

Facility: <u>Vogtle 1 & 2</u>		Date of Examination: <u>04/15/2013</u>
Examination Level: RO <input checked="" type="checkbox"/> SRO		Operating Test Number: <u>2013-301</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, M	<p>V-NRC-JP-14915-HL18</p> <p>Calculate Quadrant Power Tilt Ratio</p> <p>Description: With data provided, candidate will perform 14915-1, Data Sheet 7, for QPTR monitoring.</p> <p>G2.1.7 (4.4 / 4.7)</p>
Conduct of Operations	R, M	<p>V-NRC-JP-00012-HL18</p> <p>Identify On-Shift Manning Requirements for Conditions Provided</p> <p>Description: Candidate will determine if the minimum on-shift staffing requirements are met and will determine if a crew member can fulfill two specific ERO positions.</p> <p>G2.1.5 (2.9* / 3.9)</p>
Equipment Control	R, N	<p>V-NRC-JP-14825-HL18</p> <p>Evaluate Surveillance Test Data</p> <p>Description: Candidate will evaluate quarterly valve test surveillance data and determine if the required acceptance criteria are met.</p> <p>G2.2.12 (3.7 / 4.1)</p>
Radiation Control	R, D, P	<p>V-NRC-JP-00930-HL18</p> <p>Proper RWP Implementation</p> <p>Description: Candidate will determine proper protective clothing requirements, projected dose, and whether the RWP is appropriate for the job task.</p> <p>G2.3.7 (3.5 / 3.6)</p>
Emergency Procedures/Plan	N/A	N/A
<p>NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.</p>		

* Type Codes & Criteria:

(C)ontrol room, (S)imulator, or Class(R)oom

(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)

(N)ew or (M)odified from bank (≥ 1)

(P)revious 2 exams (≤ 1 ; randomly selected)

Facility: <u>Vogtle 1 & 2</u>		Date of Examination: <u>04/15/2013</u>
Examination Level: RO	SRO <input checked="" type="checkbox"/> SROU <input checked="" type="checkbox"/>	Operating Test Number: <u>2013-301</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, M	<p>V-NRC-JP-14915-HL18</p> <p>Evaluate Quadrant Power Tilt Ratio</p> <p>Description: With data provided, candidate will perform 14915-1, Data Sheet 7, for QPTR monitoring, evaluate data, and take appropriate action.</p> <p>G2.1.7 (4.4 / 4.7)</p>
Conduct of Operations	R, M	<p>V-NRC-JP-00012-HL18</p> <p>Evaluate On-Shift Manning Requirements for Conditions Provided</p> <p>Description: Candidate will determine if the minimum on-shift staffing requirements are met and identify required actions any time minimum staffing requirements are not met.</p> <p>G2.1.5 (2.9* / 3.9)</p>
Equipment Control	R, N	<p>V-NRC-JP-14825-HL18</p> <p>Evaluate Surveillance Test Data</p> <p>Description: Candidate will evaluate quarterly valve test surveillance data, determine if the required acceptance criteria are met, and specify Technical Specification required actions.</p> <p>G2.2.12 (3.7 / 4.1)</p>
Radiation Control	R, D, P	<p>V-NRC-JP-00930-HL18</p> <p>Proper RWP Implementation</p> <p>Description: Candidate will determine proper protective clothing requirements, projected dose, and whether the RWP is appropriate for the job task.</p> <p>G2.3.7 (3.5 / 3.6)</p>

NRC RO Job Performance Measure "a"

Facility: Vogtle

Task No: V-LO-TA-17007

Task Title: Calculate Quadrant Power Tilt Ratio

JPM No: V-NRC-JP-14915-HL18

K/A Reference: G2.1.7 RO 4.4 SRO 4.7

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ 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: Unit 1 is at 100% RTP.

Annunciator ALB10-E06, RADIAL TILT, is lit.

I&C reports that the Quadrant Power Tilt Monitor alarm is inoperable.

Initiating Cue: The Shift Supervisor has directed you to, "Perform 14915-1, 'Special Conditions Surveillance Logs', for QPTR Monitoring, including the completion of Section 7.0, Evaluation and Review, using the following provided data".

NI Channel	Detector	Current
1NI-41	A	409 mA
1NI-42	A	380 mA
1NI-43	A	450 mA
1NI-44	A	415 mA
1NI-41	B	435 mA
1NI-42	B	395 mA
1NI-43	B	460 mA
1NI-44	B	425 mA

Task Standard: QPTR calculation per 14915-1, Data Sheet 7, performed correctly.

Required Materials: 14915-1, "Special Condition Surveillance Logs"
Unit 1 Plant Technical Data Book, Tab 5.0 (rev. 150)
Calculator
Red Ink Pen, if requested

General References: None

Time Critical Task: No

Validation Time: 12 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

DATA SHEET 7

Sheet 1 of 2

QUADRANT POWER TILT RATIO

NOTES

- The arrangement of the NI rack layout is Channel I, II, IV, and III.
- If ALB 10 D02 or E02 annunciate and power is less than 50% performance of this data sheet is not required.
- If ALB 10 E06 annunciates and power is less than 10% performance of this data sheet is not required.
- Prior to taking readings from the upper and lower detector meters, change scales on the RANGE MILLI-AMPS Switch and then return it to its original position. This will wipe the switch contacts giving a more accurate reading.

1. Calculate and record Quadrant Power Tilt Ratio at least once per 12 hours using Sheet 2. PC based spreadsheet may be used for QPTR calculation if normalization factors used are verified current with the PTDB Tab 5.0 revision. If performing a manual calculation, compare PTDB Tab 5.0 with the PC Spreadsheet (if the PC is available) to verify normalization factors.

Standard: Candidate reviews NOTES and step. PC Spreadsheet is not available.

Comment:

-
2. With one Power Range NI inoperable, obtain TILT DEVIATION from Reactor Engineering as determined from moveable incore detectors and verify it is within ± 0.02 of QPTR obtained from the operable power range NIs. (Use avg and max of 3 operable NIs)

Standard: Candidate reviews step. No Power Range NI is inoperable.

Comment:

NOTE

A Fluke 8050A Digital Multimeter may be used to obtain more accurate current values for calculation of QPTR.

3. If a Fluke 8050A Digital Multimeter will be used to obtain current values from the NI Drawer, record instrument information below.

Instrument ID No. _____

Cal Due Date _____

Standard: Candidate reviews step. A Multimeter will not be used.

Comment:

-
- * 4. Verify Quadrant Power Tilt Ratio is less than or equal to 1.02.**

Standard: Candidate verifies the calculated Quadrant Power Tilt Ratio value is greater than 1.02 by correctly completing Sheet 2 of Data Sheet 7.

Comment:

-
- * 5. With Quadrant Power Tilt Ratio greater than 1.02, initiate action in accordance with Technical Specification LCO 3.2.4 and continue to calculate and record QPTR once every 12 hours on sheet 2.**

Standard: Section 7.0, Evaluation and Review, is correctly completed to notify the Shift Supervisor that the calculated Quadrant Power Tilt Ratio exceeds the Technical Specification limit.

Comment:

Terminating cue: Candidate returns initiating cue sheet.

(ANSWER KEY – DO NOT PROVIDE TO CANDIDATES)

DATA SHEET 7

Sheet 2 of 2

DATE _____

TIME _____

NI Channel	Detector	Current	Factor*
41	A	<u>409 mA</u> x <u>1.131</u>	= <u>462.579</u> (1)
42	A	<u>380 mA</u> x <u>1.129</u>	= <u>429.020</u> (1)
43	A	<u>450 mA</u> x <u>1.020</u>	= <u>459.000</u> (1)
44	A	<u>415 mA</u> x <u>1.103</u>	= <u>457.745</u> (1)
			Avg = <u>452.086</u> (1)

$$\text{QPTR (Upper)} = \frac{\text{Max(upper)}}{\text{Avg(upper)}} = \underline{1.02} \text{ (2)}$$

NI Channel	Detector	Current	Factor*
41	B	<u>435 mA</u> x <u>1.077</u>	= <u>468.495</u> (1)
42	B	<u>395 mA</u> x <u>1.090</u>	= <u>430.550</u> (1)
43	B	<u>460 mA</u> x <u>1.000</u>	= <u>460.000</u> (1)
44	B	<u>425 mA</u> x <u>1.060</u>	= <u>450.500</u> (1)
			Avg = <u>452.386</u> (1)

$$\text{QPTR (Lower)} = \frac{\text{Max(lower)}}{\text{Avg(lower)}} = \underline{1.04} \text{ (2)}$$

$$\text{QPTR} = \text{Max of QPTR(upper) or QPTR(lower)} = \underline{1.04}$$

$$\text{TILT DEVIATION} = \underline{\text{N/A}}$$

(from Reactor Engineering if applicable)

COMPLETED BY Candidate

Shift Supervisor Review: _____ / _____ / _____
Initial Date Time

*Factor = Normalization Factor from Plant Technical Data Book tab 5.0

Note 1 = Calculations should be performed to 3 decimal places

Note 2 = Round to 2 decimal places (if the 3rd decimal is ≥ 5 round up, if 3rd decimal is < 5 , round down)

(ANSWER KEY – DO NOT PROVIDE TO CANDIDATES)

7.0 EVALUATION AND REVIEW

7.1 TEST PURPOSE

Special Condition(s):

Quadrant Power Tilt Monitor alarm is inoperable

Data Sheet(s) completed (Circle Appropriate Sheets):

1 2 3 4a 4b 5 6 7 8 9 10 11 12 13 14 15 16 17 18

7.2 Results obtained through the performance of this procedure meet the ACCEPTANCE CRITERIA of Section 6.0.

☐ YES

☒ NO

7.3 IF no was checked, immediately notify the SS and initiate action in accordance with the actions specified on the data sheet(s) not meeting the acceptance criteria.

7.4 Comments (include any abnormal conditions and corrective actions taken):

Lower QPTR exceeds 1.02

Test Completed and SS Notified:

Supervisory Review:

Signature

Date

Time

Verification of Completion

Job Performance Measure No: V-NRC-JP-14915-HL18

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Initial Conditions: Unit 1 is at 100% power.

Annunciator ALB10-E06, RADIAL TILT, is lit.

I&C reports that the Quadrant Power Tilt Monitor alarm is inoperable.

Initiating Cue: The Shift Supervisor has directed you to, "Perform 14915-1, 'Special Conditions Surveillance Logs', for QPTR Monitoring, including the completion of Section 7.0, Evaluation and Review, using the following provided data.

NI Channel	Detector	Current
1NI-41	A	409 mA
1NI-42	A	380 mA
1NI-43	A	450 mA
1NI-44	A	415 mA
1NI-41	B	435 mA
1NI-42	B	395 mA
1NI-43	B	460 mA
1NI-44	B	425 mA

NRC SRO Job Performance Measure "a"

Facility: Vogtle

Task No: V-LO-TA-17007

Task Title: Evaluate Quadrant Power Tilt Ratio

JPM No: V-NRC-JP-14915-HL18

K/A Reference: G2.1.7 RO 4.4 SRO 4.7

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ 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: Unit 1 is at 100% RTP.

Annunciator ALB10-E06, RADIAL TILT, is lit.

I&C reports that the Quadrant Power Tilt Monitor alarm is inoperable.

Initiating Cue: The Shift Supervisor has directed you to, "Perform 14915-1, 'Special Conditions Surveillance Logs', for QPTR Monitoring, including the completion of Section 7.0, Evaluation and Review, using the following provided data".

NI Channel	Detector	Current
1NI-41	A	409 mA
1NI-42	A	380 mA
1NI-43	A	450 mA
1NI-44	A	415 mA
1NI-41	B	435 mA
1NI-42	B	395 mA
1NI-43	B	460 mA
1NI-44	B	425 mA

Based on the results of the surveillance, is any Technical Specification LCO NOT met?

If any Technical Specification LCO is NOT met, THEN determine all Technical Specification REQUIRED ACTIONS, if any, for the given plant conditions.

Task Standard: QPTR calculation per 14915-1, Data Sheet 7, performed correctly and evaluated for Tech Spec applicable actions.

Required Materials: 14915-1, "Special Condition Surveillance Logs"
Unit 1 Plant Technical Data Book, Tab 5.0 (rev. 150)
Tech Specs and Tech Spec Bases
Calculator
Red Ink Pen, if requested

General References: None

Time Critical Task: No

Validation Time: 16 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

DATA SHEET 7

Sheet 1 of 2

QUADRANT POWER TILT RATIO

NOTES

- The arrangement of the NI rack layout is Channel I, II, IV, and III.
- If ALB 10 D02 or E02 annunciate and power is less than 50% performance of this data sheet is not required.
- If ALB 10 E06 annunciates and power is less than 10% performance of this data sheet is not required.
- Prior to taking readings from the upper and lower detector meters, change scales on the RANGE MILLI-AMPS Switch and then return it to its original position. This will wipe the switch contacts giving a more accurate reading.

1. Calculate and record Quadrant Power Tilt Ratio at least once per 12 hours using Sheet 2. PC based spreadsheet may be used for QPTR calculation if normalization factors used are verified current with the PTDB Tab 5.0 revision. If performing a manual calculation, compare PTDB Tab 5.0 with the PC Spreadsheet (if the PC is available) to verify normalization factors.

Standard: Candidate reviews NOTES and step. PC Spreadsheet is not available.

Comment:

-
2. With one Power Range NI inoperable, obtain TILT DEVIATION from Reactor Engineering as determined from moveable incore detectors and verify it is within ± 0.02 of QPTR obtained from the operable power range NIs. (Use avg and max of 3 operable NIs)

Standard: Candidate reviews step. No Power Range NI is inoperable.

Comment:

NOTE

A Fluke 8050A Digital Multimeter may be used to obtain more accurate current values for calculation of QPTR.

3. If a Fluke 8050A Digital Multimeter will be used to obtain current values from the NI Drawer, record instrument information below.

Instrument ID No. _____

Cal Due Date _____

Standard: Candidate reviews step. A Multimeter will not be used.

Comment:

-
- * 4. Verify Quadrant Power Tilt Ratio is less than or equal to 1.02.**

Standard: Candidate verifies the calculated Quadrant Power Tilt Ratio value is greater than 1.02 by correctly completing Sheet 2 of Data Sheet 7.

Comment:

-
- * 5. **With Quadrant Power Tilt Ratio greater than 1.02, initiate action in accordance with Technical Specification LCO 3.2.4** and continue to calculate and record QPTR once every 12 hours on sheet 2.

The Technical Specification LCO 3.2.4 REQUIRED ACTION for QPTR > 1.02 is to limit THERMAL POWER to $\geq 3\%$ below RTP for each 1% of QPTR > 1.00 within 2 hours. **With calculated QPTR = 1.04, a power reduction to at least 12% below RTP (88%) is required.**

NOTE TO EXAMINER: LCO 3.2.4 includes additional required actions to perform periodic manual QPTR calculations and to perform other surveillances after the thermal power reduction. These actions are NOT necessary to successfully complete the critical step, which is to “initiate action in accordance with Technical Specification LCO 3.2.4”.

Standard: **Candidate determines the required power reduction to be initiated.**

Comment:

Terminating cue: Candidate returns initiating cue sheet.

3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT RATIO (QPTR)

LCO 3.2.4 The QPTR shall be ≤ 1.02 .

