- A Manual Radioactive Liquid Release Permit was prepared.
- Additional Data:

Permit Number	070300
Tank ID	13 WDST
Initial Tank Level	97
Pre-release volume	22972
Recirculation Rate	150 gpm
Recirc Start-	Today 01:00
Recirc Stop	Today 05:45
Chem Sample Number	4807
Sample Date/Time	Today 05:30
Total Gamma Activity	4.0E-5
ADC	5.31E-7
ppm Boron in tank	849

Initiating Cue:

You are the CRS and the SM has directed you to review the Manual Liquid Release Permit for 13 WDST in accordance with 2-SOP-5.1.5, Calculation and Recording of Radioactive Liquid Releases. Recommend corrective actions if necessary.

CALCULATION AND RECORDING OR RADIOACTIVE LIQUID RELEASES

No: 2-SOP-5.1.5

Rev: 38

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ATTACHMENT 1 EXAMPLE RADIOACTIVE LIQUID RELEASE PERMIT (Page 1 of 1)

PERMIT # <u>070300</u>	TANK ID <u>13 WDST</u>	INITIAL	Tank Level: <u>97</u> (Inches)	Volume (V), gal <u>22972</u>
RECIRC RATE: <u>150</u> gpm	Recirc Start: <u>Today</u> (Date) <u>01:00</u> (Time)		Recirc Stop: <u>Today</u> (Date) <u>05:45</u> (Time)	
Chemistry Sample No. <u>4807</u>	Sample Collection: <u>Today</u> (Date) <u>05:30</u> (Time)			
Gamma Activity without Gas and Tritium is less than the admin limit of SMM-CY-001: <u>Yes</u> / No				
Total Gamma Activity <u>4.0E-5</u> µCi/ml	Allowed Diluted Concentration (ADC) <u>5.31E-7</u> µCi/ml			
TOTAL DILUTION FLOW (T) <u>504,000</u> (GPM)	From:	<u>6</u> Unit 2 Circulators	<u>0</u> Unit 3 Circulators	<u>0</u> Service Water Pumps
BORON:	$\frac{849}{\text{ppm B}} \times \frac{22972}{\text{tank vol (V), gal}} \times 8.33\text{E-6} =$	<u>162.5 ± .5</u> pounds		
Maximum Chemical Release Rate (Rc) =	$(\frac{504,000}{\text{Avail Dil Flow (B), gpm}} \times 1 \text{ ppm}) + \frac{849}{\text{ppm B}} =$	<u>593.6 ± .5</u> gpm		
Radioactive Release Rate: (Rr) =	$(\frac{504,000}{\text{Avail Dil Flow (B), gpm}} \times \frac{5.31 \text{E-7}}{\text{ADC, uCi/ml}}) + \frac{4.0\text{E-5}}{\text{Gamma Act (C), uCi/ml}} =$	<u>6691</u> gpm		
Most Restrictive Release Rate (R) =	<u>250</u> gpm	(pump capacity most limiting)		
Rad Monitor # <u>54</u>	SOURCE CHECKED <input checked="" type="checkbox"/>	OPERABLE <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NO (IF NO, COMPLETE ATT 3)
Maximum Alarm Setpoint =	$(\frac{504,000}{\text{Avail Dil Flow (B), gpm}} \times \frac{5.31 \text{E-7}}{\text{ADC, uCi/ml}}) + \frac{250}{\text{Most Restrictive Release Rate (R), gpm}} =$	<u>1.07E-3</u> uCi/ml		
Actual Alarm Setpoint =	<u>4.0E-5</u> uCi/ml	Warn Setpoint =	<u>3.0E-5</u> uCi/ml	
DISCHARGE FLOW METER & RECORDER OPERABLE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (IF NO, COMPLETE ATTACHMENT 3)				
Release Authorized By: _____ (Date)				
RELEASE INITIATED: _____ (Date) _____ (Time)				
RELEASE TERMINATED: _____ (Date) _____ (Time)				
FINAL TK LEVEL: _____ (Inches)	_____ gal	TOTAL VOLUME RELEASED	_____ gal	
Remarks:				

Facility : Indian Point
Unit 2

Task No: 1500010522

Task Title: **Classify Emergency Events Requiring Emergency Plan Implementation (Time Critical)**

K/A Reference: 2.4.38 Job Performance Measure No: SRO Admin 5
SRO - 4.4

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance	X	Actual Performance
Classroom	<u>X</u>	Plant
	Simulator	

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:**The Current Time Is 0223****The Unit was operating at 100% power****At 0200**

- A small feedwater break occurred on the suction to 21 MBFP
- The crew attempted to trip the reactor, but the reactor trip breakers failed to open
- The crew is performing actions in FR-S.1, Response to Nuclear Power Generation/ATWS
- The Turbine ws Tripped
- Reactor Power is 42% and lowering.

At 0204

- Both Main Boiler Feed Pumps were tripped
- All AFW Pumps started

At 0206

- Conventional NPO reports that he is unable to trip the reactor locally.

At 0210

- A steam break occurs upstream of PCV-1139, 22 AFW Pump Steam Supply Pressure Control Valve
- All Wide Range levels are 45% and lowering

At 0217

- The harsh environment in the ABFP room caused both Motor Driven AFW Pumps to trip.

At 0223 (NOW)

- The conventional NPO reports that the Rod Drive MG Sets are secured and the reactor is tripped

Meteorological Conditions:

- Wind Speed: 2.2 meters/second
- Wind Direction: 55 degrees @ 10 meters
- Stability Class: B

Initiating Cue:

You are the CRS and the SM is unable to get to the control room. Classify the event and complete the Radiological Emergency Data Form.