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. <u>NOTE</u> Required Action A.6 must be completed whenever Required Action A.5 is implemented.</p> <hr/> <p>QPTR not within limit.</p>	A.1 Limit THERMAL POWER to $\geq 3\%$ below RTP for each 1% of QPTR > 1.00.	2 hours
	<u>AND</u>	
	A.2.1 Perform SR 3.2.4.1.	Once per 12 hours
	<u>AND</u>	
	A.2.2 Limit THERMAL POWER to $\geq 3\%$ below RTP for each 1% QPTR > 1.00.	<p><u>NOTE</u> For performances of Required Action A.2.2 the Completion Time is measured from the completion of SR 3.2.4.1.</p> <hr/> <p>2 hours</p>
	<u>AND</u>	
	A.3 Perform SR 3.2.1.1 and SR 3.2.2.1.	<p>Within 24 hours after achieving equilibrium conditions with THERMAL POWER limited by Required Actions A.1 and A.2.2</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<u>AND</u>	<u>AND</u> Once per 7 days thereafter
	A.4 Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1 and A.2.2
	<u>AND</u>	
	A.5 <u>NOTE</u> Perform Required Action A.5 only after Required Action A.4 is completed. Calibrate excore detectors to show QPTR = 1.00.	Prior to increasing THERMAL POWER above the limit of Required Action A.1 and A.2.2
	<u>AND</u>	(continued)
A. (continued)	A.6 <u>NOTE</u> Perform Required Action A.6 only after Required Action A.5 is completed.	
	Perform SR 3.2.1.1 and SR 3.2.2.1.	<u>NOTE</u> Only one of the following Completion Times, whichever becomes applicable first, must be met. Within 24 hours after reaching RTP <u>OR</u> Within 48 hours after increasing THERMAL POWER above the limit of Required Action A.1 and A.2.2

(ANSWER KEY – DO NOT PROVIDE TO CANDIDATES)

DATA SHEET 7

Sheet 2 of 2

DATE _____

TIME _____

NI Channel	Detector	Current	Factor*
41	A	<u>409 mA</u> x <u>1.131</u>	= <u>462.579</u> (1)
42	A	<u>380 mA</u> x <u>1.129</u>	= <u>429.020</u> (1)
43	A	<u>450 mA</u> x <u>1.020</u>	= <u>459.000</u> (1)
44	A	<u>415 mA</u> x <u>1.103</u>	= <u>457.745</u> (1)
			Avg = <u>452.086</u> (1)

$$\text{QPTR (Upper)} = \frac{\text{Max(upper)}}{\text{Avg(upper)}} = \frac{1.02}{1} = \underline{1.02} \text{ (2)}$$

NI Channel	Detector	Current	Factor*
41	B	<u>435 mA</u> x <u>1.077</u>	= <u>468.495</u> (1)
42	B	<u>395 mA</u> x <u>1.090</u>	= <u>430.550</u> (1)
43	B	<u>460 mA</u> x <u>1.000</u>	= <u>460.000</u> (1)
44	B	<u>425 mA</u> x <u>1.060</u>	= <u>450.500</u> (1)
			Avg = <u>452.386</u> (1)

$$\text{QPTR (Lower)} = \frac{\text{Max(lower)}}{\text{Avg(lower)}} = \frac{1.04}{1} = \underline{1.04} \text{ (2)}$$

$$\text{QPTR} = \text{Max of QPTR(upper) or QPTR(lower)} = \underline{1.04}$$

TILT DEVIATION = N/A
(from Reactor Engineering if applicable)

COMPLETED BY Candidate

Shift Supervisor Review: _____ / _____ / _____
Initial Date Time

*Factor = Normalization Factor from Plant Technical Data Book tab 5.0

Note 1 = Calculations should be performed to 3 decimal places

Note 2 = Round to 2 decimal places (if the 3rd decimal is ≥ 5 round up, if 3rd decimal is < 5 , round down)

(ANSWER KEY – DO NOT PROVIDE TO CANDIDATES)

7.0 EVALUATION AND REVIEW

7.1 TEST PURPOSE

Special Condition(s):

Quadrant Power Tilt Monitor alarm is inoperable

Data Sheet(s) completed (Circle Appropriate Sheets):

1 2 3 4a 4b 5 6 7 8 9 10 11 12 13 14 15 16 17 18

**7.2 Results obtained through the performance of this procedure meet the
ACCEPTANCE CRITERIA of Section 6.0.**

☐ YES

☒ NO

**7.3 IF no was checked, immediately notify the SS and initiate action in
accordance with the actions specified on the data sheet(s) not meeting the
acceptance criteria.**

7.4 Comments (include any abnormal conditions and corrective actions taken):

Lower QPTR exceeds 1.02

Test Completed and SS Notified: _____

Supervisory Review: _____

Signature

Date

Time

Verification of Completion

Job Performance Measure No: V-NRC-JP-14915-HL18

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Initial Conditions: Unit 1 is at 100% RTP.

Annunciator ALB10-E06, RADIAL TILT, is lit.

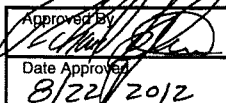

I&C reports that the Quadrant Power Tilt Monitor alarm is inoperable.

Initiating Cue: The Shift Supervisor has directed you to, "Perform 14915-1, 'Special Conditions Surveillance Logs', for QPTR Monitoring, including the completion of Section 7.0, Evaluation and Review, using the following provided data.

NI Channel	Detector	Current
1NI-41	A	409 mA
1NI-42	A	380 mA
1NI-43	A	450 mA
1NI-44	A	415 mA
1NI-41	B	435 mA
1NI-42	B	395 mA
1NI-43	B	460 mA
1NI-44	B	425 mA

Based on the results of the surveillance, is any Technical Specification LCO NOT met?

If any Technical Specification LCO is NOT met, THEN determine all Technical Specification REQUIRED ACTIONS, if any, for the given plant conditions.

Approved By: 	Vogtle Electric Generating Plant 	TAB NO. 5.0	Rev 150
Date Approved: 8/22/2012	Plant Technical Data Book	Unit 1	Page Number 1 of 1

NI NORMALIZATION

POWER RANGE DETECTOR NORMALIZATION FACTORS

UNIT 1


CYCLE 17

CHANNEL	DETECTOR A (TOP)	DETECTOR B (BOTTOM)
N41	1.131	1.077
N42	1.129	1.090
N43	1.020	1.000
N44	1.103	1.060

COMPLETED BY:  8/21/12
 REVIEWED BY:  8/21/12
 Signature Date

* Software Change Required per 10023-C

** Current 88023-C DATA SHEET 4 data may be used in lieu of TAB 5.0 data until TAB 5.0 is updated, if necessary.

Approved By S. E. Prewitt	Vogle Electric Generating Plant 	Procedure Number Rev 14915-1 47.4
Date Approved 3/25/2010	SPECIAL CONDITIONS SURVEILLANCE LOGS	Page Number 21 of 39

DATA SHEET 7

Sheet 1 of 2

QUADRANT POWER TILT RATIO

NOTES

- The arrangement of the NI rack layout is Channel I, II, IV and III.
- If ALB 10 D02 or E02 annunciate and power is less than 50% performance of this data sheet is not required.
- If ALB 10 E06 annunciates and power is less than 10% performance of this data sheet is not required.
- Prior to taking readings from the upper and lower detector meters, change scales on the RANGE MILLI-AMPS Switch and then return it to its original position. This will wipe the switch contacts giving a more accurate reading.

1. **Calculate** and **record** Quadrant Power Tilt Ratio at least once per 12 hours using Sheet 2. PC based spreadsheet may be used for QPTR calculation if normalization factors used are verified current with the PTDB Tab 5.0 revision. If performing a manual calculation, **compare** PTDB Tab 5.0 with the PC Spreadsheet (if the PC is available) to **verify** normalization factors.
2. With one Power Range NI inoperable, **obtain** TILT DEVIATION from Reactor Engineering as determined from moveable incore detectors and **verify** it is within ± 0.02 of QPTR obtained from the operable power range NIs. (Use avg and max of 3 operable NIs).

NOTE


A Fluke 8050A Digital Multimeter may be used to obtain more accurate current values for calculation of QPTR.

3. If a Fluke 8050A Digital Multimeter will be used to **obtain** current values from the NI Drawer, **record** instrument information below.

Instrument ID No. _____

Cal Due Date _____

4. **Verify** Quadrant Power Tilt Ratio is less than or equal to 1.02.
5. With Quadrant Power Tilt Ratio greater than 1.02, initiate action in accordance with Technical Specification LCO 3.2.4 and continue to **calculate** and **record** QPTR once every 12 hours on sheet 2.

Approved By S. E. Prewitt	Vogle Electric Generating Plant 	Procedure Number Rev 14915-1 47.4
Date Approved 3/25/2010	SPECIAL CONDITIONS SURVEILLANCE LOGS	Page Number 22 of 39

DATA SHEET 7

Sheet 2 of 2

DATE _____

TIME _____

NI Channel	Detector	Current	Factor*
41	A	_____ x _____	= _____ (1)
42	A	_____ x _____	= _____ (1)
43	A	_____ x _____	= _____ (1)
44	A	_____ x _____	= _____ (1)
			Avg = _____ (1)

QPTR (Upper) = $\frac{\text{Max(upper)}}{\text{Avg(upper)}}$ = _____ (2)

NI Channel	Detector	Current	Factor*
41	B	_____ x _____	= _____ (1)
42	B	_____ x _____	= _____ (1)
43	B	_____ x _____	= _____ (1)
44	B	_____ x _____	= _____ (1)
			Avg = _____ (1)

QPTR (Lower) = $\frac{\text{Max(lower)}}{\text{Avg(lower)}}$ = _____ (2)

QPTR = Max of QPTR(upper) or QPTR(lower) = _____

TILT DEVIATION = _____
(from Reactor Engineering if applicable)

COMPLETED BY _____

Shift Supervisor Review: _____ / _____ / _____
Initial Date Time

*Factor = Normalization Factor from Plant Technical Data Book tab 5.0

Note 1 = Calculations should be performed to 3 decimal places

Note 2 = Round to 2 decimal places (if the 3rd decimal is ≥ 5 round up, if 3rd decimal is < 5 , round down)

3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT RATIO (QPTR)

LCO 3.2.4 The QPTR shall be ≤ 1.02 .

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Required Action A.6 must be completed whenever Required Action A.5 is implemented. -----</p> <p>QPTR not within limit.</p>	A.1 Limit THERMAL POWER to $\geq 3\%$ below RTP for each 1% of QPTR > 1.00.	2 hours
	<u>AND</u>	
	A.2.1 Perform SR 3.2.4.1.	Once per 12 hours
	<u>AND</u>	
	A.2.2 Limit THERMAL POWER to $\geq 3\%$ below RTP for each 1% QPTR > 1.00.	-----NOTE----- For performances of Required Action A.2.2 the Completion Time is measured from the completion of SR 3.2.4.1. -----
	<u>AND</u>	2 hours
	A.3 Perform SR 3.2.1.1 and SR 3.2.2.1.	Within 24 hours after achieving equilibrium conditions with THERMAL POWER limited by Required Actions A.1 and A.2.2
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)		<u>AND</u>
		Once per 7 days thereafter
	<u>AND</u>	
	A.4 Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1 and A.2.2
	<u>AND</u>	
	A.5 -----NOTE----- Perform Required Action A.5 only after Required Action A.4 is completed. -----	
	Calibrate excore detectors to show QPTR = 1.00.	Prior to increasing THERMAL POWER above the limit of Required Action A.1 and A.2.2
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.6</p> <p>-----NOTE----- Perform Required Action A.6 only after Required Action A.5 is completed. -----</p> <p>Perform SR 3.2.1.1 and SR 3.2.2.1.</p>	<p>-----NOTE----- Only one of the following Completion Times, whichever becomes applicable first, must be met. -----</p> <p>Within 24 hours after reaching RTP</p> <p><u>OR</u></p> <p>Within 48 hours after increasing THERMAL POWER above the limit of Required Action A.1 and A.2.2</p>
B. Required Action and associated Completion Time not met.	<p>B.1</p> <p>Reduce THERMAL POWER to $\leq 50\%$ RTP.</p>	4 hours

NRC RO Job Performance Measure "b"

Facility: Vogtle

Task No: N/A

Task Title: Identify On-Shift Manning Requirements for Conditions Provided

JPM No: V-NRC-JP-00012-HL18

K/A Reference: G2.1.5 RO 2.9* SRO 3.9

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance _____

Classroom _____

Simulator _____

Plant _____

Read to the examinee:

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

Initial Conditions: Both Units are at 100% power.

It is night shift on a holiday, and maximum off-time has been encouraged by Operations Management.

The SAT Operator and the Wilson Operator are not required to be manned.

All required Security positions are manned.

The table below represents the Operations personnel who have arrived to receive turnover and their qualification status.

OPERATORS	LICENSE STATUS / QUALIFICATIONS
Bill	SRO V-OPS-SS, V-ERO-CR01, V-ERO-CR10, V-OPS-STA
Stephen Amy	SRO V-OPS-USS, V-ERO-CR02, V-ERO-CR10, V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Matt	SRO V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Kevin Britt Jayme Rodney	RO V-OPS-RO/BOP, V-ERO-CR04,
Neal Robert Ray Elizabeth Terry Jeff	NLO V-OPS-SO, V-FP-FIRE BRIGADE

Initiating Cue:

Using 00012-C, "Shift Manning Requirements", and the operations crew shown in the table provided, give a written response to the following questions:

- 1) Does the crew shown in the table provided satisfy the Minimum Shift Manning requirements of 00012-C, Data Sheet 1? (NOTE: Only consider the operations crew members and not the Emergency Plan Section of Data Sheet 1.)

YES / NO.
(circle one)

- 2) Based on the crew shown in the table provided and 00012-C, can "Elizabeth" simultaneously fill the positions on Data Sheet 1 of Unit #2 SO and Fire Brigade Member?

YES / NO.
(circle one)

Task Standard: Upon successful completion of this JPM, the examinee will correctly:

1. Determine if the minimum shift manning requirements of 00012-C, "Shift Manning Requirements", are met.
2. Determine if an operator can simultaneously fill two required shift positions on Data Sheet 1 of 00012-C.

Required Materials: 00012-C, "Shift Manning Requirements"

General References: None

Time Critical Task: No

Validation Time: 10 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

- * 1. Determine if the minimum shift manning requirements of 00012-C, "Shift Manning Requirements", are met.

Data Sheet 1 of 00012-C and available operations personnel table are reviewed to determine if minimum shift manning requirements are met.

NOTE TO EXAMINER: Completion of Data Sheet 1 is NOT required to meet the critical step. The following is an example provided to aid debrief discussions with the candidate, if required. Name/position combinations may vary.

Approved By J. B. Stanley	Vogle Electric Generating Plant	Procedure Number Rev 00012-C 17.2
Date Approved 03/17/2009	SHIFT MANNING REQUIREMENTS	Page Number 5 of 6

DATA SHEET 1			
Minimum Shift Manning (Either Unit in Mode 1-4)			
Date: _____		Shift (Day/Night): _____	
POSITION	UNIT #1	COMMON	UNIT #2
Shift Manager <small>V-OPS-SS, V-ERO-CR01, and V-ERO-CR10</small>		Bill <small>Also assigned as Emergency Director</small>	
SS <small>V-OPS-USS, V-ERO-CR02, AND V-ERO-CR10</small>	Stephen <small>Also assigned as ENS Communicator</small>		Amy <small>Also assigned as ENS Communicator</small>
OATC <small>V-OPS-RO/BOP</small>	Kevin		Britt
UO <small>V-OPS-RO/BOP and V-ERO-CR04</small>	Jayne <small>Also assigned as ENN Communicator</small>		Rodney <small>Also assigned as ENN Communicator</small>
SO <small>V-OPS-SO</small>	Terry <small>SONPO</small>		Jeff <small>SONPO</small>
STA <small>(May be assigned other duties) V-OPS-STTA</small>		Bill <small>(SM, or SSS or SS not assigned to FB or ENN Communicator)</small>	
Fire Team Captain <small>V-FP-FIRE BRIGADE LEADER</small>		Matt <small>SSS, or SS C&T</small>	
FB Member <small>V-FP-FIRE BRIGADE</small>		1. Neal <small>SO (Also fulfills Common SO PSAR req)</small>	
FB Member <small>V-FP-FIRE BRIGADE</small>		2. Robert <small>SO</small>	
FB Member <small>V-FP-FIRE BRIGADE</small>		3. Ray <small>SO</small>	
FB Member <small>V-FP-FIRE BRIGADE</small>		4. Elizabeth <small>SO</small>	
Security <small>V-ERO-SEC or V-ERO-SEC02</small>		Joe <small>Per Security Procedure 90101-C</small>	
SAT Operator <small>V-OPS-SO-OAO</small>	<small>Assigned per procedure 13419-C</small>	5. N/A <small>SONPO/SRO</small>	
Wilson Operator <small>V-OPS-WILSON BLKSTRT</small>	<small>Assigned per procedure 13419-C</small>	6. N/A <small>SONPO</small>	

Cue: *If asked about the SAT Operator, Wilson Operator, or Security, "See initial conditions".*

Standard: Candidate determines minimum shift manning requirements of 00012-C, "Shift Manning Requirements", ARE met.

Comment:

- * 2. Determine if an operator can simultaneously fill two required shift positions on Data Sheet 1 of 00012-C.

Data Sheet 1 of 00012-C is reviewed to determine if a qualified NLO can simultaneously fill the Unit #2 SO and Fire Brigade Member positions.

A note at the bottom of Data Sheet 1 reads, "1. Personnel may NOT be assigned to more than one position unless specifically noted next to the position label". There is no allowance for either of these two positions to fill other positions simultaneously.

SO V-OPS-SO	Terry SONPO		Jeff SONPO
STA (May be assigned other duties) V-OPS-STA		Bill (SM, or SSS or SS not assigned to FB or ENN Communicator)	
Fire Team Captain V-FP-FIRE BRIGADE LEADER		Matt SSS, or SS C&T	
FB Member V-FP-FIRE BRIGADE		1. Neal SO(Also fulfills Common SO FSAR req)	
FB Member V-FP-FIRE BRIGADE		2. Robert SO	
FB Member V-FP-FIRE BRIGADE		3. Ray SO	
FB Member V-FP-FIRE BRIGADE		4. Elizabeth SO	

1. Personnel may NOT be assigned to more than one position unless specifically noted next to the position label.

Standard: Candidate determines that the operator can NOT simultaneously fill the two required shift positions.

Comment:

Terminating cue: Candidate returns initiating cue sheet.

(ANSWER KEY – DO NOT PROVIDE TO CANDIDATES)

- 1) Does the crew shown in the table provided satisfy the Minimum Shift Manning requirements of 00012-C, Data Sheet 1? (NOTE: Only consider the operations crew members and not the Emergency Plan Section of Data Sheet 1.)

YES / NO
(circle one)

- 2) Based on the crew shown in the table provided and 00012-C, can “Elizabeth” simultaneously fill the positions on Data Sheet 1 of Unit #2 SO and Fire Brigade Member?

YES / NO
(circle one)

Verification of Completion

Job Performance Measure No: V-NRC-JP-00012-HL18

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Initial Conditions: Both Units are at 100% power.

It is night shift on a holiday, and maximum off-time has been encouraged by Operations Management.

The SAT Operator and the Wilson Operator are not required to be manned.

All required Security positions are manned.

The table below represents the Operations personnel who have arrived to receive turnover and their qualification status.

OPERATORS	LICENSE STATUS / QUALIFICATIONS
Bill	SRO V-OPS-SS, V-ERO-CR01, V-ERO-CR10, V-OPS-STA
Stephen Amy	SRO V-OPS-USS, V-ERO-CR02, V-ERO-CR10, V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Matt	SRO V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Kevin Britt Jayme Rodney	RO V-OPS-RO/BOP, V-ERO-CR04
Neal Robert Ray Elizabeth Terry Jeff	NLO V-OPS-SO, V-FP-FIRE BRIGADE

Initiating Cue:

Using 00012-C, "Shift Manning Requirements", and the operations crew shown in the table provided, give a written response to the following questions:

- 1) Does the crew shown in the table provided satisfy the Minimum Shift Manning requirements of 00012-C, Data Sheet 1? (NOTE: Only consider the operations crew members and not the Emergency Plan Section of Data Sheet 1.)**

YES / NO
(circle one)

- 2) Based on the crew shown in the table provided and 00012-C, can "Elizabeth" simultaneously fill the positions on Data Sheet 1 of Unit #2 SO and Fire Brigade Member?**

YES / NO
(circle one)

NRC SRO Job Performance Measure "b"

Facility: Vogtle

Task No: N/A

Task Title: Evaluate On-Shift Manning Requirements for Conditions Provided

JPM No: V-NRC-JP-00012-HL18

K/A Reference: G2.1.5 RO 2.9* SRO 3.9

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance _____

Classroom _____

Simulator _____

Plant _____

Read to the examinee:

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

Initial Conditions: Both Units are at 100% power.

It is night shift on a holiday, and maximum off-time has been encouraged by Operations Management.

The SAT Operator and the Wilson Operator are not required to be manned.

All required Security positions are manned.

The table below represents the Operations personnel who have arrived to receive turnover and their qualification status.

OPERATORS	LICENSE STATUS / QUALIFICATIONS
Bill	SRO V-OPS-SS, V-ERO-CR01, V-ERO-CR10, V-OPS-STA
Stephen Amy	SRO V-OPS-USS, V-ERO-CR02, V-ERO-CR10, V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Matt	SRO V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Kevin Britt Jayme Rodney	RO V-OPS-RO/BOP, V-ERO-CR04
Neal Robert Ray Elizabeth Terry Jeff	NLO V-OPS-SO, V-FP-FIRE BRIGADE

Initiating Cue:

Using 00012-C, "Shift Manning Requirements", and the operations crew shown in the table provided, give a written response to the following questions:

- 1) Does the crew shown in the table provided satisfy the Minimum Shift Manning requirements of 00012-C, Data Sheet 1? (NOTE: Only consider the operations crew members and not the Emergency Plan Section of Data Sheet 1.)

YES / NO

(circle one)

- 2) Based on the crew shown in the table provided and 00012-C, can "Elizabeth" simultaneously fill the positions on Data Sheet 1 of Unit #2 SO and Fire Brigade Member?

YES / NO

(circle one)

- 3) If, at any time, the operating crew minimum shift manning requirements are NOT met, what Technical Specification action, if any, must be taken?

Task Standard: Upon successful completion of this JPM, the examinee will correctly:

1. Determine if the minimum shift manning requirements of 00012-C, "Shift Manning Requirements", are met.
2. Determine if an operator can simultaneously fill two required shift positions on Data Sheet 1 of 00012-C.
3. State the Technical Specification action that must be taken if minimum shift manning requirements are not met.

Required Materials: 00012-C, "Shift Manning Requirements"
Technical Specifications

General References: None

Time Critical Task: No

Validation Time: 14 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

- * 1. **Determine if the minimum shift manning requirements of 00012-C, "Shift Manning Requirements", are met.**

Data Sheet 1 of 00012-C and available operations personnel table are reviewed to determine if minimum shift manning requirements are met.

NOTE TO EXAMINER: Completion of Data Sheet 1 is NOT required to meet the critical step. The following is an example provided to aid debrief discussions with the candidate, if required. Name/position combinations may vary.

Approved By J. B. Stanley	Vogle Electric Generating Plant	Procedure Number Rev 00012-C 17.2
Date Approved 03/17/2009	SHIFT MANNING REQUIREMENTS	Page Number 5 of 6

DATA SHEET 1		Sheet 1 of 2
Minimum Shift Manning (Either Unit in Mode 1-4)		
Date: _____ Shift (Day/Night): _____		
POSITION	UNIT #1	COMMON
Shift Manager <small>V-OPS-SS, V-ERO-CR01, and V-ERO-CR10</small>		Bill <small>Also assigned as Emergency Director</small>
SS <small>V-OPS-USS, V-ERO-CR02, AND V-ERO-CR10</small>	Stephen <small>Also assigned as ENS Communicator</small>	Amy <small>Also assigned as ENS Communicator</small>
OATC <small>V-OPS-RO/BOP</small>	Kevin	Britt
UO <small>V-OPS-RO/BOP and V-ERO-CR04</small>	Jayne <small>Also assigned as ENN Communicator</small>	Rodney <small>Also assigned as ENN Communicator</small>
SO <small>V-OPS-SO</small>	Terry <small>SONPO</small>	Jeff <small>SONPO</small>
STA <small>(May be assigned other duties) V-OPS-STA</small>		Bill <small>(SM, or SSS or SS not assigned to FB or ENN Communicator)</small>
Fire Team Captain <small>V-FP-FIRE BRIGADE LEADER</small>		Matt <small>SSS, or SS C&T</small>
FB Member <small>V-FP-FIRE BRIGADE</small>		1. Neal <small>SO(Also fulfills Common SO PSAR req)</small>
FB Member <small>V-FP-FIRE BRIGADE</small>		2. Robert <small>SO</small>
FB Member <small>V-FP-FIRE BRIGADE</small>		3. Ray <small>SO</small>
FB Member <small>V-FP-FIRE BRIGADE</small>		4. Elizabeth <small>SO</small>
Security <small>V-ERO-SEC or V-ERO-SEC02</small>		Joe <small>Per Security Procedure 90101-C</small>
SAT Operator <small>V-OPS-SO-OAO</small>	<small>Assigned per procedure 13419-C</small>	5. N/A <small>SONPO/SRO</small>
Wilson Operator <small>V-OPS-WILSON BLKSTRT</small>	<small>Assigned per procedure 13419-C</small>	6. N/A <small>SONPO</small>

Cue: *If asked about the SAT Operator, Wilson Operator, or Security, "See initial conditions".*

Standard: Candidate determines minimum shift manning requirements of 00012-C, "Shift Manning Requirements", ARE met.

Comment:

- * 2. Determine if an operator can simultaneously fill two required shift positions on Data Sheet 1 of 00012-C.

Data Sheet 1 of 00012-C is reviewed to determine if a qualified NLO can simultaneously fill the Unit #2 SO and Fire Brigade Member positions.

A note at the bottom of Data Sheet 1 reads, "1. Personnel may NOT be assigned to more than one position unless specifically noted next to the position label". There is no allowance for either of these two positions to fill other positions simultaneously.

SO V-OPS-SO	Terry SO/NPO		Jeff SO/NPO
STA (May be assigned other duties) V-OPS-STA		Bill (SM, or SSS or SS not assigned to FB or ENM Communicator)	
Fire Team Captain V-FP-FIRE BRIGADE LEADER		Matt SSS, or SS C&T	
FB Member V-FP-FIRE BRIGADE		1. Neal SO(Also fulfills Common SO FSAR req)	
FB Member V-FP-FIRE BRIGADE		2. Robert SO	
FB Member V-FP-FIRE BRIGADE		3. Ray SO	
FB Member V-FP-FIRE BRIGADE		4. Elizabeth SO	

1. Personnel may NOT be assigned to more than one position unless specifically noted next to the position label.

Standard: Candidate determines that the operator can NOT simultaneously fill the two required shift positions.

Comment:

*** 3. State the Technical Specification action that must be taken if minimum shift manning requirements are not met.**

Technical Specification 5.2.2.c is reviewed to determine required actions to be taken if minimum shift manning requirements are not met. A NOTE in 00012-C prior to Step 4.4 states:

“The shift crew composition may be less than the minimum requirement of 10CFR50.54 (m)(2)(i) and Tech. Spec. 5.2.2.a and g. for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements”.

NOTE TO EXAMINER: This is the same wording as Technical Specification 5.2.2.c.

Standard: Candidate states that immediate action is taken to ensure the minimum shift manning requirements are met within two hours.

Comment:

Terminating cue: Candidate returns initiating cue sheet.

(ANSWER KEY – DO NOT PROVIDE TO CANDIDATES)

- 1) Does the crew shown in the table provided satisfy the Minimum Shift Manning requirements of 00012-C, Data Sheet 1? (NOTE: Only consider the operations crew members and not the Emergency Plan Section of Data Sheet 1.)

YES / NO
(circle one)

- 2) Based on the crew shown in the table provided and 00012-C, can “Elizabeth” simultaneously fill the positions on Data Sheet 1 of Unit #2 SO and Fire Brigade Member?

YES / NO
(circle one)

- 3) If, at any time, the operating crew minimum shift manning requirements are NOT met, what Technical Specification action, if any, must be taken?

Take immediate action to ensure the minimum shift manning requirements are met within two hours.

NOTE TO EXAMINER: Similar wording is acceptable if based on the NOTE in 00012-C:

“The shift crew composition may be less than the minimum requirement of 10CFR50.54 (m)(2)(i) and Tech. Spec. 5.2.2.a and g. for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements”.

Verification of Completion

Job Performance Measure No: V-NRC-JP-00012-HL18

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Initial Conditions: Both Units are at 100% power.

It is night shift on a holiday, and maximum off-time has been encouraged by Operations Management.

The SAT Operator and the Wilson Operator are not required to be manned.

All required Security positions are manned.

The table below represents the Operations personnel who have arrived to receive turnover and their qualification status.

OPERATORS	LICENSE STATUS / QUALIFICATIONS
Bill	SRO V-OPS-SS, V-ERO-CR01, V-ERO-CR10, V-OPS-STA
Stephen Amy	SRO V-OPS-USS, V-ERO-CR02, V-ERO-CR10, V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Matt	SRO V-OPS-STA, V-FP-FIRE BRIGADE LEADER
Kevin Britt Jayme Rodney	RO V-OPS-RO/BOP, V-ERO-CR04,
Neal Robert Ray Elizabeth Terry Jeff	NLO V-OPS-SO, V-FP-FIRE BRIGADE

Initiating Cue:

Using 00012-C, "Shift Manning Requirements", and the operations crew shown in the table provided, give a written response to the following questions:


- 1) Does the crew shown in the table provided satisfy the Minimum Shift Manning requirements of 00012-C, Data Sheet 1? (NOTE: Only consider the operations crew members and not the Emergency Plan Section of Data Sheet 1.)

YES / NO
(circle one)

- 2) Based on the crew shown in the table provided and 00012-C, can "Elizabeth" simultaneously fill the positions on Data Sheet 1 of Unit #2 SO and Fire Brigade Member?

YES / NO
(circle one)

- 3) If, at any time, the operating crew minimum shift manning requirements are NOT met, what Technical Specification action, if any, must be taken?

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Revision to this procedure requires software update to Shift Manning Program

SHIFT MANNING REQUIREMENTS

PROCEDURE LEVEL OF USE CLASSIFICATION PER NMP-AP-003	
CATEGORY	SECTIONS
Continuous:	NONE
Reference:	NONE
Information:	ALL



Approved By J. B. Stanley	Vogtle Electric Generating Plant 	Procedure Number Rev 00012-C 17.2
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1.0 **PURPOSE**

This procedure consolidates and establishes the minimum shift manning as required by Technical Specifications, the Technical Requirements Manual, the Emergency Plan, and the FSAR. This procedure also prescribes the manner in which each department will provide records for shift manning.

2.0 **DEFINITIONS**

None

3.0 **RESPONSIBILITIES**

3.1 **DEPARTMENT MANAGERS/SUPERINTENDENTS**

Department Managers/Superintendents whose personnel are required to work shifts are responsible to ensure that their department provides at least the minimum required qualified personnel on each shift as outlined in Data Sheet 1.


3.2 **EMERGENCY PREPAREDNESS SUPERVISOR (EPS)**

The EPS will supply each department head monthly a list of all Emergency Response Organization personnel that are currently unqualified and/or will become unqualified at the end of the current month. Additionally, Emergency Preparedness will maintain a database with this information. This data is available to personnel throughout the plant.

4.0 **INSTRUCTIONS**

4.1 The Operations, Health Physics/Chemistry, Security, and Maintenance Departments shall ensure that for each shift the minimum staffing is maintained for positions required by Data Sheet 1.

4.2 At the beginning of each shift, the Shift Manager shall ensure Data Sheet 1 is completed. Any deviation from the manning requirements of Data Sheet 1 shall be noted in the Comments section with the reason for the deviation(s). Typical or normal personnel filling the positions are listed below that position slot. Data Sheet 1 shall be filled out using the lists of qualified personnel. An Operations Superintendent, the Operations Manager, or the Duty Manager shall approve any deviation from Data Sheet 1 manning.

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- 4.3 Each Department's senior supervisor on-shift is responsible for ensuring that only qualified personnel are assigned to Data Sheet 1 positions and that all changes to Data Sheet 1 manning during the course of the shift are reported to the Shift Manager.

NOTES


- Each position on Data Sheet 1 indicates the job title of the individual that may fill that position. Some of the positions may have more than one job title listed. These positions may be filled by any individual qualified for that position. Additionally, the job titles are not listed in any particular order, and all job titles that may fill the position may not be indicated.
- The shift crew composition may be less than the minimum requirement of 10CFR50.54 (m)(2)(i) and Tech. Spec. 5.2.2.a and g. for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

- 4.4 Data Sheet 1 shall be submitted to Document Control.