Required Materials: EAL Wall Chart.

General References: IP-EP-115
IP-EP-120
IP-EP-210
IP-EP-410

Time Critical Task: Yes (Declare event in 15 minutes and Initiate notification
within 15 minutes of declaration)

Validation Time: 30 min

Task Standard: Proper E-Plan Classification and Part 1 form properly filled out .

Performance Information

(Denote critical steps with a check mark √)

1. Performance Step: Obtain correct procedure IP-EP-120 or EAL chart

Standard: Give candidate Wall Chart

Comment:

√ 2. Performance Step: Evaluate Initiating Cues to determine a GE classification applies.

Standard: GENERAL EMERGENCY
EAL# SG2.1

Comment: This action is time critical Mark Time when Declaration is made.

√ 3. Performance Step: Complete "New York State Radiological Emergency Data Form, Part 1"

Standard: Complete IP-EP-115

Comment: Critical elements on Part 1 form are marked with an asterisk

√ 4. Performance Step: Direct Communicator to initiate notification.

Standard: Hand completed Part 1 form to evaluator and direct them to initiate notification.

CUE: Acknowledge direction to initiate notification.

Comment: This action is time critical.

Terminating Cue: JPM Complete

New York State Indian Point Energy Center RADIOLOGICAL EMERGENCY DATA FORM - PART 1		Notification # 1
1.	This is an: <u>EXERCISE</u> ACTUAL EMERGENCY at the Indian Point Energy Center	
2.	The Emergency Classification is: A. Unusual Event B. Alert C. Site Area Emergency D. General Emergency * E. Emergency Terminated This Emergency Classification declared on: <u>TODAY</u> at <u>CURRENT TIME</u> * (Date) (Time 24 hr clock)	
3.	Release of Radioactive Materials due to the Classified Event: To Atmosphere: A. NO Release * B. Release BELOW Federal Limits C. Release ABOVE Federal Limits D. Unmonitored Release Requiring Evaluation To Water: A. NO Release * B. Release BELOW Federal Limits C. Release ABOVE Federal Limits D. Unmonitored Release Requiring Evaluation	
4.	The following Protective Actions are recommended to be implemented as soon as practicable: A. NO NEED for PROTECTIVE ACTIONS outside the site boundary B. EVACUATE and IMPLEMENT the KI PLAN for the following Sectors * C. SHELTER-IN-PLACE and IMPLEMENT the KI PLAN for the following Sectors 2 miles around 5-miles downwind: In the following Sectors: 1 2 3 4 5 6 7 * 8 * 9 * 10 * 11 * 12 13 14 15 16 2 miles around 10-miles downwind: In the following Sectors: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 All remaining Areas MONITOR the EMERGENCY ALERT SYSTEM NOTE: OFFSITE AUTHORITIES SHOULD CONSIDER SHELTER-IN-PLACE + TAKE KI IF EVACUATION IS NOT FEASIBLE	
5.	EAL#: <u>SG2.1</u> Failure of automatic and all manual trip signals to reduce power range < 5% * AND Actual or imminent conditions requiring entry into TREN path in FD.3 HEAT SINK	Affected Location: A. UNIT 2 * B. UNIT 3 C. IPEC SITE
6.	Reactor Status: Unit 2: Operational or Shutdown at (Date) <u>TODAY</u> (Time) <u>0023</u> (24 hr clock) Unit 3: Operational or Shutdown at (Date) _____ (Time) _____ (24 hr clock)	
7.	Wind Speed: <u>2.2</u> Meters/Sec at elevation 10 meters	
8.	Wind Direction: (From) <u>55</u> Degrees at elevation 10 meters	
9.	Stability Class: A <u>B</u> C D E F G	
10.	Reported by - Communicator: _____ Telephone # _____ (Communicator's Name)	
11.	Emergency Director Approval: <u>Signature</u> Date/Time: <u>TODAY CURRENT TIME</u> (Director's Name)	

VERIFICATION OF COMPLETION

Job Performance Measure No.

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to complete:

Question Documentation:

Question:

Response:

Result: SAT or UNSAT

Examiner's signature and date: _____

Initial Conditions:

The Current Time Is 0223

The Unit was operating at 100% power

At 0200

- **A small feedwater break occurred on the suction to 21 MBFP**
- **The crew attempted to trip the reactor, but the reactor trip breakers failed to open**
- **The crew is performing actions in FR-S.1, Response to Nuclear Power Generation/ATWS**
- **The Turbine ws Tripped**
- **Reactor Power is 42% and lowering.**

At 0204

- **Both Main Boiler Feed Pumps were tripped**
- **All AFW Pumps started**

At 0206

- **Conventional NPO reports that he is unable to trip the reactor locally.**

At 0210

- **A steam break occurs upstream of PCV-1139, 22 AFW Pump Steam Supply Pressure Control Valve**
- **All Wide Range levels are 45% and lowering**

At 0217

- **The harsh environment in the ABFP room caused both Motor Driven AFW Pumps to trip.**

At 0223 (NOW)

- **The conventional NPO reports that the Rod Drive MG Sets are secured and the reactor is tripped**

Meteorological Conditions:

- **Wind Speed: 2.2 meters/second**
- **Wind Direction: 55 degrees @ 10 meters**
- **Stability Class: B**

Initiating Cue:

You are the CRS and the SM is unable to get to the control room. Classify the event and complete the Radiological Emergency Data Form.