5.0 REFERENCES

- Emergency Plan, Table B-1
- Technical Specifications 5.2.2.c and g
- 10CFR50.54 (m)(2)(i)
- FSAR 9.5.1.5.3
- Technical Requirements Manual, Table 15.1.2-1,
- Security Plan

END OF PROCEDURE TEXT

Approved By J. B. Stanley	Vogle Electric Generating Plant 	Procedure Number Rev 00012-C 17.2
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DATA SHEET 1
Minimum Shift Manning (Either Unit in Mode 1-4)


Sheet 1 of 2

Date: _____ **Shift (Day/Night):** _____

POSITION	UNIT #1	COMMON	UNIT #2
Shift Manager V-OPS-SS, V-ERO-CR01, and V-ERO-CR10		Also assigned as Emergency Director	
SS V-OPS-USS, V-ERO-CR02, AND V-ERO-CR10	Also assigned as ENS Communicator		Also assigned as ENS Communicator
OATC V-OPS-RO/BOP			
UO V-OPS-RO/BOP and V-ERO-CR04	Also assigned as ENN Communicator		Also assigned as ENN Communicator
SO V-OPS-SO	SO/NPO		SO/NPO
STA (May be assigned other duties) V-OPS-STA		(SM, or SSS or SS not assigned to FB or ENN Communicator)	
Fire Team Captain V-FP-FIRE BRIGADE LEADER		SSS, or SS C&T	
FB Member V-FP-FIRE BRIGADE		1. SO(Also fulfills Common SO FSAR req)	
FB Member V-FP-FIRE BRIGADE		2. SO	
FB Member V-FP-FIRE BRIGADE		3. SO	
FB Member V-FP-FIRE BRIGADE		4. SO	
Security V-ERO-SEC or V-ERO-SEC02		Per Security Procedure 90101-C	
SAT Operator V-OPS-SO-OAO	Assigned per procedure 13419-C	5. SO/NPO/SRO	
Wilson Operator V-OPS-WILSON BLKSTRT	Assigned per procedure 13419-C	6. SO/NPO	

Emergency Plan

POSITION	UNIT #1	COMMON	UNIT #2
Emergency Director V-OPS-SS		Shift Manager	
ENN Communicator V-ERO-CR04 or V-ERO-CR10	UO Unaffected Unit		UO Unaffected Unit
ENS Communicator V-OPS-USS or V-OPS-STA	SS Unaffected Unit		SS Unaffected Unit

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DATA SHEET 1
Emergency Plan (cont)

Sheet 2 of 2

POSITION	UNIT #1	COMMON	UNIT #2
Dose Assessment V-ERO-TSC09 OR V-ERO-TSC10		HP Foreman	
Field Monitoring Team (FMT) V-ERO-CR08 OR V-ERO-OSC16		1. HP Tech/Chem Tech/SO/I&C Tech 2. HP Tech/Chem Tech/SO/I&C Tech	
FMT Communicator V-ERO-TSC18		Chem Foreman/Chem Tech/HP Tech/ Maint. Shift ATL	
Chemistry Sampler V-ERO-OSC09		Chemistry Tech	
Mechanical Repair and Corrective Action V-ERO-OSC07		Mechanic	
Electrical Repair and Corrective Action V-ERO-OSC06		Electrician	
I & C Repair and Corrective Action V-ERO-OSC08		I & C Technician	
In Plant Monitors V-ERO-OSC17		1. HP Technician 2. HP Technician	
Search & Rescue/First Aid (May be assigned other Duties) V-ERO-OSC15		1. HP Technician 2. HP Technician	

Minimum Dual Unit Safe Shutdown

POSITION	UNIT #1	COMMON	UNIT #2
Emergency Director		SM	
ENN		UO Unit #1 or #2	
ENS		UO Unit #2 or #1	
Shutdown Panel "B"	SS		SS
Shutdown Panel "A"	OATC		OATC
Shutdown Panel "C"	SO		SO
Fire Brigade		Same as Normal Operations	

1. Personnel may NOT be assigned to more than one position unless specifically noted next to the position label.
2. If both units are in Modes 5, 6, or defueled, minimum shift manning for operations may be reduced per Operations Manager (not Emergency Plan or Fire Brigade staffing).

COMMENTS: _____

Approved by: _____ Date: _____ Time: _____
Shift Manager

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the FSAR;
- b. The Plant Manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;
- c. The Vice President - Vogtle shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and
- d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

- a. A non-licensed operator shall be assigned to each reactor and an additional non-licensed operator shall be assigned for the control room when a reactor is operating in MODES 1,

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

2, 3, or 4. With both units in MODES 5 or 6 or defueled, a total of three non-licensed operators are required for the two units.

- b. At least one licensed RO shall be present in the control room when fuel is in the reactor.

-----NOTE-----
A single SRO licensed on both units may fulfill this function for both units.

In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed SRO shall be present in the control room.

- c. The shift crew composition may be less than the minimum requirement of 10 CFR 50.54 (m)(2)(i) and 5.2.2.a and g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

- d. -----NOTE-----
A single Health Physics Technician may fulfill this position for both units.

A Health Physics Technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

- e. Deleted.

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

- f. The Operations Manager or at least one Operations Superintendent shall hold an SRO license.
- g. An individual shall be assigned who provides technical support in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall be available for duty when the plant is in modes 1-4. At other times, this individual is not required. In addition, this individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift. This position may also be filled by the Shift Superintendent or

(continued)

NRC RO Job Performance Measure "c"

Facility: Vogtle

Task No: N/A

Task Title: Evaluate Surveillance Test Data

JPM No: V-NRC-JP-14825-HL18

K/A Reference: G2.2.12 RO 3.7 SRO 4.1

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ 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.

PART 1

Initial Conditions: Unit 1 is at 100% RTP.

14825-1, "Quarterly Inservice Valve Test", is being performed for the following Train A Atmospheric Relief Valves (ARVs):

1-PV-3000

1-PV-3030

Initiating Cue: The Shift Supervisor has directed you to, "Perform Steps 4.5 and 4.6 of 14825-1 and record the Reference Stroke Times and the High and Low Acceptance Criteria Limits on the provided Data Sheet 12".

PART 2
(PROVIDE WHEN CANDIDATE COMPLETES PART 1)

Initial Conditions: Unit 1 is at 100% RTP.

14825-1, "Quarterly Inservice Valve Test", for the following Train A Atmospheric Relief Valves (ARVs) is complete:

1-PV-3000
1-PV-3030

The results of the surveillance tests are as follows:

Valve Number	Exercise (EXER) Test	Iso Valve Stroke Test	Position Indication Test	Fail Safe Test	Actual Stroke Open Time	Actual Stroke Closed Time
1-PV-3000	Sat	Sat	Sat	Unsat	21.7 sec.	23.6 sec.
1-PV-3030	Sat	Sat	Unsat	Sat	25.9 sec.	27.2 sec.

Initiating Cue: The Shift Supervisor has directed you to, "Complete Data Sheet 12 of 14825-1 using the data provided and determine if the Acceptance Criteria of Section 6.0 are met".

Task Standard: 14825-1, Data Sheet 12, completed correctly.

Required Materials: 14825-1, "Quarterly Inservice Valve Test" (pages 1-7, 96-97, and 129)
14825-1, Data Sheet 12 (partially completed for candidate use)
Unit 1 In-Service Test (IST) Data Book
Calculator
Red Ink Pen, if requested

General References: None

Time Critical Task: No

Validation Time: 14 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

BEGIN PART 1

- * 4.5** Record the Reference Stroke Time [obtained from the In-Service Test (IST) Data Book] for the valve(s) to be tested.

DATA SHEET 12 -

MAIN STEAM SYSTEM

TECHNICAL SPECIFICATIONS APPLICABILITY - MODES 1, 2, 3
(TEST SECTION 5.3.12)

TEST PURPOSE:

- ☒ Surveillance
☐ Maintenance Retest-MWO# _____
☐ Other _____

VALVE(TRAIN) DESCRIPTION	VALVE TYPE	VALVE TEST DATE	INIT POST	SAFETY POS	EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME
*1-PV-3000 SG-1 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O <u>19.9</u> C <u>20.5</u>
*1-PV-3010 SG-2 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O _____ C _____
*1-PV-3020 SG-3 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O _____ C _____
*1-PV-3030 SG-4 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O <u>21.2</u> C <u>21.9</u>

NOTE TO EXAMINER: The INIT POST (initial position) column may be filled in later, and is not required for this critical step. There is no allowable error in the candidate's Reference Stroke Time data since it taken directly from the IST Data Book.

Standard: Candidate correctly completes REF STROKE TIME column.

Comment:

NOTES prior to Step 4.6

NOTES

- The method used to determine valve tolerance factor is per the following table. The tolerance factor is dependent on the valve Reference-Stroke Time and actuator type [i.e., Motor Operated Valves (MOVs) versus all other types of Power Operated Valves (POVs)]. Also, valves with reference-stroke times of less than two (2) seconds may be exempted from applying a tolerance factor IF maximum allowable stroke time is set at 2 seconds. □

Reference Stroke Time	Tolerance	Low Limit Correction Factor	High Limit Corr Factor
POVs: ≤10 sec	±50%	0.50	1.50
>10 sec	±25%	0.75	1.25
MOVs: ≤10 sec	±25% <u>OR</u> ±1 sec*	0.75 <u>OR</u> -1 sec*	1.25 <u>OR</u> +1 sec*
>10 sec	±15%	0.85	1.15

*Whichever Is Greater

- IF High Acceptance Time Limit is greater than Max Stroke Time, record Max Stroke Time as High Acceptance Time Limit.

NOTE TO EXAMINER: Candidate will use the POV line (>10 sec.) in the table to determine allowable tolerance factor. The ARV valve type is an EHV.

Standard: Candidate reviews NOTES to determine correct tolerance factor.

Comment:

- * 4.6. Calculate **AND** record, on applicable data sheet, Acceptance Criteria Limits for the respective valves using the Reference Stroke Time multiplied by the tolerance factor or record limits from the In Service Test (IST) Data Book.

DATA SHEET 12 -

MAIN STEAM SYSTEM

TECHNICAL SPECIFICATIONS APPLICABILITY - MODES 1, 2, 3
(TEST SECTION 5.3.12)

TEST PURPOSE:

☒ Surveillance

☐ Maintenance Retest-MWO# _____

☐ Other _____

VALVE(TRAIN) DESCRIPTION	VALVE TYPE	VALVE TEST DATE	INIT POST	SAFETY POS	EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME	LOW LIMIT	HIGH LIMIT
*1-PV-3000 SG-1 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O 19.9 C 20.5	O 14.9 C 15.4	O 24.9 C 25.6
*1-PV-3010 SG-2 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C
*1-PV-3020 SG-3 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C
*1-PV-3030 SG-4 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O 21.2 C 21.9	O 15.9 C 16.4	O 26.5 C 27.4

Standard: Candidate correctly determines the Acceptance Criteria High and Low Limits from the IST Data Book and records on Data Sheet 12. NOTE: The candidate may re-calculate the limits to confirm the data, but is not required to do so.

Comment:

Candidate turns in Part 1 of JPM.

NOTE TO EXAMINER: When candidate returns first cue sheet, give the candidate the second cue sheet.

BEGIN PART 2

* Complete Data Sheet 12 of 14825-1 using the data provided.

EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME	LOW LIMIT	HIGH LIMIT	MAX STROKE TIME	** FAIL SAFE TEST	ACT RESV TEMP 'F	ACTUAL STROKE TIME	STROKE TIME TEST
Sat Unsat	Sat Unsat	Sat Unsat	O 19.9 C 20.5	O 14.9 C 15.4	O 24.9 C 25.6	28	Sat Unsat	N/A	O 21.7 C 23.6	Sat Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat Unsat	Sat Unsat	Sat Unsat	O 21.2 C 21.9	O 15.9 C 16.4	O 26.5 C 27.4	28	Sat Unsat	N/A	O 25.9 C 27.2	Sat Unsat

Standard: Candidate correctly completes Data Sheet 12 using the data provided.

Comment:

*** Determine if the Acceptance Criteria of Section 6.0 are met.**

6.2 The Exercise, Fail Safe AND Position Indication Verification Test results are recorded on the applicable data sheet as SAT indicating that each valve tested exercised satisfactorily, failed CLOSED on loss of power, AND the position indication corresponded to actual valve position (recorded in Step 5.2.3).

* See Test Section 5.3.12 prior to testing

** Not required for OPERABILITY.

Results obtained through performance of this procedure meet ACCEPTANCE CRITERIA of Section 6.0. ☐ YES ☒ NO

IF NO was checked, refer to Section 7.0, EVALUATION AND REVIEW.

Standard: **Candidate determines that the Acceptance Criteria of Section 6.0 are NOT met based on UNSAT 1-PV-3000 Fail Safe Test and 1-PV-3030 Position Indication Test results.**

Comment:

Terminating cue: Candidate returns initiating cue sheet.

Verification of Completion

Job Performance Measure No: V-NRC-JP-14825-HL18

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Initial Conditions: Unit 1 is at 100% RTP.

14825-1, "Quarterly Inservice Valve Test", is being performed on the following Train A Atmospheric Relief Valves (ARVs):

1-PV-3000

1-PV-3030

Initiating Cue: The Shift Supervisor has directed you to, "Perform Steps 4.5 and 4.6 of 14825-1 and record the Reference Stroke Times and the High and Low Acceptance Criteria Limits on the provided Data Sheet 12".

PART 2

Initial Conditions: Unit 1 is at 100% RTP.

**14825-1, "Quarterly Inservice Valve Test", on the following
Train A Atmospheric Relief Valves (ARVs) is complete:**

**1-PV-3000
1-PV-3030**

The results of the surveillance tests are as follows:

Valve Number	Exercise (EXER) Test	Iso Valve Stroke Test	Position Indication Test	Fail Safe Test	Actual Stroke Open Time	Actual Stroke Closed Time
1-PV-3000	Sat	Sat	Sat	Unsat	21.7 sec.	23.6 sec.
1-PV-3030	Sat	Sat	Unsat	Sat	25.9 sec.	27.2 sec.

**Initiating Cue: The Shift Supervisor has directed you to, "Complete Data
Sheet 12 of 14825-1 using the data provided and determine if
the Acceptance Criteria of Section 6.0 are met".**

NRC SRO Job Performance Measure "c"

Facility: Vogtle

Task No: N/A

Task Title: Evaluate Surveillance Test Data

JPM No: V-NRC-JP-14825-HL18

K/A Reference: G2.2.12 RO 3.7 SRO 4.1

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ 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.

PART 1

Initial Conditions: Unit 1 is at 100% RTP.

14825-1, "Quarterly Inservice Valve Test", is being performed on the following Train A Atmospheric Relief Valves (ARVs):

1-PV-3000

1-PV-3030

Initiating Cue: The Shift Supervisor has directed you to, "Perform Steps 4.5 and 4.6 of 14825-1 and record the Reference Stroke Times and the High and Low Acceptance Criteria Limits on the provided Data Sheet 12".

PART 2
(PROVIDE WHEN CANDIDATE COMPLETES PART 1)

Initial Conditions: Unit 1 is at 100% RTP.

14825-1, "Quarterly Inservice Valve Test", for the following Train A Atmospheric Relief Valves (ARVs) is complete:

1-PV-3000
1-PV-3030

The results of the surveillance tests are as follows:

Valve Number	Exercise (EXER) Test	Iso Valve Stroke Test	Position Indication Test	Fail Safe Test	Actual Stroke Open Time	Actual Stroke Closed Time
1-PV-3000	Sat	Sat	Sat	Unsat	21.7 sec.	23.6 sec.
1-PV-3030	Sat	Sat	Unsat	Sat	25.9 sec.	27.2 sec.

Initiating Cue: The Shift Supervisor has directed you to, "Complete Data Sheet 12 of 14825-1 using the data provided and determine if the Acceptance Criteria of Section 6.0 are met".

Based on your evaluation and review of the surveillance test results:

Is 1-PV-3000 operable?

Is 1-PV-3030 operable?

IF any Technical Specification LCO is NOT met, THEN determine all Technical Specification REQUIRED ACTIONS.

Task Standard: 14825-1, Data Sheet 12, completed correctly and ARV operability determined.

Required Materials: 14825-1, "Quarterly Inservice Valve Test" (pages 1-7, 96-97, and 129)
14825-1, Data Sheet 12 (partially completed for candidate use)
Unit 1 In-Service Test (IST) Data Book
Calculator
Red Ink Pen, if requested

General References: None

Time Critical Task: No

Validation Time: 18 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

BEGIN PART 1

- * 4.5 **Record the Reference Stroke Time [obtained from the In-Service Test (IST) Data Book] for the valve(s) to be tested.**

DATA SHEET 12 -

MAIN STEAM SYSTEM

TECHNICAL SPECIFICATIONS APPLICABILITY - MODES 1, 2, 3
(TEST SECTION 5.3.12)

TEST PURPOSE:

- ☒ Surveillance
☐ Maintenance Retest-MWO# _____
☐ Other _____

VALVE(TRAIN) DESCRIPTION	VALVE TYPE	VALVE TEST DATE	INIT POST	SAFETY POS	EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME
*1-PV-3000 SG-1 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O <u>19.9</u> C <u>20.5</u>
*1-PV-3010 SG-2 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O _____ C _____
*1-PV-3020 SG-3 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O _____ C _____
*1-PV-3030 SG-4 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O <u>21.2</u> C <u>21.9</u>

NOTE TO EXAMINER: There is no allowable error in the candidate's Reference Stroke Time data since it taken directly from the IST Data Book.

Standard: Candidate correctly completes REF STROKE TIME column.

Comment:

NOTES prior to Step 4.6

NOTES

- The method used to determine valve tolerance factor is per the following table. The tolerance factor is dependent on the valve Reference-Stroke Time and actuator type [i.e., Motor Operated Valves (MOVs) versus all other types of Power Operated Valves (POVs)]. Also, valves with reference-stroke times of less than two (2) seconds may be exempted from applying a tolerance factor IF maximum allowable stroke time is set at 2 seconds. □

Reference Stroke Time	Tolerance	Low Limit Correction Factor	High Limit Corr Factor
POVs: ≤10 sec	±50%	0.50	1.50
>10 sec	±25%	0.75	1.25
MOVs: ≤10 sec	±25% <u>OR</u> ±1 sec*	0.75 <u>OR</u> -1 sec*	1.25 <u>OR</u> +1 sec*
>10 sec	±15%	0.85	1.15

*Whichever Is Greater

- IF High Acceptance Time Limit is greater than Max Stroke Time, record Max Stroke Time as High Acceptance Time Limit.

NOTE TO EXAMINER: Candidate will refer to the POV line (>10 sec.) in the table to determine allowable tolerance factor. The ARV valve type is an EHV.

Standard: Candidate reviews NOTES to determine correct tolerance factor.

Comment:

- * 4.6. Calculate **AND** record, on applicable data sheet, Acceptance Criteria Limits for the respective valves using the Reference Stroke Time multiplied by the tolerance factor or record limits from the In Service Test (IST) Data Book.

DATA SHEET 12 - MAIN STEAM SYSTEM
TECHNICAL SPECIFICATIONS APPLICABILITY - MODES 1, 2, 3
(TEST SECTION 5.3.12)

TEST PURPOSE:

- ☒ Surveillance
☐ Maintenance Retest-MWO# _____
☐ Other _____

VALVE(TRAIN) DESCRIPTION	VALVE TYPE	VALVE TEST DATE	INIT POST	SAFETY POS	EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME	LOW LIMIT	HIGH LIMIT
*1-PV-3000 SG-1 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O 19.9 C 20.5	O 14.9 C 15.4	O 24.9 C 25.6
*1-PV-3010 SG-2 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C
*1-PV-3020 SG-3 ARV (B)	EHV	N/A	O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C
*1-PV-3030 SG-4 ARV (A)	EHV		O C	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O 21.2 C 21.9	O 15.9 C 16.4	O 26.5 C 27.4

Standard: Candidate correctly determines the Acceptance Criteria High and Low Limits from the IST Data Book and records on Data Sheet 12. NOTE: The candidate may re-calculate the limits to confirm the data, but is not required to do so.

Comment:

Candidate turns in Part 1 of JPM.

NOTE TO EXAMINER: When candidate returns first cue sheet, give the candidate the second cue sheet.

BEGIN PART 2

* Complete Data Sheet 12 of 14825-1 using the data provided.

EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME	LOW LIMIT	HIGH LIMIT	MAX STROKE TIME	** FAIL SAFE TEST	ACT RESV TEMP °F	ACTUAL STROKE TIME	STROKE TIME TEST
Sat	Sat	Sat	O 19.9	O 14.9	O 24.9	28	Sat	N/A	O 21.7	Sat
Unsat	Unsat	Unsat	C 20.5	C 15.4	C 25.6		Unsat		C 23.6	Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat	Sat	Sat	O 21.2	O 15.9	O 26.5	28	Sat	N/A	O 25.9	Sat
Unsat	Unsat	Unsat	C 21.9	C 16.4	C 27.4		Unsat		C 27.2	Unsat

Standard: Candidate correctly completes Data Sheet 12 using the data provided.

Comment:

*** Determine if the Acceptance Criteria of Section 6.0 are met.**

6.2 The Exercise, Fail Safe AND Position Indication Verification Test results are recorded on the applicable data sheet as SAT indicating that each valve tested exercised satisfactorily, failed CLOSED on loss of power, AND the position indication corresponded to actual valve position (recorded in Step 5.2.3).

* See Test Section 5.3.12 prior to testing

** Not required for OPERABILITY.

Results obtained through performance of this procedure meet ACCEPTANCE CRITERIA of Section 6.0. ☐ YES ☒ NO

IF NO was checked, refer to Section 7.0, EVALUATION AND REVIEW.

Standard: **Candidate determines that the Acceptance Criteria of Section 6.0 are NOT met based on UNSAT 1-PV-3000 Fail Safe Test and 1-PV-3030 Position Indication Test results.**

Comment:

*** Determine if 1-PV-3000 is operable.**

Candidate recognizes that the ** in the FAIL SAFE TEST column means that this test is NOT required for operability.

NOTE TO EXAMINER: Candidate may also refer to the NOTE prior to Step 5.3.12.1, which states, "The Fail Safe Test is not required to satisfy OPERABILITY under the IST program. This test is performed every 12 months in conjunction with the local hand-pump station valve strokes and is tracked by that Task Sheet".

EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME	LOW LIMIT	HIGH LIMIT	MAX STROKE TIME	** FAIL SAFE TEST	ACT RESV TEMP °F	ACTUAL STROKE TIME	STROKE TIME TEST
Sat Unsat	Sat Unsat	Sat Unsat	O 19.9 C 20.5	O 14.9 C 15.4	O 24.9 C 25.6	28	Sat Unsat	N/A	O 21.7 C 23.6	Sat Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat	Sat	Sat	O 21.2 C 21.9	O 15.9 C 16.4	O 26.5 C 27.4	28	Sat Unsat	N/A	O 25.9 C 27.2	Sat Unsat

* See Test Section 5.3.12 prior to testing

** Not required for OPERABILITY.

Results obtained through performance of this procedure meet ACCEPTANCE CRITERIA of Section 6.0. ☐ YES ☒ NO

IF NO was checked, refer to Section 7.0, EVALUATION AND REVIEW.

Standard: Candidate determines that 1-PV-3000 is OPERABLE.

Comment:

* Determine if 1-PV-3030 is operable.

Candidate recognizes that the POS IND TEST is UNSAT. Step 7.0.c, Evaluation and Review, states, "IF in Applicable Mode AND valve exercised unsatisfactorily, did NOT fail CLOSED on loss of power, position indication did NOT correspond to actual valve position, OR maximum allowed stroke time was exceeded; corrective action should be initiated immediately. The valve SHALL be declared INOPERABLE at the time of discovery AND the ACTION statement of applicable Technical Specification(s) entered".

EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME	LOW LIMIT	HIGH LIMIT	MAX STROKE TIME	** FAIL SAFE TEST	ACT RESV TEMP °F	ACTUAL STROKE TIME	STROKE TIME TEST
Sat Unsat	Sat Unsat	Sat Unsat	O 19.9 C 20.5	O 14.9 C 15.4	O 24.9 C 25.6	28	Sat Unsat	N/A	O 21.7 C 23.6	Sat Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat	Sat	Sat	O	O	O	28	Sat		O	Sat
Unsat	Unsat	Unsat	C	C	C		Unsat		C	Unsat
Sat Unsat	Sat Unsat	Sat Unsat	O 21.2 C 21.9	O 15.9 C 16.4	O 26.5 C 27.4	28	Sat Unsat	N/A	O 25.9 C 27.2	Sat Unsat

* See Test Section 5.3.12 prior to testing

** Not required for OPERABILITY.

Results obtained through performance of this procedure meet ACCEPTANCE CRITERIA of Section 6.0. ☐ YES ☒ NO

IF NO was checked, refer to Section 7.0, EVALUATION AND REVIEW.

Standard: Candidate determines that 1-PV-3030 is INOPERABLE.

Comment:

*** Determine if any Technical Specification LCO is not met.**

Candidate recognizes that 1-PV-3030 is the only INOPERABLE ARV and that Technical Specification LCO 3.7.4, "Atmospheric Relief Valves (ARVs)", is met. No action is required. The candidate may indicate an INFO LCO will be written, but this is not required for the critical step.

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Relief Valves (ARVs)

LCO 3.7.4 Three ARV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ARV line inoperable.	A.1 Restore required ARV line to OPERABLE status.	30 days
B. Two or more required ARV lines inoperable.	B.1 Restore at least two ARV lines to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4	18 hours

Standard: Candidate determines that Technical Specification LCO 3.7.4, "Atmospheric Relief Valves (ARVs)", is met.

Comment:

Terminating cue: Candidate returns initiating cue sheet.

Verification of Completion

Job Performance Measure No: V-NRC-JP-14825-HL18

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Initial Conditions: Unit 1 is at 100% RTP.

14825-1, "Quarterly Inservice Valve Test", is being performed on the following Train A Atmospheric Relief Valves (ARVs):

1-PV-3000

1-PV-3030

Initiating Cue: The Shift Supervisor has directed you to, "Perform Steps 4.5 and 4.6 of 14825-1 and record the Reference Stroke Times and the High and Low Acceptance Criteria Limits on the provided Data Sheet 12".

PART 2

Initial Conditions: Unit 1 is at 100% RTP.

**14825-1, "Quarterly Inservice Valve Test", for the following
Train A Atmospheric Relief Valves (ARVs) is complete:**

**1-PV-3000
1-PV-3030**

The results of the surveillance tests are as follows:

Valve Number	Exercise (EXER) Test	Iso Valve Stroke Test	Position Indication Test	Fail Safe Test	Actual Stroke Open Time	Actual Stroke Closed Time
1-PV-3000	Sat	Sat	Sat	Unsat	21.7 sec.	23.6 sec.
1-PV-3030	Sat	Sat	Unsat	Sat	25.9 sec.	27.2 sec.


**Initiating Cue: The Shift Supervisor has directed you to, "Complete Data
Sheet 12 of 14825-1 using the data provided and determine if
the Acceptance Criteria of Section 6.0 are met".**

**Based on your evaluation and review of the surveillance test
results:**

Is 1-PV-3000 operable?

Is 1-PV-3030 operable?

**IF any Technical Specification LCO is NOT met, THEN
determine all Technical Specification REQUIRED
ACTIONS.**

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**Notify Surveillance Coordinator PRIOR
to revising this procedure.**

QUARTERLY INSERVICE VALVE TEST

PROCEDURE LEVEL OF USE CLASSIFICATION PER NMP-AP-003	
CATEGORY	SECTIONS
Continuous:	ALL
Reference:	NONE
Information:	NONE



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1.0 PURPOSE

- 1.1 The purpose of this procedure is to demonstrate the operability of those valves, listed on the attached data sheets, to be tested on a quarterly basis in accordance with the VEGP In-service Test Program and Technical Specification 5.5.8, SR 3.3.2.8, SR 3.3.5.3, SR 3.6.3.5, SR 3.4.11.1, SR 3.7.2.1, SR 3.7.3.1, SR 3.7.4.1 and SR 3.3.3.2 (Table 3.3.3-1 Function 21). This procedure may also be used for individual valve testing.
- 1.2 The frequency of this surveillance is at least once every 92 days.
- 1.3 The Position Indication Test shall be completed at a minimum of once every two years and should be performed at refueling intervals. SR 3.3.3.2 (Table 3.3.3-1 Function 21) indicated valves must be performed on an 18-month frequency.

NOTE


This procedure is written to accommodate the use of surveillance task sheets to perform specific sections of this procedure.

√

2.0 APPLICABILITY

Mode applicability is as follows:


<u>TEST SECTION</u>	<u>SYSTEM</u>	<u>MODES</u>
5.3.1	CVCS	1,2,3,4,5,6
5.3.2	CAP&C	1,2,3,4,6
5.3.3	RCS	1,2,3,4,5
5.3.4	NSCW	1,2,3,4
5.3.5	SIS	1,2,3,4
5.3.6	RHR	1,2,3,4
5.3.7	CS	1,2,3,4
5.3.8	MS	1,2,3,4
5.3.9	SS	1,2,3,4
5.3.10	MISC	1,2,3,4
5.3.11	AFW	1,2,3
5.3.12	MS	1,2,3

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INITIALS

3.0 **PRECAUTIONS AND LIMITATIONS**

- | | | |
|------|---|-------------|
| 3.1 | Only one valve should be tested at a time. | <u>7167</u> |
| 3.2 | Times recorded on data sheets are to be in <u>SECONDS</u> . Valve stroke times less than one second shall be rounded off to one second and recorded as <u>ONE SECOND</u> on data sheets. Valve stroke times greater than one second shall be measured and recorded to the nearest tenth of a second. | <u>7167</u> |
| 3.3 | If a train-related failure results, corrective action shall be implemented to correct the failure prior to testing the opposite train. | <u>7167</u> |
| 3.4 | Out-of-tolerance data shall be circled in red and reported to the Shift Supervisor (SS). | <u>7167</u> |
| 3.5 | Alternate flow paths must be established prior to closing any valve in an operating flow path. | <u>7167</u> |
| 3.6 | Shifting equipment or trains shall be done in accordance with the applicable operating procedure. | <u>7167</u> |
| 3.7 | This procedure is written for testing valves in systems aligned for normal operation. If a system is not in normal alignment, the test should not be performed until the system is returned to normal or consideration should be given to the effect on the plant for testing in the present configuration. Also, assurance should be given that valve operation will not result in equipment damage or place the plant in an unsafe condition. | <u>7167</u> |
| 3.8 | Valves should be returned to initial position immediately after test results are obtained. | <u>7167</u> |
| 3.9 | Individual test sections may contain additional precautions and limitations that are specific to that section. | <u>7167</u> |
| 3.10 | When testing Containment Isolation Valves, the redundant valve shall be operable prior to testing either valve, if containment integrity is required. | <u>7167</u> |

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INITIALS


3.11 When performing Tech Spec surveillances and ASME code in-service testing, equipment shall be tested in the as found condition. Any alteration, such as realignment, disconnection, installation of jumpers that is required to perform the surveillance should be limited to the minimum required.

Cycling, cleaning, and lubricating should not be performed before surveillance testing.

MM

3.12 Valves may be tested in any order, if all requirements are met and testing is not prohibited by system conditions or other limits.

MM

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INITIALS

4.0 PREREQUISITES OR INITIAL CONDITIONS

4.1 The SS SHALL verify this surveillance test does NOT affect other tests presently in progress OR jeopardize plant operation PRIOR to granting approval to perform this surveillance test.

GCW
SS APPROVAL

4.2 **Check** air is available to the air-operated valves to be tested.

TM7

4.3 **Check** power is available to Valve Solenoids, motor operators, AND handswitches for valves to be tested.

TM7

4.4 **Obtain** stopwatch(s) AND **record** identification number(s) and cal-due date(s) as necessary.

Stop watch: ID # 150 Cal-due date 06/30/2013

Stop watch: ID # N/A Cal-due date N/A

4.5 **Record** the Reference Stroke Time [obtained from the In-Service Test (IST) Data Book] for the valve(s) to be tested.

INITIALS

NOTES

- The method used to determine valve tolerance factor is per the following table. The tolerance factor is dependent on the valve Reference-Stroke Time and actuator type [i.e., Motor Operated Valves (MOVs) versus all other types of Power Operated Valves (POVs)]. Also, valves with reference-stroke times of less than two (2) seconds may be exempted from applying a tolerance factor IF maximum allowable stroke time is set at 2 seconds. ☐

Reference Stroke Time	Tolerance	Low Limit Correction Factor	High Limit Corr Factor
POVs: ≤10 sec	±50%	0.50	1.50
>10 sec	±25%	0.75	1.25
MOVs: ≤10 sec	±25% <u>OR</u> ±1 sec*	0.75 <u>OR</u> -1 sec*	1.25 <u>OR</u> +1 sec*
>10 sec	±15%	0.85	1.15


*Whichever Is Greater

- IF High Acceptance Time Limit is greater than Max Stroke Time, record Max Stroke Time as High Acceptance Time Limit. ☐

4.6 **Calculate AND record**, on applicable data sheet, Acceptance Criteria Limits for the respective valves using the Reference Stroke Time multiplied by the tolerance factor or record limits from the In Service Test (IST) Data Book. _____

4.7 IF possible, WHEN performing the Position Indication Verification Test, **dispatch** an operator to each valve PRIOR to testing AND **establish** communications with the Main Control Room. _____

4.8 **Refer to** each test section for any additional prerequisites OR initial conditions. _____

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6.0

ACCEPTANCE CRITERIA

NOTE


The Acceptance Criteria is generic to all Data Sheets. □

6.1

The Stroke Time Test results are recorded on the applicable data sheet as SAT indicating that the Actual Stroke Time of each valve tested did NOT exceed the low limit OR the high limit.

6.2

The Exercise, Fail Safe AND Position Indication Verification Test results are recorded on the applicable data sheet as SAT indicating that each valve tested exercised satisfactorily, failed CLOSED on loss of power, AND the position indication corresponded to actual valve position (recorded in Step 5.2.3).

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7.0

EVALUATION AND REVIEW

Actions required IF Acceptance Criteria are NOT met OR valve exceeds High OR Low Acceptance Time limits:

- a. Notify SS.
- b. IF in applicable mode and a valve exceeds the High OR Low Acceptance Time limits:
 - (1) The IST Engineer SHALL be notified AND the valve retested.
 - IF the second set of data does NOT meet acceptance criteria, the data will be analyzed WITHIN 96 hours to verify that the new stroke time represents acceptable valve operation OR the valve will be declared INOPERABLE.
 - IF second set of data does meet acceptance criteria, the cause of the initial deviation SHALL be analyzed AND the results documented in the record of tests.
 - OR-
 - (2) The IST Engineer SHALL be notified AND the valve will be declared INOPERABLE UNTIL such time that the valve is repaired, replaced, OR the data analyzed to determine the cause of the deviation AND the valve shown to be operating acceptably.
- c. IF in Applicable Mode AND valve exercised unsatisfactorily, did NOT fail CLOSED on loss of power, position indication did NOT correspond to actual valve position, OR maximum allowed stroke time was exceeded; corrective action should be initiated immediately. The valve SHALL be declared INOPERABLE at the time of discovery AND the ACTION statement of applicable Technical Specification(s) entered.
- d. IF NOT in Applicable Mode AND a valve requires corrective action, the condition SHALL be corrected PRIOR to entry into the mode requiring the valve to be operable.
- e. A retest showing acceptable operation SHALL be completed for each valve requiring corrective action PRIOR to the valve being returned to service AND the plant entering a mode requiring the valve to be operable.

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QUARTERLY INSERVICE VALVE TEST

Sheet 1 of 1

DATA SHEET 12 - MAIN STEAM SYSTEM
TECHNICAL SPECIFICATIONS APPLICABILITY - MODES 1, 2, 3
(TEST SECTION 5.3.12)

PLANT MODE _____

TEST PURPOSE: _____
TEST STARTED _____ TIME _____ DATE _____

- ☒ Surveillance
☐ Maintenance Retest-MWO# _____
☐ Other _____

VALVE(TRAIN) DESCRIPTION	VALVE TYPE	VALVE TEST DATE	INIT POST	SAFETY POS	EXER TEST	ISO VALVE STROKE	POS IND TEST	REF STROKE TIME	LOW LIMIT	HIGH LIMIT	MAX STROKE TIME	** FAIL SAFE TEST	ACT RESV TEMP °F	ACTUAL STROKE TIME	STROKE TIME TEST	VALVE RESTORED TO INITIAL POSITION (INITIALS)
*1-PV-3000 SG-1 ARV (A)	EHV		<input checked="" type="radio"/>	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C	28	Sat Unsat	N/A	O C	Sat Unsat	/ IV
*1-PV-3010 SG-2 ARV (B)	EHV	N/A	<input type="radio"/>	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C	28	Sat Unsat		O C	Sat Unsat	/ IV
*1-PV-3020 SG-3 ARV (B)	EHV	N/A	<input type="radio"/>	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C	28	Sat Unsat		O C	Sat Unsat	/ IV
*1-PV-3030 SG-4 ARV (A)	EHV		<input checked="" type="radio"/>	O/C	Sat Unsat	Sat Unsat	Sat Unsat	O C	O C	O C	28	Sat Unsat	N/A	O C	Sat Unsat	/ IV

INSTRUMENT ID NO. _____ CAL DUE DATE _____

* See Test Section 5.3.12 prior to testing
** Not required for OPERABILITY.

☐ YES ☐ NO

Results obtained through performance of this procedure meet ACCEPTANCE CRITERIA of Section 6.0.

IF NO was checked, refer to Section 7.0, EVALUATION AND REVIEW.

Comments (include any abnormal conditions and corrective actions taken): _____

Completed By: _____

Signature _____ Date/Time _____

Supervisory Review: _____

Signature _____ Date/Time _____

IST Review: _____

Signature _____ Date/Time _____

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1201 (RCS)

TRN A:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-8000A	MOV	OPN: 17.5 CLS: 17.8	$\pm 15\%$	OPN: 14.9 CLS: 15.1	OPN: 20.0 CLS: 20.0	20 SEC.
1-HV-8047	AOV	1.0	N/A	N/A	N/A	2 SEC.

TRN B:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-8033	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-8028*	AOV	3.6	$\pm 50\%$	1.8	5.4	15 SEC.
1-HV-8000B	MOV	OPN: 17.3 CLS: 18.4	$\pm 15\%$	OPN: 14.7 CLS: 15.6	OPN: 19.9 CLS: 21.2	23 SEC.

*Ensure reactor makeup pumps are not running or reference will not be valid.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1202 (NSCW)

TRN A:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-CV-9446	AOV	1.5	$\pm 50\%$	1.0	2.3	10 SEC.
1-HV-1668A	MOV	18.3	$\pm 15\%$	15.6	20.0	20 SEC.
1-HV-1668B	MOV	18.3	$\pm 15\%$	15.6	20.0	20 SEC.
1-HV-2134	MOV	26.9	$\pm 15\%$	22.9	30.9	40 SEC.
1-HV-2138	MOV	27.6	$\pm 15\%$	23.5	31.7	40 SEC.

TRN B:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-CV-9447	AOV	1.8	$\pm 50\%$	1.0	2.7	10 SEC.
1-HV-1669A	MOV	18.2	$\pm 15\%$	15.5	20.0	20 SEC.
1-HV-1669B	MOV	18.4	$\pm 15\%$	15.6	20.0	20 SEC.
1-HV-2135	MOV	27.9	$\pm 15\%$	23.7	32.1	40 SEC.
1-HV-2139	MOV	28.6	$\pm 15\%$	24.3	32.9	40 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1204 (SI)

TRN A:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-10950	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-10952	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-10958	AOV	4.4	$\pm 50\%$	2.2	6.6	10 SEC.
1-HV-8801A	MOV	14.3	$\pm 15\%$	12.2	16.4	17 SEC.
1-HV-8821A	MOV	OPN: 22.3 CLS: 21.5	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 19.0 CLS: 18.3	OPN: 25.0 CLS: 24.7	25 SEC.
1-HV-8807A	MOV	15.6	$\pm 15\%$	13.3	17.9	20 SEC.
1-HV-8814	MOV	OPN: 9.1 CLS: 9.1	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 6.8 CLS: 6.8	OPN: 11.4 CLS: 11.4	15 SEC.
1-HV-8871	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875A	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875B	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875C	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875D	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8924	MOV	15.8	$\pm 15\%$	13.4	18.2	20 SEC.
1-HV-0943A	SOV	OPN: 6.5	OPN: $\pm 50\%$	OPN: 3.3	OPN: 9.8	30 SEC.
1-HV-10957	AOV	4.1	$\pm 50\%$	2.1	6.2	10 SEC.
1-HV-8801B	MOV	14.3	$\pm 15\%$	12.2	16.4	17 SEC.
1-HV-8807B	MOV	16.1	$\pm 15\%$	13.7	18.5	20 SEC.
1-HV-0943B	SOV	OPN: 9.5	OPN: $\pm 50\%$	OPN: 4.8	OPN: 14.3	30 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1204 (SI)

TRN B:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-8920	MOV	OPN: 8.0 CLS: 7.6	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 6.0 CLS: 5.7	OPN: 10.0 CLS: 9.5	15 SEC.
1-HV-8821B	MOV	OPN: 23.0 CLS: 21.5	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 19.6 CLS: 18.3	OPN: 25.0 CLS: 24.7	25 SEC.
1-HV-8823	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-8824	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-8825	AOV	1.1	N/A	N/A	N/A	2 SEC.
1-HV-8843	AOV	1.1	N/A	N/A	N/A	2 SEC.
1-HV-8890A	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-8890B	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-8964	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-10951	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-10953	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875E	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875F	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875G	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8875H	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-8881	AOV	1.2	N/A	N/A	N/A	2 SEC.
1-HV-8888	AOV	1.0	N/A	N/A	N/A	2 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1205 (RHR)

TRN A:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-8812A	MOV	OPN: 16.0 CLS: 16.0	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 13.6 CLS: 13.6	OPN: 18.4 CLS: 18.4	20 SEC.
1-HV-8811A	MOV	OPN: 12.7 CLS: 11.9	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 10.8 CLS: 10.1	OPN: 14.6 CLS: 13.7	20 SEC.
1-FV-0610	MOV	OPN: 9.1 CLS: 9.2	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 6.8 CLS: 6.9	OPN: 10.0 CLS: 10.0	10 SEC.
1-HV-8716A	MOV	OPN: 26.1 CLS: 26.3	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 22.2 CLS: 22.4	OPN: 30.0 CLS: 30.0	30 SEC.

TRN B:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-8812B	MOV	OPN: 16.2 CLS: 16.0	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 13.8 CLS: 13.6	OPN: 18.6 CLS: 18.4	20 SEC.
1-HV-8811B	MOV	OPN: 31.3 CLS: 30.9	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 26.6 CLS: 26.3	OPN: 36 CLS: 35.5	40 SEC.
1-FV-0611	MOV	OPN: 8.7 CLS: 8.3	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 6.5 CLS: 6.2	OPN: 10.0 CLS: 10.0	10 SEC.
1-HV-8716B	MOV	OPN: 26.7 CLS: 26.8	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 22.7 CLS: 22.8	OPN: 30.0 CLS: 30.0	30 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1206 (CS)

TRN A:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-9001A	MOV	OPN: 25.4 CLS: 25.0	$\pm 15\%$	OPN: 21.6 CLS: 21.3	OPN: 29.2 CLS: 28.8	30 SEC.
1-HV-9002A	MOV	OPN: 24.5 CLS: 24.5	$\pm 15\%$	OPN: 20.8 CLS: 20.8	OPN: 28.2 CLS: 28.2	30 SEC.
1-HV-9003A	MOV	25.4	$\pm 15\%$	21.6	29.2	30 SEC.
1-HV-9017A	MOV	OPN: 25.7 CLS: 24.6	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 21.8 CLS: 20.9	OPN: 29.6 CLS: 28.3	30 SEC.

TRN B:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-9001B	MOV	OPN: 25.2 CLS: 23.8	$\pm 15\%$	OPN: 21.4 CLS: 20.2	OPN: 29.0 CLS: 27.4	30 SEC.
1-HV-9002B	MOV	OPN: 25.5 CLS: 25.5	$\pm 15\%$	OPN: 21.7 CLS: 21.7	OPN: 29.3 CLS: 29.3	30 SEC.
1-HV-9003B	MOV	24.8	$\pm 15\%$	21.1	28.5	30 SEC.
1-HV-9017B	MOV	OPN: 25.8 CLS: 24.0	OPN: $+ 15\%$ CLS: $+ 15\%$	OPN: 21.9 CLS: 20.4	OPN: 29.7 CLS: 27.6	30 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1208 (CVCS)

TRN A:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-0190A	SOV	7.3	$\pm 50\%$	3.7	10.0	10 SEC.
1-HV-8116	MOV	OPN: 8.3 *CLS: 8.3	$\pm 25\%$	OPN: 6.2 *CLS: 6.2	OPN: 10.0 *CLS: 10.0	10 SEC.
1-HV-8104	MOV	OPN: 9.4 CLS: 9.0	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 7.1 CLS: 6.8	OPN: 11.8 CLS: 11.3	15 SEC.
1-HV-8110	MOV	12.6	$\pm 15\%$	10.7	14.5	15 SEC.
1-HV-8471A	MOV	OPN: 16.0 CLS: 15.2	$\pm 15\%$	OPN: 13.6 CLS: 12.9	OPN: 18.4 CLS: 17.5	20 SEC.
1-HV-8509B	MOV	12.3	$\pm 15\%$	10.5	14.1	17 SEC.

TRN B:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-0190B	SOV	6.7	$\pm 50\%$	3.4	10.0	10 SEC.
1-HV-8111A	MOV	12.8	$\pm 15\%$	10.9	14.7	15 SEC.
1-HV-8111B	MOV	14.0	$\pm 15\%$	11.9	15.0	15 SEC.
1-HV-8471B	MOV	OPN: 15.6 CLS: 15.9	$\pm 15\%$	OPN: 13.3 CLS: 13.5	OPN: 17.9 CLS: 18.3	20 SEC.
1-HV-8509A	MOV	12.9	$\pm 15\%$	11.0	14.8	17 SEC.

*Added closing stroke for ESFAS

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1301 (ARVs)

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-PV-3000	EHV	OPN: 19.9 CLS: 20.5	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 14.9 CLS: 15.4	OPN: 24.9 CLS: 25.6	28 SEC.
1-PV-3010	EHV	OPN: 20.7 CLS: 23.4	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 15.5 CLS: 17.6	OPN: 25.9 CLS: 28.0	28 SEC.
1-PV-3020	EHV	OPN: 20.2 CLS: 19.4	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 15.2 CLS: 14.6	OPN: 25.3 CLS: 24.3	28 SEC.
1-PV-3030	EHV	OPN: 21.2 CLS: 21.9	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 15.9 CLS: 16.4	OPN: 26.5 CLS: 27.4	28 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1301 (MS)

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-13005A	AOV	1.1	N/A	N/A	N/A	2 SEC.
1-HV-13006A	AOV	1.1	N/A	N/A	N/A	2 SEC.
1-HV-13007A	AOV	1.2	N/A	N/A	N/A	2 SEC.
1-HV-13008A	AOV	1.2	N/A	N/A	N/A	2 SEC.
1-HV-15212A	AOV	3.0	$\pm 50\%$	1.5	4.5	15 SEC.
1-HV-15212B	AOV	3.7	$\pm 50\%$	1.9	5.6	15 SEC.
1-HV-15212C	AOV	4.0	$\pm 50\%$	2.0	6.0	15 SEC.
1-HV-15212D	AOV	3.7	$\pm 50\%$	1.9	5.6	15 SEC.
1-HV-3019	MOV	OPN: 15.1 CLS: 13.5	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 12.8 CLS: 11.5	OPN: 17.4 CLS: 15.5	20 SEC.
1-HV-9451	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-9454	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-13005B	AOV	1.2	N/A	N/A	N/A	2 SEC.
1-HV-13006B	AOV	1.2	N/A	N/A	N/A	2 SEC.
1-HV-13007B	AOV	1.2	N/A	N/A	N/A	2 SEC.
1-HV-13008B	AOV	1.1	N/A	N/A	N/A	2 SEC.
1-HV-15216A	AOV	3.8	$\pm 50\%$	1.9	5.7	15 SEC.
1-HV-15216B	AOV	3.8	$\pm 50\%$	1.9	5.7	15 SEC.
1-HV-15216C	AOV	3.6	$\pm 50\%$	1.8	5.4	15 SEC.
1-HV-15216D	AOV	4.2	$\pm 50\%$	2.1	6.3	15 SEC.
1-HV-3009	MOV	OPN: 15.3 CLS: 13.7	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 13.0 CLS: 11.6	OPN: 17.6 CLS: 15.8	20 SEC.
1-HV-9452	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-9453	SOV	1.0	N/A	N/A	N/A	2 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
SYSTEM NO. 1302 (AFW)

TRN A:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-5119	MOV	9.7	$\pm 25\%$	7.3	12.1	20 SEC.
1-HV-5137	MOV	OPN: 24.2 CLS: 24.6	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 20.6 CLS: 20.9	OPN: 27.8 CLS: 28.3	30 SEC.
1-HV-5139	MOV	OPN: 25.4 CLS: 25.9	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 21.6 CLS: 22.0	OPN: 29.2 CLS: 29.8	30 SEC.
1-FV-5155	MOV	OPN: 18.3 CLS: 11.0	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 15.6 CLS: 9.4	OPN: 21.0 CLS: 12.7	22 SEC.

TRN B:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-5118	MOV	9.1	$\pm 25\%$	6.8	11.4	20 SEC.
1-HV-5132	MOV	OPN: 23.5 CLS: 23.6	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 20.0 CLS: 20.1	OPN: 27.0 CLS: 27.1	30 SEC.
1-HV-5134	MOV	OPN: 24.3 CLS: 24.5	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 20.7 CLS: 20.8	OPN: 27.9 CLS: 28.2	30 SEC.
1-FV-5154	MOV	OPN: 18.8 CLS: 9.2	OPN: $\pm 15\%$ CLS: $\pm 25\%$	OPN: 16.0 CLS: 6.9	OPN: 21.6 CLS: 11.5	22 SEC.

TRN C:

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-5106	MOV	23.0	$\pm 15\%$	19.6	26.5	29 SEC.
1-HV-5113	MOV	14.9	$\pm 15\%$	12.7	17.1	25 SEC.
1-HV-5120	MOV	OPN: 9.8 CLS: 10.1	OPN: $\pm 25\%$ CLS: $\pm 15\%$	OPN: 7.4 CLS: 8.6	OPN: 12.0 CLS: 11.6	12 SEC.
1-HV-5122	MOV	OPN: 9.2 CLS: 9.5	OPN: $\pm 25\%$ CLS: $\pm 25\%$	OPN: 6.9 CLS: 7.1	OPN: 11.5 CLS: 11.9	12 SEC.
1-HV-5125	MOV	OPN: 10.3 CLS: 10.2	OPN: $\pm 15\%$ CLS: $\pm 15\%$	OPN: 8.8 CLS: 8.7	OPN: 11.8 CLS: 11.7	12 SEC.
1-HV-5127	MOV	OPN: 10.1 CLS: 10.0	OPN: $\pm 15\%$ CLS: $\pm 25\%$	OPN: 8.6 CLS: 7.5	OPN: 11.6 CLS: 12.0	12 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
 SYSTEM NO. CAP&C 1505, 1506, 1508, 1513, 1609

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-2626B	AOV	2.9	±50%	1.5	4.4	5 SEC.
1-HV-2628B	AOV	3.1	±50%	1.6	4.7	5 SEC.
1-HV-2624A	MOV	17.4	±15%	14.8	20.0	20 SEC.
1-HV-12975	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-12978	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-2627B	AOV	2.9	±50%	1.5	4.4	5 SEC.
1-HV-2629B	AOV	2.8	±50%	1.4	4.2	5 SEC.
1-HV-2624B	MOV	19.0	±15%	16.2	20.0	20 SEC.
1-HV-12976	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-12977	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-2791A	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-2792A	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-2792B	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-2793A	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-2790A	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-2790B	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-2791B	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.
1-HV-2793B	SOV	OPN: 1.0 CLS: 1.0	N/A	N/A	N/A	2 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1
 SYSTEM NO. SAMPLING 1211, 1212, 2702

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-3502	AOV	1.9	$\pm 50\%$	1.0	2.9	15 SEC.
1-HV-3508	AOV	1.8	$\pm 50\%$	1.0	2.7	15 SEC.
1-HV-3514	AOV	2.0	$\pm 50\%$	1.0	3.0	15 SEC.
1-HV-8212	SOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-3507	AOV	2.0	$\pm 50\%$	1.0	3.0	15 SEC.
1-HV-3513	AOV	2.1	$\pm 50\%$	1.1	3.2	15 SEC.
1-HV-3548	MOV	17.8	$\pm 15\%$	15.1	20.0	20 SEC.
1-HV-8211	SOV	1.0	N/A	N/A	N/A	2 SEC.

IST ENGINEER A. Smith

REVIEWER B. Jones

FOR TRAINING ONLY

In-Service Test (IST) Data Book

OPS PROCEDURE NO.: 14825-1

SYSTEM NO. MISCELLANEOUS 1214, 1901, 2401, 2402

VALVE NO.	TYPE	REFERENCE STROKE TIME	TOLERANCE FACTOR	LOW LIMIT	HIGH LIMIT	MAXIMUM STROKE TIME
1-HV-0780	AOV	2.8	$\pm 50\%$	1.4	4.2	15 SEC.
1-HV-0781	AOV	3.5	$\pm 50\%$	1.8	5.3	15 SEC.
1-HV-7126	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-7136	AOV	2.6	$\pm 50\%$	1.3	3.9	15 SEC.
1-HV-7150	AOV	1.1	N/A	N/A	N/A	2 SEC.
1-HV-7699	AOV	2.9	$\pm 50\%$	1.5	4.4	15 SEC.
1-HV-8880	AOV	1.0	N/A	N/A	N/A	2 SEC.
1-HV-9385	AOV	4.0	$\pm 50\%$	2.0	6.0	20 SEC.

IST ENGINEER A. SmithREVIEWER B. Jones

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Relief Valves (ARVs)

LCO 3.7.4 Three ARV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ARV line inoperable.	A.1 Restore required ARV line to OPERABLE status.	30 days
B. Two or more required ARV lines inoperable.	B.1 Restore at least two ARV lines to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4	18 hours

NRC RO / SRO Job Performance Measure "d"

Facility: Vogtle

Task No: N/A

Task Title: Determine Minimum Protective Clothing Requirements and Total Projected Dose,
and Determine if task can be completed without exceeding any Radiological Limits

JPM No: V-NRC-JP-00930-HL18

K/A Reference: G2.3.7 RO 3.5 SRO 3.6

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance _____

Classroom _____

Simulator _____

Plant _____

Read to the examinee:

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

Initial Conditions: Unit 1 is at 100% power.

You have been assigned to close and danger tag 1-1204-U4-111 in Unit 1 containment.

You have been briefed by HP on the limitations of RWP 13-0101.

HP has permitted the minimum protective clothing requirements stated in the RWP.

Your accumulated dose for this year to date is 960 mrem.

The TOTAL round-trip TRANSIT dose will be 6 mrem.

The TOTAL time at the job site will be 5 minutes.

Assume neutron dose exposure is negligible.

Initiating Cue: Using RWP 13-0101 and the survey map of the Unit 1 containment work area, determine and document in the table below:

- a. Your protective clothing requirements.
- b. Your projected total gamma dose.
- c. If you can or cannot perform the task without exceeding any limits. If not, then state the reason.

Protective clothing requirements	
Projected total gamma dose	
Can you complete this task without exceeding any limits?	(CIRCLE ONE) YES NO
REASON, if applicable	

Task Standard: Upon successful completion of this JPM, the examinee will correctly:

1. Identify the protective clothing requirements.
2. Calculate the projected total gamma dose.
3. Determine if the task can be performed without exceeding any limits, and if not, then state the reason.

Required Materials: Calculator
Containment survey map
RWP 13-0101

General References: NMP-HP-001, "Radiation Protection Standard Practices"
00930-C, "Radiation and Contamination Control"

Time Critical Task: No

Validation Time: 15 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

*** Determine protective clothing requirements.**

Refer to RWP 13-0101 "Protective Clothing Requirements", which states the minimum requirements for a "C" zone are booties, gloves, and a lab coat.

Cue: ***If asked if the dress requirements were changed per HP direction, "See initial conditions".***

Standard: **Correct protective clothing requirements determined.**

Comment:

*** Calculate projected total gamma dose.**

Using survey map, a dose rate of 84 mrem/hour at the valve is determined.

The tagging task will take 5 minutes.

84 mrem/hour (1 hour / 60 minutes) (5 minutes) = 7 mrem [no range on calculated value]

Transit dose of 6 mrem is added to calculated dose.

7 mrem + 6 mrem = 13 mrem [no range on calculated value]

Standard: **Projected total dose calculated to be 13 mrem [no range on final value].**

Comment:

Radiation Work Permit

Plant Vogtle
13-0101
ACTIVE

Rev
0

Unit

1

Job Description MINOR WORK TASK, OPS TOURS AND SURVEILLANCES IN UNIT ONE CONTAINMENT.
Location GENERAL ENTRY INTO UNIT 1 CONTAINMENT

HP Coverage Authorization Briefing
CONTINUOUS SINGLE USE SINGLE USE

Start Date 1/1/2013 End Date 12/31/2013 11:59:00 PM
Job Supv. I KOCHERY Ext. 3229

Radiological Conditions

AIRBORNE LEVELS: > 0.3 DAC PARTICULATE AND IODINE, >1.0 DAC NOBLE GAS
CONTAMINATION : > 500,000 DPM/100CM2 BETA/GAMMA, >20 DPM/100CM2 ALPHA
RAD LEVELS: > 1000 MREM/HR

Dosimetry

OSLD & ED, RELOCATE ONLY PER HP

Protective Clothing Requirements

'MINIMUM REQUIREMENTS IN "C" ZONE
BOOTIES/GLOVES/LAB COAT
DRESS REQ. MAY BE CHANGED AS HP DIRECTS

Respirators

NP
PAPR
SCBA

Usage is Conditional per HP

Tasks

Description	DAD Alarms	
	Dose (mr)	Rate (mr/h)
SURVEILLANCES/TRANSMITTER CALS	15	80
WALKDOWNS/INSPECTIONS	15	80
LLRTS	15	80
HP JOB COVERAGE	15	80
CORRECTIVE MAINTENANCE	15	80
PREVENTATIVE MAINTENANCE	15	80
OPERATIONS SUPPORT/TAGGING ACTIVITIES	15	80

Instructions

* APPROVAL OF HP MANAGER (OR DESIGNEE) REQUIRED PRIOR TO CHANGING DOSE AND/OR DOSE RATE ALARM SETPOINTS ABOVE LEVELS REQUIRING STAY TIME CALCULATIONS (>=500 MREM DOSE/ENTRY; >=2000 MREM/HR DOSE RATE).

* FOLLOW ALL HP INSTRUCTIONS. * STAY IN DESIGNATED LOW DOSE AREAS WHENEVER POSSIBLE.

* NO ENTRY BEHIND BIOSHIELD IN RX MODES 1 OR 2. * ALL PERSONNEL ARE TO REMAIN IN LINE OF SIGHT OF HP TECH WHEN RX IS IN MODES 1 OR 2.

* ALARA IS TO BE NOTIFIED IF ANY ONE OF THE FOLLOWING UNEXPECTED RAD CONDITIONS ARE ENCOUNTERED: 1) AREAS > OR = 250 MREM/HR GAMMA (OR)

2) AREAS > OR = 100 MREM/HR NEUTRON WHEN COMPOSITE SURVEYS CAN NOT BE USED AND A NEUTRON SURVEY INSTRUMENT IS USED. *AVOID HOT SPOTS.

* YOUR ENTRY SIGNATURE ON DATA SHEET 1 OF 00303-C INDICATES THAT YOU UNDERSTAND THAT MATERIAL TAKEN INTO CONTAINMENT MUST BE: (A) APPROVED (A PERMIT ISSUED PER PROCEDURE 00309-C) TO BE LEFT IN CONTAINMENT, OR

* (B) BE ATTENDED AT ALL TIMES AND CAPABLE OF BEING REMOVED IN ONE TRIP.

* YOUR EXIT SIGNATURE ON DATA SHEET 1 OF 00303-C SIGNIFIES THAT THERE IS NO LOOSE DEBRIS PRESENT IN ALL AREAS THAT YOU ENCOUNTERED THAT COULD BE TRANSPORTED TO THE CONTAINMENT SUMP AND CAUSE RESTRICTION OF THE ECCS PUMP SUCTIONS.

* IF THE ROBOT IS TO BE USED FOR INSPECTION INSIDE THE BIOSHIELD, THE POTENTIAL EXISTS THAT THE ROBOT MAY BE TIPPED OVER DUE TO THE FORCE OF BLOWN AIR FROM THE CONTAINMENT CIRCULATOR FANS.

* AS A PRECAUTION, HP SHOULD REQUEST FOR OPERATIONS TO TURN OFF THE CONTAINMENT CIRCULATOR FANS IN THE AFFECTED INSPECTION AREA WHENEVER THE ROBOT IS TO BE USED INSIDE THE BIOSHIELD.

* THE FANS SHOULD REMAIN OFF UNTIL THE INSPECTION IS COMPLETE.

* THE UNIT 1 CIRCULATOR FAN NUMBERS ARE AS FOLLOWS: 11503B7008 - WEST BIOSHIELD ENTRANCE, 11503B7004 - EAST BIOSHIELD ENTRANCE, 11503B7006 - BETWEEN LOOPS 1 & 4, AND 11503B7002 - BETWEEN LOOPS 2 & 3.

* RESPIRATORY EQUIPMENT MAY BE USED DEPENDING ON RADIOLOGICAL CONDITIONS OR WORK EVOLUTIONS.

* HP HAS STOP WORK AUTHORITY AS A CONTINGENCY WHEN RADIOLOGICAL CONDITIONS OR WORK PRACTICES DEVIATE SIGNIFICANTLY FROM PRE-JOB PLANNING AND/OR RWP.

* UNLESS DIRECTED BY HP SUPERVISION, WORKERS WILL WEAR AN EPD EXTERNAL ALARMING MODULE DURING AT POWER CONTAINMENT ENTRIES.

* ALARA BRIEFINGS WILL CLARIFY RWP REQUIREMENTS FOR DOSE RATE SPECIFICATIONS IN THE IMMEDIATE WORK AREA.

Prepared

Health Physics
Staff

Approved

12/8/2012 02:03
by GBRENENB

Suspended

Terminated

NRC SRO Admin Job Performance Measure "e"

Facility: Vogtle

Task No: V-LO-TA-40005

Task Title: Determine Offsite Protective Action Recommendations

JPM No: V-NRC-JP-NMP-EP-112-HL18

K/A Reference: G2.4.44 SRO 4.4

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ 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.

THIS IS A TIME CRITICAL JPM

Initial Conditions: A General Emergency has just been declared due to a loss of three fission product barriers.

An uncontrolled release is in progress from a failed containment penetration.

The initial Dose Assessment projects site boundary doses of 0.85 REM TEDE and 5.2 REM Thyroid CDE.

Heavy rains have caused widespread flooding in the CSRA with several bridges in Burke County washed out and many roads impassable. Heavy rains are continuing.

Wind direction (10 meter, 15 min. avg.) is currently from 330°.

Initiating Cue: Based on the information given, "Determine the required Offsite Protective Action Recommendation(s) and document your recommendations on Attachment 5, Figure 1, of NMP-EP-112".

Task Standard: PAR 1 determined and recommendations documented on Attachment 5, Figure 1, of NMP-EP-112.

Required Materials: NMP-EP-112, "Protective Action Recommendations"

General References: None

Time Critical Task: Yes

Validation Time: 15 minutes

Performance Information

Critical steps denoted with an asterisk and bolded.

BEGIN TIME CRITICAL PAR DETERMINATION: _____

NMP-EP-112, Attachment 1, "Action Checklist for PAR Development", selected.

Standard: Candidate initiates NMP-EP-112, Attachment 1.

Comment:

NOTE: ONLY THE MUTUALLY AGREED UPON PROTECTIVE ACTIONS SPECIFIED BELOW SHOULD BE RECOMMENDED UNLESS THERE ARE OBVIOUS RELEVANT FACTORS (E.G., SEVERE NATURAL PHENOMENA LIKE HURRICANES) THAT PROBABLY WERE NOT ANTICIPATED WHEN THE PARS WERE DEVELOPED AND THAT WOULD MAKE THE STANDARD PAR RECOMMENDATIONS IMPRACTICAL OR OBVIOUSLY NON-CONSERVATIVE. IN SUCH EVENTS, THE ED SHOULD USE JUDGMENT AS APPROPRIATE.

Standard: Candidate reads NOTE.

Comment:

Step A. INITIAL ACTIONS

1. Precautions and Limitations are applicable in development of Protective Action Recommendations (PARs) in subsequent steps. Attachment 5, Figure 1, "PAR WORKSHEET", may be used to record affected zones or sectors.

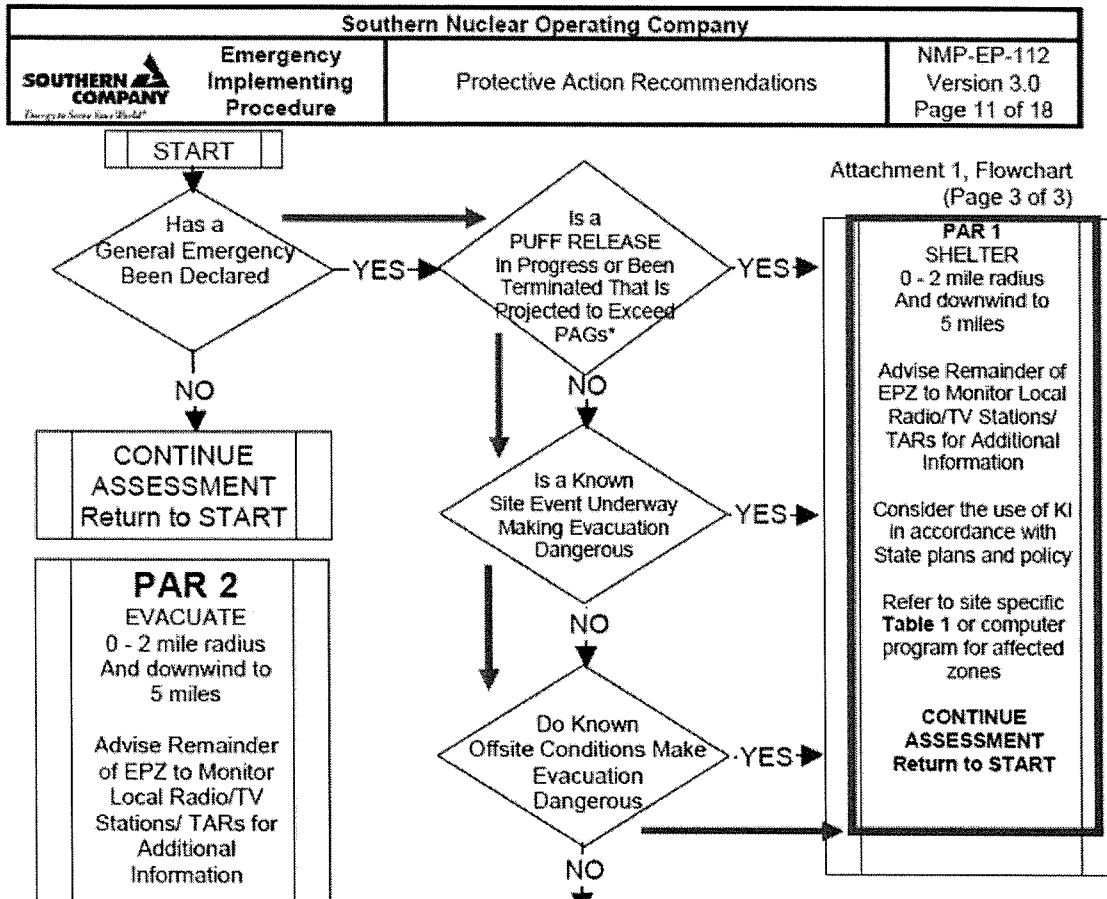
Standard: Candidate reviews precautions and limitations and uses Attachment 5, Figure 1, to document results per ED direction of initiating cue.

Comment:

* Step A. **INITIAL ACTIONS**

*2. Determine General Emergency PARs using Attachment 1 Flowchart.

Standard: Candidate uses flow chart and determines PAR 1.



Comment:

CAUTION - PAR Revisions must include previous PARs

Standard: Candidate reads CAUTION. It does not apply since this is the initial PAR.

Comment:

*** Step A. INITIAL ACTIONS**

- *3. For PAR 1, 2, and 3, determine the affected zones using Site specific Table 1. An electronic program may also be used.**

Standard: Candidate selects Attachment 4, Table 1, to determine affected zones.

Selects >326 to 349 row.

Selects PAR 1 and 2 column.

Selects A, B5, SRS to 2 miles

Comment:

NOTE: Once conditions requiring a PAR change are available, PARs should be developed as soon as possible. (The expectation for development is 15 minutes after the change in conditions.)

Standard: Candidate reads NOTE.

Comment:

Step A. INITIAL ACTIONS

- 4. Communicate developed PARs to the ED for review and approval.**

Standard: Candidate completes Attachment 5, Figure 1. See Key on next page.

PAR 1 box checked.

Wind Direction from 330° entered.

ENN line 5 (C) – A, B5, SRS to 2 Miles entered.

END TIME CRITICAL PAR DETERMINATION: _____

Comment:

Terminating cue: Candidate returns cue sheet and Attachment 5, Figure 1.

KEY (DO NOT PROVIDE TO CANDIDATES)

Attachment 5
Figure 1

PAR WORKSHEET

INSTRUCTIONS:


1. Check the box for the applicable PAR (1, 2, 3, or 4).
2. Record the 15 minute average "wind direction from" for the selected PAR.
Use met instrumentation corresponding to primary release point(s) (BWR) OR ground level release (PWR).
3. Use the applicable "Site Specific" PAR table (Table 1 or 2) to determine the affected zones.


CAUTION:


PAR Revisions must include previous PARs.


On the ENN Form for the selected PAR:

- Select block 5.B and record the "Evacuate" zones OR select block 5.C and record the "Shelter" zones"
- Select block 5.D
- IF PAR 4 is selected, THEN additionally select block 5.E "Other" and provide "Affected Sectors" and "To Miles"

 PAR 1	Wind direction from	330°
	ENN Line 5 [C] Shelter Zones	A, B5, SRS to 2 Miles
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations /Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy

 PAR 2	Wind direction from	
	ENN Line 5 [B] Evacuate Zones	
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations /Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy

 PAR 3	Wind direction from	
	ENN Line 5 [B] Evacuate Zones	
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations /Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy

 PAR 4	Wind direction from	
	ENN Line 5 [B] Evacuate Zones	
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations/ Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy
	ENN Line 5 [E] OTHER	Evacuate Affected Sectors _____ to _____ miles

Approval:

Emergency Director

Date/Time

Verification of Completion

Job Performance Measure No: V-NRC-JP-NMP-EP-112-HL18

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

THIS IS A TIME CRITICAL JPM

Initial Conditions: A General Emergency has just been declared due to a loss of all three fission product barriers.


An uncontrolled release is in progress from a failed containment penetration.

The initial Dose Assessment projects site boundary doses of 0.85 REM TEDE and 5.2 REM Thyroid CDE.

Heavy rains have caused widespread flooding in the CSRA area with several bridges in Burke County washed out and many roads impassable. Heavy rains are continuing.


Wind direction (10 meter, 15 min. avg.) is currently from 330°.

Initiating Cue: Based on the information given, "Determine the required Offsite Protective Action Recommendation(s) and document your recommendations on Attachment 5, Figure 1, of NMP-EP-112".

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4.0 DEFINITIONS

- 4.1 EPA PROTECTIVE ACTION GUIDELINE (PAG) - exposure levels determined by the Environmental Protection Agency for the evacuation of the offsite public following a release of radioactive materials. These levels have been established at one (1) Rem TEDE or five (5) Rem CDE Thyroid.
- 4.2 PROTECTIVE ACTION RECOMMENDATIONS (PARs) – shelter, evacuation, monitor, and/or KI recommendations made by SNC to appropriate state agencies. PARs are made by SNC personnel based on the Attachment 1 Flowchart whenever a General Emergency is declared. Additionally, if in the opinion of the ED, conditions warrant the issuance of PARs, a General Emergency will be declared (SNC will not issue PARs for any accident classified below a General Emergency).
- 4.3 UNCONTROLLED RELEASE - is a radiological effluent release that cannot be immediately stopped via positive control action (Example: Vent stack release from a known or unknown Containment leakage pathway which is not under the control of the shift and requires time to terminate.)
- 4.4 CONTROLLED RELEASE - is a planned radiological effluent release that can be immediately terminated by the licensee (Example: closure of the Post LOCA CTMT vent valves that were manually opened to lower Containment pressure.).
- 4.5 PUFF RELEASE - A controlled release that is projected to exceed the PAGs and will be terminated in less than an hour or an uncontrolled release that was projected to exceed the PAGs and has been terminated.
- 4.6 TOTAL EFFECTIVE DOSE EQUIVALENT (TEDE) - The sum of the deep dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).
- 4.7 COMMITTED DOSE EQUIVALENT (CDE) - The dose equivalent to organs or tissues of reference that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.
- 4.8 TONE ALERT RADIO (TAR) – Radio used to provide emergency information to the public living in the 10 mile emergency planning zone around the sites.

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* Continuing Activity

Attachment 1
(Page 1 of 3)

Action Checklist for PAR Development

NOTE: ONLY THE MUTUALLY AGREED UPON PROTECTIVE ACTIONS SPECIFIED BELOW SHOULD BE RECOMMENDED UNLESS THERE ARE OBVIOUS RELEVANT FACTORS (E.G., SEVERE NATURAL PHENOMENA LIKE HURICANES) THAT PROBABLY WERE NOT ANTICIPATED WHEN THE PARS WERE DEVELOPED AND THAT WOULD MAKE THE STANDARD PAR RECOMMENDATIONS IMPRACTICAL OR OBVIOUSLY NON-CONSERVATIVE. IN SUCH EVENTS, THE ED SHOULD USE JUDGMENT AS APPROPRIATE.

A. INITIAL ACTIONS

Please Check

1. * Precautions and Limitations are applicable in development of Protective Action Recommendations (PARs) in subsequent steps. Attachment 5, Figure 1, "PAR WORKSHEET", may be used to record affected zones or sectors. ☐
2. * Determine General Emergency PARs using the Attachment 1 Flowchart. ☐
 - PAR 1 – Shelter to 2 miles and 5 mile downwind zones
 - PAR 2 – Evacuate to 2 miles and 5 mile downwind zones
 - PAR 3 – Evacuate to 5 miles and 10 mile downwind zones
 - PAR 4 – Guidance for PARs Beyond the 10 Mile EPZ

CAUTION - PAR Revisions must include previous PARs

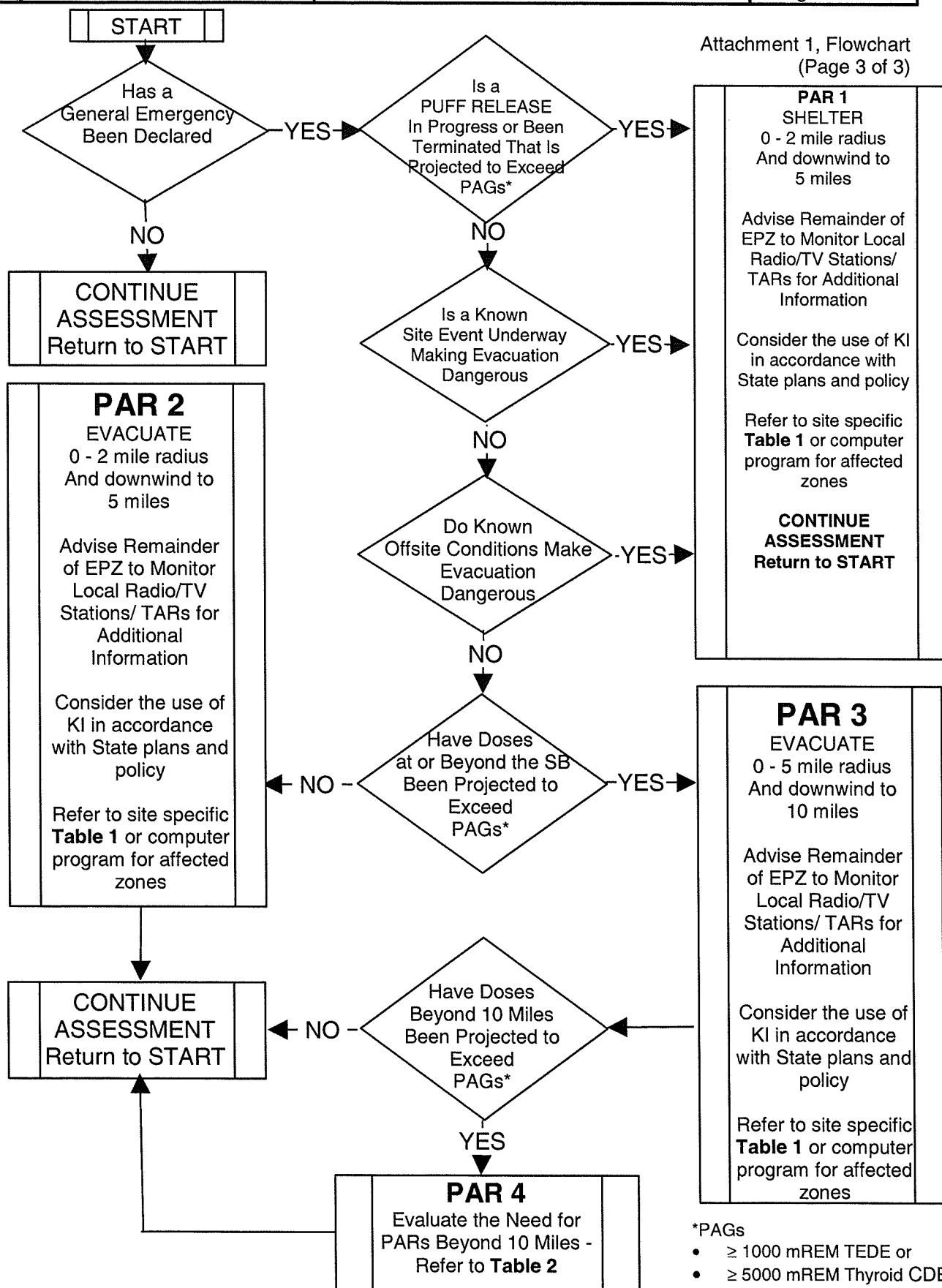
3. For PAR 1, 2, and 3, determine the affected zones using Site specific Table 1. An electronic program may also be used. ☐

NOTE: Once conditions requiring a PAR change are available, PARs should be developed as soon as possible. (The expectation for development is 15 minutes after the change in conditions.)

4. Communicate developed PARs to the ED for review and approval. ☐


NOTE: Once PARs are developed and approved they should be communicated to appropriate agencies as soon as possible. (Notification of PARs to applicable agencies is required within 15 minutes following PAR development and approval.)

5. Ensure that the ED approved PARs from the PAR Worksheet Attachment 5, Figure 1 (to be communicated to offsite agencies) are entered on the ENN form (manual or electronic) per NMP-EP-111, Emergency Notifications. ☐



*PAGs


- ≥ 1000 mREM TEDE or
- ≥ 5000 mREM Thyroid CDE

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Attachment 4
Table 1

PLANT VOGTLE
AFFECTED ZONES FOR PROTECTIVE ACTION RECOMMENDATIONS

WIND DIRECTION FROM (degrees)	PAR 1 and 2	PAR 3
	AFFECTED ZONES	AFFECTED ZONES
N, > 349 - 11	A, B5, C5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, B10, C10, D10, SRS to 5 Miles
NNE, >11 - 34	A, B5, C5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, C10, D10, SRS to 5 Miles
NE, >34 - 56	A, B5, C5, D5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, C10, D10, E10, SRS to 5 Miles
ENE, >56 - 79	A, C5, D5, E5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, D10, E10, F10, SRS to 5 Miles
E, >79-101	A, C5, D5, E5, F5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, D10, E10, F10, SRS to 5 Miles
ESE, >101 - 124	A, D5, E5, F5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, E10, F10, G10, SRS to 5 Miles
SE, >124-146	A, D5, E5, F5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, E10, F10, G10, SRS to 10 Miles
SSE, >146 - 169	A, E5, F5, SRS to 5 Miles	A, B5, C5, D5, E5, F5, F10, G10, SRS to 10 Miles
S, >169 - 191	A, F5, SRS to 5 Miles	A, B5, C5, D5, E5, F5, F10, G10, SRS to 10 Miles
SSW, >191 - 214	A, F5, SRS to 5 Miles	A, B5, C5, D5, E5, F5, G10, SRS to 10 Miles
SW, >214-236	A, SRS to 5 Miles	A, B5, C5, D5, E5, F5, SRS to 10 Miles
WSW, >236-259	A, SRS to 5 Miles	A, B5, C5, D5, E5, F5, H10, SRS to 10 Miles
W, >259 - 281	A, B5, SRS to 5 Miles	A, B5, C5, D5, E5, F5, B10, H10, SRS to 10 Miles
WNW, >281 - 304	A, B5, SRS to 5 Miles	A, B5, C5, D5, E5, F5, B10, C10, H10, SRS to 10 Miles
NW, >304 - 326	A, B5, SRS to 5 Miles	A, B5, C5, D5, E5, F5, B10, C10, H10, SRS to 10 Miles
NNW, >326 - 349	A, B5, SRS to 2 Miles	A, B5, C5, D5, E5, F5, B10, C10, D10, SRS to 5 Miles

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Attachment 5
Figure 1

PAR WORKSHEET

INSTRUCTIONS:

1. Check the box for the applicable PAR (1, 2, 3, or 4).
2. Record the 15 minute average "wind direction from" for the selected PAR.
Use met instrumentation corresponding to primary release point(s) (BWR) OR ground level release (PWR).
3. Use the applicable "Site Specific" PAR table (Table 1 or 2) to determine the affected zones.

CAUTION:

PAR Revisions must include previous PARs.

On the ENN Form for the selected PAR:

- Select block 5.B and record the "Evacuate" zones OR select block 5.C and record the "Shelter" zones"
- Select block 5.D
- IF PAR 4 is selected, THEN additionally select block 5.E "Other" and provide "Affected Sectors" and "To Miles"

<input type="checkbox"/> PAR 1	Wind direction from	
	ENN Line 5 [C] Shelter Zones	
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations /Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy

<input type="checkbox"/> PAR 2	Wind direction from	
	ENN Line 5 [B] Evacuate Zones	
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations /Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy

<input type="checkbox"/> PAR 3	Wind direction from	
	ENN Line 5 [B] Evacuate Zones	
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations /Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy

<input type="checkbox"/> PAR 4	Wind direction from	
	ENN Line 5 [B] Evacuate Zones	
	ENN Line 5 [D]	Advise remainder of EPZ to Monitor Local Radio/TV Stations/ Tone Alert Radios. Consider the use of KI (Potassium Iodide) in accordance with State Plans and Policy
	ENN Line 5 [E] OTHER	Evacuate Affected Sectors _____ to _____ miles

Approval:

Emergency Director

Date/Time

Emergency Procedures/Plan	R, D	<p>V-NRC-JP-NMP-EP-112-HL18</p> <p>Determine Offsite Protective Action Recommendations</p> <p>Description: The candidate will determine PARs for the given emergency and complete the PAR Worksheet.</p> <p>G2.4.44 (4.4)</p>
<p>NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.</p>		
<p>* Type Codes & Criteria:</p> <p>(C)ontrol room, (S)imulator, or Class(R)oom</p> <p>(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)</p> <p>(N)ew or (M)odified from bank (≥ 1)</p> <p>(P)revious 2 exams (≤ 1; randomly selected)</p>		